

JV Science Team Meeting Minutes - January 2017

Upper Mississippi River and Great Lakes Region Joint Venture

The Joint Venture Science Team met 9-11 January at the Embassy Suites Hotel and Conference Center in Peoria, IL. The Science Team consists of our JV Technical Committee plus additional bird conservation experts who serve on the four JV bird-group sub-committees.

Technical Committee members: Present – John Coluccy (DU), Mike Eichholz (SIU), Dave Ewert (TNC), Bob Gates (OSU), Frank Nelson (MO DOC), Mark Nelson (USFS), Rich Schultheis (KS PW), Jake Straub (UWSP), and Greg Soulliere (FWS-JV). Absent – Dave Luukkonen (MI DNR) and Wayne Thogmartin (USGS).

Ad hoc Bird-group Subcommittee members: Present – Mohammed Al-Saffar (FWS-JV), Pat Devers (BDJV), Andy Forbes (FWS-JV), Erin Geise (UWGB), Heath Hagy (IL NHS), Dan Holm (IL DNR), Katie Koch (FWS-MB), Brian Loges (FWS-Refuges), Nat Miller (Audubon), Mike Monfils (MI NFI), Ben O’Neal (Franklin College), Rachael Pierce (FWS-MB), Brad Potter (FWS-LCC), John Simpson (WPBC), Anna Sidie-Slettedahl (FWS-JV), Kelly VanBeek (FWS-MB), Mike Ward (INHS), Tom Will (FWS-MB), and Linda Wires (FWS-IWMM). Absent – Brendan Shirkey (WPMC) and Chris Tonra (OSU).

9 January, 2:00 – 6:00 PM

Science Team

We began with introductions, and some background regarding the evolution of the JV Science Team. New member Pat Devers (Black Duck JV) announced he had just accepted a new position with the FWS, as Branch Chief for the Population and Habitat Assessment Program. So his first meeting as a Science Team member was also his last, but we wished him well in his new position. We welcomed other new members: Erin Geise (Univ. of Wisconsin – Green Bay, Frank Nelson (Missouri Dept. of Conservation), Jake Straub (Univ. of Wisconsin – Stevens Point), Kelly VanBeek (FWS – Migratory Bird Program), and Mohammed Al Saffar (JV Science Office). New member Brendan Shirkey (Winous Point Marsh Conservancy) was unable to attend due to pending child birth this week. Meeting guests included Kristin Hall (Audubon MN), Mitch Weegman (Univ. of Missouri), Jaymi LeBrun (FWS-HAPET), Randy Smith (IDNR), and Jessica Stanton (USGS) substituted for Wayne Thogmartin.

Information sharing and program updates

Heath Hagy provided a presentation about the **history of the Illinois River** and the significant influence humans have had on this once great fish and wildlife habitat. Historic river diversions and rerouting, effluent from the city of Chicago, and sedimentation from surrounding agricultural lands destroyed river diversity and productivity over the decades, especially in the slower moving stretches of the river (lower half). More than 50% of the floodplain and associated bottomland lakes are now farmed via drainage and levee districts. Heath countered the doom and gloom with some

success stories, including the Emiquon Wildlife Refuge and its 6,000 acres of restored marsh and lake with high water quality. He also provided a brief overview of the tremendous research and monitoring information collected by staff of the Forbes Biological Station, which was established near Havana in 1894.

Greg Soulliere provided a very brief update on the JV Waterbird and Waterfowl Habitat strategy revisions, which are about 1/2 and 2/3 completed, respectively. He then introduced Mohammed Al-Saffar to discuss the **modeling and mapping effort for JV waterfowl focal species and non-breeding guilds**. Mohammed is using more sophisticated approaches than used for the 2007 versions of these bird-group strategies. However, some spatial data gaps required extra time and effort to mitigate modeling issues. Mo provided the background for population abundance data used for modeling and showed examples of interpolated abundance maps based on survey transect data. He also provided examples of how county-level harvest data was used to depict the distribution of duck harvest across the region, and presumably the distribution of ducks (and hunters). Model based maps were developed for the four breeding focal species (e.g., distribution in surveyed area and habitat suitability across the JV region) and for the four non-breeding guilds. These draft products were a primary focus for the Waterfowl Committee breakout session.

Kelly VanBeek reviewed information regarding the **Midwest Grasslands Conservation Atlas**, and much of her presentation covered work completed by Dan Lambert and Rosalind Renfrew. The Conservation Atlas, a collection of spatial information across multiple JV's, was a product of the Midwest Grasslands Network along with an effort to map conservation opportunities for Bobolink (BOBO) mapping effort.. The Conservation Opportunities map and other grassland related spatial data and analyses are available in Data Basin, which allows internal mapping and manipulation of data sets along with download ability of select datasets for use in desktop programs. The Conservation Atlas pulls together conservation opportunity area maps from State Wildlife Action Plans and various conservation planning products. Many spatial datasets available in the atlas overlap with those found on the LCC Gulf Hypoxia Initiative Data Basin site.. The Conservation Atlas has increased access to spatial data, increased coordination of conservation interests, supported conservation decisions, promoted coordination across scales, and allows the stacking of conservation interests (data layers) via the planning tool. Bird conservationists can sign up for a free account to Data Basin.

Background and current status of the Midwest Marsh Bird Working Group was provided by Mike Monfils. We began with an update on the Marsh Bird Survey conducted in several Midwest states, and described challenges and future needs as some states (WI and MI) have seen a significant decline in routes completed. Secretive marsh birds are a conservation priority and knowledge about population abundance and factors limiting population growth remains limited. Mike reviewed the surveys evolution and how the focus has shifted from a BBS-like survey to one more regional in scope with a management focus. Priority research questions were identified by the Marsh Bird Working Group, especially related to waterfowl and marsh bird use of restored wetlands, and bird response to invasive plant colonization and management. The number of

surveys completed in WI and MI has declined from 40-50 in each state to just over 10 in 2016. Ohio started with 9 and have been steady, now at 10. Decline in number of field technicians has resulted in the decline in survey routes completed, as original FWS survey funding is no longer available.

John Simpson, presenting for Brendan Shirkey, provided an **update on multiple Winous Point Marsh Conservancy rail projects**. Researchers are working with a local population of King Rail at this location, including trapping and marking birds with various experimental trap designs and techniques (automated calling systems). Trapping for this species was stepped-up in 2014, with comparison of trapping efficiency of two trap styles, and a total of 13 birds captured and banded, and seven marked with PTTs (transmitters) since 2014. They have found that even with a substantial resident King Rail population, zero detections have occurred during standard secretive marsh bird call-back surveys. Following the breeding season, researchers were able to track a couple birds during migration, and found these individuals took 3-5 days to reach Louisiana where they spent the winter primarily in rice fields. The Virginia Rail and Sora project was also expanded beginning in 2014 to sample habitat variables and record vital rates from marked birds. During April to August 2016, 85 Sora and 235 Virginia Rails were trapped and marked; 73 of 98 transmitter-marked birds appeared to have migrated from the area as their signals were lost during study (breeding survey period). They used VHF transmitters (limited distance effectiveness), but they conducted search flights and should have recorded those birds if they were still in the area with a functioning transmitter. There seemed to be primary departure period within a day or two of marking, but most birds remaining on the area had good transmitter effects. Initial study findings suggest small home ranges and not uniformly distributed across marsh areas; they were concentrated with much range overlap between birds. In both projects, there is an apparent discrepancy in marsh bird abundance based on the standardized call-back survey and the trapping and marking effort. Researchers are questioning the validity of survey results lacking a correction factor for birds that do not call during the survey.

Mike Ward updated the group on a project referred to as **SCARC – Shorebird Conservation Acreage via drainage water Runoff Control**. Fields in east-central Illinois are commonly used during spring migration by American Golden Plover (AMGP), with some sites having 5,000 to 10,000 birds during peak migration stopover. Research lead by the INHS and U of IL found that AMGP feed primarily in soybean fields but often spend the night in corn stubble fields. By marking birds, researchers have also found AMGP typically spend about 25 days in IL before moving to the arctic to nest. This duration of stay was far longer than expected, and lack of adequate food was a concern as captured birds were generally emaciated. Researchers used these data and worked with the RCPP (Regional Conservation Partnership Program) to enhance drainage water management in crop fields. Modified control structures can be attached to existing field drainage systems to create small areas of shallow water and mudflats on fields during stopover periods, providing more feeding habitat (key food source here is earthworms). In theory, this practice also holds nutrients (N) in the soil longer to allow microbial breakdown and nutrient reduction into waterways. With water manipulation occurring in mid to late April, habitat can be provided to better support plovers while still

supporting soy bean planting in May. This is not a costly conservation practice, and Mike suggested there may be opportunity to expand this type of shorebird management on working lands into IN and IA (BCR 22). Bird use in some fields is much higher than other fields, perhaps related to cover crops and use of anhydrous on fields (maybe why corn fields are used less). Future research is expected to focus on evaluating N retention, impact on crop yields, use by other species, and opportunities to expand the program.

Mitch Weegman provided a presentation about **population-level analysis to inform habitat conservation**. He described an example (Greenland White-fronted Goose) technique for using data from mark recapture and GPS-acceleration tracking devices coupled with integrated population models to inform conservation planning and direct actions to the life-cycle period most limiting population growth. Mitch revealed how pieces of information from research during one part of the annual cycle can be used to inform scientists about remaining parts of the annual cycle. With this group of birds, the global population appears to be declining, but the wintering population at the largest known wintering site appears to be stable. From multiple models and data sources (e.g., survey count data, capture-mark-recapture data) one can develop a model of population size. In this case, the GPS-accelerated tracking devices provided behavioral data, which was coupled with spatial data to assess activity throughout the year. Decisions to breed appeared most associated with environmental conditions at the Greenland breeding grounds, which ultimately resulted in low population recruitment and decline. This approach lead to an increase in effectiveness regarding where, when, and how habitat conservation dollars are spent on this species.

Tom Will provided an update from the recent **NSST (NAWMP Science Support Team) and TriST (Tri-initiative Science Support Team) combined meetings**. These two groups of bird scientists provide the technical guidance to the NAWMP Committee (NSST) and to the continental conservation initiatives for waterbirds, landbirds, and shorebirds (Tri-ST). Because of the significant overlap in membership and in some of the conservation issues the two groups were addressing, the NSST and TriST experimentally met together during the past two years to reduce travel expense and better share information regarding common science questions. During the experiment the expanded group was referred to as the TrUST (Trial Unified Science Team). While TrUST plans to continue meeting together, sub-teams (e.g., NSST, Partners in Flight) will likely also have breakout sessions to focus on issues specific to individual bird groups. Tom also provided a brief update on a “net landscape change assessment” initiative discussed at the meeting. This has actually been a discussion topic for many years, but the diversity of questions and potential resources the various JVs have related to the topic has resulted in no action. The TrUST decided to elevate the question of completing a landscape assessment to the North American Bird Conservation Initiative (NABCI), which seems to be reenergized lately after several years of no activity.

Action item: Tom W. will provide each of the JV bird-group committee chairs with a brief questionnaire asking for specific needs related to a net landscape change assessment. Committee chairs will confer with key committee members regarding

aspects of a potential assessment to help determine if it is a priority for them, answering the questions provided, and returning responses to Tom by the stated deadline.

We adjourned at 6:00 PM.

10 January, 8:00 – 11:30 AM Science Team / Committee Breakouts

The **Avian Conservation Assessment Database (ACAD)** may provide a foundation for focal species conservation planning, and recent movement to expand the ACAD was reviewed by Tom Will. One of the results of the effort to unify science activities of mutual interest across the Bird Conservation Plan Partnerships (TrUST) is the desire to use a common framework for species conservation vulnerability assessment. This effort would include a single database for all bird groups—i.e., expanding what has been known as the "PIF Database" to include shorebirds, waterbirds, and waterfowl assessments at global (range-wide), continental, and regional (BCR) scales for breeding, wintering, and migration seasonal scores. This assessment already serves as the information source for the USFWS Birds of Conservation Concern (BCC) and periodic State of the Birds reports. Tom Will provided a brief overview of the current format of the database; progress on global scoring for breeding birds of all groups; and data sources, strategies, and timeline for completing BCR-scale scoring for all birds for breeding and non-breeding seasons. For a reference on assessment methodology, see the current [PIF Handbook on Species Assessment](#).

Following the ACAD presentation described above, we broke into Bird-Group Committee Sessions (landbirds, waterbirds, and waterfowl). Results of this morning's breakout sessions were combined with the later sessions and reported on the last page of these minutes (see January 11).

1:00 – 5:00 PM Science Team

Our afternoon was a mix of presentations and group discussion with the theme of better linking / integrating bird management, monitoring, and people.

We began with Pat Dever's presentation of **integrating human dimensions into waterfowl conservation planning on the Atlantic Coast**. The NAWMP has been a leader in identifying the importance of people to the future of bird conservation. Pat and others have used various data sets to develop an initial process for guiding where on the landscape to work. Hunting and birdwatching were considered of high economic benefit to the region. Pat's group explored how Atlantic Coast partners might change what they do to achieve the 2012 NAWMP goal specific to people. Pat reviewed landscape features affecting human birding/hunting activity: access, travel distance, bird abundance, and size of areas (multiple hypotheses). Harvest data, location of band recoveries, and eBird data were used to quantify hypothesized relationships in a random utility travel choice model. They found that travel distance of 50 km or less for hunter trips was important in all states, and the same rule applied for bird watching. Also, >50% of hunting occurs

within county of residence, and >90% within state of residence (NY analysis). There were also positive relationships in hunting/viewing and total wetland acreages, total public land, and total coastal area. Their current approach is to identify focal areas for biological importance, then overlay spatial data important for birders and hunters. This approach was applied to recent NAWCA grant proposals to help inform the review process by the Atlantic Coast JV Management Board.

Linda Wires updated the group on the **Integrated Waterbird Management and Monitoring – IWMM program**, which focuses on monitoring waterbirds (waterfowl, shorebirds, wading birds) during the non-breeding period, and linking bird area use to management techniques. The program also includes analysis at multiple scales, from local to regional to Flyway. IWMM recently modified a feature of their website to include bird abundance estimates by location and time. The program has made much progress since 2013, Linda's last presentation about IWMM, even with limited staffing. In addition to integrated monitoring across guilds, the program also provides examples of how to deal with competing wetlands objectives between guilds. This is the only multi-scale effort monitoring non-breeding waterbirds and habitat parameters impacted by management actions. A pilot until 2015, the IWMM now has a budget, protocol and guidance documents, plus other information for managers and planners working within migration and wintering areas important for waterbirds.

Brad Potter updated the group on **Midwest Landscape Conservation Cooperatives (LCCs), with focus on achieving multi-program conservation objectives** in the Midwest region. He reviewed the evolution of the Upper Midwest and Great Lakes (UMGL) LCC, then discussed how human populations at various scales are changing and how human related landscape trends must be considered in conservation planning. For example, the world population is predicted to increase from 7.5 billion to 10 billion by 2050, with implications to all regions of the U.S. Although LCCs are self-directed and quite different across North America, one of their themes is to better predict and manage for the likely influence of human population change. Brad reminded us that conservationists must realize there are many influences on the landscape beyond the influence of wildlife-habitat work. Following its 2010 establishment, project priorities of the UMGL LCC evolved annually. In recent years the LCC has taken a focal-area approach with workgroups established to step-down high-level priorities, such as the 2015 aquatic habitat connectivity and science-based conservation of Great Lakes coastal wetlands. The LCC has also completed a strategic plan and established "strategic objectives" overarching their current four focal-landscape initiatives. Brad provided LCC examples that have implications to bird habitat conservation and described overlap in scientists participating in both LCC and JV conservation planning.

We spent the remainder of the afternoon discussing **bird monitoring and Strategic Habitat Conservation with a "collective impact" theme**. This started with Greg Soulliere reviewing the evolution of the JV Science Team, from an eight person Technical Committee with a wetland bird focus (2001) to the current 30-person team of experts in the four primary bird groups with a focus on conservation modeling. Change has resulted from periodic self-assessment of strengths and weaknesses in an effort to

continually improve effectiveness in providing science guidance to the JV Management Board. Although the **JV's technical arm has expanded, our mission and operating principles remain the same** as those of the original Technical Committee (2003 JV by laws): The Mission ... is to improve the scientific foundation of bird conservation within the Joint Venture under the direction of the Joint Venture Management Board ... via four operating principles.

- Apply scientific information to support strategic planning and implementation of all-bird conservation.
- Identify sources of uncertainty and evaluate biological assumptions of JV objectives.
- Provide a framework for coordinated habitat and population monitoring and evaluation.
- Maintain strong links among planning, implementation, and evaluation to improve delivery of all-bird conservation at multiple scales.

Katie Koch provided a review of Strategic Habitat Conservation (SHC) and how monitoring was considered the SHC component in greatest need of attention. She described a past assessment ultimately resulting in **the Coordinated Bird Monitoring (CBM) Partnerships**. The CBM partnership was established in FWS Region 3 eight years ago, with Katie filling the position of coordinator. This position has been supported by the Region 3 Migratory Bird Program since its' inception. CBM in the Midwest region currently has 10 working groups, such as the Midwest Landbird Migration Monitoring Network and the Midwest Marsh Bird Working Group. The CBM program has also been responsible for establishment of the Midwest Data Center, now seen as the standard for other Avian Knowledge Network nodes in other regions. However, some of the monitoring partnerships have had mission creep, with monitoring turning into conservation design and more JV-science type work. To determine the future of CBM groups and increase efficiency, there has been interest by some to better tie CBM science efforts with the interests of the JV Management Board. However, the Management Board members have many obligations and may feel JV science regarding bird conservation is generally positive and going in the right direction compared to their many other challenges.

In order to discuss JV Science Team and CBM culture and roles, we divided into three groups for brief breakout sessions. Feedback was collected through questions regarding knowledge of CBM as well as opportunities and barriers to improve information sharing and better integrate CBM into regional bird conservation planning. After reporting out by each of the three groups, Brad Potter generated a discussion wrap-up. In brief, Brad suggested it is a good assumption there are ways to better connect CBM and the Science Team, but we must be careful to not overtax human capacity with additional work. Andy Forbes and Katie Koch reminded the group we are not restructuring our current teams, but looking for feedback to determine if this is a priority. If Science Team members collectively believe we need to significantly restructure, we would need to take this proposal to the JV Management Board for review and approval. Our next step was establishment of a small ad hoc committee to develop a recommendation for this topic. Brad reviewed potential options for the team such as having one person from each of the

bird-group committees participate in further discussion. Katie offered to help, and Erin Geise offered to represent the Landbird Committee. Mike Eichholz suggested more time was needed to digest material presented before committing to spend time on this ad hoc group. Nat Miller reminded us the JV Waterbird Committee already has a pretty well integrated network and probably does not need adjusting. Heath Hagy made a similar comment regarding the Waterfowl Committee and whole Science Team.

Action Item: Katie and Erin will use today’s discussion regarding CBM and Science Team integration to develop a draft recommendation for review by the full JV Science Team by early March.

Our meeting adjourned for the day at 5:15 PM.

***11 January, 8:00 – 11:30 AM* Committees / Science Team**

The Waterfowl, Waterbird, and Landbird committees met separately from 8:00 to 10:30 and reported to the full Science Team from 10:30 to 11:00. Brief summaries of these reports are below.

Landbird Committee (Dave Ewert and Tom Will, Co-chairs) — Discussion focused largely on species assessment for the ACAD, and the group successfully scored threats to breeding landbirds in the JV region. The following priority landbirds were identified for the JV region: Kirtland's Warbler, Golden-winged Warbler, Black-billed Cuckoo, Canada Warbler, Wood Thrush, Cerulean Warbler, Chimney Swift, Bobolink, Henslow's Sparrow, and Eastern Meadowlark. Work on non-breeding period scores, including relative density (RD) and “proportion of population” data for fall migration, winter (stationary non-breeding), and spring migration will be completed in the future. Revised criteria were used for the 2016 PIF Plan revision at the global scale, and regional scoring methods will be consistent with the PIF global approach. BCR-scale scores are intended to provide the foundation for assessment and landbird focal species selection at the JV regional scale. A complete regional assessment should also provide insight and guidance on identifying knowledge gaps and addressing critical threats. These data (and scores) will serve as a foundation for full life cycle conservation assessment and action. There was also discussion around working with JV partners to determine exactly what information they would like in a JV Landbird Strategy revision. We might also consider a simplified revision and only contribute significant additional science-staff time when JV partners ask for detailed analysis and reporting to target landbird conservation within specific sub-regions. Population estimates, population objectives (i.e., population abundance or trend), and habitat objectives will still be needed, but in an overview format until more information is requested. Jessica Stanton may be helpful with the next generation of regional species population abundance estimates. Sean Fields of the Prairie Potholes JV called-in to the committee meeting and described their JV’s process for developing grassland bird population and habitat objectives, with focus on Bobolink.

Waterbird Committee (Mike Monfils and Rachael Pierce, Co-Chairs, plus Dan Holm assisting when Mike had to leave the meeting early) — The group primarily focused on the JV Waterbird Habitat Conservation Strategy revision, reviewing progress on completed sections. The committee was not totally comfortable with the draft waterbird abundance objectives in the current version of the plan and provided recommendations for adjusting the non-breeding objectives table. We also discussed the extensiveness of the waterfowl habitat objectives which Greg provided the group and the potential to simply use these as a basis for most of the waterbird habitat objectives, thus transferring information from the JV Waterfowl Strategy when logical. We can take advantage of breeding and non-breeding waterfowl habitat objectives, but with management recommendations that assure proper timing and quality of habitat to support both non-breeding waterfowl and waterbirds. We plan to continue using simple models to generate habitat objectives for breeding focal species. There was discussion regarding development of a process to scientifically prioritize guilds within the waterbird group in the future, but in the meantime secretive marsh birds should be considered the sub-group with greatest management and monitoring need. Time was also spent reviewing past progress on research and monitoring priorities and paring down remaining (uncompleted) monitoring objectives to those most important currently. The potential to develop a regionally coordinated multi-state marsh bird monitoring effort was also discussed (via Nat Miller).

Action Item: Greg, Rachael, and Mike will make adjustments to the draft JV Waterbird Strategy (e.g., non-breeding population objectives) to address concerns and discussion from this meeting by 1 March 2017.

Action Item: Greg, Mike and Rachael will continue work on remaining sections of the draft JV Waterbird Strategy and provide these draft sections to the full committee through spring and early summer 2017.

Action Item: Greg and Andy will provide a draft of the completed waterbird strategy to the JV Management Board by mid-July for review, with feedback provided at the August Board meeting.

Waterfowl Committee (John Coluccy and Greg Soulliere, Co-Chairs) – Pat Devers provided a quick update on recent activities of the Black Duck JV, which has been working toward understanding what part of the annual cycle is most limiting population growth by BCR (or region of interest). An initial model addressing this question is up and running, and the JV would like to eventually integrate model results into an integrated decision analysis. They have used this same framework to drive research. Pat discussed how the JV is shifting from bioenergetics research to occupancy models and other breeding ground investigation. NRCS has accepted the Black Duck as a focal species for the Working Lands For Wildlife Program in the Delaware and Chesapeake Bay region. The JV is targeting areas currently converting to salt marsh due to salt-water intrusion. BDJV funded genetics indicating the Black Duck is indeed a species, not a dark-phase of the Mallard as some have suggested. Greg and Jake Straub also provided a brief update on Sea Duck JV priorities. Jake and Mike Schummer have been funded by

the SDJV to organize a workshop to share Great Lakes sea duck monitoring information, which is planned for Winous Point (OH) in May 2017. The eventual goal for this gathering is to develop a Great Lakes sea duck monitoring network. On a related note, there is growing interest in hunting long-tailed ducks on Lake Michigan but little understanding of species population dynamics. Mark Koneff recently completed a report on allowable sea duck harvest. The committee spent the remainder of the breakout session discussing the upcoming NAWMP Committee meeting, and the update material Greg and Andy Forbes planned to present, as well as the JV Waterfowl Habitat Conservation Strategy revision. We spent a lot of time with models and maps developed by Mohammed Al-Saffar and Greg. There was valuable discussion and recommendations for adjustments from the group. We also discussed integration of human dimensions and a potential factor-weighting system and related maps -- or a series of maps -- that could be compared with varied weights on social vs. biological parameters. Finally, we discussed monitoring priorities and made initial adjustments to the last (2013) updated list.

Action item: Heath Hagy recorded discussion about monitoring priorities and he will provide Greg a revised monitoring matrix reflecting committee discussion by 31 January.

Action item: Mohammed and Greg will revise Appendix B (non-breeding) maps using feedback from the committee meeting by 31 January, and the related text in strategy will be adjusted by 15 February.

Action item: John, Jake, Bob, Heath, and Mitch will update Table 11 (energy estimates) by 3 February and determine how to treat data in fall vs. spring studies as well as energy estimates vs. “available energy” (currently estimated at 50% of estimates). When this exercise is completed, John and Greg will use results to revise related text in Appendix B and in the strategy by 15 February.

Action item: Greg, John, and Mohammed will complete drafts for remaining strategy sections and provide them to the full committee by 25 February, with comments needed from committee members by 10 March.

Action item: Greg and Andy will provide the JV Management Board the completed draft waterfowl strategy by 20 March so they have three weeks to review it before the 10–11 April 2017 JV Management Board meeting at the DU Office in Ann Arbor, MI.

Andy Forbes provided an **update on the JV financial budget with focus on the availability of “flex funds” to support science projects during FY 2017**. Previous JV supported projects have tested planning assumptions and filled information gaps identified during 2005-2007, when the Science Team updated the JV Implementation Plan and wrote the four Bird-group Habitat Conservation Strategies. The JV had only enough financial resources last year (FY 2016) to fund on-going (multi-year) projects. However, with the recent completion of some of these efforts, adequate funds should be available to cost share new projects in 2017. Although uncertain, a FWS funding cut is not expected this year, and the hope is to fund 3-5 new science projects. Andy was more

uncertain about next year's JV budget, an potential concern for those considering submission of a multi-year proposal. The deadline for these science-related JV grant applications is 29 January. Greg will coordinate review and ranking of applications with the 10-person JV Technical Committee beginning in February.

The JV Science Team meeting adjourned at 11:30 AM. Greg Soulliere and bird-group committee chairs compiled these minutes.