U.S. Fish & Wildlife Service

Mourning Dove

Population Status, 2014

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U.S. Fish and Wildlife Service
Division of Migratory Bird Management
Population and Habitat Assessment Branch
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MOURNING DOVE POPULATION STATUS, 2014

MARK E. SEAMANS, U.S. Fish and Wildlife Service, Division of Migratory Bird Management, 755 Parfet Street Suite 235, Lakewood, CO 80215

TODD A. SANDERS, U.S. Fish and Wildlife Service, Division of Migratory Bird Management, 1211 SE Cardinal Court Suite 100, Vancouver, WA 98683

Abstract: This report summarizes information collected annually in the United States on survival, recruitment, abundance and harvest of mourning doves. We report on trends in the number of doves heard and seen per route from the all-bird Breeding Bird Survey (BBS), and provide absolute abundance estimates based on band recovery and harvest data. Harvest and hunter participation are estimated from the Migratory Bird Harvest Information Program (HIP). BBS data suggested that the abundance of mourning doves over the last 48 years increased in the Eastern Management Unit (EMU) and decreased in the Central (CMU) and Western (WMU) Management Units. Estimates of absolute abundance are available only since 2003 and indicate that there are about 275 million doves in the United States; annual abundance during the recent 5 years appears stationary in the EMU and WMU, but may be declining in the CMU. Current (2013) HIP estimates for mourning dove total harvest, active hunters, and total days afield in the U.S. were 14,529,800 ±495,600 (estimate ± SE) birds, 857,300 hunters, and 2,572,900 ±77,300 days afield. Harvest and hunter participation at the unit level were: EMU, 6,350,600 ±348,700 birds, 363,100 hunters, and 987,900 ± 44,800 days afield; CMU, 6,236,000 ± 349,900 birds, 353,000 hunters, and 1,185,300 ± 60,500 days afield; and WMU, 1,943,300 ± 98,000 birds, 141,200 hunters, and 399,800 ± 19,400 days afield.

The mourning dove (*Zenaida macroura*) is one of the most abundant bird species in North America, and is familiar to millions of people. Authority and responsibility for management of this species in the United States is vested in the Secretary of the Interior. This responsibility is conferred by the Migratory Bird Treaty Act of 1918 which, as amended, implements migratory bird treaties between the United States and other countries. Mourning doves are included in the treaties with Great Britain (for Canada) and Mexico (U.S. Department of the Interior 1988). These treaties recognize sport hunting as a legitimate use of a renewable migratory bird resource.

Maintenance of dove populations in a healthy, productive state is a primary management goal. Management activities include population assessment, harvest regulation, and habitat management. Each year, tens of thousands of doves are banded and thousands of wings from harvested doves are analyzed to estimate annual survival, harvest rates, recruitment, and abundance. The resulting information is used by wildlife managers in setting annual hunting regulations. Past federal frameworks for hunting in the United States are in Appendix A.

DISTRIBUTION

The mourning dove is one of the most widely distributed and abundant birds in North America (Peterjohn et al. 1994, Fig. 1). Mourning doves breed from southern Canada throughout the United States into Mexico, Bermuda, the Bahamas and Greater Antilles, and in scattered locations in Central America (Fig. 1). Although mourning doves winter throughout much of their breeding range, the majority winter in the southern United States, Mexico, and south through Central America to western Panama (Aldrich 1993, Mirarchi and Baskett 1994).

POPULATION MONITORING

Within the United States, there are three zones that contain mourning dove populations that are largely independent of each other (Kiel 1959; Fig. 2). These zones encompass the principal breeding, migration, and U.S. wintering areas for each population. As

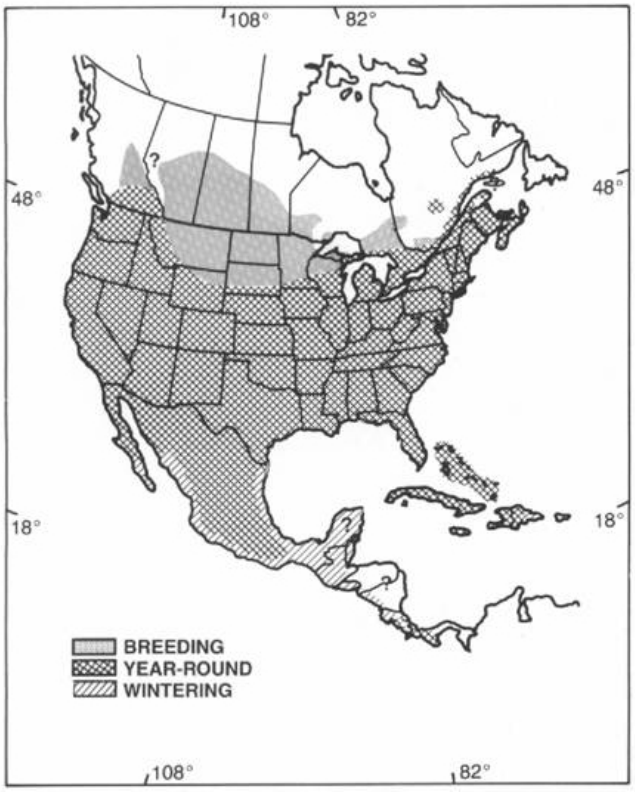

Figure 1. Breeding and wintering ranges of the mourning dove (adapted from Mirarchi and Baskett 1994).

suggested by Kiel (1959), these three areas were established as separate management units in 1960 (Kiel 1961). Since that time, management decisions have been made within the boundaries of the Eastern (EMU), Central (CMU), and Western (WMU) Management Units (Fig. 2). The EMU was further divided into two groups of states for analyses. States permitting dove hunting were combined into one group (hunt) and those prohibiting dove hunting into another (nonhunt). Wisconsin became a hunt state for the first time in 2003, Minnesota in 2004, and Iowa in 2011. Additionally, some states were grouped to increase sample sizes. Maryland and Delaware were combined; Vermont, New Hampshire, Maine, Massachusetts, Connecticut, and Rhode Island were combined to form a New England group. Even though Rhode Island is a hunt state, due to its small size and geographic location its data was included in this nonhunt group of states for analysis.

Breeding Bird Survey

The North American Breeding Bird Survey (BBS) is completed in June and is based on routes that are 24.5 miles long. Each route consists of 50 stops or point count locations at 0.5-mile intervals. At each stop, a 3-minute count is conducted whereby every bird seen within a 0.25-mile (400 m) radius or heard is recorded. Surveys start one-half hour before local sunrise and take about 5 hours to complete. Data for birds heard and seen at stops are combined for BBS analyses.

Although the BBS is not used to inform annual harvest management decisions, it is still of intrest because it provides independent estimates of trends in mourning dove abundance. Consequently, we are including 1966–2013 BBS trend information in this report. Current year BBS data are not available in time for inclusion in the report.

Banding Program

A national banding program was initiated in 2003 to improve our understanding of mourning dove population biology and to help estimate the effect of harvest on mourning dove populations. Doves are banded in July and August in most of the lower 48 states. Band recoveries occur almost exclusively during the U.S. hunting seasons which occur between 1 September and 15 January.

Banding goals for each state (specified by Bird Conservation Region [BCR]) are based on a power analysis to estimate sample size necessary to achieve a desired precision in estimates of population growth rate at the management unit level (Otis 2009). A weighting factor based on the median BBS index during 1966–2008 was used to determine banding goals for each state within the management units. Within states BCR areas and associated median BBS indices were used to determine sample size allocation. Placement of banding stations is left to judgment of the state banding coordinator.

Harvest Survey

Wildlife professionals have long recognized that reliable harvest estimates are needed to monitor the impact of hunting. In the past, the U.S. Fish and

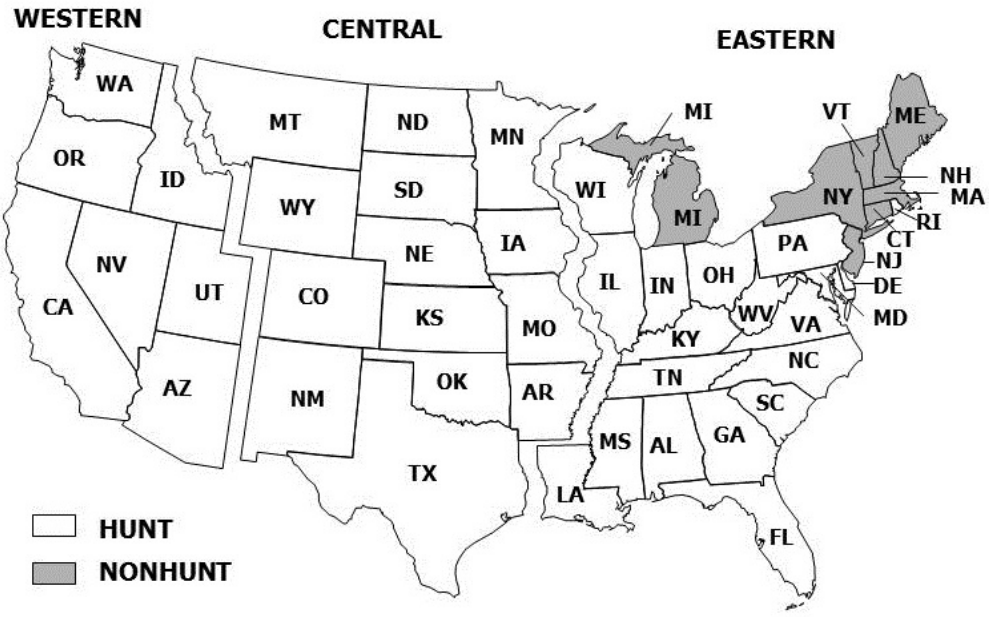

Figure 2.Mourning dove management units with 2014 hunt and nonhunt states.

Wildlife Service (USFWS) estimated harvest of mourning doves from the Mail Questionnaire Survey (Martin and Carney 1977, Martin 1979). However, the sampling frame was primarily waterfowl hunters because it included only those people who bought Duck Stamps. The estimate of harvest from this survey was not the total estimate of dove harvest, but rather the total estimate of dove harvest by hunters who purchased Duck Stamps. Therefore, it underestimated total dove harvest and dove hunter activity. Some states conducted dove harvest surveys, but the usefulness of these surveys in estimating dove harvest at larger scales was limited because of partial geographic coverage, the lack of consistent survey methodology, and thus an inability to compare survey results among states.

To remedy the limitations associated with the Mail Questionnaire Survey and the state surveys, the USFWS initiated the Migratory Bird Harvest Information Program (HIP). The program was established in 1992 and became fully operational on a national scale in 1999. HIP is designed to enable the USFWS to conduct nationwide surveys that provide reliable annual estimates of the harvest of mourning doves and other migratory game bird species on state, management unit, and national levels. Under HIP, states provide the USFWS with the names and addresses of all licensed migratory bird hunters each year and then surveys are conducted to estimate harvest and hunter participation (i.e., number of active hunters, total days afield) in each state. All states except Hawaii participate in the program.

Parts Collection Survey

Age of individual doves can be determined by examination of their wings (Braun 2014, Ruos and Tomlinson 1967). Mourning dove wings are easily obtained during the hunting season and can potentially provide estimates of recruitment (number of young per adult in the population), which can be used to inform harvest management. From 2005–2009 some states collected wings for use in estimating age ratios in the fall populations. In 2007, the USFWS initiated the national Mourning Dove Parts Collection Survey, which expanded the geographical scope of the earlier state-based survey.

The survey design for mourning dove wing collection follows that of waterfowl. The sampling frame is defined by hunters who identify themselves as dove hunters when purchasing a state hunting license and who were active dove hunters the previous year.

Each year, state and federal biologists classify wings during a 3-day wingbee hosted by the Missouri Department of Conservation in Lee's Summit,

Missouri. Wings of harvested mourning doves are classified as juveniles (hatch-year birds or HY) or adults (after-hatch-year birds or AHY). A significant portion of wings are classified as unknown age where molt has progressed to a late stage. These harvest age ratios are used to estimate recruitment (population age ratio) after accounting for uncertainty related to unknown age wings and age-specific harvest vulnerability (Miller and Otis 2010).

Call-count Survey

The Mourning Dove Call-count Survey (CCS) was conducted from 1966 to 2013. The CCS was developed to provide an annual index of abundance specifically for mourning doves (Dolton 1993). The CCS was discontinued because the harvest strategy adopted for mourning doves in 2013 does not make use of data from the CCS, but rather relies on absolute abundance estimates. Those interested in historic CCS information can look at status reports for mourning doves (available online at: http://www.fws.gov/migratorybirds/Newreportspublications/PopulationStatus.html).

METHODS

Estimation of Trends in Abundance Indices

BBS trends were estimated using a log-linear hierarchical model and Bayesian analytical framework (Sauer et al. 2008, Sauer et al. 2010). The hierarchical model has a rigorous and realistic theoretical basis and the indices and trends are directly comparable because trends are calculated directly from the indices.

With the hierarchical model, the log of the expected value of the counts is modeled as a linear combination of strata-specific intercepts and trends, a random effect for each unique combination of route and observer, a year effect, a start-up effect on the route for first year counts by new observers, and over-dispersion. Most of the parameters of interest are treated as random effects and some parameters are hierarchical in that they are assumed to follow distributions that are governed by additional parameters. The model is fit using Bayesian methods. Markov-chain Monte Carlo methods are used to iteratively produce sequences of parameter estimates which can be used to describe the distribution of the parameters of interest. Once the sequences converge, medians and credible intervals (CI, Bayesian confidence intervals) for the parameters are determined from the subsequent replicates. Annual indices are defined as exponentiated year and trend effects, and trends are defined as ratios of the year effects at the start and end of the interval of interest, taken to the appropriate power to estimate a yearly change (Sauer et al. 2008). Trend estimates are expressed as the average percent change per year over a given time period, while indices are expressed as the number of doves heard and seen per route.

Annual indices were calculated at the state, region (group of states), and dove management unit levels. Short- (recent 10-year period) and long-term (all years with data) trends were evaluated for each area. We present the median and 95th percentile credible intervals for estimates. The extent to which trend credible intervals exclude zero can be interpreted as the strength of evidence for an increasing or decreasing trend. Thus, there is evidence of a positive trend if the CI > 0 and there is evidence of negative trend if the CI < 0. If the CI contains 0, then there is inconclusive evidence about trend in abundance. The reported sample sizes are the number of routes or sites on which trend estimates are based, which includes any route on which mourning doves were ever encountered in the region. BBS results are presented in Table 1.

Estimation of Survival, Harvest Rate, Recruitment and Absolute Abundance

Band recovery models were used to estimate annual survival. Only direct recoveries were used to estimate harvest rates and data were adjusted for reporting rate (Sanders and Otis 2012) prior to analysis; thus, recovery rates were interpreted as harvest rates. We used a Seber parameterization (Seber 1970) and all dead recoveries to estimate survival rates. No adjustment was made to account for band reporting probabilities as it had no consequence in survival rate estimation, and both direct and indirect recoveries were used.

We estimated age specific harvest and survival rates by state and management unit. Most states lacked sufficient sample sizes of banded birds to estimate

annual survival rates; therefore, data were pooled over years to obtain mean annual estimates. We only estimated harvest rate for a year in a given state when the number of banded birds in an age-class was >100. Average harvest for a state over the period of study was calculated using a weighted average, with annual estimates weighted by the reciprocal their standard errors. Management unit level harvest rates were based on state weighted harvest rate estimates. The state weight wasthe product of state habitat area (area within state presumed to be dove habitat) and dove abundance estimated by the Call Count Survey-heard index during the most recent 5-year moving average.

For estimating survival we formulated a model that allowed recovery rate to vary by state with an additive age effect, and allowed survival to vary by state and age. We used this model for inference regarding age and state specific survival rates.

We used the approach of Miller and Otis (2010) to estimate annual recruitment. We limited samples to wings collected during the first two weeks of September to minimize the proportion of unknown age wings and maximize the proportion of local birds in samples. Unknown age wings were assigned to an age-class based on previously estimated probabilities that adults will be in late stages of molt. Band recovery data was used to adjust age-ratio estimates for differential vulnerability to harvest.

A simple Lincoln-type estimator was used to estimate abundance from annual harvest and harvest rates (Otis 2006). Abundance for each year was estimated at the management unit level separately for juvenile and adult doves by dividing age-specific total harvest (from the USFWS Harvest Information Program [Table 3] and Parts Collection Survey [Table 6]) by harvest rate estimated from direct (first hunting season) band recoveries.

RESULTS

Breeding Bird Survey

Eastern Management Unit.—The BBS provided evidence that dove abundance increased in the EMU and the EMU hunt and nonhunt states during the last 48 years (Table 1). Over the recent 10 years there was evidence that abundance increased in the entire EMU and the EMU hunt states, but not the EMU nonhunt states.

Central Management Unit.—In the CMU, the BBS provided evidence that doves decreased in abundance over the last 10 and 48 years (Table 1).

Western Management Unit.—The BBS provided evidence that dove abundance decreased in the WMU during the last 48-year interval and during the most recent 10 years (Table 1).

Harvest Survey

Preliminary results of mourning dove harvest and hunter participation from HIP for the 2012 and 2013 hunting seasons are presented in Tables 2 and 3, respectively. Current (2013) HIP estimates indicate that in the U.S. about 14.5 million mourning doves were harvested by about 850,000 hunters that spent about 2.5 million days afield. The EMU and CMU total harvest represented 44% and 43%, respectively, of the national harvest of doves while the WMU represented 13% (Table 3). Considering the precision of estimates, mourning dove harvest and hunter participation were similar between the 2012 and 2013 seasons (Tables 2 and 3).

Additional information about HIP, survey methodology, and results can be found in annual reports located at http://www.fws.gov/migratorybirds/newreportspublications/hip/hip.htm.

Survival and Harvest Rate

Over the past 11 years 214,954, 164,869, and 72,274 mourning doves have been banded during July and August in the EMU, CMU and WMU, respectively (Table 4). There have been 12,864, 8,307, and 2,570 recoveries of banded birds in the EMU, CMU, and WMU, respectively.

Mean annual survival was similar between the CMU and WMU for both hatch-year and after-hatch-year individuals (Table 5). Hatch-year survival in the EMU was similar to that in the CMU and WMU, however, survival of after-hatch-year birds was lower in the EMU than the other two management units.

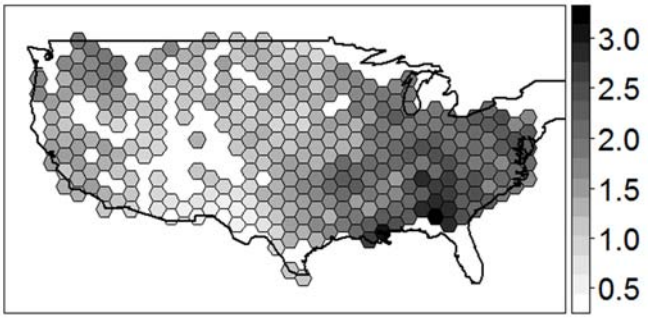

Figure 3. Estimated mourning dove fall population age ratios (juveniles per adult) from the Parts Collection Survey 2007–2013.

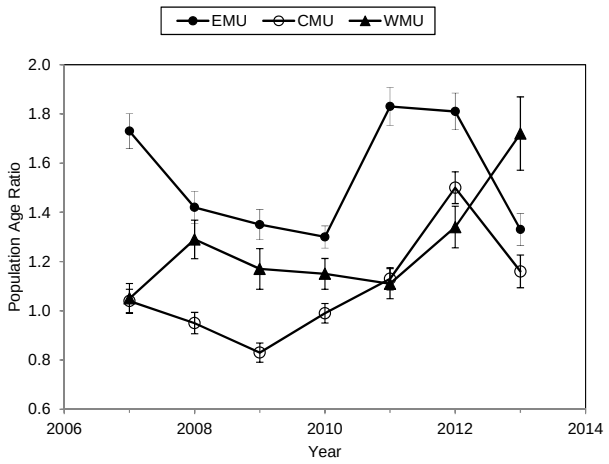

Figure 4. Estimated mourning dove fall population age ratios for each management unit, 2007–2013. Error bars represent 95% confidence intervals.

Mean annual harvest rate was higher for hatch-year individuals compared to after-hatch-year individuals in the EMU and CMU (Table 5). This relationship was more pronounced in the EMU (HY harvest rate 42% greater than AHY harvest rate) and CMU (HY harvest rate 13% greater). Mean annual harvest rate was similar between the two age-classes in the WMU. Harvest rates of both hatch-year and after-hatch-year individuals were greater in the EMU than the other management units (Table 5). Within the EMU, the harvest rate of birds banded in the non-hunt states was much lower than that of the hunt states (Table 5).

Recruitment

We obtained 147,008 wings during 2007–2013 from birds harvested prior to September 15th. Overall recruitment rates were highest in the east and northwest and lowest in the Great Plains states and the southwest (Fig. 3). At the management unit level, the EMU had higher recruitment and more annual variation compared to the other two units (Fig. 4). In 2013 the WMU experienced its hightest recorded population age ratio among the 6 sample years (1.72 juveniles per adult), while the EMU (1.33) and CMU (1.16) were near their 6-year average.

Mean population age ratios for all states are provided in Table 6. There was much variation in the sample sizes for individual states. However, sample sizes now appear sufficient to calculate precise estimates of recruitment for all states. We do not estimate age ratios for Florida because hunting seasons there do not start until 1 October each year. At this late date most wings cannot be aged due to molt progression, precluding accurate estimates of age ratio.

Absolute Abundance

Estimates of absolute abundance are available since 2003 (Fig. 5, Table 7). Estimates during the first 1 or 2 years may be biased in association with startup of the national mourning dove banding program when coordinators were gaining experience, and some states were not yet participants. In addition, age ratio information was not available for the first 4 years (the annual averages from later years were used for estimating abudance during this period). The most recent estimates indicate that there were 274 million doves in the United States preseason during 2013. Annual abundance during the most recent 5 years appears stable in the EMU. Abundance appeared to increase in the CMU and WMU between 2011 and 2012, yet it appeared to decline in the CMU from 2012 to 2013.

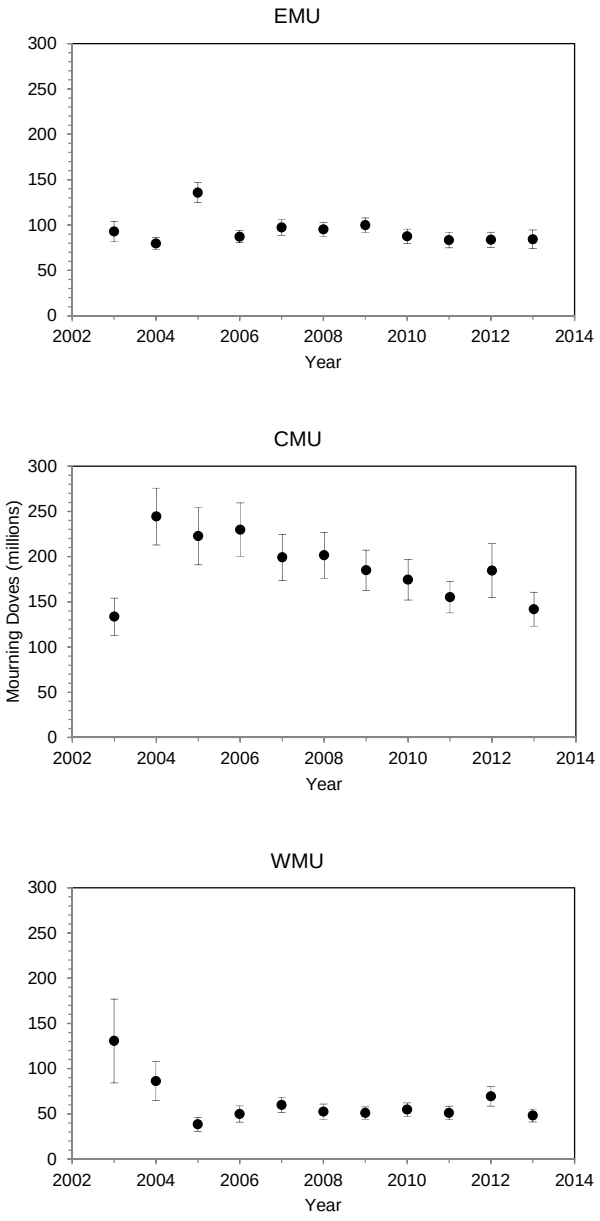

Figure 5. Estimates and 95% confidence intervals of mourning dove absolute abundance by management unit and year, 2003–2013. Estimates based on band recovery and harvest data.

ACKNOWLEDGMENTS

State wildlife agencies and the U.S. Fish and Wildlife Service (USFWS) cooperated to collect the data presented in this report. The following indivivuals participated in the November 2013 Dove Wingbee: A. Arraya (USFWS), T. Cooper (USFWS), J. Duguay (LA), L. Fendick (OH), J. Fleming (MO), M. Frisbee (TX), J. Lusk (NE), D. McGowan (GA), J. Neal (OK), J. Odell (AZ), S. Oldenburger (TX), R. Rau (USFWS), R. Schultheis (KS), W. Simmons (SC), and R. Throm (FL). A special thanks to R. Bredesen (MO) for providing the space at the J.A. Reed Memorial Wildlife Area for the Wingbee. J. Sauer (USGS) analyzed the BBS data and provided statistical support. We recognize his commitment to the annual assessment of abundance data, report contributions, and extraordinary work hours during report preparation. K. Wilkins, B. Raftovich, and H. Spriggs (USFWS) provided HIP data and explanation. F. Rivera-Milan, R. Rau, and E. Silverman (USFWS) reviewed a draft of this report. V. Neatrour helped format and produce the cover page of this report. This report would not be possible without the significant contributions of all involved.

LITERATURE CITED

Aldrich, J.W. 1993. Classification and distribution.Pages 47-54 *in* T.S. Baskett, M.W. Sayre, R.E. Tomlinson, and R.E. Mirarchi, Editors.Ecology and management of the mourning dove.Stackpole Books, Harrisburg, Pennsylvania, USA.

Braun, C.E. 2014. Use of secondary feathers to age mourning doves. North American Bird Bander 39:1–6.

Dolton, D.D. 1993. The call-count survey: historic development and current procedures. Pages 233–252 *in* T.S. Baskett, M.W. Sayre, R.E. Tomlinson, and R.E. Mirarchi, editors.Ecology and management of the mourning dove.Stackpole Books, Harrisburg, Pennsylvania, USA.

Kiel, W.H. 1959. Mourning dove management units, a progress report. U.S. Fish and Wildlife Service, Special Scientific Report—Wildlife 42.

Kiel, W.H. 1961. The mourning dove program for the future. Transactions of the North American Wildlife and Natural Resources Conference 26:418–435.

Martin E.M. 1979. Hunting and harvest trends for migratory game birds other than waterfowl: 1964–76. U. S. Department of the Interior, Fish and Wildlife Service, Special Scientific Report No. 218, Washington, D.C., USA.

Martin, E. M., and S. M. Carney. 1977. Population ecology of the mallard, IV. A review of duck

hunting regulations, activity, and success, with special reference to the mallard.U.S.Department of the Interior, Fish and Wildlife Service, Resource Publication 130, Washington, D.C., USA.

Miller, D.A., and D.L. Otis. 2010. Calibrating recruitment estimates for mourning doves from harvest age ratios. Journal of Wildlife Management 74:1070–1079.

Mirarchi, R.E. and T.S. Baskett. 1994. Mourning dove (*Zenaidamacroura*). In A. Poole and F. Gill, editors, The birds of North America, No. 117. The Academy of Natural Sciences, Philadelphia and TheAmerican Ornithologists' Union, Washington, D.C., USA.

Otis, D.L. 2006. A mourning dove hunting regulation strategy based on annual harvest statistics and banding data. Journal of Wildlife Management 70:1302–1307.

Otis, D.L. 2009. Mourning dove banding needs assessment. U.S. Fish and Wildlife Service.Unpublished report. 22pp. Available online:http://www.fws.gov/migratorybirds/NewsPublicationsReports.html

Peterjohn, B. G., J. R. Sauer and W. A. Link. 1994. The 1992 and 1993 summary of the North American breeding bird survey. Bird Populations 2:46–61.

Ruos, J. L., and R. E. Tomlinson. 1967. Results of mourning dove wing collection in the eastern management unit, 1966–67. U.S. Bureau of Sport Fisheries and Wildlife Administration Report, Washington, D.C., USA.

Sanders, T. A., and D. L. Otis. 2012. Mourning dove reporting probabilities for web-address versus toll-free bands. Journal of Wildlife Management 76:480–488.

Sauer, J. R., W. A. Link, W. L. Kendall, and D. D. Dolton. 2010. Comparative Analysis of mourning dove population change in North America. Journal of Wildlife Management 74:1059–1069.

Sauer, J. R., W. A. Link, W. L. Kendall, J. R. Kelly, and D. K. Niven. 2008. A hierarchical model for estimating change in American woodcock populations. Journal of Wildlife Management. 58:204–214.

Seber, G.A.F. 1970. Estimating time-specific survival and reporting rates for adult birds from band returns. Biometrika 57:313–318.

U.S. Department of the Interior. 1988. Final Supplemental Environmental Impact Statement: Issuance of annual regulations permitting the sport hunting of migratory birds. U.S. Fish and Wildlife Service. Washington, D.C., USA.

Table 1. Estimated trend[a] (percent change per year and lower and upper 95% credible intervals) in mourning dove abundance based on Breeding Bird Survey data for management units and states during 48-year (1966–2013) and 10-year (2004–2013) periods.

Management Unit	48 year				10 year			
State	N	Trend	Lower	Upper	N	Trend	Lower	Upper
Eastern	1756	0.6	0.7	0.5	1478	0.4	0.7	0.1
Hunt states	1433	0.5	0.6	0.4	1216	0.4	0.8	0.1
AL	105	-0.9	-0.5	-1.3	92	0.5	1.7	-0.6
DE-MD	83	0.0	0.3	-0.3	71	-0.3	0.6	-1.3
FL	96	2.5	3.1	1.9	79	2.0	3.4	0.7
GA	99	-0.5	-0.1	-0.9	87	-0.3	0.8	-1.1
IL	102	0.7	1.2	0.2	101	-1.0	0.1	-2.1
IN	63	0.1	0.6	-0.3	57	0.0	1.3	-1.3
KY	60	0.9	1.3	0.4	43	1.1	2.7	-0.3
LA	94	2.6	3.1	2.0	71	2.8	4.2	1.4
MS	54	-0.1	0.6	-0.8	43	0.4	2.1	-0.9
NC	93	0.4	0.8	0.0	79	0.9	1.7	0.1
OH	78	1.2	1.6	0.7	59	0.7	2.2	-0.7
PA	127	1.3	1.7	0.9	101	0.7	1.7	-0.3
SC	47	0.0	0.5	-0.5	40	0.7	2.1	-0.4
TN	32	-0.4	0.1	-0.9	27	-0.1	1.1	-1.4
VA	58	-0.1	0.3	-0.5	50	0.2	1.1	-0.9
WI	97	1.4	1.9	1.0	93	-0.7	0.6	-1.9
WV	57	4.0	4.7	3.2	49	2.4	4.5	0.3
Nonhunt states	406	1.1	1.3	0.9	333	-0.5	0.2	-1.2
MI	88	1.0	1.4	0.5	74	-0.9	0.5	-2.5
N. England[b]	165	1.9	2.3	1.4	137	-1.4	-0.2	-2.6
NJ	33	0.0	0.7	-0.7	23	-0.2	1.0	-1.7
NY	125	1.4	1.8	1.0	102	0.2	1.5	-1.2
Central	1157	-0.7	-0.5	-0.8	1017	-0.7	-0.2	-1.1
AR	53	0.2	0.9	-0.5	47	0.7	2.8	-1.4
CO	142	-0.5	0.0	-1.1	132	-1.7	-0.4	-3.1
IA	39	0.4	1.0	-0.1	33	0.0	1.4	-1.5
KS	65	-0.4	0.1	-0.9	63	-1.4	0.1	-2.9
MN	77	-1.1	-0.7	-1.6	71	-1.8	-0.5	-3.2
MO	73	-1.3	-0.8	-1.8	59	-0.6	0.6	-1.8
MT	57	-0.9	-0.3	-1.6	53	-0.2	1.7	-1.8
NE	50	-0.4	0.0	-0.9	47	-0.2	0.9	-1.4
NM	81	-1.6	-0.9	-2.3	62	-5.4	-3.7	-7.1
ND	49	-0.1	0.5	-0.6	47	-1.4	0.3	-3.1
OK	62	-1.3	-0.8	-1.7	54	-0.4	1.1	-1.7
SD	58	0.0	0.5	-0.6	52	0.3	1.9	-1.3
TX	228	-0.8	-0.4	-1.1	206	0.5	1.4	-0.4
WY	123	-1.5	-0.8	-2.2	91	-1.9	-0.4	-3.4
Western	661	-1.3	-0.9	-1.6	532	-1.1	-0.2	-2.1
AZ	83	-1.0	-0.2	-1.8	62	-0.3	1.6	-2.1
CA	246	-1.1	-0.6	-1.6	189	-2.1	-0.5	-3.6
ID	47	-1.6	-0.7	-2.6	41	-3.4	-1.0	-5.7
NV	43	-1.4	-0.3	-2.5	31	0.5	4.2	-3.6
OR	113	-1.7	-0.8	-2.6	90	0.0	2.6	-2.3
UT	102	-1.9	-1.0	-2.8	94	-1.1	0.8	-2.8
WA	27	-0.1	1.2	-1.5	25	-2.7	0.5	-6.2

[a]Trend estimated from annual indices derived from a log-linear hierarchical model fit using Bayesian methods. There is evidence of a positive trend if the CI > 0 and there is evidence of negative trend if the CI < 0. If the CI contains 0, then there is inconclusive evidence about trend in abundance.

[b] New England consists of CT, ME, MA, NH, RI, and VT; RI is a hunt state but was included in this group for purposes of analysis.

Table 2. Preliminary estimates and 95% confidence intervals (CI, expressed as the interval half width in percent) of mourning dove harvest and hunter activity for management units and states during the 2012 hunting season[a].

Management Unit	Total harvest		Active hunters		Hunter days afield		Harvest per hunter[b]	
State	Estimate	CI	Estimate	CI	Estimate	CI	Estimate	CI
Eastern	6,279,900	8	349,600	†[c]	1,015,600	7	†	†
AL	687,100	15	38,500	10	116,400	23	17.8	18
DE	39,900	28	2,400	21	7,200	30	16.5	36
FL	175,100	28	10,700	32	48,500	59	16.4	43
GA	735,700	15	35,600	11	94,600	14	20.7	19
IL	372,700	26	20,500	17	62,700	22	18.2	31
IN	263,300	34	14,100	23	40,700	26	18.7	41
KY	511,800	43	21,500	39	61,100	41	23.8	58
LA	354,100	50	17,800	29	60,400	43	19.9	58
MD	94,300	25	6,200	22	16,800	26	15.1	33
MS	286,900	28	11,800	15	32,300	23	24.3	32
NC	1,020,600	22	62,100	16	148,000	18	16.4	27
OH	136,000	33	8,600	23	33,500	35	15.8	41
PA	203,200	30	18,000	26	60,200	26	11.3	40
RI	500	77	100	47	400	61	7.9	91
SC	554,600	30	25,100	21	81,900	28	22.1	36
TN	464,400	26	27,000	18	71,300	25	17.2	31
VA	295,900	19	19,900	14	45,100	15	14.9	24
WI	10,300	33	1,000	24	1,900	42	10.7	41
WV	73,200	31	8,900	32	32,700	29	8.3	44
Central	6,361,600	14	338,700	†	1,108,700	11	†	†
AR	494,200	30	21,400	22	57,600	26	23.1	37
CO	204,300	26	17,000	18	43,800	26	12	32
KS	244,800	62	12,200	39	49,100	52	20.1	73
MN	65,400	75	6,800	52	21,600	48	9.7	91
MO	296,600	81	23,800	29	51,400	50	12.4	86
MT	2,600	161	200	87	500	120	13.3	183
NE	223,400	20	13,200	17	39,000	17	16.9	26
NM	160,100	17	9,000	11	38,000	17	17.8	20
ND	78,900	37	4,900	30	17,400	36	16	48
OK	349,700	26	15,700	14	49,200	19	22.3	30
SD	65,500	28	4,500	22	14,700	28	14.4	36
TX	4,150,800	20	207,200	13	720,200	16	20	24
WY	25,300	40	2,700	32	6,300	38	9.3	51
Western	1,849,400	8	140,700	†	413,700	7	18.7	18
AZ	601,200	16	32,100	9	110,800	14	13.8	12
CA	900,000	10	65,200	7	192,200	10	13.1	33
ID	127,600	25	9,700	22	32,200	35	7.5	44
NV	26,900	36	3,600	26	7,400	26	5.3	38
OR	64,100	32	12,000	19	28,900	24	5.9	48
UT	78,000	43	13,200	22	30,800	31	10.6	40
WA	51,500	30	4,900	26	11,300	27	18.7	18
United States	14,490,800	7	828,900	†	2,538,000	6	†	†

[a]Hunter number estimates at the Management Unit and national levels may be biased high, because the HIP sample frames are state specific; therefore hunters are counted more than once if they hunt in >1 state. Variance is inestimable.
[b]Seasonal harvest per hunter.
[c] No estimate available.

Table 3. Preliminary estimates and 95% confidence intervals (CI, expressed as the interval half width in percent) of mourning dove harvest and hunter activity for management units and states during the 2013 hunting season[a].

Management Unit	Total harvest		Active hunters		Hunter days afield		Harvest per hunter[b]	
State	Estimate	CI	Estimate	CI	Estimate	CI	Estimate	CI
Eastern	6,350,600	11	363,100	†[c]	987,900	9	†	†
AL	634,200	15	36,800	12	91,400	27	17.2	19
DE	33,100	57	1,800	44	4,500	48	18.1	71
FL	200,700	56	10,900	36	31,900	35	18.4	66
GA	851,600	46	47,600	22	125,000	34	17.9	50
IL	426,600	23	24,400	18	67,200	23	17.5	29
IN	160,100	19	7,700	20	24,400	18	20.8	28
KY	632,900	30	29,500	33	82,300	36	21.5	45
LA	625,400	62	24,800	56	74,700	61	25.2	83
MD	85,000	23	6,000	23	16,500	30	14.2	32
MS	336,200	24	17,200	15	40,500	22	19.5	28
NC	555,200	24	43,500	18	93,800	20	12.8	31
OH	371,600	29	19,900	17	65,600	23	18.6	34
PA	250,700	61	17,700	24	60,300	31	14.2	66
RI	1,300	121	200	98	500	39	6.9	134
SC	372,200	32	20,400	25	68,800	30	18.2	41
TN	474,500	29	27,400	19	64,200	26	17.4	35
VA	251,500	19	16,900	14	40,600	16	14.8	24
WI	72,800	35	9,000	30	33,600	34	8.1	46
WV	15,000	38	1,300	30	2,300	34	11.5	48
Central	6,236,000	11	353,000	†	1,185,300	10	†	†
AR	155,900	46	8,900	42	30,100	57	17.5	62
CO	176,900	25	15,600	15	36,900	19	11.3	29
IA	214,300	16	12,900	9	49,400	14	16.6	18
KS	504,400	18	31,900	12	93,000	16	16	22
MN	53,500	30	7,700	53	17,000	39	7	62
MO	587,600	28	36,400	11	104,500	18	16.2	30
MT	12,000	41	1,700	46	2,900	41	7.1	63
NE	239,800	24	13,500	16	39,300	19	17.7	29
NM	123,000	15	6,500	9	23,700	13	18.9	18
ND	88,200	37	6,300	28	16,400	29	14.1	47
OK	421,200	25	23,300	13	69,400	24	18.1	28
SD	118,300	31	6,200	22	17,500	26	19	38
TX	3,506,700	18	178,900	13	677,900	16	19.6	22
WY	34,200	19	3,100	19	7,200	19	10.9	25
Western	1,943,300	10	141,200	†	399,800	10	†	†
AZ	774,800	18	36,300	16	134,300	21	21.3	24
CA	828,300	11	63,600	8	163,200	9	13	14
ID	157,300	42	13,300	21	39,100	32	11.9	46
NV	31,900	30	3,800	26	9,900	32	8.4	40
OR	28,400	43	3,400	35	10,500	43	8.3	54
UT	80,200	80	16,000	33	31,200	45	5	86
WA	42,500	41	4,800	29	11,500	43	8.8	49
United States	14,529,800	7	857,300	†	2,572,900	6	†	†

[a]Hunter number estimates at the Management Unit and national levels may be biased high, because the HIP sample frames are state specific; therefore hunters are counted more than once if they hunt in >1 state. Variance is inestimable.
[b]Seasonal harvest per hunter.
[c] No estimate available.

Table 4. Number of mourning doves banded in each management unit, state, and year, 2003–2013. Only known age birds banded in July or August are included in the table and used in analysis of survival and harvest rates.

Mgmt Unit State	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Eastern	15,652	17,454	20,142	20,862	21,717	19,461	21,309	20,475	18,946	19,525	19,411
AL	1,130	1,112	991	961	889	117	1,147	1,026	942	1,010	1,097
DE	0	0	0	0	0	68	111	133	103	205	107
FL	830	960	916	858	773	1,027	799	865	736	968	805
GA	1,424	1,161	1,396	1,136	1,234	1,332	1,450	1,670	1,244	1,498	1,258
IL	6	6	47	1,163	1,267	1,378	1,877	1,833	2,034	1,501	1,276
IN	6	1,175	1,211	1,253	1,261	963	1,008	1,312	1,162	1,418	1,136
KY	1,444	1,566	1,454	1,637	1,608	1,867	2,391	2,232	1,786	1,299	1,553
LA	1,205	655	2,412	2,581	3,516	2,347	1,955	1,826	1,738	1,362	1,729
MD	472	482	719	571	708	322	334	312	377	346	366
MI	39	26	0	2	6	2	4	0	2	10	0
MS	1,071	994	1,008	656	690	822	928	448	462	605	666
North Atl.[a]	20	4	19	34	12	12	460	1,176	1,286	967	987
NC	1,283	1,539	1,662	1,299	1,307	1,736	1,685	1,198	795	1,847	1,734
OH	1,984	2,712	2,020	1,976	1,993	1,958	2,007	955	1,264	1,393	1,300
PA	1,564	1,590	1,658	1,838	1,748	942	903	899	827	899	1,007
RI	0	0	0	0	0	0	14	22	0	0	0
SC	1,041	863	1,484	1,461	1,761	1,720	1,875	1,953	1,911	1,795	1,902
TN	938	1,277	1,154	1,275	866	1,199	653	854	635	651	785
VA	474	546	804	585	642	603	599	554	496	522	420
WI	7	18	561	973	836	725	761	838	807	926	895
WV	714	768	626	603	600	321	348	369	339	303	388
Central	10,491	12,562	10,960	11,355	10,499	16,230	19,595	17,380	18,710	18,219	18,868
AR	782	975	1,085	914	822	711	514	0	424	222	297
CO	7	12	11	20	467	753	670	953	984	940	1,254
IA	1,940	2,191	2,458	1,099	987	1,694	1,238	1,078	2,216	2,089	1,649
KS	1,230	1,426	1,412	1,457	1,099	2,377	3,388	2,445	3,211	3,385	3,739
MN	0	4	0	0	363	529	700	1,164	853	1,026	1,390
MO	1,983	2,063	1,739	2,219	1,729	2,512	2,861	2,903	2,296	2,168	2,453
MT	0	0	0	0	0	0	0	322	270	296	223
NE	926	1,237	721	753	799	1,057	1,014	997	1,316	1,454	1,345
NM	3	11	14	4	0	463	1,059	625	114	717	829
ND	745	1,293	1,072	976	703	782	1,135	1,666	1,741	1,433	1,344
OK	391	447	528	715	826	1,513	2,746	1,520	1,661	1,488	1,182
SD	1,506	1,303	851	1,768	1,456	1,713	1,693	1,771	1,356	1,430	1,370
TX	978	1,600	1,069	1,430	1,237	2,078	2,575	1,936	2,268	1,502	1,702
WY	0	0	0	0	11	48	2	0	0	69	91
Western	3,261	3,658	4,494	4,559	6,495	6,253	9,059	9,348	7,552	8,634	8,961
AZ	1,653	1,574	1,582	2,436	2,562	2,544	3,831	3,599	3,818	3,362	3,718
CA	252	157	819	1,160	1,870	1,706	2,693	3,468	1,422	2,458	2,269
ID	440	854	837	730	615	594	466	453	355	677	511
NV	0	0	0	0	0	120	431	488	642	729	200
OR	0	0	0	0	0	173	245	219	243	319	734
UT	0	0	0	233	722	398	685	553	323	319	770
WA	916	1,073	1,256	0	726	718	708	568	749	770	759
United States	29,404	33,674	35,596	36,776	38,711	41,944	49,963	47,203	45,208	46,378	47,240

[a]Combined total for North Atlantic non-hunt states: CT, ME, MA, NJ, NY, and VT.

Table 5. Estimates of mean annual survival and harvest rate of mourning doves, by management unit and state that banded doves, 2003–2013. Estimates by age-class: hatch-year (HY) and after-hatch-year (AHY). Standard errors of estimates are in parentheses.

Management Unit	Annual Survival		Annual Harvest Rate	
State	HY (SE)	AHY (SE)	HY (SE)	AHY (SE)
Eastern	0.29 (0.01)	0.41 (0.01)	0.095 (0.003)	0.067 (0.002)
AL	0.30 (0.02)	0.39 (0.02)	0.074 (0.008)	0.047 (0.004)
DE-MD[a]	0.29 (0.03)	0.39 (0.03)	0.121 (0.008)	0.081 (0.009)
FL	0.25 (0.04)	0.42 (0.03)	0.043 (0.007)	0.043 (0.008)
GA	0.28 (0.02)	0.39 (0.02)	0.093 (0.005)	0.057 (0.006)
IL	0.34 (0.03)	0.40 (0.03)	0.072 (0.004)	0.055 (0.007)
IN	0.36 (0.03)	0.38 (0.02)	0.074 (0.008)	0.082 (0.006)
KY	0.34 (0.02)	0.42 (0.02)	0.061 (0.004)	0.055 (0.005)
LA	0.33 (0.01)	0.44 (0.02)	0.124 (0.008)	0.071 (0.009)
MS	0.24 (0.02)	0.41 (0.02)	0.163 (0.009)	0.095 (0.007)
North Atl[b]	0.63 (0.10)	0.54 (0.16)	0.002 (0.001)	0.001 (0.001)
NC	0.21 (0.02)	0.40 (0.02)	0.144 (0.013)	0.091 (0.007)
OH	0.29 (0.02)	0.37 (0.02)	0.057 (0.004)	0.047 (0.005)
PA	0.26 (0.03)	0.44 (0.03)	0.052 (0.006)	0.025 (0.003)
SC	0.30 (0.02)	0.44 (0.02)	0.122 (0.008)	0.079 (0.006)
TN	0.23 (0.02)	0.39 (0.02)	0.109 (0.005)	0.076 (0.004)
VA	0.32 (0.04)	0.47 (0.03)	0.062 (0.008)	0.049 (0.006)
WI	0.32 (0.04)	0.51 (0.04)	0.061 (0.007)	0.040 (0.005)
WV	0.47 (0.05)	0.46 (0.05)	0.022 (0.003)	0.024 (0.003)
Central	0.29 (0.01)	0.45 (0.01)	0.044 (0.002)	0.039 (0.001)
AR	0.21 (0.02)	0.40 (0.03)	0.109 (0.019)	0.088 (0.009)
CO	0.76 (0.06)	0.59 (0.05)	0.010 (0.001)	0.014 (0.003)
IA	0.35 (0.03)	0.50 (0.02)	0.025 (0.006)	0.017 (0.008)
KS	0.35 (0.02)	0.48 (0.02)	0.038 (0.003)	0.032 (0.003)
MN	0.33 (0.05)	0.53 (0.05)	0.040 (0.007)	0.024 (0.007)
MO	0.17 (0.01)	0.36 (0.01)	0.213 (0.012)	0.185 (0.010)
MT	0.40 (0.21)	0.35 (0.18)	0.017 (0.006)	0.037 (0.002)
ND	0.59 (0.04)	0.58 (0.03)	0.019 (0.003)	0.013 (0.003)
NE	0.37 (0.04)	0.48 (0.02)	0.044 (0.004)	0.052 (0.004)
NM	0.81 (0.08)	0.54 (0.10)	0.007 (0.001)	0.005 (0.001)
OK	0.25 (0.02)	0.38 (0.03)	0.045 (0.004)	0.037 (0.004)
SD	0.47 (0.03)	0.48 (0.02)	0.041 (0.006)	0.034 (0.005)
TX	0.41 (0.03)	0.46 (0.02)	0.030 (0.004)	0.023 (0.003)
Western	0.31 (0.02)	0.44 (0.01)	0.040 (0.004)	0.038 (0.004)
AZ	0.46 (0.05)	0.48 (0.02)	0.025 (0.004)	0.018 (0.002)
CA	0.22 (0.03)	0.40 (0.02)	0.063 (0.009)	0.073 (0.011)
ID	0.37 (0.09)	0.52 (0.04)	0.028 (0.005)	0.019 (0.004)
NV	0.35 (0.10)	0.57 (0.07)	0.072 (0.010)	0.040 (0.009)
OR	0.82 (0.32)	0.29 (0.10)	0.057 (0.020)	0.024 (0.009)
UT	0.26 (0.08)	0.43 (0.08)	0.025 (0.005)	0.019 (0.006)
WA	0.32 (0.05)	0.43 (0.03)	0.060 (0.005)	0.044 (0.012)

[a]Data combined for Delaware and Maryland.
[b]Data combined for northeastern states: CT, ME, MA, NJ, NY,RI,and VT.

Table 6. Estimated age ratios (juvenile to adult) by state based on the Parts Collection Survey, 2007–2013. Age ratios are corrected for unknown age wings and differential vulnerability. Sample size is number of wings examined.

Management Unit State	Sample Size	Population Age Ratio	SE[a]
Eastern	64,324	1.51	0.09
AL	2,699	1.80	0.07
DE	1,549	1.66	0.09
GA	2,774	1.96	0.08
IL	5,956	1.53	0.04
IN	7,740	1.58	0.04
KY	3,933	1.58	0.05
LA	1,544	1.80	0.10
MD	3,159	1.61	0.06
MS	3,405	1.36	0.05
NC	6,391	1.38	0.03
OH	3,058	1.52	0.06
PA	2,335	1.19	0.05
SC	6,709	1.61	0.04
TN	2,480	1.71	0.07
VA	7,763	1.32	0.03
WI	1,729	1.54	0.08
WV	1,100	1.65	0.10
Central	54,117	1.05	0.08
AR	3,272	1.50	0.05
CO	5,763	1.18	0.03
IA	614	1.37	0.11
KS	5,680	1.14	0.03
MN	1,357	1.36	0.07
MO	5,075	1.32	0.04
MT	1,631	1.26	0.06
ND	2,026	1.07	0.05
NE	5,211	0.88	0.02
NM	3,382	0.56	0.02
OK	4,829	1.34	0.04
SD	3,586	1.12	0.04
TX	9,477	1.06	0.02
WY	2,214	1.26	0.05
Western	28,567	1.21	0.07
AZ	8,702	0.70	0.02
CA	7,988	1.28	0.03
ID	2,283	1.40	0.06
NV	2,264	1.10	0.05
OR	1,318	1.45	0.08
UT	1,688	0.99	0.05
WA	4,324	1.59	0.05

[a] Standard errors for state estimates only incorporate sampling error for the proportion of young in the sample and do not incorporate additional uncertainty from correction factors for unknown age wings and differential vulnerability. Standard errors for management unit estimates based on weighted mean of annual point estimates with weights being the inverse of annual standard errors.

Table 7. Estimates of absolute abundance of mourning doves based on band recovery and harvest data by year and management unit in the United States, 2003–2013.

	Management Unit							
	Eastern		Central		Western		Total (United States)	
Year	N	SE	N	SE	N	SE	N	SE
2003	92,888,696	5,785,048	133,617,700	10,469,598	130,612,858	23,673,472	357,119,254	26,523,811
2004	79,562,804	3,455,454	244,309,182	16,091,468	86,163,062	10,982,495	410,035,048	19,786,123
2005	135,715,865	5,636,130	222,758,440	16,246,756	38,395,836	3,855,987	396,870,142	17,623,612
2006	87,207,003	3,478,991	229,838,623	15,127,403	49,864,544	4,580,160	366,910,170	16,183,930
2007	97,237,418	4,316,410	199,101,579	13,055,208	59,860,570	4,387,999	356,199,567	14,433,447
2008	95,149,078	3,883,459	201,509,159	12,953,125	52,511,314	4,288,905	349,169,551	14,186,592
2009	99,855,541	4,064,931	184,892,403	11,403,050	50,899,868	3,438,865	335,647,813	12,584,873
2010	87,633,175	4,050,661	174,410,800	11,467,703	54,688,559	3,824,468	316,732,534	12,749,220
2011	83,416,618	4,328,089	155,263,007	8,887,474	51,044,856	3,864,797	289,724,481	10,613,963
2012	83,784,502	4,243,818	184,459,010	15,164,213	69,323,080	5,483,625	337,566,592	16,674,336
2013	84,285,600	5,304,985	141,932,629	9,602,310	48,180,645	3,651,678	274,398,873	11,562,092

Appendix A. Federal framework dates, season length, and daily bag limit for mourning dove hunting in the United States by management unit, 1918–2013.

	Management Unit								
	Eastern			Central			Western		
Year	Dates[a]	Days	Bag	Dates	Days	Bag	Dates	Days	Bag
1918	Sep 1–Dec 31	107	25	Sep 1–Dec 15	106	25	Sep 1–Dec 15	106	25
1919–22	Sep 1–Jan 31	108	25	Sep 1–Dec 15	106	25	Sep 1–Dec 15	106	25
1923-28	Sep 1–Jan 31	108	25	Sep 1–Dec 31	106	25	Sep 1–Dec 15	106	25
1929	Sep 1–Jan 31	106	25	Sep 1–Dec 31	106	25	Sep 1–Dec 15	106	25
1930	Sep 1–Jan 31	108	25	Sep 1–Dec 15	106	25	Sep 1–Dec 15	106	25
1931	Sep 1–Jan 31	106	25	Sep 1–Dec 15	106	25	Sep 1–Dec 15	106	25
1932–33	Sep 1–Jan 31	106	18	Sep 1–Dec 15	106	18	Sep 1–Dec 15	106	18
1934	Sep 1–Jan 31	106	18	Sep 1–Jan 15	106	18	Sep 1–Dec 15	106	18
1935	Sep 1–Jan 31	107	20	Sep 1–Jan 16	106	20	Sep 1–Jan 05	107	20
1936	Sep 1–Jan 31	77	20	Sep 1–Jan 16	76	20	Sep 1–Nov 15	76	20
1937[b]	Sep 1–Jan 31	77	15	Sep 1–Nov 15	76	15	Sep 1–Nov 15	76	15
1938	Sep 1–Jan 31	78	15	Sep 1–Nov 15	76	15	Sep 1–Nov 15	76	15
1939	Sep 1–Jan 31	78	15	Sep 1–Jan 31	77	15	Sep 1–Nov 15	76	15
1940	Sep 1–Jan 31	77	12	Sep 1–Jan 31	76	12	Sep 1–Nov 15	76	12
1941	Sep 1–Jan 31	62	12	Sep 1–Oct 27	42	12	Sep 1–Oct 12	42	12
1942	Sep 1–Oct 15	30	10	Sep 1–Oct 27	42	10	Sep 1–Oct 12	42	10
1943	Sep 1–Dec 24	30	10	Sep 1–Dec 19	42	10	Sep 1–Oct 12	42	10
1944	Sep 1–Jan 20	58	10	Sep 1–Jan 20	57	10	Sep 1–Oct 25	55	10
1945	Sep 1–Jan 31	60	10	Sep 1–Jan 31	60	10	Sep 1–Oct 30	60	10
1946	Sep 1–Jan 31	61	10	Sep 1–Jan 31	60	10	Sep 1–Oct 30	60	10
1947–48[c]	Sep 1–Jan 31	60	10	Sep 1–Dec 3	60	10	Sep 1–Oct 30	60	10
1949	Sep 1–Jan 15	30	10	Sep 1–Nov 14	45	10	Sep 1–Oct 15	45	10
1950	Sep 1–Jan 15	30	10	Sep 1–Dec 3	45	10	Sep 1–Oct 15	45	10
1951	Sep 1–Jan 15	30	8	Sep 1- Dec 24	42	10	Sep 1–Oct 15	45	10
1952	Sep 1–Jan 10	30	8	Sep 1–Nov 6	42	10	Sep 1–Oct 12	42	10
1953	Sep 1–Jan 10	30	8	Sep 1–Nov 9	42	10	Sep 1–Oct 12	42	10
1954[d]	Sep 1–Jan 10	40	8	Sep 1–Nov 9	40	10	Sep 1–Oct 31	40	10
1955	Sep 1–Jan 10	45	8	Sep 1–Nov 28	45	10	Sep 1–Dec 31	45	10
1956[e]	Sep 1–Jan 10	55	8	Sep 1–Jan 10	55	10	Sep 1–Jan 10	50	10
1957	Sep 1–Jan 10	60	10	Sep 1–Jan 10	60	10	Sep 1–Jan 10	50	10
1958–59	Sep 1–Jan 15	65	10	Sep 1–Jan 15	65	10	Sep 1–Jan 15	50	10
1960–61[f]	Sep 1–Jan 15	70[g]	12	Sep 1–Jan 15	60	15	Sep 1–Jan 15	50	10
1962	Sep 1–Jan 15	70[g]	12	Sep 1–Jan 15	60	12	Sep 1–Jan 15	50	10
1963	Sep 1–Jan 15	70[g]	10	Sep 1–Jan 15	60	10	Sep 1–Jan 15	50	10
1964–67	Sep 1–Jan 15	70[g]	12	Sep 1–Jan 15	60	12	Sep 1–Jan 15	50	12
1968	Sep 1–Jan 15	70[g]	12	Sep 1–Jan 15	60	12	Sep 1–Jan 15	50	10
1969–70	Sep 1–Jan 15	70[g]	18[h]	Sep 1–Jan 15	60	10	Sep 1–Jan 15	50	10
1971–79	Sep 1–Jan 15	70[g]	12	Sep 1–Jan 15	60	10	Sep 1–Jan 15	50	10
1980	Sep 1–Jan 15	70	12	Sep 1–Jan 15[i]	60	10	Sep 1–Jan 15	70[j]	10[k]
1981	Sep 1–Jan 15	70	12	Sep 1–Jan 15[i]	45[l]	15[l]	Sep 1–Jan 15	70[j]	10[k]
1982	Sep 1–Jan 15	45[m]	15[m]	Sep 1–Jan 15[i]	45[m]	15[m]	Sep 1–Jan 15	45[m]	15[m]
1983–86	Sep 1–Jan 15	60[m]	15[m]	Sep 1–Jan 15[i]	60[m]	15[m]	Sep 1–Jan 15	60[m]	15[m]
1987–07[n]	Sep 1–Jan 15	60[m]	15[m]	Sep 1–Jan 15[i]	60[m]	15[m]	Sep 1–Jan 15	60[o]	10
2008	Sep 1–Jan 15	70	15	Sep 1–Jan 15[i]	60[m]	15[m]	Sep 1–Jan 15	60[o]	10
2009–13	Sep 1–Jan 15	70	15	Sep 1–Jan 15[i]	70	15	Sep 1–Jan 15	60[o]	10

[a] From 1918–1947, seasons for doves and other "webless" species were selected independently and the dates were the earliest opening and latest closing dates chosen. Dates were inclusive. There were different season lengths in various states with some choosing many fewer days than others. Only bag and possession limits, and season dates were specified.

[b] Beginning in 1937, the bag and possession limits included white-winged doves in selected states.

[c] From 1948–1953, states permitting dove hunting were listed by waterfowl flyway. Only bag and possession limits, and season dates were specified.

[d] In 1954–1955, states permitting dove hunting were listed separately. Only bag and possession limits, and season dates were specified.

[e] From 1956–1959, states permitting dove hunting were listed separately. Framework opening and closing dates for seasons (but no maximum days for season length) were specified for the first time along with bag and possession limits.

[f] In 1960, states were grouped by management unit for the first time. Maximum season length was specified for the first time.

[g] Half days.

Appendix A. Continued.

[h] More liberal limits allowed in conjunction with an Eastern Management Unit hunting regulations experiment.
[i] The framework extended to January 25 in Texas.
[j] 50–70 days depending on state and season timing.
[k] Arizona was allowed 12.
[l] States had the option of a 60-day season and daily bag limit of 12.
[m] States had the option of a 70-day season and daily bag limit of 12.
[n] Beginning in 2002, the limits included white-winged doves in all states in the Central Management Unit. Beginning in 2006, the limits included white-winged doves in all states in the Eastern Management Unit.
[o] 30–60 days depending on state (30 in Idaho, Nevada, Oregon, Utah, Washington; 60 in Arizona and California).

U.S. Fish and Wildlife Service
Division of Migratory Bird Management
Population and Assessment Branch
11510 American Holly Drive
Laurel, Maryland 20708-4016

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