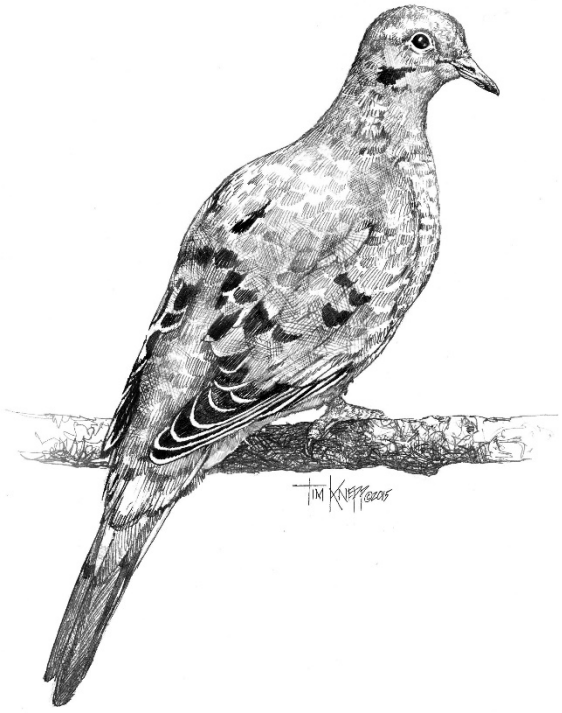
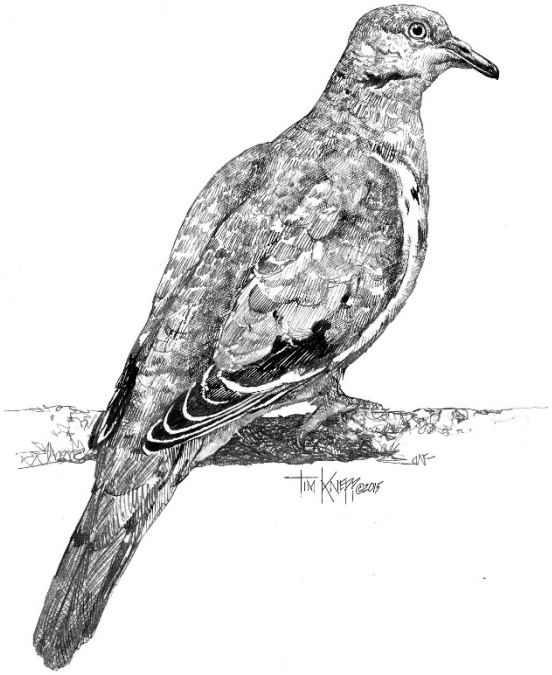


Priority Information Needs for Mourning and White-winged Doves II

A Funding Strategy

An Update to the First Priority Needs Document Developed by the Association of Fish and Wildlife Agencies' Migratory Shore and Upland Game Bird Support Task Force

September 2020



Priority Information Needs for Mourning and White-winged Doves II

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An Update to the First Priority Needs Document Developed by the Association of Fish and Wildlife Agencies' Migratory Shore and Upland Game Bird Support Task Force

Compiled and Revised by
Mark Seamans
17 September, 2020

Cover Illustrations: Mourning and White-winged Dove drawings by Tim Knepp ©.

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Executive Summary

This strategy contains recommendations for updated priority information needs that build upon previous priorities identified in the first workshop convened by the Association of Fish and Wildlife Agencies' Migratory Shore and Upland Game Bird Task Force. This strategy is intended to inform research and management of the U.S. Fish and Wildlife Services' Webless Migratory Game Bird Program and assist stakeholder coordination for completing priorities to improve the management of mourning and white-winged doves.

In collaboration with the national Flyways and dove researchers, the National Dove Task Force (NDTF) developed a revised list of priority information needs for mourning and white-winged doves. The NDTF was established by the Association of Fish and Wildlife Agencies' Migratory Shore and Upland Game Bird Working Group to address management of mourning and white-winged doves. The NDTF identified 6 issues that they believe should be addressed to improve management of these species:

1) Improve the Harvest Information Program
2) Develop an integrated population model for mourning doves
3) Complete a new banding assessment for mourning doves
4) Assess effects of landscape-level changes on dove species
5) Estimate factors affecting hunter recruitment, retention, and reactivation
6) Assess the economic impact of dove hunting

The priority information needs identified in this strategy will improve the population and harvest management of these two dove species by: (1) increasing our understanding of dove population dynamics and the effect of harvest on these dynamics; (2) providing better information about dove hunters' preferences and the economic impact of dove hunting to managers so they can better allocate resources; and (3) better structuring the decision making process for managing doves.

Introduction

In 2008 the Association of Fish and Wildlife Agencies' Migratory Shore and Upland Game Bird Working Group recommended a strategy to obtain information to reduce uncertainties underlying management decisions for mourning and white-winged doves. The four priority information needs identified were: (1) a national banding program; (2) a national parts collection survey; (3) independent measures of abundance and or trends; and (4) a database of predictors of dove vital rates. The first three priorities have been accomplished, and much work has been done to address the fourth priority. Thus, the dove management community has suggested the list of priority information needs be revised to address ongoing or new areas of uncertainty. Development of new priorities is also to help indicate the need for increases in funding and to direct financial support for mourning and white-winged doves over the next 10 years. In collaboration with the Flyways, the National Dove Task Force (NDTF) developed a revised list of priority information needs for mourning and white-winged doves.

Strategy Purpose

This Strategy contains recommendations for obtaining priority information needed to reduce the uncertainties underlying management decisions for mourning and white-winged doves. The Strategy focuses on identifying priority information needs because they: (1) aid in estimation of critical population information needed to inform harvest-management decisions; and (2) inform the allocation of resources at the national and local scale to better manage these two species and their habitats.

The Strategy is intended to indicate the need for increases in, and to direct financial support for, management and research activities over the next 10 years with thoughtful and deliberate planning built on basic scientific principles. The Strategy can be used to guide the expenditure of funds, as well as provide the means to attract additional funds from partners interested in the conservation of migratory shore and upland game birds.

Strategy Development Process

The NDTF led the effort in developing a new set of priority information needs. The NDTF met 11-12 October 2017 in San Antonio, Texas and created a draft list of needs. The draft list of needs was circulated among the four Flyways for their review and comment. The four Flyways and their respective sub-committees (Eastern Management Unit Dove Technical Committee, Central Flyway Webless Migratory Game Bird and Central Management Unit Dove Technical Committee, and the Pacific Flyway Study Committee) suggested edits, removal of some NDTF proposed needs, and the addition of some needs.

The NDTF met again during 9–10 October 2018 in Fort Collins, Colorado and based on feedback from the four Flyways developed the final list of priority information needs provided in this document. A list of NDTF members is included in Appendix A.

Important Resource

Mourning doves, and white-winged doves in the Southwest, are valued by the public in rural, suburban, and urban locales because they occur widely, nest readily around yards and farmsteads, and are frequent visitors to bird feeders. Mourning and white-winged doves also are very popular game birds in the United States. In recent years, annually about 750,000 hunters pursued mourning doves during 2 million days afield, and harvested about 12.5 million birds (U.S. Fish and Wildlife Service 2018). Additionally, annually about 165,000 hunters pursued white-winged doves during 550,000 days afield, and harvested about 1.5 million birds. In contrast, during that same time about 1.1 million waterfowl hunters harvested about 15 million ducks and geese during about 9 million days afield. Compared to waterfowl hunting, doves provided more birds per hunter and birds per days afield.

Although the economic impact specific to dove hunting is unknown, it is likely considerable. The 2016 National Survey of Fishing, Hunting, and Wildlife Associated Recreation (U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau 2018) estimated that annual migratory bird-related spending for trips and equipment was $2.3 billion, or about $958 per hunter.

Using data from the Harvest Information Program (HIP), the number of mourning dove hunters and amount of harvest have been declining for decades (Figure 1). Note that HIP did not estimate the number of dove hunters 2003–2006. White-winged dove harvest and number of hunters annually increased from 1999 to 2009, then has apparently leveled off (Figure 1). The increase in hunters and harvest likely reflects the rapid range expansion and increase in abundance of white-winged doves.

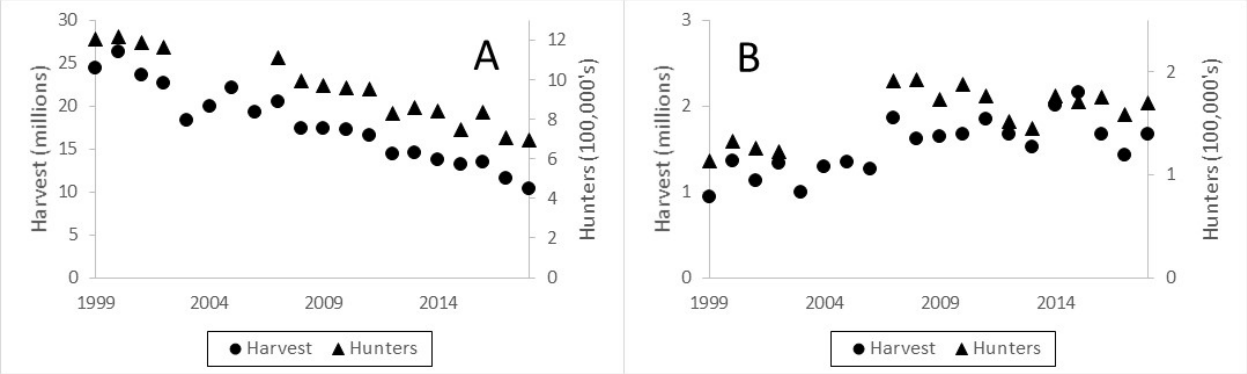

Figure 1. Mourning (A) and white-winged dove (B) annual harvest and number of hunters. Data from the U.S. Fish and Wildlife Service Harvest Information Program, 1999–2018.

Population Status and Trends

Annual estimates of mourning dove abundance at the start of the hunting season (1 September) ranged from 242 to 322 million nationally from 2008 to 2017 (Seamans 2018). White-winged dove range-wide abundance is unknown but over the past decade they have increased their range and abundance (Collier et al. 2012).

In spite of the widespread distribution and large population size of mourning doves, managers have been concerned for some time about potential population declines in some portions of their range. Annual estimates of abundance and trends in abundance indices from the North American Breeding Bird Survey both suggest declines (Seamans 2020).

Manager are less concerned about the status of white-winged doves. Breeding Bird Survey indices suggest rapidly increasing abundances in the southern Central Flyway states in the near- (2008–2017) and long-term (1966–2017), and stable or slightly increasing trends for the near- and long-term in the Pacific Flyway (Arizona and California) and Gulf states (Alabama, Louisiana and Florida). Why white-winged dove abundances are increasing or what effect this may have on mourning doves or their harvest is not well understood.

Priority Information Needs

Priority 1. Improvements to Harvest Information Program

Rationale

The Migratory Bird Harvest Information Program (HIP) was fully implemented in 1998 and information is used to generate estimates of annual hunter activity and total harvest of migratory game birds throughout the continental U.S. and Alaska. Estimates of annual harvest are required to reliably manage any game species. The estimated harvest of mourning doves is used in the derivation of annual abundance (Otis 2006), and the magnitude of abundance triggers changes in hunting regulations for doves following a harvest strategy developed cooperatively by the U.S. Fish and Wildlife Service and the Flyways (USFWS 2017). Estimates of hunter activity are also of great interest to federal and state managers and are used in decisions regarding the allocation of agency resources and hunter outreach (*see* priority needs 5 & 6 below).

The HIP is designed to provide comparable estimates of migratory bird harvest at various scales in the U.S. However, some data suggest that the HIP sampling protocol may increase the cost of the survey and potentially bias harvest estimates due to: 1) the sample frame being inflated by the inclusion of individuals that do not hunt migratory birds; 2) an incomplete sampling frame because not all migratory bird hunters are included; 3) late data submission that yields incomplete annual sample frames; and 4) incorrectly formatted or coded data that has at times yielded dramatically inaccurate harvest estimates.

Description

The Bird Conservation Committee (BCC) of the Association of Fish and Wildlife Agencies (AFWA) has established an ad hoc Harvest Information Program Working Group (HIPWG) to assess challenges to HIP and propose solutions. The HIPWG produced a draft report in 2017 that details the problems, options, and recommendations for improving the HIP.

Timetable and Cost

Improving the HIP is an ongoing process. Removing non-migratory bird hunters from the sampling frame is estimated to save $50,000 to $75,000/year in printing, postage, and personnel costs. Moving to a centralized national system for HIP would provide long-term cost savings for both federal and state wildlife agencies due to less errors that require checking and correcting, and more streamlined movement of data.

Because the HIP is a cooperative effort between the states and federal government, it is expected that this priority information need will primarily be worked on by the USFWS and the states. In 2019 the Wildlife Management Institute (WMI) was awarded a grant to conduct pilot work to improve HIP within 6 states. The work will focus on the ability to do away with 3rd party vendors.

Priority 2. Mourning Dove Integrated Population Model

Rationale

Because mourning doves are a highly important game bird, wildlife managers have sought to develop a more informed monitoring and decision-making framework (USFWS 2005). Subsequent to the 2005 plan, a national banding program and parts-collection survey have been implemented to provide requisite information for estimating annual survival rates, band recovery rates, band reporting rates, and production. Estimates of annual harvest, harvest rate and production are now used to inform annual regulatory decisions (USFWS 2017).

The initial National Mourning Dove Harvest Strategy (USFWS 2005) sought to implement an adaptive harvest management strategy. The current strategy (USFWS 2017) makes annual regulatory decisions based on resource status (dove abundance) but does not explicitly seek to reduce uncertainty or better understand the system to improve harvest management. One of the impediments to implementing an adaptive harvest management strategy for doves has been the creation of models of dove population dynamics where model-specific predictions of abundance differ in their response to harvest and/or environmental perturbations.

Description

Development of an integrated population model (IPM) for mourning doves is ongoing by the USFWS and NDTF. Once an initial model is complete there will likely be a need to incorporate new information (e.g., demographic responses habitat change, density dependent responses). The IPM will need to operate within an adaptive decision framework developed by the NDTF and U.S. Fish and Wildlife Service, thus, further development of an IPM will require coordination with the U.S. Fish and Wildlife Service and NDTF.

Timetable and Cost

Creation of an IPM should take a single or couple of experienced researchers approximately one year to complete. Cost should be approximately $30,000. Work has already begun on this priority need with a prototype being developed for the CMU. Additional work will be needed to expand the IPM to the other management units and to include predictors of variability in demographic rates and exploration of density dependent population responses. It is recommended that anyone interested in submitting a proposal for this information first contact the Webless Program Coordinator (Mark_Seamans@fws.gov).

Priority 3. Banding Assessment

Rationale

The mourning dove banding program became operational in 2003. Capture-recovery data from the banding program, together with an estimate of band-reporting rate (Sanders and Otis 2012), is used to estimate annual survival and harvest rates, with harvest rates being an integral piece to the current harvest management strategy (USFWS 2017).

The original banding assessment (Otis 2006) was designed to estimate precise trends in abundance. An updated assessment is necessary to determine if spatial and numerical goals of the program are being met, where gaps in data exist, and whether modifications to the banding program will be needed as the tools for managing harvest (e.g., use of an IPM) change. Coordination with the U.S. Fish and Wildlife Service and NDTF will be necessary to ensure the assessment meets current information needs.

Description

A new banding assessment for mourning doves is driven by two issues: (1) whether sampling is sufficient to meet the needs of the harvest strategy as related to the precision of estimates of survival and harvest rate; and (2) whether sampling is appropriate for obtaining unbiased estimates of survival and harvest rate at the needed spatial scales.

Timetable and Cost

A new banding assessment should be able to make full use of existing banding, recovery, and encounter data and not require additional field effort. However, it is expected that work on a banding assessment will need to wait until the mourning dove integrated population model is completed. The assessment should take a single or couple of researchers approximately one year to complete. Cost should be about $30,000 for a simple assessment of sample effort, or more depending on complexity.

Priority 4. Landscape-Level Changes in Dove Species

Rationale

Implementation of operational programs for banding mourning doves in 2003 and parts collection in 2007 have enabled managers to estimate annual mourning dove abundance in each management unit (Seamans 2018). These estimates of abundance are integral to the Dove Harvest Strategy (USFWS 2017), with changes in regulatory packages tied to thresholds of dove abundance. As with all wildlife populations, mourning dove abundance has varied over space and time. Although less studied, white-winged dove abundance has also changed over the past two decades, especially in the Central Management Unit where they have expanded numerically and geographically.

To better manage mourning and white-winged doves and their harvest, we need to understand why dove populations vary over large areas such as states, and especially at the level of the management unit. Some studies of mourning dove age-ratio estimates over space and time have found interesting correlates with variables such as precipitation. More can be done with the various data streams available for dove demographics and potential environmental covariates. Less data is available for white-winged doves, but some key states (Arizona and Texas) have conducted either point-count surveys or initiated banding to estimate demographic information.

Of principle concern are habitat changes at regional levels (e.g., agriculture in the upper Midwest U.S.) and how such changes may affect the long-term population status of doves. However, weather has also been shown to impact mourning dove demographics and also needs further study.

Description

There is a need to investigate the effects of habitat and weather on mourning and white-winged dove demographic rates, specifically survival and recruitment rates. Agriculture, energy, and urban development are changing habitat conditions in large portions of the Midwest, Southeast, and West, and are expected to continue. Examination of how range expansion of white-winged doves may be affecting mourning doves, and range expansion of Eurasian collared doves may be affecting mourning and white-winged doves, could be included. In addition, how landscape changes may have caused or be causing range expansion in either Eurasian collared or white-winged doves could be examined. Any hypotheses or models regarding the effect of landscape change should inform or predict changes in dove populations at the scale of the Mourning Dove Management Unit and ideally be used in harvest management strategies.

Timetable and Cost

Assuming the IPM for mourning doves is completed sometime in 2021, including habitat change into harvest management decisions should be done in the next 5 to 10 years, especially if mourning dove populations decline further. This priority may be accomplished using existing information collected on doves and habitat data collected by other agencies (e.g., USDA, USGS, etc.). However, some field work may be required depending on the issue(s) studied. Until the IPM is completed and the harvest management strategy revised, cost to include habitat is unknown but could likely be funded with targeted research funds through the Webless Migratory Gamebird Program.

Priority 5. Hunter Recruitment, Retention, and Reactivation

Rationale

Recently, R3 (i.e., hunter recruitment, retention, and reactivation) efforts have become increasingly discussed within federal and state wildlife agencies to address declines in hunter numbers. For instance, the number of dove hunters in the U.S. has declined since the 1980s, from a high of around 2 million to now less than 1 million. The Western Management Unit in 2016 had approximately half the number of hunters it did in 2000, while the Eastern and Central Management Units experienced drops of 30-40% in numbers of hunters during this time. This decline in dove hunting participation (and hunting in general) is of great concern because hunters have supplied the bulk of financial support for all wildlife conservation. Yet reasons for these declines are largely unknown, thus, devising effective strategies to halt or reverse them will be elusive.

Dove hunting has always been viewed as a gateway hunting opportunity due to the nationwide distribution of mourning doves, minimal hunting gear required, and the accessibility of hunting opportunities. This suggests dove hunting may be valuable in recruiting first time hunters. In addition, according to the 2013 National Dove Hunter Survey, about half of dove hunters said dove hunting was one their most important recreational activities, suggesting that dove hunting is important for hunter retention. Therefore, a better understanding of possible barriers to dove hunting, and recruiting new dove hunters, at national and regional scales is needed. Managers may be able to alleviate barriers if demographic information related to dove hunters can be estimated.

Description

A list of potential barriers (e.g., cost, lack of interest, places to hunt) and how these barriers apply to different audiences (e.g., non-hunters, urban, suburban and rural groups) should be developed and prioritized. There are multiple options for pursuing this information, such as convening focus groups, targeted interviews, situation analysis targeting hypothesized barriers, and follow-up surveys. This information would need to be developed regionally, and probably at the state level to be useful for wildlife managers. Explicit strategies on how results could be used in marketing or outreach and directing money toward public hunting programs would be highly beneficial to state resource managers.

Knowing the most effective methods for recruiting new dove hunters, and to understand the value of dove hunting for introducing people to hunting in general would be useful to managers. Some of the results of the 2013 National Dove Hunter Survey may provide a starting point, although that effort only surveyed existing dove hunters. The 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation also contains valuable general information for migratory bird hunting in the U.S. In addition, The Council to Advance Hunting and Shooting Sports has an action plan for R3 that should be considered.

Timetable and Cost

Work should be done with human dimension specialists to ensure reliable results. The likely sampling frames for any study would include current dove hunters, past dove hunters, hunters who do not hunt doves, and potentially people who do not hunt at all. A plan on how to evaluate the effectiveness of any strategies needs to be included.

Priority 6. The Economic Impact of Dove Hunting

Rationale

Understanding how dove hunting benefits state and local economies is important for directing wildlife management resources at state, regional, and national levels. A study examining in detail the economic impact of dove hunting has not been done in more than 2 decades. Although total annual number of hunters and harvest of doves in each state, as estimated by HIP, is useful for understanding where the majority of hunters are pursuing doves, it does not tell the full story of how much and where dove hunters are spending money. Such economic analyses, when compared with money generated by other recreational activities, can help guide investment of federal and state natural resource management dollars.

The economic impact of dove hunting is likely considerable. The 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation estimated that migratory bird-related spending for trips and

equipment was $2.3 billion in 2016. The estimated numbers of dove hunters and the days they spend afield suggests dove hunting accounts for a large portion of this. The National Survey estimated that in 2016, 1.2 million hunters pursued doves on 5 million days.

Description

In addition to total dollars spent on dove hunting, estimates of expenditures by category would be useful for resource managers. Typical expenditures that benefit local economies such as fuel, hotels, food, etc., are important for local decisions. Other expenses related to dove hunting are also important such as: how much (and by how many dove hunters) is spent for day hunts where hunters pay private landowners for access; how much are landowners spending on dove fields (seed, fuel, fertilizer, etc.) whether they hunt themselves or are leasing to hunters. It would also be of interest to know how far hunters travel to hunt, if they came from out of state, where in each state they dove hunt, and if they are hunting on private or public fields. Studies should strive to obtain species-specific results (i.e., mourning and white-winged dove).

Closely related to the economics of dove hunting is how often and when hunters hunt doves. For example, how many hunters spend just a day or two hunting doves? At what point during the dove season do hunters pursue doves? It would also be of interest to understand if the numbers of days hunted has changed over time. Hunter demographic info is also critical (knowing your market) and estimating economic impacts at small scales (e.g., it would help a land manager to know differences in dove zones within states with a large number of hunters).

Timetable and Cost

Work should be done in conjunction with state resource managers to ensure useable information is collected. A collaborative effort between researchers, managers, other stakeholders (e.g., hunting sports industry, state chamber of commerce organizations) might prove useful. Work can be either regional or national but should include important dove hunting areas.

Measuring Success

All of the priorities described in this strategy promote efforts to reduce uncertainty in current management practices or initiate studies to better understand and serve dove hunters. Success in addressing priority needs 1 through 4 will increase our knowledge of the ecology and habitat requirements of migratory mourning and white-winged dove populations. The improved information will better enable managers to target site-specific and range-wide management and monitoring programs, increasing the cost-effectiveness of management. Priority information needs 5 and 6 will help state and federal wildlife agencies better address concerns of hunters and improve allocation of scarce conservation resources.

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Appendix A

Dove Task Force members and attendees

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