U.S. Fish & Wildlife Service

Mourning Dove

Population Status, 2010

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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, 2010

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Abstract: This report summarizes information on abundance and harvest of mourning doves collected annually in the United States. For abundance, we report primarily on trends in the number of doves heard per route from the Mourning Dove Call-count Survey (CCS), but also include trends in doves seen per route from the CCS and birds heard and seen per route from the all-bird Breeding Bird Survey (BBS). Harvest and hunter participation are estimated from the Migratory Bird Harvest Information Program (HIP). The CCS-heard data provided evidence that abundance of doves decreased in all three dove management units (Eastern [EMU], Central [CMU], and Western [WMU]) during the long term (1966–2010); within the EMU, however, there is evidence that abundance decreased in hunt states but increased in nonhunt states. In the recent 10 and 2 years, the EMU was the only unit that had evidence of a change in dove abundance; there, it increased in the recent 10 years. Also there was evidence that abundance increased in EMU nonhunt states, but no evidence of change in the EMU hunt states for the same period. Over the long term, trends in CCS-heard and CCS-seen data were consistent in the WMU, but inconsistent in the EMU and CMU; here there is evidence that trends in CCS-seen were stable in the CMU and increased in the EMU. BBS data provided evidence that the abundance of doves over the long term increased in the EMU and decreased in the CMU and WMU. Thus, over the long term, the three data sets provided consistent results only in the WMU. In the CMU, CCS-seen is somewhat inconsistent with CCS-heard and BBS, and in the EMU, CCS-heard are opposite CCS-seen and BBS. Current (2009) HIP estimates for total harvest, active hunters, and total days afield in the U.S. were 17,354,800 ± 531,269 (estimate ± SE) birds, 974,400 hunters, and 2,987,400 ± 60,967 days afield. Harvest and hunter participation and the unit level were: EMU, 7,639,200 ± 272,829 birds, 437,600 hunters, and 1,245,700 ± 38,134 days afield; CMU, 7,474,600 ± 457,629 birds, 393,400 hunters, and 1,312,700 ± 53,580 days afield; and WMU, 2,241,000 ± 91,469 birds, 143,400 hunters, and 429,000 ± 15,321 days afield.

The mourning dove (*Zenaida macroura*) is one of the most abundant bird species in urban and rural areas of 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. The annual harvest is estimated to be between 5 and 10% of the population (Otis et al. 2008a). Maintenance of mourning dove populations in a healthy, productive state is a primary management goal. Management activities include population assessment, harvest regulation, and habitat management. Each year, counts of mourning doves heard and seen are conducted by state, federal, tribal, and other biologists in the 48 conterminous states to monitor mourning dove populations. The resulting information is used by wildlife administrators in setting annual hunting regulations. A history of dove hunting regulations is provided in Appendix A.

The primary purpose of this report is to facilitate the prompt distribution of timely information. Results are preliminary and may change with the inclusion of additional data.

DISTRIBUTION AND ABUNDANCE

The mourning dove is one of the most widely distributed and abundant birds in North America (Peterjohn et al. 1994, Fig. 1). The fall population for the United States was recently estimated to be about 350 million (Otis et al. 2008b).

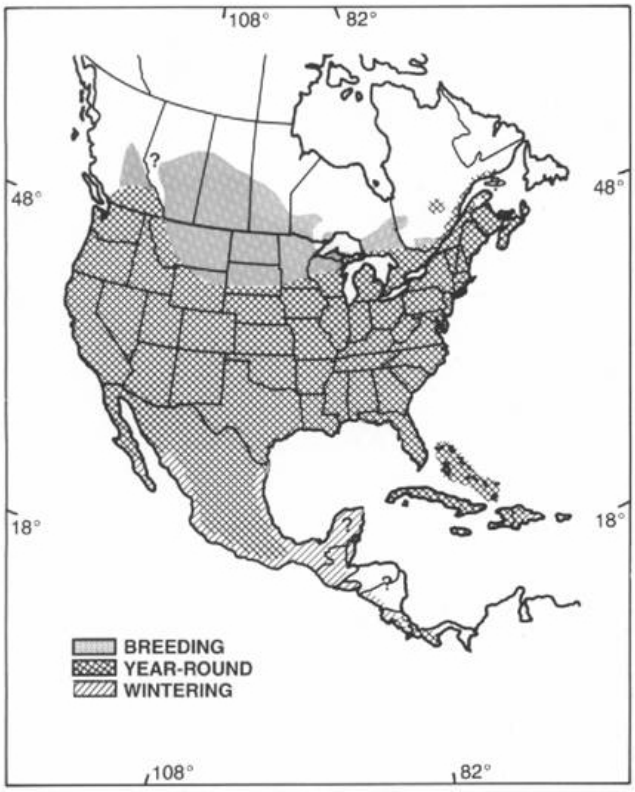

Figure 1. Breeding and wintering ranges of the mourning dove (adapted from Mirarchi and Baskett 1994).

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). While mourning doves winter throughout much of the 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

Call-count Survey

The Mourning Dove Call-count Survey (CCS) was developed to provide an annual index of abundance specifically for mourning doves (Dolton 1993). This survey is based on work by McClure (1939) in Iowa. In the United States, the survey currently includes more than 1,000 randomly selected routes, stratified by physiographic region (Fenneman 1931, Dolton 1993).

CCS routes are located on secondary roads and have 20 listening stations spaced at 1-mile intervals. At each stop, the number of individual doves heard calling, the number of doves seen, and the level of disturbance (noise) that impairs the observer's ability to hear doves are recorded. Observers also record the number of doves seen while driving between stops.

Counts begin one-half hour before sunrise and take about 2 hours to complete. Routes are run once between 20 May and 5 June. Surveys are not conducted when wind velocities exceed 12 miles per hour or when it is raining.

The number of doves heard and seen during the CCS are recorded and analyzed separately. The total number of doves heard on each route is used to determine annual indices of abundance during the breeding season. Subsequently, trends in abundance over time are determined from these annual indices. A similar assessment is completed based on doves seen and results are also presented in this report, but only as supplemental information for comparison with indices and trends of doves heard.

Within the United States, there are three zones that contain mourning dove populations that are largely independent of each other (Kiel 1959). These zones encompass the principal breeding, migration, and U.S. wintering areas for each population. As 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 while Minnesota became a hunt state in 2004. 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. Due to its small size, Rhode Island, which is a hunt state, was included in this nonhunt group of states for analysis.

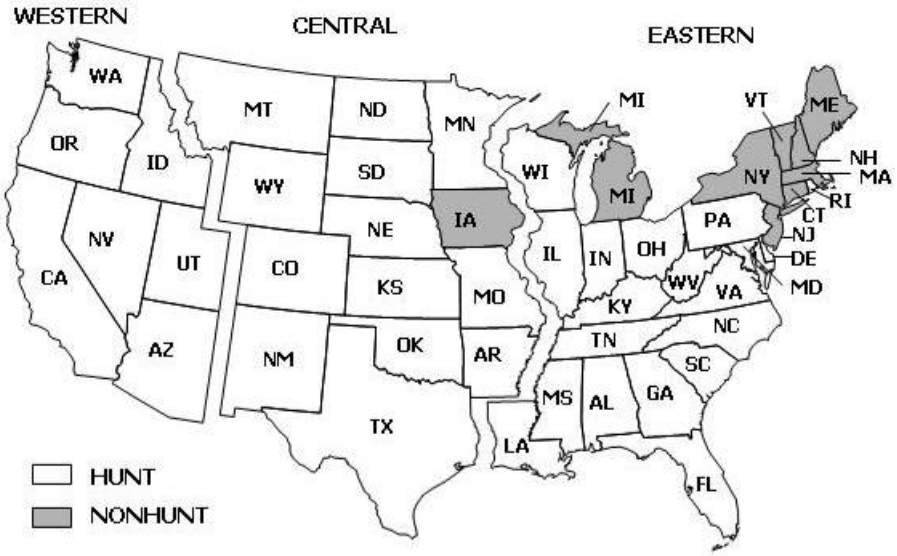

Figure 2. Mourning dove management units with 2009 hunt and nonhunt states.

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 (doves heard and seen are analyzed separately for the CCS).

There has been considerable discussion about utilizing the BBS as a measure of mourning dove abundance. Consequently, we are including 1966–2009 BBS trend information in this report. Currently available BBS data is one year behind CCS data; however, BBS results from this report can be compared with CCS results published in the previous year's status report for consistency of year intervals (see Dolton et al. 2009). Sauer et al. (1994) discussed the differences in the methodology of the two surveys. Current year BBS data are not available in time for use in regulations development during the same year. Research is currently underway to evaluate the causes of differences in estimated trends between the CCS and BBS results (e.g., Sauer et al. 2010).

Harvest Survey

Wildlife professionals have long recognized that reliable harvest estimates are needed to monitor the impact of hunting. In the past, the 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 an inability to compare survey results among states.

To remedy the limitations associated with the Mail Questionnaire Survey and using the results of state surveys, the U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service 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 U.S. Fish and Wildlife Service with the names and addresses of all

licensed migratory bird hunters each year and then surveys are conducted to estimate harvest and hunter participation (total harvest, number of active hunters, total days afield, and seasonal harvest per hunter) in each state. All states except Hawaii are participating in the program.

METHODS

Estimation of Trends in Abundance

For the first time in this annual report, CCS and BBS trends were estimated using a log-linear hierarchical model and Bayesian analytical framework (Sauer et al. 2008, Sauer et al. 2010) instead of the previously used route regression approach (Link and Sauer 1994). Both methods provide trend and annual index values that are generally comparable. The hierarchical model, however, has a more rigorous and realistic theoretical basis than the weightings used in the route regression approach, and the indices and trends are directly comparable as trends are calculated directly from the indices unlike the former assessment.

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 of 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, seen, or both heard and seen (BBS) per route.

Annual indices were calculated at the state, region (group of states), and dove management unit level. Short- (recent 2-year period), intermediate- (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.

For the CCS-heard data, we estimated the trend, or average annual change, in dove abundance for each area over the last 2 and 10 years and for all 45 years since survey implementation in 1966 (Table 1). Also we estimated the trend in dove abundance for each area from CCS-seen data over the same time periods, and present these as supplemental information for comparison with CCS-heard results (Table 2).

Figure 3. Mourning dove abundance in the Eastern Management Unit based on the mean of the 2 CCS-heard index values from the last 2 years (2009–2010).

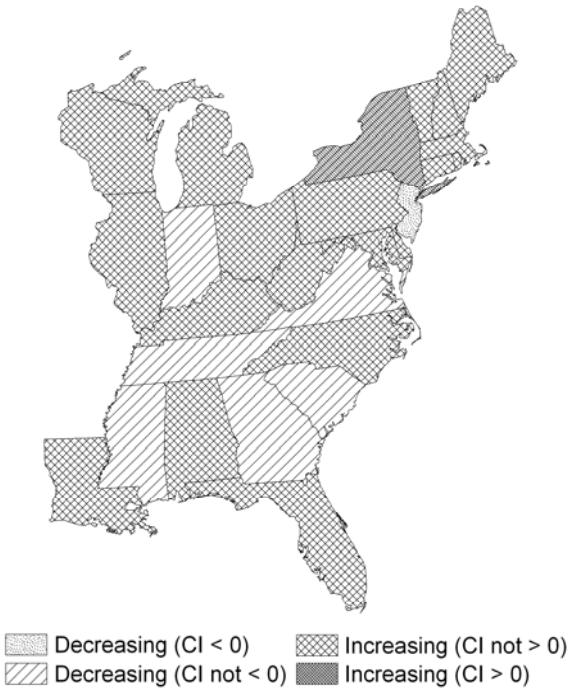

Figure 4. Trend in mourning dove abundance by state in the Eastern Management Unit over the last 10 years (2001–2010) based on CCS-heard data. Credible intervals (CI, 95%) that exclude zero provide evidence for an increasing or decreasing trend.

For the BBS, trends were calculated over the recent 10 years and for all 44 years since survey implementation in 1966. Current year BBS data are not available at the time of publication of this report and consequently these data are one year behind the CCS data. BBS results are presented in Table 3.

We present estimated annual indices of mourning dove abundance during 1966–2010 for management units and states based on CCS-heard data (Table 4) and CCS-seen data (Table 5). From these data, trend (point estimate) in dove abundance can be calculated for any time interval within this time period based on the ratio of the index values in the first and last year of the interval of interest.

CALL-COUNT SURVEY RESULTS

Eastern Management Unit

The EMU includes 27 states comprising 30% of the land area of the contiguous United States. Dove hunting is permitted in 19 states, representing 80% of the land area of the unit (Fig. 2).

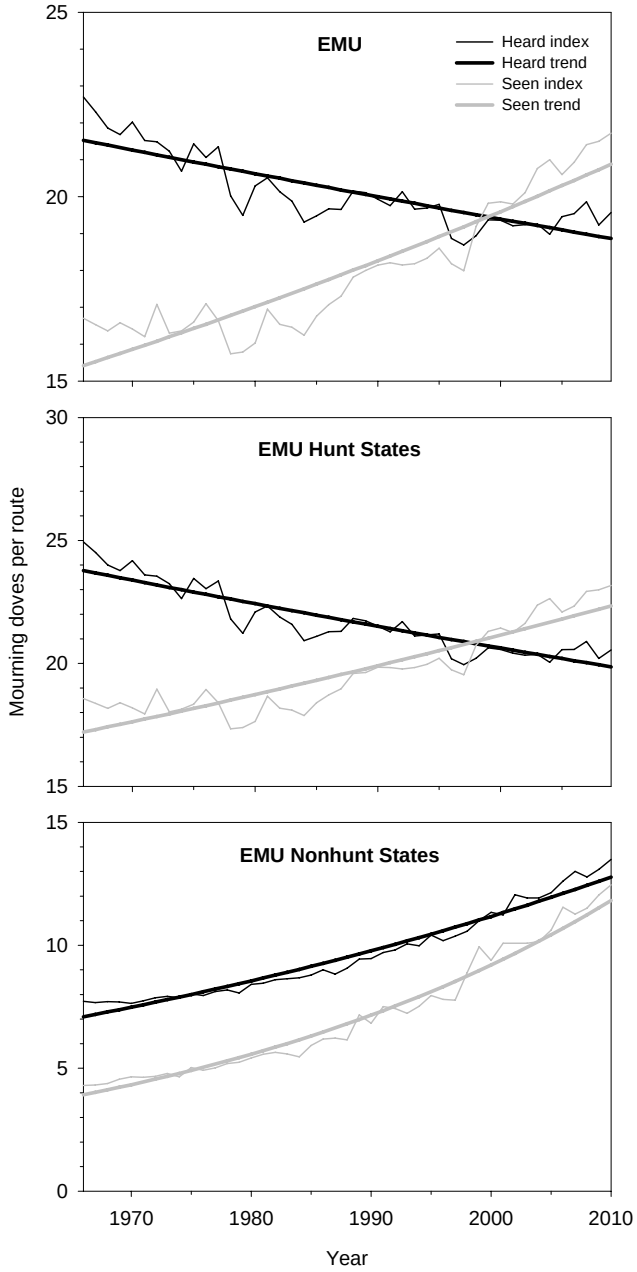

Figure 5. Mourning dove abundance indices and predicted trends in the Eastern Management Unit (EMU), EMU hunt states, and EMU nonhunt states based on CCS data, 1966–2010. Trend lines are exponentiated predicted values from fitting a regression line through the log transformed annual indices.

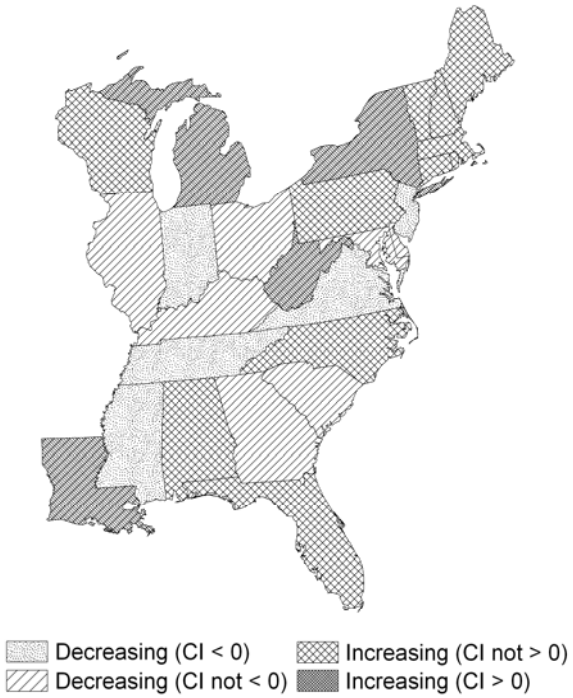

Figure 6. Trend in mourning dove abundance by state in the Eastern Management Unit over the last 45 years (1966–2010) based on CCS-heard data. Credible intervals (CI, 95%) that exclude zero provide evidence for an increasing or decreasing trend.

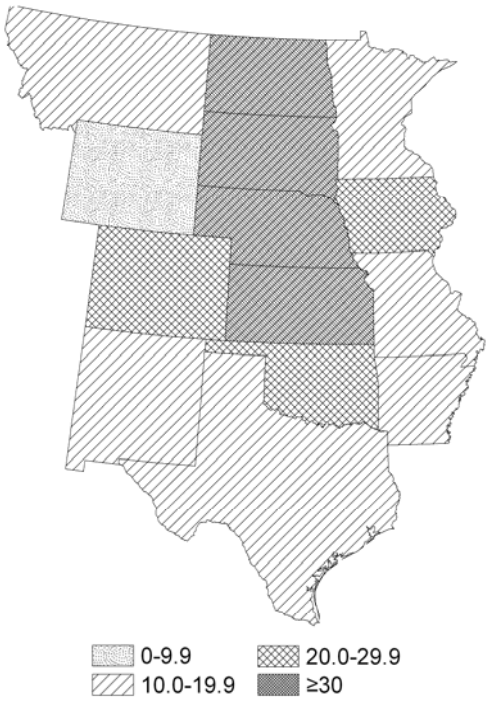

Figure 7. Mourning dove abundance in the Central Management Unit based on the mean of the 2 CCS-heard index values from the last 2 years (2009–2010).

Abundance Indices: 2 year.— Based on the mean of the 2 CCS-heard index values from the last 2 years, North Carolina had the highest annual count in the EMU with a mean of 41 doves per route (Fig. 3). Illinois, Indiana, Ohio, Kentucky, Mississippi, Alabama, Georgia, and South Carolina all had 20–30 doves. The rest of the EMU states had 10–20 doves, with the exception of West Virginia, which had < 10 doves per route.

Abundance Trends: 2 year.— Based on CCS-heard data, there was no evidence that dove abundance changed in the EMU or in EMU hunt and nonhunt states during the recent 2 year interval (Table 1). At the state-level, there was evidence that Wisconsin increased in dove abundance during the last 2 years (Table 1). There was no evidence of change in other EMU states, but the precision of trend estimates was not great during the short 2-year time period (Table 1).

Abundance Trends: 10 and 45 year.— According to CCS-heard data, there was evidence that dove abundance increased in the EMU and EMU nonhunt states over the last 10 years (Table 1). The only EMU states that had evidence of a change in dove abundance during the 10-year time period were New Jersey and New York (Table 1, Fig. 4). The trend decreased in New Jersey and increased in New York.

Considering a 45-year time period, there was evidence that dove abundance decreased in the EMU and in EMU hunt states, but increased in EMU nonhunt states (Table 1, Fig. 5). At the state-level, there was evidence that Michigan, New York, West Virginia, and Louisiana all increased in abundance while Indiana, New Jersey, Virginia, Tennessee, and Mississippi all decreased in abundance during the 45-year time period (Table 1, Fig. 6). There was no evidence of a trend in dove abundance in any of the other EMU states.

Trends in dove abundance from CCS-heard and CCS-seen data were somewhat similar in both the EMU and EMU hunt states during the last 10 years, but opposite in both areas during the last 45 years (Tables 1 and 2, Fig. 5). Results from the two data sets were similar for EMU nonhunt states during both the 10- and 45-year periods (Tables 1 and 2, Fig. 5).

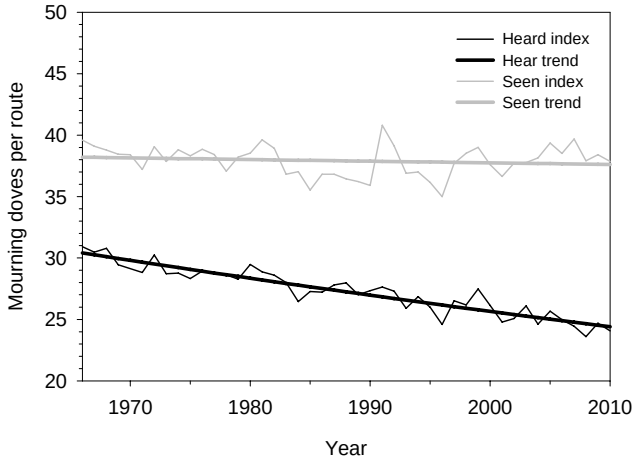

Figure 8. Mourning dove abundance indices and predicted trends in the Central Management Unit based on CCS data, 1966–2010. Trend lines are exponentiated predicted values from fitting a regression line through the log transformed annual indices.

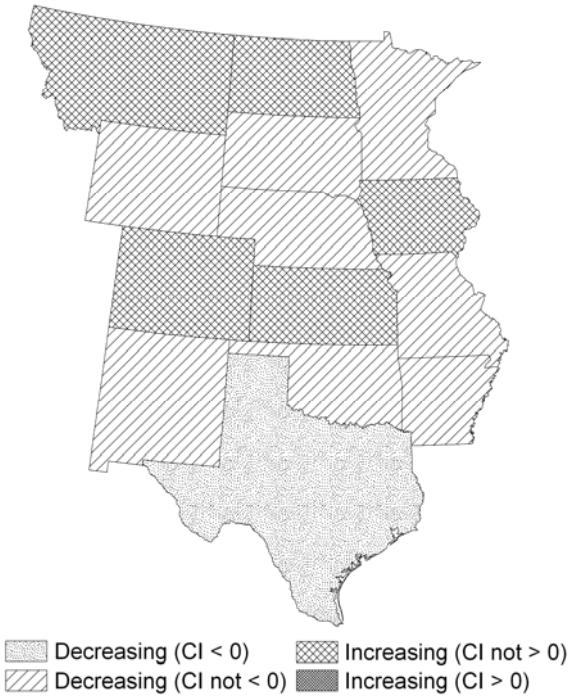

Figure 9. Trend in mourning dove abundance by state in the Central Management Unit over the last 10 years (2001–2010) based on CCS-heard data. Credible intervals (CI, 95%) that exclude zero provide evidence for an increasing or decreasing trend.

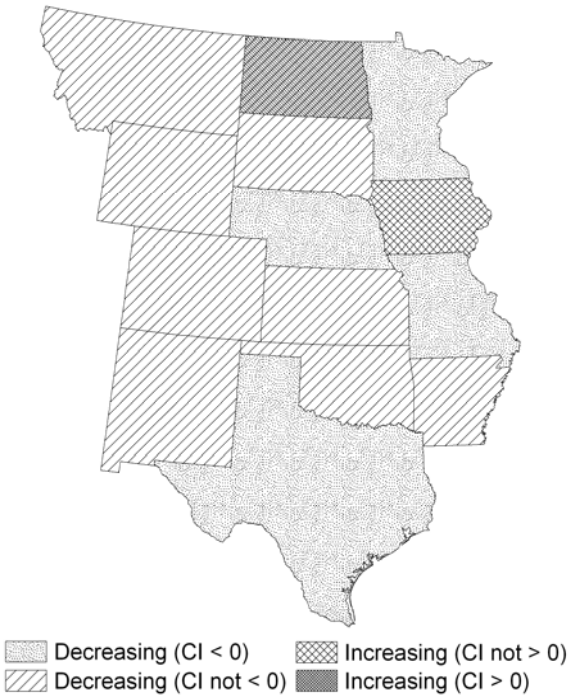

Figure 10. Trend in mourning dove abundance by state in the Central Management Unit over the last 45 years (1966–2010) based on CCS-heard data. Credible intervals (CI, 95%) that exclude zero provide evidence for an increasing or decreasing trend.

Central Management Unit

The CMU consists of 14 states, containing 46% of the land area of the contiguous United States. It has the highest population index of the 3 Units. Within the CMU, dove hunting is permitted in 13 states (Fig. 2).

Abundance Indices: 2 year.— North Dakota, South Dakota, Nebraska, and Kansas had the most doves in the CMU based on the mean of the 2 CCS-heard index values from the last 2 years; values ranged from 44.1–52.1 doves per route (Fig. 7). Other states in the CMU were between 13.9 and 27.8 doves, with the exception of Wyoming, which was the only state in the CMU with less than 10 (7.3) doves per route.

Abundance Trends: 2 year.— There was no evidence that dove abundance changed in the CMU over the last 2 years based on CCS-heard data (Table 1). Also, there was no evidence of change in dove abundance within CMU states, but the precision of trend estimates was not great during the short 2-year time period (Table 1).

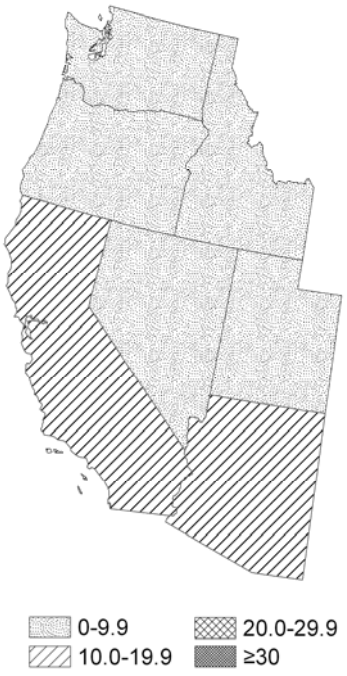

Figure 11. Mourning dove abundance in the Western Management Unit based on the mean of the 2 CCS-heard index values from the last 2 years (2009–2010).

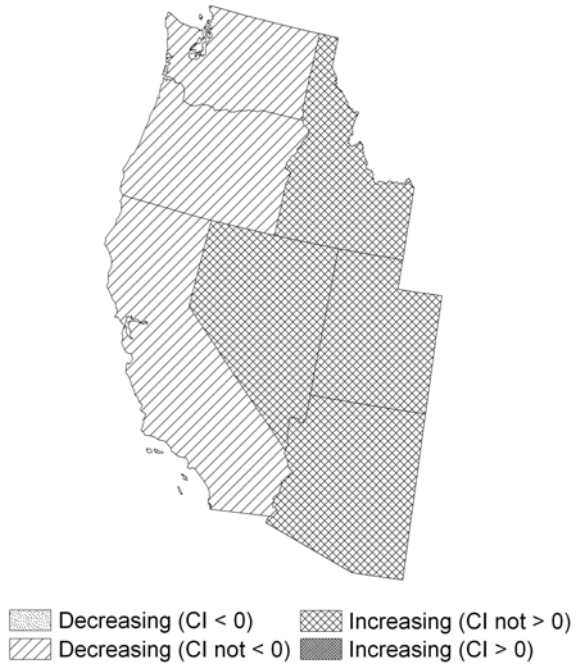

Figure 12. Trend in mourning dove abundance by state in the Western Management Unit over the last 10 years (2001–2010) based on CCS-heard data. Credible intervals (CI, 95%) that exclude zero provide evidence for an increasing or decreasing trend.

Abundance Trends: 10 and 45 year.— According to CCS-heard data in the CMU, there was no evidence that dove abundance changed over the last 10 years, but there was evidence that it decreased over the last 45 years (Table 1, Fig. 8). The only state in the CMU with evidence of a change in the 10 year period was Texas where dove abundance decreased (Table 1, Fig. 9). Considering the 45-year period, North Dakota was the only state that had evidence of an increase in dove abundance (Table 1, Fig. 10). Four states, Minnesota, Nebraska, Missouri, and Texas, had evidence that dove abundance decreased over the 45-year period (Table 1, Fig. 10).

Trends in dove abundance from CCS-heard and CCS-seen data at the CMU level were somewhat similar during the last 10 and 45 years (Tables 1 and 2, Fig. 8).

Western Management Unit

The WMU consists of 7 states and represents 24% of the land area of the contiguous United States. All states within the WMU permit mourning dove hunting (Fig. 2).

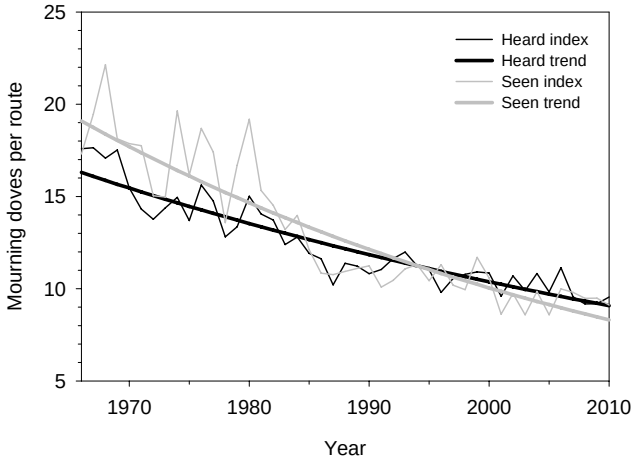

Figure 13. Abundance indices and predicted trends of breeding mourning doves in the Western Management Unit, 1966–2010. Trend lines are exponentiated predicted values from fitting a regression line through the log transformed annual indices.

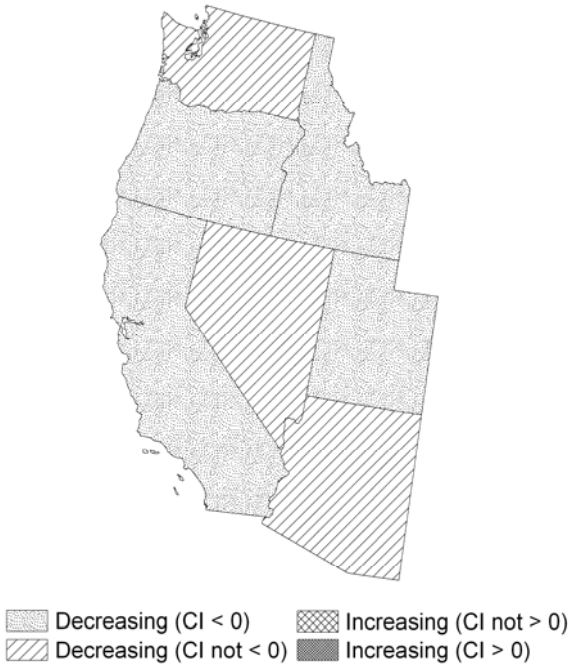

Figure 14. Trend in mourning dove abundance by state in the Western Management Unit over the last 45 years (1966–2010) based on CCS-heard data. Credible intervals (CI, 95%) that exclude zero provide evidence for an increasing or decreasing trend.

Abundance Indices: 2 year.— Based on the mean of the 2 CCS-heard index values from the last 2 years, California and Arizona had the highest number of doves per route in the WMU at 10.2 and 18.1 doves, respectively (Fig. 11). All other states in the WMU had less than 10 doves, and values ranged from 4.1–8.6 doves per route.

Abundance Trends: 2 year.— There was no evidence of a change in dove abundance in the WMU, or within any state in the WMU, during the last 2 years based on CCS-heard data (Table 1). However, the trend in Arizona increased by an estimated 20.4% per year and the credible interval nearly excluded zero (CI = -0.1–45.9). The precision of trend estimates was not great during the short 2-year time period for any state (Table 1).

Abundance Trends: 10 and 45 year.— Based on CCS-heard data, there was no evidence that the abundance of doves changed in the WMU or within any state in the WMU over the last 10 years (Table 1, Fig. 12). Over the last 45 years, however, there was evidence that dove abundance decreased in the WMU (Table 1, Fig. 13). During this time period, Oregon, Idaho, California, and Utah had evidence of a change in dove abundance; it decreased in all four states (Fig. 14).

At the WMU level, CCS trend results for doves heard and doves seen per route were similar during the 10 and 45 year time periods (Tables 1 and 2).

BREEDING BIRD SURVEY RESULTS

Comparisons between BBS and CCS results over the same time periods usually requires evaluation of BBS tables in this report with CCS tables in the previous year's report because current-year BBS data are not available at time of publication. However, this is the first year that results from CCS and BBS assessments using the log-liner hierarchical model were published in an annual report. So although BBS results from this report have the same time period as CCS results from the previous year's report, we caution that the two assessments used different analytical methods. Comparisons of BBS results in this report with CCS results from last year may reflect differences in both survey design and analytical methods. Here we compare 1966–2009 BBS (Table 3) and 1966–2010 CCS (Table 1, doves heard; and Table 2, doves seen) results presented in this report. The time period for these comparisons are off by 1 year, but this should be relatively inconsequential over long time periods (≥ 10 years), especially for time periods of 44 or 45 years where both intervals begin in 1966.

Eastern Management Unit

The BBS provided evidence that dove abundance increased in the EMU and EMU hunt states during the last 10 and 44 years of available data (Table 3). Also, there was evidence that abundance in the EMU nonhunt states increased over the 44 years but there was no evidence of change over the 10 years. Considering the last 10 years of available data, the BBS generally provided similar results to CCS-heard and CCS-seen results (Tables 1–3). But considering the last 44–45 years of available data, BBS results were most consistent with CCS-seen results (Tables 2 and 3). Thus, in the EMU, BBS data were more consistent with CCS-seen data than CCS-heard data, especially over the long term.

Central Management Unit

In the CMU, the BBS provided evidence that doves decreased in abundance over the last 44 years, but provided no evidence that abundance changed over the last 10 years (Table 3). Over the short term, BBS results were consistent with CCS-heard and CCS-seen results, but over the long term, BBS results were most consistent with CCS-heard results (Tables 1–3).

Western Management Unit

The BBS provided evidence that dove abundance decreased in the WMU during both the last 44 and 10 year intervals (Table 3). For the 44-year time period, BBS results are consistent with both the CCS-heard and CCS-seen results (Tables 1–3). However, for the 10-year time period, BBS results were inconsistent with CCS-heard and CCS-seen results, both CCS results provided no evidence of change in dove abundance.

HARVEST SURVEY ESTIMATES

Preliminary results of mourning dove harvest and hunter participation from HIP for the 2008 and 2009 hunting seasons are presented in Tables 6 and 7, respectively. Current (2009) HIP estimates indicate that in the U.S. about 17 million birds were harvested by about 1 million hunters that spent about 3 million days afield. The EMU and CMU total dove harvest represented 44% and 43% of the national harvest of doves while the WMU represented 13% (Table 7). Considering the precision of estimates, mourning dove harvest and hunter participation appeared similar during the 2008 and 2009 seasons (Tables 6 and 7).

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.

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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.

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.

Dolton, D. D., T. A. Sanders, and K. Parker. 2009. Mourning dove population status, 2009. Pages 1–22 in T. A. Sanders, editor. Mourning dove, white-winged dove, and band-tailed pigeon population status, 2009. U.S. Department of the Interior, Fish and Wildlife Service, Division of Migratory Bird Management Washington, D.C., USA.

Fenneman, N. M. 1931. Physiography of western United States. McGraw Hill Book Co., New York. 534 pp.

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.

Link, W. A. and J. R. Sauer. 1994. Estimating equations estimates of trends. Bird Populations 2:23–32.

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. Deprment of the Interior, Fish and Wildlife Service, Resource Publiation 130, Washington, D.C., USA.

McClure, H.E. 1939. Cooing activity and censusing of the mourning dove. Journal of Wildlife Management 3:323–328.

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

Otis, D. L., J. H. Schulz, and D. P. Scott. 2008a. Mourning dove (*Zenaida macroura*) harvest and population parameters derived from a national banding study. U.S. Department of Interior, Fish and Wildlife Service, Biological Technical Publication FWS/BTP-R3010-2008, Washington, D.C., USA.

Otis, D. L., J. H. Schulz, D. A. Miller, R. Mirarchi, and T. Baskett. 2008b. Mourning dove (*Zenaida macroura*). In The Birds of North America, No. 117. (A. Poole and F. Gill, editors.). Philadelphia: The Academy of Natural Sciences; Washington, D.C., USA.

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.

Sauer, J. R., D. D. Dolton, and S. Droege. 1994. Mourning dove population trend estimates from Call-count and North American Breeding Bird Surveys. Journal of Wildlife Management. 58(3):506–515.

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, in press.

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(1):204–214.

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 Call-count Survey **heard** data for management units and states during 45-year (1966–2010), 10-year (2001–2010), and 2-year (2009–2010) periods.

Management Unit	45 year				10 year				2 year			
State	N	Trend	Lower	Upper	N	Trend	Lower	Upper	N	Trend	Lower	Upper
Eastern	614	-0.3	-0.6	-0.1	469	0.4	0.0	0.9	438	2.1	-1.6	6.0
Hunt states	499	-0.4	-0.7	-0.2	398	0.3	-0.2	0.8	372	2.0	-2.0	6.2
AL	47	0.0	-0.5	0.6	32	0.4	-0.9	1.8	28	1.2	-9.1	13.2
DE-MD	20	-0.8	-1.7	0.1	15	0.3	-1.9	2.5	14	-5.1	-22.8	11.3
FL	32	0.2	-0.5	0.8	26	0.8	-1.1	3.0	24	6.7	-9.4	27.3
GA	32	-0.8	-1.5	0.0	23	-0.8	-3.2	1.4	22	-7.2	-24.7	10.9
IL	23	-0.6	-1.7	0.4	21	0.6	-1.6	3.0	20	3.7	-13.6	26.4
IN	18	-1.3	-1.9	-0.7	15	-0.8	-2.6	1.1	15	-1.6	-15.9	14.8
KY	27	-0.1	-0.8	0.6	20	0.2	-1.2	1.7	19	-0.4	-11.2	12.6
LA	25	1.9	1.2	2.7	21	1.8	-0.1	3.5	19	0.7	-11.6	13.7
MS	32	-1.5	-2.1	-0.9	24	-1.3	-2.8	0.1	23	-2.2	-13.1	9.8
NC	25	0.2	-0.3	0.7	22	0.3	-0.9	1.5	21	-0.5	-10.5	9.1
OH	57	-0.3	-0.9	0.3	37	1.6	-0.3	3.6	37	9.9	-5.8	29.3
PA	20	0.4	-0.5	1.3	20	0.8	-1.9	3.4	17	0.9	-19.4	25.1
SC	27	-0.5	-1.1	0.1	21	-0.3	-1.6	1.3	20	1.5	-9.1	15.7
TN	23	-1.9	-2.6	-1.2	15	-1.2	-2.9	0.8	14	-2.7	-17.1	12.5
VA	33	-1.9	-4.3	-0.9	33	-0.9	-2.6	0.9	30	0.5	-12.2	15.6
WI	23	0.7	-0.1	1.5	22	1.5	-1.3	4.3	19	26.9	0.1	63.7
WV	12	1.6	0.7	2.5	11	1.7	-0.2	3.8	10	0.6	-15.9	16.8
Nonhunt states	115	1.2	0.4	1.8	71	2.0	0.9	3.2	66	3.0	-5.4	12.3
MI	23	1.0	0.3	1.6	20	1.4	-0.1	3.2	20	3.0	-9.2	19.0
N. England[b]	76	1.3	-0.2	2.2	42	1.8	-0.1	3.4	40	2.7	-9.8	17.5
NJ	17	-2.6	-3.6	-1.4	10	-2.4	-4.3	0.0	10	-4.6	-22.5	10.2
NY	22	2.3	1.5	3.1	19	2.8	1.2	4.5	16	3.9	-8.1	18.8
Central	554	-0.6	-0.7	-0.4	420	-0.3	-0.9	0.3	389	-2.5	-7.1	2.4
AR	21	-0.7	-1.5	0.2	18	-0.6	-2.4	1.2	15	-0.9	-15.4	14.9
CO	21	-0.4	-1.3	0.5	16	0.2	-2.7	3.3	16	-11.3	-32.4	13.5
IA	19	0.2	-0.5	0.9	17	1.1	-0.8	3.5	16	0.6	-15.7	19.6
KS	36	-0.3	-0.8	0.3	28	0.3	-1.2	2.4	26	-3.8	-18.2	9.9
MN	14	-1.3	-2.0	-0.5	13	-1.1	-2.7	1.1	11	-0.8	-14.1	16.6
MO	28	-2.4	-3.0	-1.7	20	-1.2	-3.1	1.3	20	5.2	-10.6	28.9
MT	32	-0.9	-1.9	0.1	25	1.0	-2.5	4.7	22	-8.1	-32.9	24.7
NE	29	-0.8	-1.3	-0.3	25	-0.5	-1.5	0.7	24	-0.2	-8.6	9.5
NM	31	-0.1	-0.8	0.7	28	-0.1	-2.9	2.8	26	-3.8	-23.5	20.6
ND	32	0.9	0.1	1.6	29	0.9	-1.3	3.2	26	9.1	-9.3	32.6
OK	25	-0.6	-1.5	0.3	16	-0.8	-3.4	2.0	16	-4.8	-25.1	18.3
SD	29	-0.4	-1.1	0.2	22	-0.5	-1.9	0.7	21	-2.3	-12.4	7.3
TX	209	-0.7	-1.1	-0.4	140	-2.0	-3.2	-0.9	132	-4.5	-13.2	5.0
WY	28	-0.5	-1.6	0.6	23	-0.2	-2.4	2.4	18	-1.1	-19.5	17.5
Western	286	-1.3	-1.7	-1.1	211	0.0	-1.2	1.1	178	3.9	-5.6	14.3
AZ	72	-0.6	-1.1	0.0	55	0.7	-1.5	3.0	40	20.4	-0.1	45.9
CA	89	-2.0	-2.6	-1.5	63	-1.2	-3.0	0.7	56	-0.8	-15.4	16.0
ID	29	-1.4	-2.3	-0.5	23	0.4	-2.7	4.0	21	11.0	-13.2	45.6
NV	38	-0.6	-1.8	0.7	25	1.0	-4.0	6.3	22	-23.9	-50.0	14.8
OR	26	-1.7	-2.7	-0.8	23	-1.3	-4.5	1.9	20	-12.0	-35.0	17.1
UT	20	-1.7	-2.7	-0.8	16	0.2	-2.6	3.4	15	0.8	-24.3	27.5
WA	12	-0.7	-2.3	1.0	6	-0.2	-4.3	3.6	4	0.6	-32.6	40.4

[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. Estimated trend[a] (percent change per year and lower and upper 95% credible intervals) in mourning dove abundance based on Call-count Survey **seen** data for management units and states during 45-year (1966–2010), 10-year (2001–2010), and 2-year (2009–2010) periods.

Management Unit	45 year				10 year				2 year			
State	N	Trend	Lower	Upper	N	Trend	Lower	Upper	N	Trend	Lower	Upper
Eastern	613	0.6	0.4	0.9	469	1.3	0.7	2.0	438	2.7	-2.1	7.7
Hunt states	498	0.6	0.3	0.8	398	1.3	0.6	1.9	372	2.6	-2.3	7.8
AL	47	0.4	-0.5	1.4	32	1.2	-0.6	3.5	28	0.1	-14.1	16.1
DE-MD	20	0.9	-0.3	2.2	15	1.5	-2.2	5.5	14	5.6	-18.8	42.3
FL	32	2.9	1.9	3.8	26	1.0	-2.6	4.1	24	-7.6	-29.7	19.2
GA	32	-0.8	-1.6	0.0	23	-0.5	-2.2	1.6	22	-2.6	-17.4	12.8
IL	23	0.5	-1.1	1.7	21	1.8	-1.1	5.0	20	10.5	-12.9	43.3
IN	18	-1.2	-2.2	-0.3	15	-0.7	-3.2	2.0	15	8.0	-11.9	38.9
KY	26	0.9	-0.1	1.9	20	1.2	-1.2	3.7	19	1.8	-16.8	27.2
LA	25	2.4	1.3	3.5	21	2.9	0.5	5.2	19	1.4	-15.0	19.0
MS	32	-1.4	-2.3	-0.5	24	-0.8	-3.0	1.5	23	-5.8	-23.6	11.4
NC	25	0.4	-0.4	1.1	22	0.7	-0.8	2.4	21	0.9	-10.5	14.3
OH	57	1.4	0.6	2.3	37	1.1	-1.3	3.6	37	9.1	-10.6	34.1
PA	20	2.1	0.9	3.3	20	2.3	0.1	4.5	17	5.2	-9.7	29.9
SC	27	0.9	0.2	1.7	21	1.2	-0.5	3.4	20	1.0	-14.3	18.3
TN	23	0.1	-0.7	0.9	15	0.6	-1.5	2.5	14	0.0	-16.0	15.7
VA	33	-0.3	-1.3	0.8	33	1.1	-1.2	4.0	30	-0.5	-16.1	16.2
WI	23	3.1	2.0	4.1	22	5.2	1.8	9.4	19	21.9	-8.4	68.6
WV	12	3.0	1.4	4.4	11	2.0	-3.1	6.3	10	0.9	-32.3	46.7
Nonhunt states	115	2.4	1.3	3.2	71	2.4	0.2	4.6	66	3.2	-11.9	25.7
MI	23	2.5	1.6	3.3	20	2.1	-0.5	4.2	20	0.1	-17.5	18.9
N. England[b]	76	2.1	0.4	3.2	42	2.9	0.8	5.2	40	3.6	-12.1	24.8
NJ	17	-0.6	-2.0	0.9	10	-0.1	-2.7	2.7	10	-2.6	-22.7	19.0
NY	22	4.3	3.0	5.6	19	2.3	-1.6	6.3	16	3.1	-22.4	50.6
Central	553	-0.1	-0.4	0.2	420	0.4	-0.3	1.0	389	-1.4	-6.4	3.7
AR	21	-0.5	-1.5	0.6	18	-0.4	-2.4	2.0	15	0.6	-15.2	21.4
CO	21	-0.5	-1.7	0.6	16	0.3	-2.5	3.4	16	-5.9	-26.4	19.8
IA	19	0.6	-0.2	1.5	17	1.2	-0.8	3.5	16	-1.0	-19.1	16.2
KS	36	0.1	-0.7	0.8	28	1.0	-0.5	3.1	26	0.3	-13.1	14.5
MN	14	-1.5	-2.7	-0.4	13	-0.8	-3.6	2.8	11	4.5	-16.8	41.7
MO	28	-1.9	-2.7	-1.1	20	-1.7	-3.4	0.2	20	-3.5	-18.3	11.1
MT	32	0.2	-0.9	1.4	25	1.3	-1.7	4.9	22	-6.8	-33.2	17.9
NE	29	0.0	-0.7	0.7	25	0.5	-1.0	2.4	24	0.2	-12.5	15.1
NM	31	-0.3	-1.3	0.7	28	1.5	-2.1	5.2	26	-10.3	-33.9	19.2
ND	32	0.4	-0.5	1.3	29	-0.2	-3.0	2.5	26	-2.7	-22.6	21.5
OK	25	0.0	-0.9	1.0	16	0.2	-2.0	2.4	16	0.4	-16.4	21.8
SD	29	-0.1	-0.9	0.8	22	-0.5	-2.6	1.3	21	-2.8	-19.1	12.8
TX	209	0.5	0.1	1.0	140	0.4	-0.9	1.7	132	-0.5	-10.5	10.7
WY	27	-3.8	-5.3	-2.4	23	-3.6	-8.1	0.8	18	-8.2	-36.7	30.6
Western	281	-1.4	-1.9	-1.0	211	0.6	-1.0	2.4	178	-3.8	-16.4	11.5
AZ	72	0.2	-0.6	1.1	55	3.1	-0.4	6.8	40	38.2	3.9	85.1
CA	88	-2.5	-3.2	-1.8	63	-2.9	-5.2	-0.8	56	-12.7	-29.5	6.3
ID	29	-0.2	-1.3	1.0	23	4.0	-0.4	8.4	21	1.3	-26.9	43.4
NV	37	-0.2	-2.6	2.0	25	2.7	-4.4	12.8	22	-16.6	-54.9	81.2
OR	25	-2.0	-3.2	-0.8	23	-0.1	-3.6	4.5	20	-12.6	-39.0	21.9
UT	20	-2.8	-4.2	-1.2	16	0.0	-6.1	6.7	15	-49.7	-70.3	-16.3
WA	10	0.4	-2.7	3.4	6	2.3	-7.7	11.2	4	8.2	-50.7	136.0

[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 3. Estimated trend[a] (percent change per year and lower and upper 95% credible intervals) in mourning dove abundance based on Breeding Bird Survey **heard and seen** data for management units and states during 44-year (1966–2009) and 10-year (2000–2009) periods.

Management Unit	44 year				10 year			
State	N	Trend	Lower	Upper	N	Trend	Lower	Upper
Eastern	1,702	0.6	0.5	0.7	1,443	0.6	0.3	0.9
Hunt states	1,299	0.5	0.4	0.6	1,110	0.7	0.3	1.1
AL	105	-0.6	-1.0	-0.1	93	1.1	-0.2	2.5
DE-MD	81	0.3	0.0	0.6	69	-0.2	-1.3	0.8
FL	91	2.4	1.7	3.0	76	0.2	-1.4	1.7
GA	85	-0.5	-0.9	0.0	75	0.3	-0.8	1.8
IL	102	0.7	0.2	1.2	101	0.5	-0.8	1.8
IN	63	0.0	-0.5	0.4	57	0.5	-1.1	2.0
KY	60	0.9	0.5	1.4	44	1.2	-0.2	2.8
LA	87	2.3	1.7	3.0	64	1.5	-0.4	3.1
MS	48	-0.4	-1.1	0.4	39	-0.2	-1.7	1.6
NC	91	0.5	0.0	0.9	78	1.0	0.1	2.1
OH	78	1.2	0.7	1.7	59	0.6	-1.0	2.1
PA	126	1.7	1.3	2.1	102	1.4	0.2	2.5
SC	40	0.0	-0.5	0.6	33	0.5	-0.9	1.9
TN	31	-0.2	-0.8	0.4	27	0.0	-1.3	1.2
VA	57	-0.1	-0.6	0.3	49	0.1	-0.9	1.1
WI	96	1.7	1.2	2.2	93	1.7	0.3	3.1
WV	58	4.4	3.7	5.1	51	1.7	-0.6	3.8
Nonhunt states	403	1.6	1.3	1.8	333	0.0	-0.6	0.6
MI	87	1.4	0.9	1.9	69	0.8	-0.6	2.2
N. England[b]	161	2.2	1.7	2.7	139	-0.8	-2.1	0.5
NJ	34	0.6	-0.1	1.3	25	0.4	-1.1	1.7
NY	121	1.6	1.2	2.1	100	-0.5	-1.9	0.9
Central	1,103	-0.5	-0.7	-0.3	992	-0.1	-0.6	0.3
AR	36	0.1	-0.6	0.8	31	0.7	-1.5	2.9
CO	139	0.1	-0.4	0.7	133	-0.1	-1.4	1.3
IA	39	0.4	-0.1	0.9	34	1.1	-0.4	2.9
KS	64	-0.2	-0.8	0.4	62	-0.3	-1.9	1.3
MN	76	-0.9	-1.4	-0.3	71	-1.2	-2.7	0.3
MO	66	-1.6	-2.1	-1.1	53	-1.4	-2.5	0.0
MT	55	-0.7	-1.4	0.0	53	-0.4	-2.0	1.5
NE	49	-0.1	-0.6	0.5	47	0.9	-0.4	2.7
NM	80	-0.9	-1.8	0.0	65	-0.9	-2.7	1.1
ND	47	0.4	-0.3	1.0	42	-0.3	-2.0	1.5
OK	62	-1.6	-2.1	-1.1	55	-1.4	-2.9	0.1
SD	58	0.0	-0.5	0.6	55	0.3	-1.6	2.2
TX	215	-0.9	-1.2	-0.6	194	-0.2	-1.3	0.8
WY	117	-0.9	-1.7	-0.1	97	0.5	-1.1	2.2
Western	646	-1.2	-1.8	-0.7	531	-1.1	-2.1	-0.1
AZ	82	-1.2	-1.9	-0.3	65	-0.8	-2.7	1.2
CA	240	-0.5	-1.0	0.0	184	0.2	-1.4	1.9
ID	46	-0.5	-1.5	0.4	42	1.4	-1.0	4.0
NV	42	-2.4	-3.5	-1.2	32	-7.1	-10.6	-3.2
OR	110	-1.9	-2.9	-0.9	90	-3.2	-5.9	-0.3
UT	100	-1.3	-2.2	-0.4	93	-2.4	-4.3	-0.6
WA	26	0.3	-1.2	1.7	25	1.6	-2.2	5.3

[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 4. Estimated annual abundance indices[a] of mourning doves based on Call-count Survey **heard** data for management units and states, 1966–2010.

Management Unit	Year									
State	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Eastern	22.7	22.3	21.9	21.7	22.0	21.5	21.5	21.2	20.7	21.4
Hunt states	24.9	24.5	24.0	23.8	24.2	23.6	23.5	23.2	22.6	23.5
AL	24.4	24.6	23.5	23.9	24.0	23.1	24.3	23.9	22.9	24.2
DE-MD	22.6	22.7	19.5	19.9	20.6	20.9	19.9	20.2	21.1	18.7
FL	10.6	10.8	10.4	10.4	11.6	10.4	11.2	11.4	11.2	12.2
GA	30.4	30.5	28.8	30.3	32.4	28.8	28.2	29.9	29.6	30.7
IL	34.3	32.3	33.9	31.8	32.3	30.8	30.8	29.6	28.0	31.0
IN	45.6	44.1	43.7	42.4	41.5	44.0	42.8	42.1	40.8	39.9
KY	28.4	27.8	27.7	27.9	28.2	28.1	27.7	27.6	28.3	27.4
LA	5.8	5.9	5.7	6.0	5.9	6.1	6.2	6.1	6.4	6.6
MS	39.8	37.8	36.7	36.7	35.8	35.6	35.9	34.7	32.1	32.7
NC	36.7	35.8	36.0	35.9	36.1	35.9	35.6	36.6	35.5	35.2
OH	25.8	24.3	24.1	25.1	29.0	27.0	26.4	22.7	23.8	31.0
PA	9.6	10.1	9.6	9.5	8.6	8.6	9.0	8.4	8.7	8.5
SC	35.5	35.6	35.2	35.3	34.7	34.3	33.5	33.8	33.1	32.9
TN	36.0	33.9	33.3	32.4	33.6	30.2	33.0	30.0	28.9	27.8
VA	33.0	30.8	30.4	28.8	29.2	28.0	24.9	25.6	26.5	26.2
WI	14.8	17.9	16.7	14.9	14.1	16.0	16.9	16.9	14.8	16.1
WV	3.8	3.8	3.8	3.9	4.0	4.0	4.2	4.1	4.2	4.2
Nonhunt states	7.7	7.7	7.7	7.7	7.6	7.7	7.9	7.9	7.9	8.0
MI	11.5	11.7	11.0	11.4	11.4	12.2	12.2	11.9	11.9	12.1
N. England[b]	6.3	6.3	6.3	6.3	6.1	6.3	6.5	6.6	6.5	6.6
NJ	34.0	32.5	32.2	31.2	30.8	30.1	29.4	28.5	27.7	26.6
NY	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.8	6.9	7.4
Central	30.9	30.5	30.8	29.5	29.1	28.8	30.2	28.7	28.8	28.3
AR	20.4	20.3	20.1	20.0	19.7	19.8	19.8	19.6	19.4	19.2
CO	27.5	30.3	27.3	28.1	29.2	25.9	28.5	26.1	27.0	24.4
IA	25.6	25.9	25.5	24.3	22.1	23.9	25.4	25.4	23.0	23.7
KS	57.8	58.3	57.9	57.4	57.7	56.6	57.8	56.5	55.5	54.0
MN	29.1	28.8	28.7	27.2	26.2	27.2	26.9	25.8	25.9	26.1
MO	44.3	42.2	43.1	36.4	38.1	37.0	40.2	35.7	32.1	33.5
MT	19.8	20.3	17.3	19.4	17.1	18.8	17.6	14.2	15.5	18.0
NE	64.9	63.9	64.6	63.8	63.0	62.0	61.3	60.6	60.2	59.4
NM	14.4	11.1	14.5	12.7	12.6	12.0	14.0	12.7	12.2	14.8
ND	31.1	32.9	38.6	32.5	31.2	32.3	33.3	37.4	37.3	34.3
OK	35.0	39.0	40.1	38.0	35.1	34.6	34.9	33.9	35.8	35.6
SD	52.9	50.2	51.5	50.5	51.0	50.1	50.1	50.6	51.6	50.5
TX	25.9	23.6	24.4	22.3	23.2	22.6	26.9	24.0	24.5	22.1
WY	9.0	9.1	8.6	8.8	8.9	8.4	8.3	8.4	8.5	8.5
Western	17.6	17.6	17.1	17.5	15.5	14.3	13.8	14.4	15.0	13.7
AZ	25.6	26.5	23.8	26.4	21.3	16.7	16.3	24.0	22.1	21.3
CA	25.7	25.2	23.1	24.9	23.6	22.4	22.2	21.6	23.0	19.7
ID	16.5	16.2	14.9	15.5	14.8	12.9	12.8	12.7	12.7	12.1
NV	4.6	4.5	12.4	8.8	7.0	4.2	5.5	3.0	5.2	3.6
OR	12.1	10.6	10.5	10.7	8.7	8.3	8.2	9.0	9.8	9.1
UT	18.6	21.2	15.3	15.9	14.6	20.0	15.2	13.2	14.0	14.5
WA	6.3	6.3	6.0	5.9	5.9	5.8	5.6	5.6	5.5	5.6

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 4. Continued.

Management Unit	Year									
State	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Eastern	21.1	21.3	20.0	19.5	20.3	20.5	20.1	19.9	19.3	19.5
Hunt states	23.0	23.4	21.8	21.2	22.1	22.3	21.9	21.6	20.9	21.1
AL	24.0	24.5	25.0	25.1	25.2	25.3	25.4	25.8	24.0	25.7
DE-MD	19.1	20.7	19.3	19.3	20.0	20.0	20.2	17.9	18.2	19.2
FL	11.5	12.2	11.3	10.9	10.4	10.6	11.4	11.3	10.0	10.8
GA	26.7	27.0	27.6	26.4	27.8	28.2	28.1	27.1	26.6	27.0
IL	31.2	31.4	27.8	26.1	26.4	28.1	28.1	28.7	25.9	25.7
IN	40.7	40.6	33.9	33.6	35.9	36.8	34.9	31.8	32.2	30.7
KY	26.8	27.6	27.4	26.9	26.2	27.0	27.2	26.7	26.8	27.0
LA	6.7	6.6	7.0	6.8	7.5	7.6	7.6	7.7	7.8	7.7
MS	32.7	32.2	33.0	31.4	31.2	30.4	31.4	30.2	27.8	29.1
NC	35.4	37.3	36.1	36.4	36.9	36.2	36.7	36.5	37.0	37.0
OH	28.2	27.5	16.5	17.3	18.6	19.1	19.9	20.3	20.9	19.8
PA	8.4	8.4	8.4	8.7	8.9	9.5	9.5	9.3	9.1	9.4
SC	32.6	32.5	32.8	32.3	33.2	32.9	33.3	32.4	31.6	31.4
TN	28.1	28.3	28.2	25.7	25.9	25.0	25.5	24.0	23.3	23.7
VA	25.0	26.4	24.3	23.2	22.4	21.9	21.1	21.0	20.5	20.2
WI	17.7	17.9	14.5	13.4	19.8	20.9	13.2	14.6	13.6	13.5
WV	4.3	4.4	4.6	4.7	4.7	4.8	4.9	4.9	5.0	5.1
Nonhunt states	8.0	8.1	8.2	8.1	8.4	8.5	8.6	8.6	8.7	8.8
MI	12.3	12.3	12.5	12.2	13.0	13.2	13.0	13.0	13.3	13.3
N. England[b]	6.7	6.9	7.0	6.8	7.2	7.3	7.4	7.3	7.5	7.6
NJ	26.1	25.7	24.7	24.3	23.4	22.2	22.2	22.3	20.2	20.0
NY	7.3	7.4	7.6	7.6	8.0	8.1	8.3	8.6	8.7	8.9
Central	28.9	28.8	28.6	28.3	29.5	28.9	28.6	28.0	26.5	27.3
AR	19.5	18.5	18.0	17.5	18.2	18.3	18.5	17.6	17.0	16.6
CO	26.2	27.2	30.8	28.1	30.7	29.8	30.0	23.5	26.3	26.8
IA	24.8	24.3	25.2	22.9	25.9	26.5	23.9	22.1	23.7	24.8
KS	55.7	54.7	52.9	56.3	57.3	57.1	56.3	56.6	53.9	56.9
MN	25.6	25.9	25.3	25.0	24.9	24.7	23.9	23.5	22.3	22.2
MO	32.4	32.5	29.9	28.2	31.2	28.6	27.4	27.3	25.8	24.1
MT	14.6	17.7	16.6	16.0	15.9	16.2	18.2	20.3	15.3	16.0
NE	59.7	59.2	58.1	57.3	58.4	57.8	56.5	55.8	55.2	55.1
NM	13.8	13.4	13.6	10.4	12.7	13.4	10.6	13.7	15.1	13.9
ND	47.5	41.6	44.7	42.5	47.3	47.6	47.2	45.1	35.6	44.7
OK	36.5	42.7	37.0	31.8	32.5	31.3	35.6	35.5	29.6	30.0
SD	50.4	49.6	50.0	49.6	49.5	48.8	49.9	49.1	49.4	48.5
TX	22.7	20.9	21.6	24.9	25.3	23.4	22.5	21.0	19.9	21.3
WY	8.5	7.9	8.1	8.2	8.0	8.0	8.4	8.0	8.0	8.1
Western	15.6	14.7	12.8	13.4	15.0	14.1	13.7	12.4	12.8	11.9
AZ	24.4	19.6	22.8	26.3	22.8	23.2	23.6	23.7	23.1	22.9
CA	22.3	20.1	19.0	16.9	20.3	18.8	20.5	16.0	17.2	15.1
ID	13.4	15.8	11.0	11.1	12.0	11.9	12.1	10.9	11.6	11.1
NV	6.9	7.7	3.9	4.8	11.5	6.0	4.3	3.6	2.5	3.5
OR	8.9	9.3	6.9	6.7	8.5	8.1	7.9	6.6	7.5	7.5
UT	15.4	15.1	10.3	12.6	12.2	15.0	10.8	12.0	13.7	10.1
WA	5.4	5.5	5.0	5.4	5.0	5.0	5.2	4.9	4.8	4.8

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 4. Continued.

Management Unit	Year									
State	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Eastern	19.7	19.7	20.1	20.1	19.9	19.8	20.1	19.7	19.7	19.8
Hunt states	21.3	21.3	21.8	21.7	21.5	21.3	21.7	21.1	21.2	21.2
AL	24.7	24.2	25.1	23.5	23.6	23.5	24.0	24.5	24.7	25.1
DE-MD	21.0	17.8	17.8	18.9	16.9	18.7	19.2	16.6	17.4	17.9
FL	11.3	10.9	11.6	11.6	12.2	11.6	12.1	11.0	10.9	11.6
GA	25.9	26.0	25.2	24.8	25.8	24.5	27.3	24.1	23.6	25.1
IL	27.7	28.6	29.2	28.9	29.4	28.5	28.8	27.4	27.9	29.5
IN	32.7	32.1	34.0	31.7	31.8	31.6	30.9	30.7	31.6	29.7
KY	26.5	26.8	27.0	27.9	26.6	26.7	26.3	26.7	26.7	26.4
LA	7.9	8.4	8.3	8.9	8.6	9.1	9.5	9.2	9.6	9.9
MS	28.8	27.6	28.4	27.8	26.6	25.1	26.4	26.6	25.5	25.1
NC	36.9	37.7	37.4	37.9	37.0	37.2	37.2	38.0	38.0	38.4
OH	20.5	21.2	23.2	23.3	23.4	24.2	24.2	21.6	24.4	22.4
PA	9.4	9.9	9.1	9.4	9.7	9.9	10.2	10.6	10.0	10.5
SC	30.7	32.2	31.0	31.1	31.3	30.4	30.1	29.7	30.0	28.8
TN	22.3	22.9	22.4	21.6	21.3	21.3	20.2	20.2	20.8	19.5
VA	19.4	19.5	18.5	18.5	17.3	17.2	16.7	16.8	16.6	16.8
WI	15.2	13.8	18.0	18.6	17.5	17.6	19.0	17.7	16.1	15.4
WV	5.1	5.3	5.4	5.5	5.7	5.8	5.7	5.9	6.0	6.1
Nonhunt states	9.0	8.8	9.1	9.4	9.5	9.7	9.8	10.1	10.0	10.4
MI	13.9	13.9	14.5	15.0	14.6	14.3	14.4	14.7	14.7	14.9
N. England[b]	7.9	7.5	7.9	8.3	8.4	8.5	8.7	9.0	8.7	9.3
NJ	20.1	19.4	18.8	18.5	17.9	17.6	16.6	16.9	16.2	15.7
NY	9.0	9.2	9.4	9.8	9.8	10.3	10.4	10.5	10.8	11.2
Central	27.2	27.8	28.0	27.0	27.3	27.6	27.3	25.9	26.8	26.0
AR	17.1	17.1	16.9	17.7	17.0	16.7	17.1	17.0	16.9	16.7
CO	24.0	30.0	28.4	28.0	27.8	25.4	25.5	24.0	28.8	27.7
IA	25.3	23.5	25.5	26.0	26.4	23.8	27.4	25.3	25.6	24.9
KS	51.2	52.9	54.9	52.7	52.0	55.9	54.5	49.5	53.0	56.0
MN	22.2	22.4	22.4	21.5	20.8	21.2	20.6	19.8	20.1	19.9
MO	24.7	23.8	24.9	24.4	23.3	22.3	22.7	21.4	22.5	21.3
MT	17.6	16.6	17.5	17.3	18.2	14.3	14.4	12.1	12.2	12.5
NE	53.5	52.6	53.1	52.4	52.2	51.9	51.6	50.8	50.1	50.6
NM	14.2	16.5	13.7	12.8	15.1	12.9	10.9	11.7	12.5	12.7
ND	46.9	52.1	49.1	52.7	49.7	54.1	53.3	48.7	44.1	44.0
OK	29.3	30.4	31.4	26.8	31.4	29.9	31.1	29.0	31.8	30.3
SD	47.8	46.8	47.8	48.2	48.3	48.0	47.2	46.5	46.5	46.4
TX	22.7	21.6	22.7	19.8	20.2	25.1	23.9	23.4	24.8	20.7
WY	8.1	7.8	7.5	7.5	7.8	7.4	7.8	7.4	7.6	7.4
Western	11.6	10.2	11.4	11.2	10.8	11.0	11.6	12.0	11.2	11.0
AZ	21.2	16.5	16.6	18.7	16.3	20.6	24.1	26.2	21.1	21.9
CA	15.6	13.6	15.1	14.1	15.0	13.5	14.0	14.4	13.9	13.0
ID	9.6	10.0	11.5	10.6	12.0	11.5	10.0	9.9	10.1	9.4
NV	2.7	2.7	5.1	4.0	2.2	3.1	3.1	2.8	2.8	4.7
OR	7.3	6.8	7.2	6.7	7.8	6.4	6.3	6.5	7.1	6.5
UT	12.1	11.0	12.0	12.7	10.7	10.6	11.3	10.8	11.5	9.2
WA	4.9	5.0	5.0	4.9	5.1	4.8	4.9	4.8	4.8	5.0

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 4. Continued.

Management Unit	Year									
State	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Eastern	18.9	18.7	18.9	19.4	19.4	19.2	19.2	19.3	19.0	19.5
Hunt states	20.2	20.0	20.2	20.6	20.6	20.4	20.3	20.4	20.0	20.6
AL	23.7	23.5	24.0	23.8	24.2	23.9	24.7	23.6	23.9	24.2
DE-MD	16.5	15.4	16.6	15.5	15.2	15.3	15.0	15.7	16.2	15.8
FL	11.2	11.5	12.0	12.6	11.6	10.7	11.4	10.9	11.4	10.9
GA	22.5	21.8	21.1	21.7	20.1	22.9	19.4	21.2	20.3	21.5
IL	26.0	25.3	25.4	24.9	27.3	25.3	25.9	26.8	25.0	27.2
IN	28.9	28.2	27.8	27.8	27.3	27.3	25.8	26.0	25.9	27.0
KY	26.1	26.1	26.4	26.8	26.8	26.6	26.6	26.8	26.1	26.3
LA	9.9	10.1	10.7	11.0	11.4	11.9	11.6	12.2	12.2	12.6
MS	24.1	23.4	23.4	23.9	23.4	22.7	21.9	22.2	20.7	20.9
NC	39.0	38.4	38.6	39.0	39.1	39.7	40.3	39.2	39.3	39.3
OH	18.9	19.6	21.4	21.5	20.8	19.6	20.7	20.9	19.7	19.7
PA	10.6	10.0	10.4	10.1	11.0	10.7	11.2	10.4	10.5	10.6
SC	29.3	29.0	29.3	29.6	28.9	28.7	28.9	28.1	28.1	27.7
TN	18.9	18.9	18.5	18.3	18.0	16.9	16.8	16.7	16.3	15.7
VA	15.6	16.1	15.8	16.0	15.8	15.2	15.1	13.9	14.0	14.3
WI	14.6	13.8	13.6	17.5	16.9	17.8	17.2	18.4	18.7	20.5
WV	5.9	6.2	6.3	6.5	6.5	6.6	6.8	6.6	7.0	7.0
Nonhunt states	10.2	10.4	10.6	11.0	11.3	11.2	12.1	11.9	11.9	12.1
MI	15.0	15.0	15.7	16.0	16.3	15.8	17.0	16.5	16.2	17.2
N. England[b]	8.8	9.0	9.2	9.6	9.8	9.7	10.8	10.4	10.3	10.3
NJ	15.5	14.6	14.6	13.9	13.8	13.1	13.0	12.6	12.2	12.0
NY	11.3	11.6	11.9	12.5	13.0	13.1	13.5	13.8	14.0	14.5
Central	24.6	26.5	26.2	27.5	26.1	24.8	25.1	26.1	24.6	25.7
AR	16.7	16.8	16.6	16.6	16.0	16.0	15.4	16.1	15.7	15.7
CO	21.7	28.9	24.9	31.2	26.1	22.6	23.7	23.0	23.5	22.4
IA	28.7	26.5	26.5	25.7	26.2	25.1	25.3	28.3	27.4	27.1
KS	48.5	55.9	53.8	57.2	52.6	49.4	51.2	53.3	51.1	54.9
MN	19.4	19.7	19.0	18.4	18.4	17.8	18.3	17.3	17.5	17.0
MO	20.3	20.1	18.8	18.2	18.0	16.8	16.5	17.3	16.2	16.1
MT	13.2	13.7	15.2	16.8	16.4	12.2	14.4	14.3	14.6	13.2
NE	49.7	48.0	49.2	48.6	47.8	46.8	46.2	47.2	46.4	46.0
NM	10.9	14.3	12.6	14.1	13.1	14.1	11.8	13.2	12.1	13.5
ND	45.8	41.4	39.7	48.6	49.0	42.6	44.4	50.2	38.0	51.2
OK	28.0	28.5	32.8	32.1	28.9	28.8	27.3	30.9	32.2	31.4
SD	46.4	46.0	45.7	45.8	46.4	45.7	45.8	45.4	45.5	44.3
TX	18.7	23.5	23.6	23.4	21.6	22.3	22.4	23.3	20.2	22.4
WY	7.6	7.4	7.7	7.5	7.6	7.3	7.4	7.2	7.4	7.2
Western	9.8	10.6	10.8	10.9	10.8	9.6	10.7	9.9	10.8	9.8
AZ	13.7	18.8	23.0	21.5	20.5	18.6	19.4	17.5	19.4	20.6
CA	13.8	13.1	13.2	13.2	12.8	11.4	12.6	11.9	13.5	11.1
ID	8.9	10.0	8.4	9.4	9.2	8.6	9.9	9.0	10.1	8.3
NV	4.3	3.5	3.8	4.1	3.9	3.3	4.6	3.9	4.5	3.4
OR	6.6	6.5	5.8	6.0	6.7	6.3	7.1	7.0	6.7	6.1
UT	10.3	10.8	8.5	10.2	11.3	8.5	9.7	9.1	9.6	8.2
WA	4.5	4.6	4.8	4.5	4.6	4.8	4.9	5.5	4.9	5.4

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 4. Continued.

Management Unit	Year									
State	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Eastern	19.5	19.9	19.2	19.6	20.0					
Hunt states	20.6	20.9	20.2	20.5	21.0					
AL	24.1	24.1	24.6	24.5	24.7					
DE-MD	15.6	16.0	15.8	16.7	15.8					
FL	11.2	11.5	11.5	10.8	11.5					
GA	20.6	18.9	20.9	22.9	21.2					
IL	28.0	28.4	24.3	25.7	26.7					
IN	25.3	26.2	25.3	25.9	25.4					
KY	26.2	27.0	26.5	27.2	27.1					
LA	12.3	13.4	12.9	13.8	13.9					
MS	21.0	21.6	20.8	20.5	20.0					
NC	40.6	40.7	41.1	41.1	40.9					
OH	20.6	21.7	19.4	20.5	22.5					
PA	11.9	11.9	11.0	11.5	11.6					
SC	27.1	27.8	27.4	27.5	28.0					
TN	15.8	15.6	15.3	15.6	15.2					
VA	14.0	14.5	13.8	13.9	14.0					
WI	18.8	19.7	16.6	16.0	20.5					
WV	7.3	7.4	7.7	7.7	7.7					
Nonhunt states	12.6	13.0	12.8	13.1	13.5					
MI	17.6	17.6	18.0	17.3	17.9					
N. England[b]	10.8	11.1	10.6	11.0	11.2					
NJ	11.8	11.2	11.3	11.2	10.6					
NY	15.2	15.7	15.8	16.2	16.8					
Central	25.0	24.4	23.6	24.7	24.1					
AR	15.7	16.0	15.7	15.2	15.0					
CO	24.5	25.8	25.0	26.0	23.1					
IA	29.5	28.8	28.4	27.7	27.8					
KS	54.2	53.0	50.8	53.2	51.1					
MN	17.0	16.9	16.5	16.3	16.2					
MO	16.1	15.8	14.2	14.3	15.1					
MT	14.1	13.1	13.3	14.5	13.3					
NE	44.8	45.1	44.1	44.7	44.7					
NM	14.1	15.9	12.2	14.4	13.9					
ND	44.8	38.9	45.6	42.4	46.3					
OK	29.0	28.9	25.6	28.1	26.7					
SD	45.2	45.0	45.4	44.6	43.5					
TX	19.2	18.0	16.0	19.4	18.5					
WY	7.5	7.2	7.7	7.3	7.2					
Western	11.1	9.6	9.2	9.2	9.6					
AZ	21.2	16.6	16.9	16.4	19.8					
CA	10.5	10.4	10.5	10.3	10.2					
ID	11.1	10.2	9.1	7.9	8.9					
NV	7.8	4.2	3.6	4.7	3.6					
OR	6.3	7.3	6.3	6.4	5.6					
UT	10.3	8.4	8.0	8.6	8.6					
WA	4.8	5.1	4.5	4.7	4.7					

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 5. Estimated annual abundance indices[a] of mourning doves based on Call-count Survey **seen** data for management units and states, 1966–2010.

Management Unit	Year									
State	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Eastern	16.7	16.5	16.4	16.6	16.4	16.2	17.1	16.3	16.4	16.6
Hunt states	18.6	18.4	18.2	18.4	18.2	17.9	19.0	18.0	18.1	18.3
AL	19.4	19.7	18.9	19.4	19.0	18.7	21.1	20.4	18.6	19.2
DE-MD	13.1	15.4	13.2	14.4	16.2	14.3	15.8	15.6	15.6	14.8
FL	6.1	5.6	6.3	6.3	5.3	5.5	7.3	7.4	6.7	8.1
GA	20.5	20.1	19.5	19.5	19.3	19.0	19.0	18.6	18.2	18.4
IL	20.2	23.8	21.6	21.9	19.6	20.2	21.1	19.8	19.6	20.6
IN	46.3	45.2	44.8	46.6	45.7	42.2	42.7	41.9	44.9	41.4
KY	21.4	20.5	21.1	20.7	20.8	19.2	21.5	20.1	20.9	20.5
LA	7.1	6.9	6.6	7.1	6.8	7.1	7.2	7.3	7.5	7.7
MS	40.3	36.2	36.8	36.1	34.1	33.6	37.4	31.7	31.3	31.8
NC	32.8	32.6	32.3	32.0	32.9	33.2	32.6	32.5	32.8	32.3
OH	19.1	20.0	20.1	23.0	24.1	24.1	25.5	24.5	24.0	25.8
PA	8.6	8.6	8.6	9.0	8.9	9.3	9.4	9.8	10.0	10.2
SC	19.9	20.1	19.9	20.4	19.7	21.0	20.9	20.3	21.0	21.7
TN	27.2	26.8	26.5	26.3	26.4	26.8	26.8	25.7	25.9	25.6
VA	17.0	15.9	16.0	15.4	16.2	15.1	15.8	15.3	15.5	15.0
WI	4.8	4.5	4.8	4.7	5.6	5.2	6.9	5.5	6.2	6.5
WV	2.7	2.5	2.4	2.3	2.5	2.8	2.6	2.4	2.6	2.9
Nonhunt states	4.3	4.3	4.4	4.6	4.6	4.6	4.7	4.8	4.7	5.0
MI	6.7	6.6	6.9	6.7	7.1	7.3	7.6	7.6	7.9	8.5
N. England[b]	3.8	3.8	3.9	3.9	4.0	4.0	4.1	4.1	4.2	4.3
NJ	22.0	22.5	22.1	21.8	21.2	21.3	21.4	21.1	20.4	20.4
NY	2.4	2.4	2.5	2.9	3.2	3.1	3.1	3.4	3.1	3.8
Central	39.6	39.1	38.8	38.4	38.4	37.2	39.1	37.9	38.8	38.3
AR	23.2	24.3	23.5	23.1	22.8	22.4	23.0	22.9	22.4	22.2
CO	33.9	35.8	30.4	31.6	28.5	30.1	28.4	28.6	34.3	25.2
IA	18.8	19.4	19.0	18.5	18.3	18.9	19.9	18.9	19.2	19.0
KS	103.5	105.2	100.7	103.4	103.5	101.4	103.5	101.3	100.2	100.9
MN	18.8	17.9	17.7	17.0	16.7	17.0	17.4	15.6	15.9	15.5
MO	50.5	49.9	47.9	47.4	46.0	45.5	46.5	43.6	41.8	41.4
MT	10.9	13.5	12.6	12.3	13.2	12.9	12.9	12.6	13.3	11.9
NE	88.2	88.3	89.9	90.3	88.4	88.2	88.7	88.7	88.8	90.2
NM	14.1	12.8	12.8	12.4	12.8	11.3	17.8	10.7	18.5	15.1
ND	21.0	22.4	22.9	23.0	22.1	23.6	24.9	27.4	24.0	25.4
OK	82.0	86.6	86.7	85.0	85.8	83.4	82.5	81.5	83.5	84.1
SD	51.2	49.6	50.8	51.0	52.5	51.0	52.4	51.3	53.0	51.1
TX	40.8	37.8	41.2	39.2	41.7	35.8	41.8	40.2	40.6	41.0
WY	25.2	18.3	16.5	16.3	14.3	16.6	14.4	17.1	14.1	21.1
Western	17.3	19.5	22.1	18.1	17.9	17.8	15.0	15.0	19.6	16.2
AZ	12.0	14.9	25.6	17.9	20.4	12.6	10.7	23.3	17.1	17.3
CA	38.3	38.3	38.7	37.6	33.8	34.8	32.7	29.5	36.9	34.2
ID	17.8	28.4	16.9	13.3	11.1	16.3	15.2	10.4	16.3	12.7
NV	4.8	6.5	18.4	9.6	8.8	8.4	5.1	4.0	11.3	4.2
OR	11.3	11.1	11.2	9.9	9.5	9.5	9.9	8.6	9.3	8.8
UT	11.2	12.7	13.7	11.9	16.9	20.6	9.9	6.6	21.7	12.5
WA	2.0	1.2	2.2	1.3	1.8	1.0	2.3	1.2	0.9	1.6

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 5. Continued.

Management Unit	Year									
State	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Eastern	17.1	16.6	15.7	15.8	16.0	17.0	16.5	16.5	16.2	16.8
Hunt states	18.9	18.4	17.3	17.4	17.6	18.7	18.2	18.1	17.9	18.4
AL	19.7	19.6	19.6	20.6	20.2	19.6	20.4	20.7	19.7	20.6
DE-MD	16.1	16.0	15.6	14.4	16.6	17.1	13.9	15.2	17.9	17.2
FL	9.2	7.6	8.2	8.6	8.5	10.4	8.9	8.9	10.6	11.5
GA	17.8	18.1	18.0	17.8	17.2	17.7	16.7	16.4	16.9	17.1
IL	22.8	22.0	19.8	17.9	18.6	20.4	19.0	18.8	16.4	19.4
IN	42.4	38.3	30.2	31.1	33.4	37.1	33.0	33.5	33.3	32.1
KY	22.5	21.4	20.9	20.7	20.2	23.1	23.7	22.7	22.0	24.6
LA	7.6	8.5	8.6	8.7	9.0	9.1	9.6	9.8	10.0	9.5
MS	30.6	32.0	31.8	31.2	31.2	29.8	31.5	32.0	28.3	27.4
NC	33.5	33.2	33.9	33.8	33.5	34.1	33.4	33.0	34.3	34.0
OH	29.0	24.2	15.6	15.6	16.4	21.5	22.1	20.8	19.9	22.7
PA	10.4	10.0	10.2	10.7	11.2	11.2	11.5	11.9	11.6	12.6
SC	21.9	21.5	22.2	22.3	22.6	22.9	23.5	22.5	23.1	23.1
TN	26.0	26.6	26.1	26.0	25.7	25.9	26.0	25.0	25.6	25.5
VA	15.6	15.8	15.5	14.6	15.2	14.2	14.3	14.4	13.8	13.6
WI	6.8	6.7	5.3	7.2	7.3	9.3	7.4	8.1	7.8	7.3
WV	2.8	2.9	3.0	3.6	3.3	4.3	4.2	3.9	4.5	4.6
Nonhunt states	4.9	5.0	5.2	5.2	5.4	5.6	5.6	5.6	5.5	5.9
MI	8.4	8.6	8.6	8.5	9.2	9.9	9.3	9.6	9.7	10.4
N. England[b]	4.3	4.4	4.5	4.5	4.7	4.5	4.7	4.6	4.8	5.1
NJ	20.8	20.4	20.5	20.3	19.6	20.3	20.3	19.5	19.2	18.1
NY	3.5	3.7	4.0	4.1	4.4	4.9	4.9	4.9	4.5	5.3
Central	38.8	38.4	37.1	38.2	38.5	39.6	38.9	36.8	37.0	35.5
AR	22.8	21.7	21.3	21.4	21.7	21.6	21.4	21.8	20.1	20.0
CO	36.5	31.4	30.7	25.9	31.2	30.4	30.6	25.9	27.5	25.9
IA	19.3	20.0	19.8	19.3	20.5	20.1	20.3	19.5	20.1	20.3
KS	100.3	100.6	97.9	99.3	102.1	99.1	99.1	99.3	97.8	96.8
MN	16.5	17.2	15.4	15.7	15.3	15.6	14.0	14.4	13.8	13.4
MO	39.3	40.2	39.3	37.5	37.2	38.6	36.6	36.5	34.2	31.7
MT	12.0	13.2	11.5	12.0	12.3	13.5	12.7	11.3	12.0	12.8
NE	93.6	92.0	91.8	90.8	90.7	90.7	91.0	86.8	87.1	87.1
NM	13.8	11.8	9.2	10.8	13.3	13.0	12.6	11.3	18.7	12.9
ND	30.1	31.2	29.8	30.2	30.0	29.0	26.7	25.0	23.6	23.9
OK	83.4	79.4	89.9	86.1	88.3	82.8	86.0	86.1	81.1	79.9
SD	53.6	53.8	52.8	52.5	51.6	52.5	52.2	52.3	52.7	52.0
TX	39.3	38.9	37.4	44.6	41.9	49.6	47.7	42.3	42.4	39.3
WY	15.7	19.1	11.1	13.4	13.1	11.6	11.5	9.4	8.5	7.8
Western	18.7	17.4	13.6	16.7	19.2	15.3	14.5	13.2	14.0	12.1
AZ	15.5	13.0	21.1	33.9	20.4	11.7	18.0	20.3	12.2	13.9
CA	31.5	32.2	24.0	26.2	27.5	28.5	29.6	23.5	25.0	23.6
ID	16.6	15.7	11.8	11.6	12.9	16.0	14.5	12.4	14.6	11.0
NV	17.2	13.6	4.4	7.0	30.2	8.0	3.8	4.8	7.1	4.9
OR	9.2	10.2	7.0	7.1	7.8	9.0	8.1	6.7	7.0	6.6
UT	17.6	14.1	8.7	8.7	11.1	16.0	6.6	6.9	15.4	8.3
WA	2.6	1.0	1.1	1.3	1.3	1.1	2.0	1.0	2.6	1.1

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 5. Continued.

Management Unit	Year									
State	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Eastern	17.1	17.3	17.8	18.0	18.1	18.2	18.2	18.2	18.3	18.6
Hunt states	18.7	19.0	19.6	19.6	19.9	19.8	19.8	19.8	20.0	20.2
AL	21.5	19.2	19.6	19.8	19.7	19.8	20.3	20.7	20.9	21.0
DE-MD	18.2	15.8	18.8	18.7	16.7	19.3	18.3	17.0	17.4	17.2
FL	10.8	10.9	11.6	12.9	14.5	13.1	14.0	14.1	15.2	15.9
GA	16.2	16.2	16.8	16.5	16.1	15.8	15.5	14.9	15.4	15.8
IL	19.9	21.3	21.2	21.6	23.4	23.0	22.0	21.6	21.5	22.4
IN	32.6	35.1	33.4	33.6	33.4	31.2	30.0	30.1	29.7	29.3
KY	22.2	24.1	25.0	25.4	23.8	26.5	25.1	25.3	24.6	25.6
LA	10.6	10.2	11.5	11.1	11.7	12.3	12.1	12.5	13.0	13.8
MS	28.3	26.4	29.5	27.0	28.4	25.5	28.3	27.6	26.6	25.7
NC	35.0	34.6	34.6	34.3	34.5	35.3	35.2	35.9	36.1	35.3
OH	25.0	26.6	29.1	30.4	26.5	28.9	28.8	27.8	30.1	29.7
PA	13.0	13.0	13.7	13.5	13.9	14.3	14.1	15.2	15.3	15.6
SC	23.0	23.5	24.3	24.0	24.7	24.8	24.9	24.1	25.2	25.0
TN	25.3	26.0	25.9	26.0	26.1	26.2	26.1	26.6	26.7	26.9
VA	13.3	13.6	13.4	12.7	14.3	13.7	13.3	13.7	12.4	13.7
WI	8.9	10.0	10.0	10.4	11.2	10.9	10.3	11.0	9.7	10.4
WV	4.0	4.3	4.2	5.8	4.4	6.0	5.5	6.4	6.7	6.6
Nonhunt states	6.2	6.2	6.2	7.2	6.8	7.5	7.4	7.2	7.5	8.0
MI	11.1	11.5	11.6	11.7	12.5	12.5	12.5	12.8	13.1	13.4
N. England[b]	5.0	5.1	5.2	5.5	5.7	5.8	5.8	6.2	6.2	6.4
NJ	19.0	17.7	17.5	18.1	17.7	19.1	18.8	18.0	18.1	18.3
NY	5.9	6.2	5.8	7.9	6.8	8.1	8.0	7.2	7.8	8.6
Central	36.8	36.8	36.5	36.2	35.9	40.8	39.1	36.9	37.0	36.1
AR	20.6	20.5	19.8	20.6	20.4	19.6	20.3	20.2	20.1	20.1
CO	30.0	28.0	29.4	27.4	28.8	29.0	26.9	28.4	28.2	27.5
IA	20.0	20.2	20.6	21.2	21.1	21.0	21.2	20.8	21.0	21.2
KS	96.9	96.8	99.1	98.6	95.5	99.3	98.6	95.9	99.5	99.5
MN	12.8	13.0	13.0	12.8	12.2	12.7	11.8	11.3	10.8	10.9
MO	33.0	33.0	33.1	32.3	31.5	31.3	30.4	28.2	27.8	28.2
MT	11.5	11.7	13.8	12.6	12.9	11.3	11.4	11.1	11.5	11.7
NE	85.2	86.8	86.8	82.6	84.8	87.8	86.9	83.4	84.4	84.0
NM	14.0	10.8	11.6	12.5	11.5	13.2	10.1	10.9	11.2	10.2
ND	24.9	25.4	26.3	27.8	28.3	28.4	31.6	28.0	24.7	22.3
OK	83.1	80.9	82.2	80.7	82.1	84.8	84.9	81.9	83.9	83.6
SD	49.3	51.2	51.1	52.1	52.2	51.9	52.2	50.7	50.6	49.2
TX	44.0	45.2	40.5	41.7	39.7	62.0	55.9	49.3	48.5	46.3
WY	9.3	10.4	8.5	8.0	8.9	9.6	8.3	6.7	7.3	6.4
Western	10.8	10.8	10.9	11.1	11.2	10.1	10.5	11.1	11.3	10.4
AZ	9.7	6.5	7.9	7.7	7.5	11.2	12.3	16.7	10.4	13.3
CA	20.5	21.1	20.4	19.8	21.5	18.4	19.9	17.5	19.8	15.4
ID	11.6	15.1	16.0	13.3	15.5	12.6	12.3	10.8	14.7	12.7
NV	4.3	5.1	4.9	4.9	4.7	2.7	3.2	5.0	7.2	9.5
OR	7.1	7.2	6.0	6.6	6.8	5.7	5.8	5.1	5.7	5.3
UT	8.4	7.1	8.4	13.0	8.9	7.6	5.7	7.4	7.2	4.1
WA	2.0	1.2	1.2	1.6	2.2	1.8	1.5	5.0	2.1	1.6

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 5. Continued.

Management Unit	Year									
State	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Eastern	18.2	18.0	19.2	19.8	19.9	19.8	20.1	20.8	21.0	20.6
Hunt states	19.7	19.5	20.7	21.3	21.4	21.3	21.6	22.4	22.6	22.1
AL	19.5	20.0	20.3	21.0	21.3	20.4	21.8	22.1	21.2	21.2
DE-MD	18.0	15.9	17.8	18.9	17.4	17.3	15.8	17.1	19.0	18.7
FL	14.7	18.1	16.3	18.9	17.6	20.2	18.3	21.9	21.7	19.7
GA	15.1	15.1	15.0	14.7	15.0	14.8	15.1	14.2	14.6	14.6
IL	21.5	19.7	22.4	20.4	23.8	21.3	23.1	24.4	26.5	25.0
IN	30.6	27.7	30.1	30.4	29.7	28.4	28.3	29.2	30.0	29.1
KY	25.9	24.6	25.9	27.7	28.3	28.5	28.6	28.2	29.9	27.3
LA	13.1	14.0	14.4	16.1	16.2	15.9	17.5	17.6	18.0	18.3
MS	23.9	24.1	23.9	24.2	22.5	22.6	22.8	22.9	20.7	21.2
NC	35.8	35.1	35.2	36.1	36.4	36.2	36.6	37.3	37.8	37.5
OH	26.2	24.5	33.0	32.9	32.9	32.8	31.4	36.9	34.8	29.0
PA	16.1	16.5	17.1	18.4	17.7	18.1	18.7	18.9	19.5	19.0
SC	25.3	25.1	25.8	27.6	26.9	26.7	27.6	26.4	27.4	27.5
TN	26.6	27.1	27.2	27.1	27.7	27.6	27.2	27.6	28.0	27.8
VA	13.6	13.5	13.8	13.9	13.4	13.4	14.9	13.4	14.2	14.4
WI	10.7	9.7	12.5	12.1	12.6	11.8	13.3	14.8	14.4	15.9
WV	6.1	6.1	6.4	7.3	8.2	8.5	7.9	6.9	8.9	8.8
Nonhunt states	7.8	7.8	8.9	9.9	9.4	10.1	10.1	10.1	10.2	10.6
MI	13.7	13.8	15.5	15.8	16.8	16.7	16.9	17.6	17.6	19.0
N. England[b]	6.4	6.4	6.7	7.3	7.3	7.5	7.7	7.7	8.0	8.2
NJ	18.1	17.9	17.5	18.2	16.6	17.0	17.7	17.2	17.0	16.9
NY	8.3	8.2	10.6	12.3	11.2	12.7	12.2	12.3	12.1	13.0
Central	35.0	37.7	38.5	39.0	37.6	36.6	37.7	37.8	38.1	39.4
AR	19.2	19.6	19.5	19.6	19.2	19.4	18.7	19.2	19.4	18.9
CO	27.6	27.6	28.4	29.4	30.0	26.5	28.6	28.6	27.2	26.3
IA	21.7	21.0	22.4	21.7	23.1	22.5	23.2	23.3	24.1	24.2
KS	96.2	100.2	100.6	102.4	100.6	97.3	98.7	101.3	102.9	105.4
MN	10.5	11.1	11.6	10.5	11.0	10.3	9.7	9.7	10.3	9.2
MO	26.8	25.9	26.2	25.1	24.4	24.6	24.4	24.0	24.3	22.5
MT	11.6	13.4	11.7	12.6	11.4	10.7	12.7	12.2	11.7	11.5
NE	83.2	81.1	85.3	85.3	86.9	84.3	83.4	84.3	86.4	86.5
NM	11.3	13.3	11.6	12.1	11.9	10.7	11.3	12.5	11.3	14.3
ND	25.5	24.2	29.5	31.7	28.2	25.1	24.8	24.4	26.8	25.1
OK	79.9	80.7	84.7	85.1	84.3	81.7	81.0	83.2	84.1	87.7
SD	49.1	50.3	52.6	54.2	52.5	52.5	52.6	51.7	51.2	51.2
TX	42.0	52.2	52.9	53.9	48.7	50.1	53.2	52.4	53.7	58.4
WY	5.9	8.3	8.0	6.1	7.3	6.3	7.3	5.7	5.1	5.3
Western	11.3	10.2	10.0	11.7	10.6	8.6	9.7	8.6	9.9	8.6
AZ	7.1	7.9	15.2	13.4	11.3	10.0	6.8	10.9	9.9	10.5
CA	20.4	17.9	17.0	18.1	17.6	15.9	17.4	15.0	16.3	14.9
ID	16.2	13.3	10.1	13.0	15.1	11.7	13.7	11.2	16.2	12.5
NV	9.8	7.5	4.2	9.2	6.3	3.4	6.7	3.5	5.2	3.6
OR	5.8	6.1	5.4	6.6	5.6	4.6	4.8	4.4	5.2	4.7
UT	5.5	5.1	4.3	7.5	5.6	3.2	6.9	4.0	4.7	2.5
WA	1.5	3.3	2.1	1.5	1.6	2.0	1.6	2.1	2.2	3.1

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 5. Continued.

Management Unit	Year									
State	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Eastern	20.9	21.4	21.5	21.7	22.3					
Hunt states	22.3	22.9	23.0	23.2	23.8					
AL	20.8	21.1	21.0	22.7	22.7					
DE-MD	17.2	20.0	19.7	18.7	19.8					
FL	19.2	20.2	23.6	23.9	22.1					
GA	14.3	14.6	14.8	14.7	14.2					
IL	27.7	24.9	22.7	22.6	25.0					
IN	27.2	26.7	27.1	24.6	26.7					
KY	29.2	29.6	30.0	31.2	31.8					
LA	18.4	19.5	19.5	20.3	20.5					
MS	21.2	22.3	22.5	22.5	21.0					
NC	37.1	37.3	37.7	38.1	38.5					
OH	31.0	33.0	33.5	33.3	36.3					
PA	19.8	20.2	21.0	21.0	22.3					
SC	28.3	28.4	28.0	29.6	29.9					
TN	27.8	27.5	28.7	29.1	28.9					
VA	14.5	15.5	16.0	14.9	14.7					
WI	16.5	17.6	15.7	15.3	18.7					
WV	6.6	9.5	10.0	10.0	10.1					
Nonhunt states	11.6	11.3	11.5	12.1	12.5					
MI	18.9	20.7	19.1	20.1	20.1					
N. England[b]	8.8	8.8	8.8	9.3	9.7					
NJ	17.0	17.5	17.3	17.3	16.7					
NY	14.4	13.7	14.3	14.9	15.5					
Central	38.5	39.7	37.9	38.4	37.9					
AR	19.3	19.0	18.6	18.6	18.8					
CO	28.7	29.8	27.9	28.9	27.2					
IA	24.7	25.3	25.2	25.4	25.1					
KS	105.6	104.6	103.0	106.2	106.4					
MN	9.8	9.6	9.0	9.1	9.6					
MO	23.4	22.5	22.2	21.9	21.1					
MT	14.9	12.8	13.7	13.0	12.0					
NE	85.1	86.6	87.9	88.4	88.9					
NM	13.0	18.1	12.5	13.8	12.3					
ND	26.7	25.9	24.0	25.4	24.7					
OK	86.4	86.1	80.5	82.5	83.0					
SD	50.9	51.2	50.5	51.7	50.0					
TX	51.3	56.3	52.3	52.2	51.9					
WY	6.2	4.9	6.1	4.9	4.5					
Western	10.0	9.8	9.5	9.5	9.1					
AZ	10.8	7.0	8.6	9.5	13.2					
CA	13.6	16.3	12.4	13.9	12.1					
ID	19.2	17.9	18.0	16.4	16.6					
NV	6.3	6.0	9.4	5.2	4.3					
OR	5.9	5.3	4.8	5.3	4.6					
UT	4.2	4.5	3.2	6.3	3.1					
WA	2.5	3.7	2.2	2.3	2.4					

[a] Annual indices are estimated from exponentiated year effects derived from a log-linear hierarchical model fit using Bayesian methods; 95% credible intervals for the annual indices are available upon request.

[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 6. 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 2008 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	7,671,800	6	404,000	†[c]	1,269,500	6	†	†
AL	877,400	15	42,300	9	113,500	12	20.7	17
DE	33,800	35	2,000	29	5,700	34	16.7	45
FL	516,500	24	20,300	16	94,800	23	25.4	29
GA	718,700	22	36,100	15	102,300	19	19.9	27
IL	683,100	21	31,600	12	97,000	18	21.6	24
IN	255,700	16	14,300	17	38,500	17	17.9	23
KY	369,400	18	18,700	21	43,700	17	19.8	28
LA	188,200	38	17,200	26	38,400	31	11.0	46
MD	151,800	26	9,300	19	28,400	25	16.3	32
MS	452,400	20	17,300	11	53,800	18	26.1	23
NC	757,900	18	43,800	15	112,900	18	17.3	24
OH	205,900	28	13,500	21	61,600	32	15.3	35
PA	340,900	19	30,700	19	129,900	24	11.1	26
RI	4,400	108	300	61	2,000	78	13.4	124
SC	844,500	17	39,900	12	140,900	19	21.2	21
TN	798,200	38	37,500	16	103,000	30	21.3	41
VA	333,600	27	17,300	20	59,000	23	19.3	33
WI	122,300	37	10,500	26	40,600	31	11.6	45
WV	16,900	29	1,400	20	3,700	28	12.0	35
Central	7,520,000	10	443,900	†	1,497,000	9	†	†
AR	422,000	23	23,300	18	76,600	33	18.1	29
CO	288,400	19	23,200	12	60,400	18	12.4	23
KS	443,700	15	26,800	11	78,500	15	16.6	19
MN	83,500	48	11,300	28	34,900	42	7.4	55
MO	467,800	16	34,300	9	93,400	14	13.7	19
MT	18,400	51	2,100	45	3,700	44	8.8	68
NE	238,600	49	13,600	33	48,800	52	17.6	59
NM	138,100	30	6,300	18	26,200	29	22.0	35
ND	26,400	31	2,700	30	9,200	44	9.6	43
OK	361,200	18	19,300	12	57,800	17	18.7	22
SD	152,100	30	7,300	18	27,500	34	20.9	35
TX	4,849,600	14	271,300	10	974,100	13	17.9	18
WY	30,100	36	2,500	25	5,900	33	11.9	44
Western	2,210,700	8	146,100	†	426,200	7	†	†
AZ	726,600	12	34,000	10	118,000	13	21.4	16
CA	1,113,700	12	72,700	7	207,200	10	15.3	14
ID	127,400	24	11,800	19	33,600	25	10.8	30
NV	45,000	25	4,900	15	12,200	26	9.1	29
OR	45,500	35	5,800	22	14,600	28	7.9	42
UT	74,100	38	9,600	28	22,100	33	7.7	48
WA	78,500	31	7,300	23	18,500	31	10.8	38
United States	17,402,400	5	994,100	†	3,192,700	5	†	†

[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 7. 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 2009 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	7,639,200	7	437,600	†[c]	1,245,700	6	†	†
AL	1,113,500	13	61,800	9	152,200	12	18.0	16
DE	36,300	36	1,800	20	5,700	28	19.7	42
FL	292,500	21	18,100	19	53,900	19	16.1	28
GA	857,200	22	48,500	18	119,000	19	17.7	28
IL	659,600	27	28,400	13	102,900	23	23.2	30
IN	243,200	17	13,200	16	40,300	15	18.4	23
KY	451,300	34	21,400	33	62,800	34	21.1	48
LA	482,700	51	25,000	24	77,700	32	19.3	56
MD	174,900	38	9,100	21	26,900	27	19.2	43
MS	361,500	19	19,800	13	47,400	18	18.3	23
NC	581,100	21	40,300	18	99,800	25	14.4	28
OH	295,800	27	16,700	19	75,500	27	17.7	33
PA	188,000	30	18,100	23	71,000	38	10.4	37
RI	<50	191	100	96	100	104	0.3	214
SC	885,700	21	42,600	13	125,900	19	20.8	25
TN	619,800	22	41,100	16	90,800	19	15.1	27
VA	305,500	12	20,900	13	57,500	24	14.6	17
WI	74,900	36	9,500	28	33,700	32	7.9	46
WV	15,600	27	1,300	24	2,700	29	11.9	36
Central	7,474,600	12	393,400	†	1,312,700	8	†	†
AR	353,500	21	22,400	19	53,800	26	15.8	28
CO	242,400	17	20,300	13	45,400	18	11.9	22
KS	572,600	16	29,400	10	97,000	14	19.5	19
MN	61,500	67	6,800	36	24,100	64	9.1	77
MO	294,700	26	21,500	16	58,700	21	13.7	30
MT	12,700	32	2,500	32	6,400	46	5.1	45
NE	277,600	17	16,000	12	51,800	15	17.4	21
NM	170,200	26	7,800	16	35,700	26	21.9	30
ND	40,000	31	2,800	28	10,800	50	14.3	42
OK	378,400	17	18,600	12	55,500	15	20.4	21
SD	105,400	24	6,500	19	21,700	23	16.2	31
TX	4,945,100	18	236,600	10	846,200	12	20.9	21
WY	20,600	31	2,300	27	5,800	31	8.8	41
Western	2,241,000	8	143,400	†	429,000	7	†	†
AZ	784,400	12	37,200	8	130,600	11	21.1	14
CA	1,069,700	13	67,200	8	197,400	12	15.9	15
ID	143,300	38	10,600	28	27,200	30	13.5	48
NV	41,500	31	4,600	18	11,600	31	9.0	36
OR	38,600	25	4,300	25	16,400	32	9.0	35
UT	122,800	26	15,200	17	34,600	19	8.1	31
WA	40,700	50	4,200	36	11,100	40	9.7	61
United States	17,354,800	6	974,400	†	2,987,400	4	†	†

[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.

Appendix A. Federal framework dates, season length, and daily bag limit for mourning dove hunting in the United States by management unit, 1918–2009.

	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	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.

[h] More liberal limits allowed in conjunction with an Eastern Management Unit hunting regulations experiment.

Appendix A. Continued.

[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).

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