

# Harvest Management Working Group

## *2018 Annual Meeting Report*



# TABLE OF CONTENTS

<b>1</b>	<b>Flyway and Partner Reports</b>	<b>4</b>
1.1	Atlantic Flyway ( <i>Min Huang and Greg Balkcom</i> ) . . . . .	4
1.2	Mississippi Flyway ( <i>Adam Phelps and John Brunjes</i> ) . . . . .	6
1.3	Central Flyway ( <i>Mike Szymanski and Mark Vrtiska</i> ) . . . . .	6
1.4	Pacific Flyway ( <i>Brandon Reishus and Jason Schamber</i> ) . . . . .	7
1.5	Canadian Wildlife Service Update ( <i>No Report</i> ) . . . . .	7
1.6	Division of Migratory Bird Management Update ( <i>Pat Devers</i> ) . . . . .	8
1.7	Communications team update ( <i>Min Huang</i> ) . . . . .	8
<b>2</b>	<b>Partner Updates</b>	<b>9</b>
2.1	NAWMP ( <i>Jim Dubovsky</i> ) . . . . .	9
2.2	Human dimensions working group ( <i>Mark Vrtiska and Jim Dubovsky</i> ) . . . . .	10
<b>3</b>	<b>Mid-continent mallard AHM revision</b>	<b>10</b>
3.1	Progress report ( <i>Adam Phelps and Mark Vrtiska</i> ) . . . . .	10
3.2	Mid-continent mallard model development: progress report ( <i>Scott Boomer</i> ) . . . . .	11
<b>4</b>	<b>Atlantic Flyway Multi-stock AHM and mallard assessment</b>	<b>12</b>
4.1	Progress report ( <i>Min Huang and Greg Balkcom</i> ) . . . . .	12
<b>5</b>	<b>Revision of Pintail AHM</b>	<b>14</b>
<b>6</b>	<b>Updating HMWG priority actions and work plan</b>	<b>15</b>
6.1	2019 HMWG Meeting . . . . .	15
	<b>LITERATURE CITED</b>	<b>16</b>
	<b>APPENDICES</b>	<b>17</b>
	2018 Harvest Management Working Group Meeting Agenda	17
	DMBM Strategic Plan	18
	2019 Harvest Management Working Group Priorities	31
	Harvest Management Working Group Members	32
	2018 Harvest Management Working Group Meeting Participants	35

# LIST OF FIGURES

1	The participants of the 2018 Harvest Management Working Group meeting in Minneapolis, MN.	36
---	---	----

# LIST OF TABLES

# PREFACE

This report provides a summary of presentations and discussions that occurred at the 30<sup>th</sup> meeting of the Harvest Management Working Group (HMGW). The 2018 meeting focused on the continued work related to the double-loop learning process of Adaptive Harvest Management (AHM) and the challenges of coordinating the revision of AHM decision frameworks across Flyways.

## Re-scheduling of 2018 Meeting

The 2018 Harvest Management Working Group meeting was canceled 2 times during the fall and winter of 2018 and 2019 due to scheduling conflicts with the George H.W. Bush national day of mourning and the 2018–19 U.S. federal government shutdown. As a result, the meeting was re-scheduled for 30 April - 1 May 2019 and condensed with a reduced schedule to facilitate participation and limit travel demands in early May. For meeting details please refer to the appended [2018 HMGW Meeting Agenda](#). The HMGW is grateful for the continuing technical support from the waterfowl management community, including many colleagues from Flyway Technical Sections, the United States Geological Survey (USGS), and other management and research institutions. We acknowledge that information provided by USGS in this report has not received the Director's approval and, as such, is provisional and subject to revision.

**Citation:** U. S. Fish and Wildlife Service. 2018. Harvest management working group meeting report. U. S. Department of Interior, Washington, D. C. 36 pp. Available online at <http://www.fws.gov/birds/management/adaptive-harvest-management/publications-and-reports.php>

## ACKNOWLEDGEMENTS

A working group comprised of representatives from the U. S. Fish and Wildlife Service (USFWS), the U. S. Geological Survey (USGS), the Canadian Wildlife Service (CWS), and the four Flyway Councils ([HMGW Members](#)) was established in 1992 to review the scientific basis for managing waterfowl harvests. The working group, supported by technical experts from the waterfowl management and research communities, subsequently proposed a framework for adaptive harvest management, which was first implemented in 1995.

The 2018 HMGW meeting report was prepared by the USFWS Division of Migratory Bird Management based on contributions from meeting participants. G. Scott Boomer was the principal compiler and serves as the coordinator of the HMGW.

---

**Cover Art:** The 2018-2019 Federal Junior Duck Stamp featuring an emperor goose (*Anser canagicus*) painted by Rayen Kang of Johns Creek, Ga.

# 1 Flyway and Partner Reports

## 1.1 Atlantic Flyway (*Min Huang and Greg Balkcom*)

### Multi-stock harvest management

The Atlantic Flyway Council Technical Section and the Division of Migratory Bird Management implemented a multi-stock decision framework for setting the general duck season for the 2019-20 season. The multi-stock strategy considers the status of a suite of 4 duck species that are important to Atlantic Flyway hunters and that represent a range of life histories and geographic distributions within the flyway: wood duck (*Aix sponsa*), green-winged teal (*Anas crecca*), ring-necked duck (*Aythya collaris*), and common goldeneye (*Bucephala clangula*).

The AF and the USFWS decided to make a fairly significant policy decision regarding mallards (*Anas platyrhynchos*) and the multi-stock decision framework. Mallards were pulled out of the decision framework and are going to be treated separately in a stand-alone harvest strategy similar to black ducks.

With the decision in hand to remove mallards, we re-ran all 18 scenarios with four species (wood ducks, American green-winged teal, ring-necks, and common goldeneye). We then ran all of the 98% shoulder strategies through the SEIS process ( $n = 9$ ), which utilizes the prior year's regulatory choice and BPOP levels. This resulted in new weights for each species since mallards were zeroed out and changes to the simulated attributes (e.g. mean season length, years between regulatory changes, etc.) that were outside of the ranges from the runs when mallards were included. Thus, we needed to redo the swing weighting exercise. So we then solicited new ranks and weights from the Technical Section and Council to compare total utility scores amongst scenarios. The new weighting exercise re-affirmed that season length was the most important metric (39% of weight). The fall flight index was the second most important metric (26% of weight). Both frequency of regulatory change and harvest were at 17%. The difference between the previous weighting exercise and this final one was the magnitude of the weight placed on the top two metrics. Both were given higher weight in this final round of swing weighting.

We then evaluated the performance in both the simulations and actual policies among the nine scenarios. It was noted that there was very little difference between them with regards to the metrics we were interested in. It was clear that the three scenarios that included the standard 50-day season were not going to fulfill our objectives of hunter opportunity and these were not considered further. The Technical Section further negotiated the scenarios among the six remaining potential scenarios for further consideration. We felt that the tradeoff between a four-bird total bag limit and a six-bird bag limit was not warranted given that there was very little difference in the performance metrics between the two scenarios, and those scenarios were not considered further. The remaining three scenarios each had a 60-day season with a six-bird bag and differed only in the method of how we weighted each species (equal, harvest, hunter days and harvest).

We then evaluated the optimal policies for the remaining three scenarios. The optimal policies varied not only in the frequency of liberal, moderate, and restrictive seasons, but also in how the optimal policy was derived. All scenarios are largely driven by either wood ducks or ring-necked ducks. The status of either is the first decision that the optimization makes. The next decision in the optimization is the status of the other. Subsequent decisions on the path to the optimal choice are governed by status of teal or goldeneyes, depending on the initial method of assigning species weights. Thus, it seems that we have a framework that does rely upon the collective status of the representative species for the annual decision.

The Technical Section gravitated to the scenario that weighted each of the four species by hunter days expended within each region (North, Mid-Atlantic, South) weighted by the species importance to each region. Based on the optimal policy we examined, this alternative resulted in a higher frequency of liberal seasons at each of the BPOP levels that we have experienced over the 20-year time series. This alternative also incorporates a measure of hunter satisfaction and participation (hunter days expended) that we can track and use as a metric for our success. This use of hunter metrics also lays the foundation for future modeling work should we desire a more complex system.

A key component of the new framework is the ability of managers to learn iteratively about the true nature of carrying capacity of the landscape and the resiliency of these species to changes in both harvest and habitat condition. Implementation of this new decision framework should result in continued hunter opportunity, a better understanding of duck and hunter population parameters, and the ability to learn how duck numbers and harvest regulations affect hunter behavior.

## **Mallard Harvest Strategy**

Since mallards were removed from the framework, the AF and the Service needed to determine the best way forward for setting annual mallard bag limits. It is clear that we are not satisfied with the performance of any of our mallard models, be it the ones associated with Eastern Mallard AHM (balance equation) or the discrete logistic model we use with the multi-stock decision framework. We collectively decided to take a short-term approach to mallard bag limits with the explicit long-term goal of developing something for mallards that would allow for changes in bag limits as mallard populations change. This approach would involve developing a biologically defensible fixed mallard bag for the short-term and working on a longer-term harvest strategy for mallards through a structured decision making process similar to the process we underwent in 2012 when we began work on the multi-stock strategy. To address the short-term issue, the DMBM conducted a Prescribed Take Level analysis (PTL) to better inform the range of mallard bag limits that would be tolerable. We will use the results of the PTL to set mallard bag limits in the foreseeable future.

For the long term, the Atlantic Flyway needs to develop a formal harvest strategy for mallards. This harvest strategy will provide decision rules regarding conditions (i.e., eastern mallard abundance) under which the daily bag limit for mallards could be liberalized. Per the USFWS, consideration of future liberalization in the eastern mallard bag limit will require the development of a formal harvest strategy that must meet four criteria:

- (1) Explicit identification of harvest management objectives for mallards in our flyway;
- (2) Identification of regulatory alternatives (i.e., daily bag limit and season length);
- (3) Development of predictive model(s) that link eastern mallard population dynamics to harvest regulations; and
- (4) Derivation of state-dependent decision rules.

The Atlantic Flyway Mallard Committee proposed the use of structured decision-making (SDM) to help develop harvest management objectives. As a first step, the Atlantic Flyway Mallard committee surveyed all member states regarding potential management objectives and constraints for the basis of an eastern mallard harvest strategy. We did this prior to the Fall 2018 meeting. We then followed up with the first of several surveys to our hunters to get feedback from our constituents. Given the unacceptable performance of our previous mallard models, we have begun some analysis of mallard data streams to see if there were any biases that we could identify that might help explain the shortcomings of the models. We are also thinking about the potential for directed field studies to better understand eastern mallard population dynamics.

## **Technical Capacity**

We continue to be concerned about the current trend in lack of fiscal and political support for DMBM, particularly on the game bird side. Technical capacity is critical towards supporting and implementing the frameworks we have collectively created. If we to continue to operate in this fashion, the resources to support and improve upon the institution need to be in place. We almost feel like the kettle calling the pot black, as we are embarking down a very complex road with multi-stock management and a separate mallard harvest strategy, but, the harvest management community has embraced AHM and the associated processes as the way we will do business, and so if that is the path forward, we collectively need to insure that we have the capacity for that moving forward.

## **1.2 Mississippi Flyway (*Adam Phelps and John Brunjes*)**

Beginning with this meeting, John Brunjes will replace Larry Reynolds as the second Mississippi Flyway representative to the HMWG. The Mississippi Flyway offers its sincere thanks to Larry for his years of service representing the Flyway to this body. In addition, the US Fish and Wildlife Service's Mississippi Flyway representative, Jim Kelley, retired in August. The Mississippi Flyway also thanks Jim for his many years of service to the Flyway. Tom Cooper is filling in for Jim as Mississippi Flyway Representative for the Service. Finally, the Canadian Wildlife Service's Mississippi Flyway representative, Jim Leafloor, has taken a new position within the agency and will no longer be the CWS's representative to the Flyway. The Mississippi Flyway thanks Jim for his service.

Discussions of HMWG-related issues by the Mississippi Flyway Council (MFC) and Technical Section took place at the winter and summer 2018 Flyway meetings, as well as the winter 2019 meeting. Discussions focused primarily on the mid-continent mallard double-looping process, but also included approval of the HMWG Priority project list. Most of the other concerns from previous years, such as the transition in meeting times associated with the SEIS and the associated delays in receipt of the harvest considerations documents, have apparently largely been resolved.

### **MCM Double Looping Process**

Later in this meeting Adam Phelps will present a summary of progress on the mid-continent mallard double-looping process thus far. Briefly, from the Mississippi Flyway's perspective, the one-step constraint remains important, and a flat bag option is important to many states. Coming out of the August 2018 Technical Section and Council meeting, the package options chosen by the Flyway reflected preferences for the one-step constraint, seven additional days in the duck season, and a flat bag option for species with national harvest strategies. That changed somewhat in Winter 2019, as will be reported later.

Larry Reynolds will serve as the Mississippi Flyway's representative and point of contact for the revision of the Northern Pintail Harvest Strategy.

### **SEIS-based Change in Flyway Meeting Dates**

At the Harvest Management Working Group meeting in 2017, Pat Devers committed to try to get the harvest recommendations from DMBM to the Flyways by 20 August, so that those Flyways that meet early would have those considerations available when making recommendations. The Mississippi Flyway was happy to see that commitment kept in 2018 and we hope that timeline can continue to be met in future years. The Flyway offers its thanks to DMBM for working with this timeline.

## **1.3 Central Flyway (*Mike Szymanski and Mark Vrtiska*)**

The Central Flyway is looking forward to completing the double-looping process for mid-continent mallard adaptive harvest management (MCM AHM) that will affect decisions for mallards and other species during future regulatory cycles. Progress has been made on MCM AHM this past year, working in conjunction with the representatives from the Mississippi Flyway and U.S. Fish and Wildlife Service (Service). We hope for components of MCM AHM relating to mallards to be completed during this regulatory cycle with work relating to other species to follow in a step-wise manner.

The Central Flyway has concerns relating to pintails (*Anas acuta*) and the performance of that species' harvest management strategy. Like other flyways, we are concerned with daily bag limits being out of sync with the current-year status of pintails due to the new regulatory process, and the communications difficulties with the public that results. We also are interested in better understanding the ramifications of a 3-bird daily bag limit.

The Central Flyway remains increasingly concerned about the Service's ability to sustain current paradigms in harvest management. We, as a management community, need to ensure that the Service is supported sufficiently to maintain annual monitoring programs that are critical to our collective migratory game bird management, understanding and communications.

Finally, concerns that we have expressed in previous HMWG meetings remain. Primarily, we see waterfowl hunter recruitment and retention, issues relating to banding programs, and Canada and light goose issues as top priorities. Of note, it is our flyway's belief that some problems arising from banding/marking programs are self-inflicted by the natural resource community and are further stressing strained resources that affect international banding programs that are critical to annual monitoring efforts. These are the opinions and perceptions of the Central Flyway's HMWG representatives, both long-term members of the Central Flyway; this statement has not been reviewed or approved by the entire Central Flyway membership.

## **1.4 Pacific Flyway (*Brandon Reishus and Jason Schamber*)**

### **Northern Pintails**

Northern pintail harvest management is of high importance to the Pacific Flyway due to species relative abundance in the flyway and its status as a reduced bag limit species within the overall duck bag limit. In recent years, attention from the public and managers has been amplified after population changes led to a decline in the bag limit to 1 per day, as well as the harvest regulations being set a year in advance of the hunting season, prior to spring population surveys. This has led to a situation where the bag limit has been reduced (2 to 1) but subsequent data shows the breeding population increased relative to the prior year and vice versa.

At its March 2018 meeting, the Pacific Flyway Council endorsed the HMWG's priority list with one change, that revision of the Northern Pintail Harvest Strategy be moved from the Long-range Priorities to Highest Priorities section. Although this change was not endorsed by all other flyways or the SRC, the Council directed the Pacific Flyway Study Committee to begin a review of the current harvest strategy and possible revision. To accomplish this, a working group was developed consisting of study committee members from Alaska, Washington, Oregon, California, Idaho, and Utah, as well as USFWS staff from the Flyway office and Region 1. The group met in person on June 27 to undertake a review, reaffirm objectives, explore model performance with updated information, and identify/eliminate other alternatives. The group continued to work on harvest strategy related issues over the summer and met again at the September Study Committee meeting. The group developed a problem statement document and associated presentation for the Harvest Management Working Group outlining its findings and suggested paths forwards. The presentation was to be delivered at the December meeting of the Harvest Management Working Group, however, due to meeting postponements, it was finally delivered in May 2019.

### **Western Mallard**

Council appreciates the work done by the Service in recent years to revisit the Western Mallard Model (WMM), developed during 2008, and include other breeding and harvest areas important to the Pacific Flyway (British Columbia and Washington, and banding data from Idaho). Although the 2019 priorities has Western Mallard Model Revision (technical update) as a high priority, Council feels that revision of the Northern Pintail Harvest Strategy is more important at this time.

## **1.5 Canadian Wildlife Service Update (*No Report*)**

A representative from the Canadian Wildlife Service was unable to attend the meeting; no report was provided.

## 1.6 Division of Migratory Bird Management Update (*Pat Devers*)

The USFWS Migratory Bird Program released a new Strategic Plan ([See Attached](#)). The Strategic Plan identifies 4 priority goals, including “conserve and manage sustainable populations of birds of management concern”. This priority goal is comprised of two sub-goals, one of which is “provide for recreational hunting and subsistence use of migratory birds”. Overall, the strategic plans places an emphasis on sport harvest management and our partnerships with the Flyway Councils. Other priorities of the Strategic Plan include improving the efficiency and biological foundation of permitting non-sport harvest take of migratory birds, and providing analytical and decision support for regulatory decisions.

The priorities of the Branch of Assessment and Decision Support have a clear linkage to the Strategic Plan. The priorities of the Branch include: 1) providing analytical and decision analysis support for sport harvest management, 2) providing analytical and decision analysis support for non-sport harvest take, and 3) maintaining partnerships with Flyway Councils and other partners.

### Staffing Issues

- (1) The Division has received approval and is working towards filling several vacancies including the Deputy Chief of the Division of Migratory Bird Management, Mississippi Flyway Representative, National Permit Coordinator and Assessment Biologist.
- (2) The Position Description for the Mississippi Flyway Representative has been updated and we expect to announce the vacancy prior to the end of FY 2019.
- (3) The Branch of Assessment and Decision Support expects to fill the Assessment Biologist by the end of FY 2019 (September 2019) or early in FY 2020 (October-November 2019). The new position will be housed at Patuxent National Wildlife Research Center.

## 1.7 Communications team update (*Min Huang*)

The original charge of the HMMWG Communications Team was to: **Develop and implement communication strategies for model based harvest management as a scientifically and administratively sound approach for managing migratory bird harvests.**

These communication efforts were critical during the initial implementation of AHM for mallard harvest. Similarly, the communications tools developed in advance of the SEIS were instrumental for informing our constituency to the changes to the regulatory cycle that occurred coming out of the SEIS. Both of these communication efforts involved national scale harvest management issues.

There is considerable consternation about the steady and gradual loss of priority within both Federal and State agencies for migratory gamebird harvest management. One of the goals of the current Communications Plan (2018) aims to inform administrators of the utility of AHM and the importance of the monitoring programs associated with AHM. Discussion within the Communications Team has recently questioned whether this should really be a charge and subsequent task of the Team. It is felt that the Communications Team should have as its focus the development of communication materials for new, national in scale, strategies. It should not be the purview nor charge of the Team to rally administrators in the individual Flyways to the merits of AHM. That very important task should be left to the individual members of each Flyway that sit on the Communications Team. In addition, there are numerous Flyway specific communication needs (e.g. AF multi-stock AHM) that have been and should continue to be handled at that smaller Flyway scale.

It is recommended that the Communications Team remain as such, but in an ad-hoc, as needed basis. This Team would be charged with the development and dissemination of outreach products that affect harvest management issues at the national scale. One such issue on the horizon is the northern pintail harvest

strategy revision. A substantive communications effort will be needed as this revision is completed. Other work for the Team should be assigned and delegated by the HMWG as the need arises.

## **2 Partner Updates**

### **2.1 NAWMP (*Jim Dubovsky*)**

#### **Key Items**

- (1) Continental species priority list (Ana Krainyk work)
- (2) Plan Committee restructuring - integration needs (vice Humburg): proposal for funding arrangement between FWS and DU Inc.

#### **NAWMP Committee Strategic Priorities for 2019-21 10, each has a PC Leader and Support personnel**

- (1) Communicate priorities to NAWMP partners
- (2) Review PC functionality & adjust structure to improve integration
- (3) Improve linkages between PC & bird conservation communities
- (4) PC lead integration of waterfowl, habitat & HD objectives
- (5) Define metrics to track implementation
- (6) Identify federal/state agencies, NGOs, others for funding & internal resources
- (7) Establish Communications Committee and Network
- (8) Engage strategic partners to promote NAWMP goals, objectives, achievements
- (9) Priority Landscapes Committee develop a scalable decision support tool
- (10) Establish process to review and revise Plan objectives at least every decade

#### **PC liaisons to various teams:**

NSST – Karla Guyn

HMWG – Jim Dubovsky

Communications WG – Joe Benedict, Jeb Williams

HDWG – Gray Anderson, David Cobb

Next meeting – Sept. 10–11, Vancouver, BC

## 2.2 Human dimensions working group (*Mark Vrtiska and Jim Dubovsky*)

- Nick Cole (postdoc working under Rudy Schuster in Fort Collins) doing additional work on HD results
- next meeting July 9-10 at USGS Lab in Colorado
- proposal for HDWG-PET Coordinator
  - USGS has agreed to fully fund first year of position
  - USFWS/SE Region committed funds to second year, along with leftover funds Flyways approved
  - Seeking additional funding to fully support second year
  - During the next 2 years, will work with partners to identify how best to create an FTE, perm position

## 3 Mid-continent mallard AHM revision

### 3.1 Progress report (*Adam Phelps and Mark Vrtiska*)

A small group of biologists from the Central and Mississippi Flyways and U.S. Fish and Wildlife Service (Service) have been working on revision of mid-continent mallard adaptive harvest management (hereafter “AHM”) since 2014. While this work is drawing to a close, unfortunately multiple administrative delays at the federal level caused the 2018 Harvest Management Working Group (HMWG) meeting to be rescheduled twice. The original timeline called for the integrated population model (IPM) that will replace the discrete model set in the AHM process to be vetted and approved at this meeting in December 2018. That meeting was postponed to mid-January when the National Day of Mourning (in observance of the death of former President George HW Bush) prevented federal employees from traveling the day before the meeting was to begin. The January meeting was then canceled due to the federal furlough. Thanks to the flexibility of the members of the HMWG, the meeting was finally held in May 2019. While we are grateful to the members for finding the time to reschedule the meeting, it delayed the timeline for implementation of the AHM revisions by six months. That delay put implementation for the 2020–21 season out of reach. In August 2018, both Flyways evaluated package options for mid-continent ducks. At this time, all those involved in the discussions fully realized that the implications of harvest impacts on other stocks made it impossible to liberalize season lengths at this time. In addition, the discussion of “flat bags” (identical bag limits, generally of 3 or 2 birds, across a suite of species that have specific harvest considerations in place [i.e., hen mallards, redheads (*Aythya americana*), pintails, canvasbacks (*Aythya valisineria*), wood ducks, and scaup (*Aythya marila* and *A. affinis*)] was deferred, despite some support for the idea in both Flyways. A flat bag approach would necessitate revision of existing continental harvest strategies for pintails, scaup, canvasbacks, and wood ducks before such a change could be made. Indeed, work has already begun to revisit the pintail strategy.

The results of the August meetings, then, were abbreviated consequence tables that reflected the preferences and (presumably) the stated objectives of each Flyway. The Mississippi Flyway’s table clearly reflects a desire for a 1-step constraint and consideration of an additional 7 days in season length during the revision of the harvest strategies for the other stocks. Since preliminary information seems to indicate that increases to season lengths in combination with a 3-bird flat bag would result in kill rates on wood ducks that are above acceptable levels, a brief discussion followed on whether states would accept a 2-bird wood duck bag in exchange for a 67 day liberal season.

These informal discussions left it clear that this option is unlikely to be accepted, which means a flat bag is unlikely to be accepted by the Mississippi Flyway under current conditions. No bag limit liberalization for mallards was given significant weight, because results of the most recent national duck hunter survey indicate that a majority of hunters in the mid-continent are satisfied with the current mallard bag limit. The Central Flyway’s table reflected a strong preference for implementation of a flat bag, as well as an

additional drake mallard in the daily bag limit (so that the drake mallard limit would be 6, the same as the overall duck bag limit). These preferences reflect an objective of simplifying duck hunting regulations and result in a projected overall increase in total mid-continent mallard harvest of 3.6% based on a worse-case scenario. Their long-standing objection to a 1-step constraint remained in place coming out of the August meeting.

After the August meetings, the following points were therefore clear:

- (1) Both Flyways are in favor of removing the NAWMP constraint from the AHM objective function.
- (2) Both Flyways are in favor of implementing the mallard IPM in place of the discrete model set.
- (3) The Mississippi Flyway is in favor of a 1-step constraint.
- (4) The Central Flyway is in favor of adding a drake mallard to the bag limit.
- (5) Liberalizations in season length will be dependent on the predicted impacts to other stocks.
- (6) Implementation of a flat bag will be dependent on the predicted impacts to other stocks.

Clearly, some disagreement remained between the Flyways, despite overarching agreement on two major issues (the NAWMP constraint and the IPM). A joint meeting of the two Flyway Councils occurred in March 2019. All of these processes were discussed, including the details and justifications for each Flyway's positions. At this meeting, the group decided that the Central Flyway's objection to the 1-step constraint could be nullified if the constraint is only used when restricting seasons (changes to seasons would be limited to one step at a time when restricting seasons, but not when liberalizing seasons). Because we intend to use this means to retain hunters, it makes sense to only use the one step constraint when restricting. If the AHM process indicates that we should go from restrictive to liberal in a given year, then the best science we have supports that duck populations can handle the harvest rates of a liberal season. As such, to force the constraint to work in both directions does nothing to protect the duck resource and acts only as a punitive measure. In addition, the potential for the Central Flyway to liberalize their drake mallard bag limit was discussed. Mississippi Flyway Council members felt that they should not object to a Central Flyway liberalization as long as it does not affect Mississippi Flyway seasons. Coming out of this meeting, then, the Service Regulations Committee (SRC) consultants for the Flyways were charged with approaching the SRC with the "unidirectional" 1-step constraint to see if there were any overt objections. The results from the final IPM will then be examined to determine impacts of a 6th drake mallard in the Central Flyway's bag limit. If the change in frequency of liberal seasons is deemed to be negligible as a result of either changes relating to use of a 1-step constraint in both flyways or drake mallard bag limit in the Central Flyway, then the Central and Mississippi Flyways may support those changes.

However, at this HMWG meeting, the point was raised that the Service may not actually be able to implement, legally, a 1-step constraint without the possibility of a closed season. If closure must remain an option even when in a 1-step constraint, then the calculus of the Flyways may change regarding the 1-step constraint and a mallard bag liberalization in the Central Flyway.

Moving forward, both Flyways intend to have recommendations to the Service after the August 2019 meetings to implement changes to AHM beginning with the 2021 duck hunting season. The August meetings will include discussions on the allowable form of any 1-step constraint and the simulation results from the finalized IPM, so final decisions should be able to be made at these meetings. However, planning to conclude this process in August leaves a time buffer in place for hang-ups, discrepancies, or disagreements to be settled, since these recommendations do not have to be made until March 2020.

### **3.2 Mid-continent mallard model development: progress report (*Scott Boomer*)**

We presented updated results describing our efforts to estimate mallard demographic and population estimates with an integrated population model (IPM; [Schaub and Abadi 2011](#)). In general, the equilibrium

analyses based on updated parameter estimates resulted in slightly larger carrying capacity values and equilibrium population sizes, suggesting that the harvest capacity of mallards has increased. We developed an IPM for mid-continent mallards with sub-models similar to the recruitment and survival sub-models developed for black ducks (Conroy 2010). We discussed the results of a retrospective analysis evaluating the variability of parameter estimates resulting from IPM estimates based on datasets with different ending years, ranging from 2007–2016). These estimates did not show any anomalous patterns suggestive of any inherent bias in our modeling framework. In addition, we presented a set of preliminary optimization results when implementing a 1-step constraint as recommended by the Mississippi Flyway. We followed up with a discussion of some additional technical work that will be performed to finalize the mid-continent mallard IPM estimation framework.

## 4 Atlantic Flyway Multi-stock AHM and mallard assessment

### 4.1 Progress report (*Min Huang and Greg Balkcom*)

Since 2000, the U.S. Fish and Wildlife Service (USFWS) has used an Adaptive Harvest Management (AHM) protocol based on the status of eastern mallards to establish the annual frameworks (i.e., season length and overall daily bag limit) for duck hunting seasons in the Atlantic Flyway. By 2010 it was apparent that all of the competing biological models used in the AHM protocol were performing poorly in terms of accurately predicting the following year's eastern mallard breeding population. This led the USFWS and the Atlantic Flyway Council (AFC) to conduct a comprehensive review of Eastern Mallard AHM, during which several questions arose. The questions focused on four general ideas: (1) Should we continue to set duck hunting regulations in the Atlantic Flyway using our current approach without any modifications?; (2) Should we continue using the Eastern Mallard AHM process, but work to improve the models used to support the process?; (3) Should we continue using the same process, but consider a new suite of models?; (4) Should we consider an alternative process, other than Eastern Mallard AHM, for setting duck hunting regulations in the Atlantic Flyway?

The AFC determined that the current Eastern Mallard AHM decision framework did not adequately address the fundamental objectives for duck harvest management in the Atlantic Flyway. Specifically, the AFC concluded that eastern mallards do not adequately represent duck harvest dynamics throughout the entire flyway, they do not represent the breeding ecology and habitat requirements of other important Atlantic Flyway duck species because their breeding range does not overlap with that of other ducks that breed in the flyway, and their breeding and/or wintering habitat needs differ from many of the other duck species in the flyway. Thus, the status (i.e., abundance, population trend, and harvest) of eastern mallards does not necessarily reflect that of other Atlantic Flyway species. For example, mallards in eastern North America have declined at an annual rate of 1% since 1998. This constitutes a 19% overall decline in eastern mallards since 1998. Over the same time period all other species in eastern North America for which we have robust population estimates are stable or increasing.

The AFC determined that a decision framework based upon a suite of duck species that better represent the habitat needs and harvest distribution of ducks in the Atlantic Flyway was more desirable than the current Eastern Mallard AHM framework. Development of a multiple species (hereafter, multi-stock) framework also allows managers to base harvest decisions on species that provide a more complete representation of habitats important to waterfowl in the Atlantic Flyway. Although habitat management was not part of the objectives (see below), a multi-stock framework would provide a more complete suite of habitats for managers to target when attempting to integrate harvest and habitat management as suggested in the 2012 North American Waterfowl Management Plan Revision. Accordingly, the USFWS and the AFC began working to develop a multi-stock AHM protocol for setting annual duck hunting season frameworks for the Atlantic Flyway.

As we worked toward developing a multi-stock framework, we initially included mallard in the framework because it is one of the most abundant and most harvested duck species in the flyway. However, we found

that even though the biological models we are using in the multi-stock framework are more basic than those used in Eastern Mallard AHM, the model set performed poorly with mallard included, likely due to the same underlying difficulties experienced with the Eastern Mallard AHM models. We concluded that mallards should not be part of a multi-stock decision framework for setting the general duck season in the Atlantic Flyway.

We initially developed 18 scenarios that encompassed three ways of weighting each of the four species and three different regulatory alternatives. The regulatory alternatives included the current 60 day and 6 bird bag limit alternatives, a 50 day and 5 bird bag limit alternative, and a 60 day and 4 bird daily bag limit. We quickly reduced the set of scenarios to nine, by gravitating towards the method of weighting species that included a measure of hunter activity (days hunted per region). We then evaluated the performance in both the simulations and actual policies among all nine remaining scenarios. It was noted that there was very little difference between them with regards to the metrics we were interested in. It was clear that the three scenarios that included the standard 50 day season were not going to fulfill our objectives of hunter opportunity and these were not considered further. The Technical Section further negotiated the scenarios among the six remaining potential scenarios for further consideration. We felt that the tradeoff between a four bird total bag limit and a six bird bag limit was not warranted given that there was very little difference in the performance metrics between the two scenarios, and those scenarios were not considered further. The remaining three scenarios each had a 60 day season with a six bird bag and differed only in the method of how we weighted each species (equal, harvest, hunter days and harvest).

We then evaluated the optimal policies for the remaining three scenarios. The optimal policies varied not only in the frequency of liberal, moderate, and restrictive seasons, but also in how the optimal policy was derived. All scenarios are largely driven by either wood ducks or ring-necked ducks. The status of either is the first decision that the optimization makes. The next decision in the optimization is the status of the other. Subsequent decisions on the path to the optimal choice are governed by status of teal or goldeneyes, depending on the initial method of assigning species weights. Thus, it seems that we have a framework that does rely upon the collective status of the representative species for the annual decision.

The Technical Section gravitated to the scenario that weighted each of the four species by hunter days expended within each region (North, Mid-Atlantic, South) weighted by the species importance to each region. Based on the optimal policy we examined, this alternative resulted in a higher frequency of liberal seasons at each of the BPOP levels that we have experienced over the 20 year time series. This alternative also incorporates a measure of hunter satisfaction and participation (hunter days expended) that we can track and use as a metric for our success or lack thereof. This use of hunter metrics also lays the foundation for future modeling work should we desire a more complex system.

The multi-stock AHM protocol was implemented for the 2019-20 season. With implementation we still needed to account for mallard harvest. The USFWS conducted a Prescribed Take Level (PTL) analysis of mallard harvest rates and determined that current dynamics allow for a 2 bird daily bag. Until a formal harvest strategy is developed and implemented, this regulation will be in place. The harvest strategy necessarily needs to:

- (1) Explicitly identify harvest management objectives;
- (2) Identification of regulatory alternatives (i.e., daily bag limit and season length);
- (3) Development of predictive model(s) that link eastern mallard population dynamics to harvest regulations; and
- (4) Derivation of state-dependent decision rules.

The technical section had previously identified two fundamental objectives for mallard harvest management:

- (1) Maintain a sustainable population at 98% of MSY at the Eastern North America (Total Survey Area) scale;

(2) Maximize hunting opportunity.

Means objectives associated with these were similar to those previously developed for multi-stock management, including no closed seasons and maximizing hunting season length. Further, the technical committee underwent an exercise to identify the scale at which mallard harvest management was important. All states indicated that protection, in some capacity, of mallards at a smaller scale than the Total Survey Area, was important. This importance of protecting mallards at a smaller scale was echoed by the hunter survey that was sent in December. That survey, which received back over 13,500 responses, indicated that hunters in the Northeast, Mid-Atlantic, and South all were concerned about the stocks from which they derived the majority of their mallard harvest.

The desire to temper overall mallard harvest by protection of mallards produced in the US presents a complexity that will have to be addressed in the formulation of the harvest strategy. Necessarily we will need to consider the status of US mallards separately from Canadian mallards. There are several potential ways through which we might address this. All potential methods will involve development of an Integrated Population Model (IPM). One way is to develop separate population models for Canadian and US stocks. Model development would entail an estimate of productivity from each stock. This is potentially very problematic for estimating productivity in the US. A number of ways to get at this estimate of may include the use of stable isotopes to tease out the age ratios from the Parts Collection Survey. There is a high likelihood, however, that isotopes, at least hydrogen, will not be able to differentiate between northern US and southern Canada origins. This is an area that is pretty critical for us to be able to discern.

Another potential avenue to explore is to derive an estimate of US productivity using the Canadian parts data, corrected for differential vulnerability, then transition those cohorts down to the US and get at US productivity by subtraction. This approach would necessitate estimating transition probabilities of each Canadian cohort down into the US. We would likely be able to use existing banding data to develop these probabilities. Another key is to develop an unbiased fall flight estimate for the Canadian mallards.

Should we be able to derive separate productivity estimates for each stock, we could then optimize an annual decision based on the status of the two stocks, similar to what is currently used in Western Mallard AHM.

In the absence of being able to separately model Canadian and US stocks, we would be left with developing an IPM for the entire mallard population in the Total Survey Area and then trying to, through the use of a constraint in the objective function, protect smaller scale stocks. It is uncertain, however, whether we could use a BPOP level as the constraint trigger or whether we would need to inform that constraint function with an underlying population model.

We have had discussions about just how much the Great Lakes currently contributes to the mallard harvest in the southern states. With the large number of captive released mallards in South Carolina and to a lesser extent, Georgia and North Carolina, there is a high probability that a large proportion of the estimated harvest is comprised of released birds. We may be able to better elucidate this through isotope analyses. We are also conducting a formal harvest derivation analysis to see what portion of the harvest is “unaccounted” for. This would give us a potential estimate of the influence of captive reared mallards on the harvest.

## 5 Revision of Pintail AHM

The remaining part of the meeting was focused on the revision of the AHM decision-making framework for pintails. The Pacific Flyway provided an update on the progress they have made in developing a problem statement and some technical work evaluating updated pintail population and demographic information. Based on a facilitated discussion, the HWWG and members of the pintail revision team discussed the elements of a problem statement to determine the scope and breadth of the revision. The remaining time was spent fleshing out a scope of work for the pintail revision committee to consider as they move forward with the revision.

## **6 Updating HMWG priority actions and work plan**

The Working Group reviewed progress on the 2019 priority action items ([see attached Priorities](#)), but did not discuss the priority technical work for 2019, preferring to re-visit this topic during the 2019 December Harvest Management Working Group meeting.

### **6.1 2019 HMWG Meeting**

The next HMWG meeting will be hosted by the Atlantic Flyway in Key West, FL, from 9 – 13 December 2019.

## LITERATURE CITED

- Conroy, M. J., 2010. Technical support for adaptive harvest management for American black ducks. Unpublished Final Report. Cooperative Fish and Wildlife Research Unit, U.S. Geological Survey, Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA.
- Schaub, M., and F. Abadi. 2011. Integrated population models: a novel analysis framework for deeper insights into population dynamics. *Journal of Ornithology* 152:S227–S237.

# Harvest Management Working Group

## 2018 Meeting Agenda

### Minneapolis, Minnesota

---

**Tuesday 30 April 2019**

Travel day

---

**Wednesday 1 May 2019**

- 0800 Welcome, introductions, logistics, agenda (Boomer, Cooper, and Phelps)
  - 0830 Flyway reports
    - Atlantic, Mississippi, Central, Pacific (State Technical Representatives)
    - US Fish and Wildlife Service (Flyway Representatives)
    - Canadian Wildlife Service (*DNA*)
    - US Fish and Wildlife Service DMBM/BADS (Devers)
  - 1000 BREAK
  - 1030 Mid-continent mallard AHM revision process update (Phelps)
    - Technical updates (Boomer)
    - Consequence table and decision analysis (Phelps, Vrtiska, Devers)
    - Non-mallard stock (group discussion)
  - 1200 Lunch
  - 1300 Atlantic Flyway Multi-stock AHM/Eastern mallard decision making
    - Progress report (Huang)
  - 1400 Pintail AHM revision - PF study committee update (Reishus and Sanders)
  - 1500 Break
  - 1530 AF, MF, CF Pintail AHM perspectives (State and Flyway representatives)
  - 1600 Pintail AHM revision - working group update: Problem Statement (Runge)
  - 1700 Adjourn
- 

**Thursday 2 May 2019**

- 0800 Meeting recap and follow-up if needed (Boomer)
- 0830 Pintail problem framing - scope of work (group discussion)
- 1000 BREAK
- 1030 Communication team updates and discussion (Huang)
  - Human Dimensions Working Group (Vrtiska)
  - NAWMP Institutions - update (Padding)
  - Plans for 2019: Actino items, priorities for 2020, task assignments
  - Next meeting: location (Atlantic Flyway), dates and travel planning
- 1200 Meeting Adjourned



---

# Migratory Bird Program Strategic Plan



Released  
20 March 2019



## How We Got Here

Partners suggested the Migratory Bird Program - working with Partners - consider the following actions:

### ***Our Stakeholders Told Us:***

Partners suggested the Migratory Bird Program - working with Partners - consider the following actions:

1. Develop and communicate KEY national and regional migratory bird messages.
2. Work through priority partnerships to achieve measurable conservation outcomes.
3. Coordinate national and regional actions and investments on migratory bird priorities.
4. Measure progress toward defined conservation outcomes & refine efforts based on learning.



### ***Suggested Operational Improvements:***

#### ***Create Decision Support Models***

To address birds of management concern

- Replicate waterfowl model.
- Include habitat factors.
- Life-cycle management.
- Multi-species emphasis.

#### ***Coordinate Data Acquisition and Management***

For mutually identified priorities and needs

- Define priority data needs.
- Determine management risk.
- Identify data sources and providers.
- Provide data to partners.

#### ***Streamline permitting and regulatory functions***

For mutually identified priorities and needs

- Consistency of approach.
- Outsource, where possible.
- Speed up process.
- Develop Best Management Practices.
- Automate.
- Reduce compliance burden & cost.

## ***From Strategy to Implementation***

### ***Steps to Implementation.***

- **Built the project-level Plan view Fall of 2017.**
- **In 2018, mapped the Migratory Bird Strategy to the Secretary's Priorities.**
- **Used the Plan to prioritize National investments in FY18.**



# Why We Do It

**Vision: Healthy bird populations valued by the American public**

## Core Values:

### What We Hold Dear

- The passion and excellence of our employees.
- Socio-economic benefits that result from healthy bird populations & habitats
- Contributions of and collaborations with all people and organizations that benefit migratory birds.
- Transparent, informed decisions based on the best available information.

## Guiding Principles:

### What Drives Our Work. We:

- Support engaging in effective partnerships to conserve and manage migratory birds.
- Evaluate the effectiveness of our work and our partnerships.
- Focus on benefits to multiple species and their habitats.
- Work with migratory birds at the scales appropriate to their management.
- Use our strategic priorities to focus our efforts and resources.
- Leverage partner resources and avoid duplication of effort.
- Coordinate data collection and analysis that supports management decisions.

## Our Unique Role

- Our trust responsibility is to manage migratory birds as identified in international treaties with Canada, Mexico, Japan, and Russia that are implemented through the Migratory Bird Treaty Act.
- Our primary focus is on those species that appear in the Birds of Management Concern list (BMC), defined as birds of conservation concern, conflict species, and species for which we hold hunting seasons.

## What We Do: Our 4 Priority Goals

**Mission:** Leadership in migratory bird conservation and management through effective partnerships, applied science, and innovative strategies

Through professional public service, we serve the American public to achieve the following goals:

1. Provide Leadership in Migratory Bird Conservation.
2. Conserve and Manage Sustainable Populations of Birds of Management Concern.
3. Conserve Habitat for Migratory Birds of Management Concern.
4. Manage Bird Data and Information for Use in Decision Making.

The strategies, goals and objectives below were developed as an ambitious map to serve the Migratory Bird Program for the next decade. Implementation of any of the actions described below is subject to annual appropriations and program priorities. The Migratory Bird Program can only invest in a subset of these actions each year. Objectives in the plan are written at a level that allows the Migratory Bird Leadership Team to annually prioritize work effort and budget allocations.



## ***1. Provide Leadership in Migratory Bird Conservation***

The USFWS has been a leader in migratory bird conservation since the founding of the Service. Our efforts focus migratory bird conservation at large flyway and continental scales. We identify and coordinate with our State, Federal and nonprofit partners to respond to emerging conservation and hunting issues. We work with our partners to build public understanding of migratory bird conservation. We also lead the federal family in bird conservation issues.

### **1.1. Identify significant issues related to Birds of Management Concern and provide leadership to address them at flyway scales**

- 1.1.1 Develop criteria to select Birds of Management Concern target species on which to focus conservation attention within 1 year. Take advantage of prior efforts such as Focal Species, and the work of multispecies working groups such as those for marine birds, grassland birds, and shorebirds.
- 1.1.2 Within 6 months of selecting priority species or species groups in Objective 1.1.1, evaluate those species that would benefit from developing Conservation, Management, or Business plans, or from developing new or providing support for existing Working Groups for individual species or for species groups.
- 1.1.3 Engage partners within existing structures, such as AFWA, Flyways, Bird Initiatives, and Joint Ventures, to identify: significant factors affecting Birds of Management Concern; achievable solutions; and partners and partnerships that can provide leadership to best address those factors. Create a summary document within 1 year.
- 1.1.4 Assess and strengthen the support of flyway councils for improving coordinated conservation action with states. Coordinate among Service-designated flyway liaisons before all flyway technical committee meetings to sharpen messaging and improve our abilities to serve flyway councils.

### **1.2 Work with partners to increase appreciation and support for bird conservation**

Improve communication and messaging of both the Migratory Bird Program's and partners' program accomplishments in advancing bird conservation as a vehicle for increasing overall awareness, understanding, and support for migratory bird conservation.

- 1.2.1 Develop and deliver strategic messages and materials with partners that will result in increased awareness, understanding and support for migratory bird conservation.
- 1.2.2 Determine how the public values and connects with birds.
- 1.2.3 Work through new, innovative Fish and Wildlife Service communications processes to maximize outreach and education about migratory bird conservation to the American public.

### **1.3 Facilitate migratory bird conservation with other Federal partner agencies**

- 1.3.1 Seek efficiencies by working collaboratively with other Federal partners to minimize duplication of effort in respective work plans, reduce threats, and to maximize communication about emerging issues that affect migratory birds.



## ***2. Conserve and Manage Sustainable Populations of Birds of Management Concern***

One of our core responsibilities is managing game species to provide for recreational and subsistence hunting opportunities and authorizing take of migratory birds in a manner that is compatible with the four international treaties. We must strive for continual improvements and efficiency in issuing permits while maintaining sustainable populations of birds.

### **2.1 Provide for recreational hunting and subsistence use of migratory birds**

- 2.1.1 Work with States to refine how we structure hunting seasons to maximize hunting opportunities commensurate with maintaining sustainable populations of harvested species. Working cooperatively with the Flyway Councils, evaluate new technologies and approaches can enhance hunting opportunities.
- 2.1.2 Work through the Alaska Migratory Bird Co-Management Council to provide subsistence hunting opportunities for rural residents of Alaska while maintaining sustainable bird populations.
- 2.1.3. Work with tribes to provide hunting frameworks on tribal lands and ceded lands while maintaining sustainable bird populations.
- 2.1.4 Design, conduct, and evaluate migratory bird monitoring programs to collect population data needed to establish annual migratory bird hunting regulations, evaluate impact of harvest on hunted species, and improve the management of harvested species.

### **2.2. Work with stakeholders and partners on managing species conflicts to balance societal needs with our obligation to maintain sustainable migratory bird populations**

- 2.2.1 Develop a new approach to identify, evaluate, and address migratory bird species conflicts that ensures input by stakeholders and a transparent decision based on defensible methods.
- 2.2.2 Work with Flyway Councils to design, maintain, and conduct migratory bird monitoring programs to collect population data needed to establish take levels for species conflicts. Engage the Branch of Assessment and Decision Support to apply assessment expertise and evaluate impact of take and improve conflict species management. Information will be needed for the Service to evaluate any management options focused on lethal take.



## **2.3 Implement an efficient permitting program that has a strong biological foundation**

### **2.3.1 Modernize the Service's Migratory Bird Program permitting technology, governance, and processes**

- 2.3.1.1 Define the governance process for permit policy decisions and coordinating between regions and headquarters. In the next 6 months, the Migratory Bird Leadership Team will charter an integrated team to define the process for policy and decision making in the permit program.
- 2.3.1.2 Build an efficient and modern web-based electronic permit (e-permit) system. The e-permit system will include fully electronic application, payment, reporting, and permitting; connectivity with the Injury and Mortality Reporting system and ECOS; and advanced data querying, viewing, summary, export and analysis capabilities to facilitate the use of data for management decisions.
- 2.3.1.3 Once the new electronic permitting system is operational, evaluate options to ensure cost recovery, including review of permit tenure and fee exemptions (consistent with OMB Circular A-25).

### **2.3.2 Develop consistent approaches to permit issuance across Fish and Wildlife Service Regions**

- 2.3.2.1 Support the permit program staff through training, professional development, and mentoring. This investment will benefit staff, the Service, and our customers.
- 2.3.3.2 Review manual chapters and standard operating procedures to ensure consistent program implementation.
- 2.3.2.3 Strengthen the biological foundation by which the program issues permits to ensure legally and biologically defensible take allowances.
- 2.3.4.4 Improve customer service and efficiency by implementing a modern system for on-line submission of permit applications that provides more efficient access to application information and permits, while providing staff and customers the data needed to help make management decisions.

## **2.4 Work with partners to develop and implement voluntary approaches to reduce bird mortality**

- 2.4.1 Provide comprehensive technical assistance and support to federal agencies and partners, emphasizing compatible use and alleviation of human-bird conflicts in the context of population sustainability.



### ***3. Conserve Habitat for Migratory Birds of Management Concern***

Because the quantity, quality, availability, and distribution of habitats are important drivers of bird populations, the loss and degradation of natural habitats are key factors in the declines of many migratory bird species. Ensuring the future of migratory birds requires the effective conservation of breeding, wintering, and migration habitats throughout their annual cycle to sustain populations at desired levels. Strategic, adaptive, collaborative approaches that address habitat requirements of birds at landscape scales are paramount, so that finite resources can be leveraged across organizational lines and targeted toward “local” habitat conservation actions expected to best support range-wide objectives for population sustainability.

#### **3.1. Initiate and develop collaborative projects and approaches that advance specific strategic objectives of bird conservation plans**

- 3.1.1. Develop, adopt, and implement a results-oriented conservation business planning approach for how we work with new and existing partners.
- 3.1.2. Collaborate with partners to identify objectives and prioritize habitat actions that alleviate threats to and enhance habitats of birds of management concern.

#### **3.2. Collaborate with States and other partners to conserve and restore habitat for birds of management concern through Joint Venture Partnerships**

- 3.2.1. Using partner delivery networks, prioritize, communicate, achieve, and track Joint Venture habitat goals to impact desired results in migratory bird populations.
- 3.2.2. Coordinate partner participation in state, regional, and national habitat conservation and grant programs.
- 3.2.3. Support state efforts to provide increased public access and bird-related recreation.
- 3.2.4. Work closely with states during state wildlife action plan updates to integrate and align Migratory Bird goals.

#### **3.3. Collaborate with other Service programs and Federal partners to conserve and restore habitat for birds of management concern**



### 3.4. Collaborate with international partners to conserve habitats of the birds of management concern across their ranges and political boundaries

- 3.4.1. Participate in or replicate regional monitoring networks/projects to establish connectivity between core breeding populations and large concentrations of non-breeding populations. Task: Develop partnerships or sister-city conservation programs based on this habitat requirements of migratory birds throughout the year.
- 3.4.2 Support the activities of major bird initiatives (e.g. Partners in Flight, North American Waterfowl Management Plan, U.S. Shorebird Conservation Plan, North American Waterbird Conservation Plan) in establishing and refining the context for approaching bird conservation within hemispheric, continental, national and other “large geographic” scales.
- 3.4.3 Participate in the development of conservation business plans or strategies that address threats across the annual cycle of migratory birds and facilitate collaboration among international partners on achieving common goals for these species.
- 3.4.4 For a specifically prioritized list of neotropical birds, annually fund Neotropical Migratory Bird Conservation Act projects that will improve the species population status. Proposals must include how to achieve measurable biological outcomes, indicate how progress will be monitored and data collected, and clearly outline how and when results reported.





## ***4. Manage Bird Data and Information For use in Decision Making***

Manage data as a strategic asset and a “trust resource” by developing information systems that improve customer service, government transparency, decision-making, and accessibility for the public.

### **4.1 Modernize bird data management including collection, storage, analysis, reporting, maintenance, and access to partners and the public**

To better serve the American public, we must manage our data assets to ensure they are of the highest quality, are well documented, and are supported by transparent and efficient processes. Improve data management within the Migratory Bird Program by implementing recognized best practices, the forthcoming Service’s data governance policies, Departmental and Federal policies, and cost-effective, innovative technological solutions. To this end, we have the following specific objectives for data management:

- 4.1.1 Develop a programmatic structure to govern Migratory Bird data management and oversee internal coordination within and among FWS Regions and Headquarters. This should begin immediately and in collaboration with National FWS and DOI efforts, as well as current regional efforts.
- 4.1.2 Conduct data management in accordance with best practices with guidance from the MB data management governance team and coordination with Service-wide data management initiatives.
- 4.1.3 Adopt new and innovative approaches to data collection, maintenance, and storage that improve data quality and the efficiency of information management.

### **4.2 Provide analytical support to inform management decisions**

- 4.2.1 Enhance the technical skills and quality of the analytical work produced by Migratory Bird staff.
- 4.2.2 Develop models, visualizations, and maps to support Migratory Bird management decisions.
- 4.2.3 Support decision analytical approaches to guide Migratory Bird technical work, project scoping, and project review.

### **4.3 Coordinate with partners to improve access to quality information for bird conservation and management decisions**

- 4.3.1 Coordinate with partners to adopt or develop standards for monitoring programs and data analysis.
- 4.3.2 Work with partners to ensure data access, sharing, availability and participate in cooperative data management and sharing systems (e.g., Avian Knowledge Network, DataOne, data.gov).



## How We Operate

### ***1. Set Priorities***

With over 1,000 migratory bird species, the Migratory Bird Program must set and follow priorities to ensure program effectiveness. We will use the following criteria to guide our work:

#### ***Primary Criteria:***

- 1.1 Is the action critical to fulfill our legal obligations or part of our unique role?**
- 1.2 Is the action focused on or does it extend the reach of an identified strategy or a Department of the Interior strategy?**
- 1.3 Is the action consistent with our values and guiding principles?**

#### ***Secondary Criteria***

##### **1.4 Is anyone else doing the action?**

- Can someone else do the action better or more cost efficiently?
- Does the action avoid duplicating the effective work of others?

##### **1.5 Does the action contribute to Birds of Management Concern conservation ?**

- If so, is the investment commensurate with the expected benefit?
- Are there sources of funding available?

##### **1.6 Does the action address a specific decision or management action?**

##### **1.7 Does the action strengthen existing partnerships?**

- Does it leverage partner resources/new partnerships/strengthen existing partnerships?

##### **1.8 What is the risk of not taking action?**



## ***2. Prioritize and Support Our Most Strategic Partnerships***

The scope and complexity of migratory bird issues require that we partner with others to develop and implement shared goals and objectives. We will enhance the effectiveness of existing partnerships, concurrent with developing opportunities to collaborate with others to address current and projected challenges in new and creative ways.

“Strategic partnerships” are those that directly implement defined and measurable priorities of the Migratory Bird Program.

### **2.1 Reallocate our resources (time, talent, funding) to the most strategic partnerships**

- 2.1.1. Require thorough workload analysis before initiating new, regional scale partnerships outside of long established partnerships such as Joint Ventures.
- 2.1.2. Develop criteria to evaluate partnerships.

### **2.2 Define mutual benefits, goals, and roles for all strategic partnerships.**

### **2.3 Evaluate each partner’s investment in the partnership.**

### **2.4 Determine expected results from each partnership and measure progress.**

## ***3. Support Staff Development and Engagement***

Effective leadership supports a culture of professional growth, trust and empowerment. Empowering decision-making at the lowest appropriate level requires employees’ support on a strategy, priorities, and a consistent operating framework. Additionally, the Migratory Bird Program must continue to provide challenging and unique growth opportunities for all staff through the use of details, field work, outside training, and other successful development programs.

### **3.1 Improve training, operating environment, trust, and employee engagement**

### **3.2 Encourage and reward quality work and innovations that improve our customer service and timely delivery of services**

### **3.3 Empower and develop the next generation of Migratory Bird leaders**



#### ***4. Ensure Efficient Operations of the Migratory Bird Program to Deliver Consistent National Strategy***

A key factor in our future success will be our ability to use our limited resources efficiently and cost-effectively in order to focus on our highest conservation priorities.

- 4.1 Clearly define roles of the regions and headquarters in implementing this strategic plan.**
- 4.2 Operate and communicate as one team.**
- 4.3 Align our programmatic resources to address identified priorities.**
- 4.4 Improve our ability to identify changes needed and more rapidly adapt to change.**
- 4.5 Use interdisciplinary teams to address priority issues. Implement team charters that include project sponsors, expected outcomes, project timelines, goals, roles, project guidance, and sidebars.**
- 4.6 Enhance overall program identity.**
- 4.7 Ensure meaningful metrics are assigned to measure the results of conservation investments.**
- 4.8 Create the tools to provide for regular project status updates.**
- 4.9 Make decisions using transparent processes.**

#### ***5. Implement Strategic Communications To Support Goals***

Strategic communications are critical to any program success.

- 5.1 Ensure national priorities are communicated effectively and creatively to targeted audiences and not just through media and traditional Service outreach channels.**
- 5.2 Work with partners in countries that support migrating and wintering birds to encourage parallel communications.**

#### ***6. Implement a Risk Assessment Framework For Key Decisions***

The inherent uncertainty in the potential effects of our actions means there are risks of our actions not achieving their desired results. More investments in upfront science and data collection to reduce uncertainty come at time and financial cost. We will establish a consistent approach to evaluating these trade-offs.



## ***7. Continue to Innovate***

Innovation in conservation actions and administrative processes is critical to our long-term success. We will foster a culture of innovation.

### **7.1 Develop an efficient process to capture, evaluate, and implement new approaches to migratory bird conservation and program management that engages our staff and partners.**

## ***8. Leverage Human Dimensions to Increase the Impact of Our Work***

Wildlife management today not only involves understand biological processes, but also social processes and consequences as well. We will leverage the field of human dimensions in order to better serve the American public and improve the effectiveness of our programs.

### **8.1 Incorporate human dimensions into management decisions on a regional and national scale.**

8.1.1. Develop a plan for getting Human Dimensions expertise at the regional level

### **8.2 Add human dimensions capabilities to understand the drivers of bird conservation.**

8.2.1 Work formally with USFW's Human Dimensions Program to determine priorities and areas for collaboration in each region

## ***9. Transform National Environmental Policy Act (NEPA) Capability***

NEPA provides a powerful decision making framework that engages the American public.

### **9.1 Develop NEPA expertise for use by all regions.**

### **9.2 Develop clear and concise guidance for developing NEPA documents.**

### **9.3 Develop new “programmatic” approaches to NEPA that apply nationally and across all Service Regions.**

## ***10. Implement an Annual Comprehensive Review of Essential Training for Employees and Prioritize Training Resource Investments.***

## 2019 Harvest Management Working Group Priorities

Priority rankings and project leads identified for the technical work proposed at the 2017 Harvest Management Working Group meeting.

### Highest Priorities (Urgent and Important)

- Adaptive Harvest Management Revisions (*aka, Double-looping*)
  - Multi-stock management (*Atlantic Flyway, PHAB, HMWG*)
  - Mid-continent mallard (*Mississippi and Central Flyways, PHAB, others...*)
  - Western mallard (*Pacific Flyway, PHAB, others...*)
- Re-invigorate institutional support for AHM (*PHAB, and HMWG Communications Team*)
  - Development of training materials to support the communication and understanding of AHM (*PHAB and USGS*)

### Long-range Priorities (Non-urgent, but Very Important)

- Time dependent optimal solutions to address system change (*Scott Boomer, Fred Johnson, Mike Runge*)
  - Habitat change
  - Hunter dynamics
  - Climate change
- Northern pintail AHM Revision (Double-looping) (*Pacific Flyway, PHAB, others...*)
- Consideration of NAWMP objectives for waterfowl management (*HDWG, Flyway Councils, FWS, NAWMP Interim Integration Committee, Joint Technical Committee, others...*)

### Additional Priorities

- Waterfowl harvest potential assessment methods case study development (*PHAB, Tech Sections, others...*)
- Canvasback harvest strategy development (*PHAB, Tech Sections, others...*)
- Waterfowl Breeding Population and Habitat Survey Review (*Migratory Bird Surveys Branch, HMWG*)

## Harvest Management Working Group Members

This list includes only permanent members of the Harvest Management Working Group. Not listed here are numerous persons from federal and state agencies that assist the Working Group on an ad-hoc basis.

### Coordinator:

#### ***Scott Boomer***

U.S. Fish & Wildlife Service  
11510 American Holly Drive  
Laurel, Maryland 20708-4017  
phone: 301-497-5684; fax: 301-497-5871  
e-mail: scott\_boomer@fws.gov

### USFWS Representatives:

#### ***Nanette Seto*** (Region 1)

U.S. Fish & Wildlife Service  
911 NE 11TH Avenue  
Portland, OR 97232-4181  
phone: 503 231-6159  
fax: 503 231-2019  
e-mail: nanette.seto@fws.gov

#### ***Tom Cooper*** (Region 3)

U.S. Fish & Wildlife Service  
5600 American Blvd West  
Bloomington, MN 55437-1458  
phone: 612-713-5101  
fax: 612-713-5393  
e-mail: tom\_cooper@fws.gov

#### ***Pam Toschik*** (Region 5)

U.S. Fish & Wildlife Service  
300 Westgate Center Drive  
Hadley, MA 01035-9589  
phone: 413-253-8610  
fax: 413-253-8293  
e-mail: pamela.toschik@fws.gov

#### ***Eric Taylor*** (Region 7)

U.S. Fish & Wildlife Service  
1011 East Tudor Road  
Anchorage, AK 99503-6119  
phone: 907-786-3446  
fax: 907-786-3641  
e-mail: eric\_taylor@fws.gov

#### ***Kathy Fleming*** (Headquarters)

Chief, Branch of Monitoring and Data Management  
U.S. Fish & Wildlife Service

#### ***Scott Carleton*** (Region 2)

U.S. Fish & Wildlife Service  
500 Gold SW - 8th Floor  
Albuquerque, NM 87103  
phone: 505-248-6639  
fax: 505-248-7885  
e-mail: scott\_carleton@fws.gov

#### ***Laurel Barnhill*** (Region 4)

U.S. Fish & Wildlife Service  
1875 Century Blvd.  
Atlanta, GA 30345  
phone: 404-679-7188  
fax: 404 679-4180  
e-mail: laurel\_barnhill@fws.gov

#### ***Casey Stemler*** (Region 6)

U.S. Fish & Wildlife Service  
P.O. Box 25486-DFC  
Denver, CO 80225-0486  
phone: 303-236-4412  
fax: 303-236-8680  
e-mail: casey\_stemler@fws.gov

#### ***Amedee Brickey*** (Region 8)

U.S. Fish & Wildlife Service  
2800 Cottage Way, W-2606  
Sacramento, CA 95825  
phone: 916-414-6480  
fax: 916-414-6486  
e-mail: amedee.brickey@fws.gov

#### ***Pat Devers*** (Headquarters)

Chief, Branch of Assessment and Decision Support  
U.S. Fish & Wildlife Service

11510 American Holly Drive  
Laurel, Maryland 20708-4017  
phone:  
fax: 301-497-5871  
e-mail: kathy\_fleming@fws.gov

***Paul Padding*** (Headquarters)  
U.S. Fish & Wildlife Service  
11510 American Holly Drive  
Laurel, MD 20708  
phone: 301-497-5851  
fax: 301-497-5885  
e-mail: paul\_padding@fws.gov

***Jim Dubovsky*** (Headquarters)  
U.S. Fish & Wildlife Service  
755 Parfet Street, Suite 235  
Lakewood, CO 80215  
phone: 303-275-2386  
fax: 303-275-2384  
e-mail: james\_dubovsky@fws.gov

**Canadian Wildlife Service Representatives:**

***Christian Roy***  
Canadian Wildlife Service  
351 Saint-Joseph Blvd,  
Gatineau, Que, K1A 0H3  
phone: 819-938-5418  
fax:  
e-mail: christian.roy3@canada.ca

**Flyway Council Representatives:**

***Min Huang*** (Atlantic Flyway)  
CT Dept. of Environmental Protection  
Franklin Wildlife Mgmt. Area  
391 Route 32 North Franklin, CT 06254  
phone: 860-642-6528  
fax: 860-642-7964  
e-mail: min.huang@po.state.ct.us

***John Brunjes*** (Mississippi Flyway)  
Kentucky Dept. Of Fish and Wildlife Resources  
# 1 Sportsman's Lane  
Frankfort, KY 40601  
phone: 502-892-4500  
fax:  
e-mail: john.brunjes@ky.gov

***Mike Szymanski*** (Central Flyway)

11510 American Holly Drive  
Laurel, Maryland 20708-4017  
phone:  
fax: 301-497-5871  
e-mail: pat\_devers@fws.gov

***Vacant*** (Headquarters)  
U.S. Fish & Wildlife Service

e-mail:

***Todd Sanders*** (Headquarters)  
U.S. Fish & Wildlife Service  
1211 SE Cardinal Court, Suite 100  
Vancouver, WA 98683  
phone: 360-604-2562  
fax: 360-604-2505  
e-mail: todd\_sanders@fws.gov

***Vacant***  
Canadian Wildlife Service  
Suite 150, 123 Main Street  
Winnipeg, MB R3C 4W2  
phone:  
fax:  
e-mail:

***Greg Balkcom*** (Atlantic Flyway)  
GA Dept. of Natural Resources  
1014 Martin Luther King Blvd.  
Fort Valley, GA 31030  
phone: 478-825-6354  
fax: 478-825-6421  
e-mail: greg.balkcom@dnr.state.ga.us

***Adam Phelps*** (Mississippi Flyway)  
Indiana Division of Fish and Wildlife  
5596 E State Road 46  
Bloomington, IN 47401  
phone: 812-334-1137  
fax: 812-339-4807  
e-mail: APhelps@dnr.IN.gov

***Mark Vrtiska*** (Central Flyway)

North Dakota Game and Fish Department  
100 North Bismarck Expressway  
Bismarck, ND 58501-5095  
phone: 701-328-6360  
fax: 701-328-6352  
e-mail: mszymanski@state.nd.us

***Brandon Reishus*** (Pacific Flyway)  
Oregon Dept of Fish and Wildlife  
4034 Fairview Industrial Dr. SE  
Salem, OR 97302  
phone: 503-947-6324  
fax: 503-947-6330  
e-mail: brandon.s.reishus@state.or.us

**USGS Scientists:**

***Fred Johnson*** (USGS)  
Wetland and Aquatic Research Center  
U.S. Geological Survey  
7920 NW 71 Street Gainesville, FL 32653  
phone: 352-264-3488  
fax: 352-378-4956  
e-mail: fjohnson@usgs.gov

Nebraska Game and Parks Commission  
P.O. Box 30370 2200 North 33<sup>rd</sup> Street  
Lincoln, NE 68503-1417  
phone: 402-471-5437  
fax: 402-471-5528  
email: mark.vrtiska@nebraska.gov

***Jason Schamber*** (Pacific Flyway)  
Alaska Dept. Fish & Game  
525 W. 67th Ave  
Anchorage, AK 99518  
phone: 907-267-2206  
fax: 907-267-2859  
e-mail: jason.schamber@alaska.gov

***Mike Runge*** (USGS)  
Patuxent Wildlife Research Center  
U.S. Geological Survey  
12100 Beech Forest Rd. Laurel, MD 20708  
phone: 301-497-5748  
fax: 301-497-5545  
e-mail: mrunge@usgs.gov

## 2018 Harvest Management Working Group Meeting Participants

HMWG Member	Representation	Affiliation
Min Huang	Atlantic Flyway Council	Connecticut Dept. of Environmental Protection
Greg Balkcom	Atlantic Flyway Council	Georgia Dept. of Natural Resources
Paul Padding	Atlantic Flyway Representative	U.S. Fish & Wildlife Service
Adam Phelps	Mississippi Flyway Council	Indiana Dept. of Natural Resources
John Brunjes	Mississippi Flyway Council	Kentucky Dept. Of Fish and Wildlife Resources
Tom Cooper	Mississippi Flyway Representative	U.S. Fish & Wildlife Service
Mike Szymanski	Central Flyway Council	North Dakota Fish and Game
Mark Vrtiska	Central Flyway Council	Nebraska Game and Parks
Jim Dubovsky	Central Flyway Representative	U.S. Fish & Wildlife Service
Jason Schamber	Pacific Flyway Council	Alaska Department Fish and Game
Brandon Reishus	Pacific Flyway Council	Oregon Department of Fish and Game
Todd Sanders	Pacific Flyway Representative	U.S. Fish & Wildlife Service
Patrick Devers	BADS Chief	U.S. Fish & Wildlife Service
Mike Runge	USGS	U.S. Geological Survey
<b>Other Participants</b>		
Scott Boomer	HMWG Coordinator (BADS)	U.S. Fish & Wildlife Service
Guthrie Zimmerman	BADS	U.S. Fish & Wildlife Service
Erik Osnas	Region 7	U.S. Fish & Wildlife Service
Larry Reynolds	Mississippi Flyway Council	Louisiana Department of Wildlife and Fisheries
Kevin Kraai	Central Flyway Council	Texas Parks and Wildlife Department



**Figure 1** – The participants of the 2018 Harvest Management Working Group meeting in Minneapolis, MN.