United States Department of the Interior

FISH AND WILDLIFE SERVICE
Division of Migratory Bird Management
Branch of Assessment and Decision Support
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MEMORANDUM

TO: Chief, Branch of Assessment and Decision Support

FROM: Mark Seamans, Wildlife Biologist, Branch of Assessment and Decision Support, Division of Migratory Bird Management

DATE: 23 August 2024

SUBJECT: Mourning dove harvest strategy assessment

This memo provides results from the annual assessment of the status of mourning doves in support of the harvest regulation setting process. It does not, however, represent a regulatory recommendation by the U.S. Fish and Wildlife Service or Flyway Councils. Based on the harvest strategy, current data, and this assessment, the prescribed regulatory alternative for all three management units during the 2025–26 hunting season is the Standard regulatory alternative. Specific details of the harvest strategy and assessment follow.

The Mourning Dove Harvest Strategy was endorsed by the Flyway Councils and Service Regulations Committee in 2013 and addressed each of the three Management Units (Eastern, Central, and Western), with implementation beginning in 2014. The harvest strategy represents an informed approach to managing harvest of mourning doves as envisioned in the Mourning Dove National Strategic Harvest Management Plan approved by the Flyway Councils in 2003.

The objectives of the strategy are to conserve mourning dove populations in the three management units and to provide recreational opportunity while minimizing annual regulatory change. Integrated population models (IPMs) were used to estimate annual abundance in each management unit (2007–2023) and predict 2024 abundance based on a 3-year average of the most recent estimates. The IPM for each management unit makes use of capture-recovery data from the U.S. Geological Survey's (USGS) Bird Banding Laboratory, U.S. Fish and Wildlife Service parts and harvest data from the Harvest Information Program, and annual abundance indices from the USGS Breeding Bird Survey. These data are used in a balance equation model within a Bayesian framework to estimate annual survival, harvest rates, recruitment, abundance, and population rate of change. The IPM results include the distribution of the predicted outyear abundance (i.e., posterior probability distribution; Table 3, Figures 1–3).

The posterior probability distribution of the predicted abundance is used in a decision-analysis framework for setting harvest regulations relative to threshold abundance values. The harvest strategy requires that 85% of the distribution (confidence in the parameter estimate) be above the critical abundance threshold (Table 1) to prescribe a specific regulatory alternative. This corresponds to the lower credible interval (CI) of the central 70% distribution for the parameter estimate. Thus, if the lower 70% CI for the predicted abundance falls below the critical abundance threshold value, then the more restrictive regulatory alternative is prescribed. Using the lower credible interval provides incentive to reduce uncertainty in parameter estimation (the spread in the posterior probability distribution) by maintaining and improving monitoring programs. The greater the uncertainty in the parameter estimate, the more frequently a restrictive regulatory alternative likely will be prescribed because one is less confident that the parameter is above the threshold value.

The decision rules for each management unit share a common assessment framework:

1) An IPM to estimate population parameters and predict population abundance in the year after the extant data time series,
2) Critical abundance thresholds for regulatory changes based on 30% and 50% of approximated maximum sustained yield (Table 1),
3) 85% confidence that the predicted abundance estimate exceeds the critical threshold that would trigger that regulatory change, and
4) Standard, Restrictive, and Closed regulatory alternatives consistent in daily bag limit across Management Units (Table 2).

The decision rules differ among management units in the abundance values that would recommend a regulatory change, each based on the unit's approximated maximum sustained yield. They also differ in the season length associated with each regulatory package (Table 2).

This assessment uses the most current data available. The strategies predict abundance for 1 September 2024, and this is used to inform annual regulatory decisions for the 2025–26 seasons. Summary results of the assessment for each management unit are provided in Table 3 and Figures 1–3. The predicted 2024 mourning dove abundance is consistent with the Standard regulatory package in each management unit.

Table 1. Critical mourning dove abundance thresholds (in millions) in the Eastern, Central, and Western Management Units based on the percentage of the population size expected when at maximum productivity (MSY; one half of carrying capacity). The harvest strategy states that 85% of the posterior probability distribution (confidence in the parameter estimate) must be above the critical abundance threshold to prescribe that regulatory alternative. Thus, if the lower 70% CI for the predicted abundance is below the critical abundance threshold value then the more restrictive regulatory alternative is prescribed.

Percentage MSY	Regulatory Threshold	EMU	CMU	WMU
50	Restrictive	35.6	59.3	19.3
30	Closed	21.3	35.6	11.6

Table 2. Mourning dove daily bag limit and days associated with each regulatory alternative in the Eastern (EMU), Central (CMU), and Western (WMU) Management Units.

Management Unit	Regulatory alternative	Daily bag Limit	Days
EMU	Standard	15	90
	Restrictive	10	70
	Closed	0	0
CMU	Standard	15	90
	Restrictive	10	70
	Closed	0	0
WMU	Standard	15	60
	Restrictive	10	60
	Closed	0	0

Table 3. Predicted abundance of mourning doves and respective credible intervals (in millions) for 1 September 2024 for each Management Unit.

Management Unit	Population Prediction	L95%CI	U95%CI	L70%CI	U70%CI
EMU	86.04	75.80	97.38	80.45	91.69
CMU	177.73	137.32	229.05	153.18	204.93
WMU	50.70	35.26	67.64	42.39	58.94

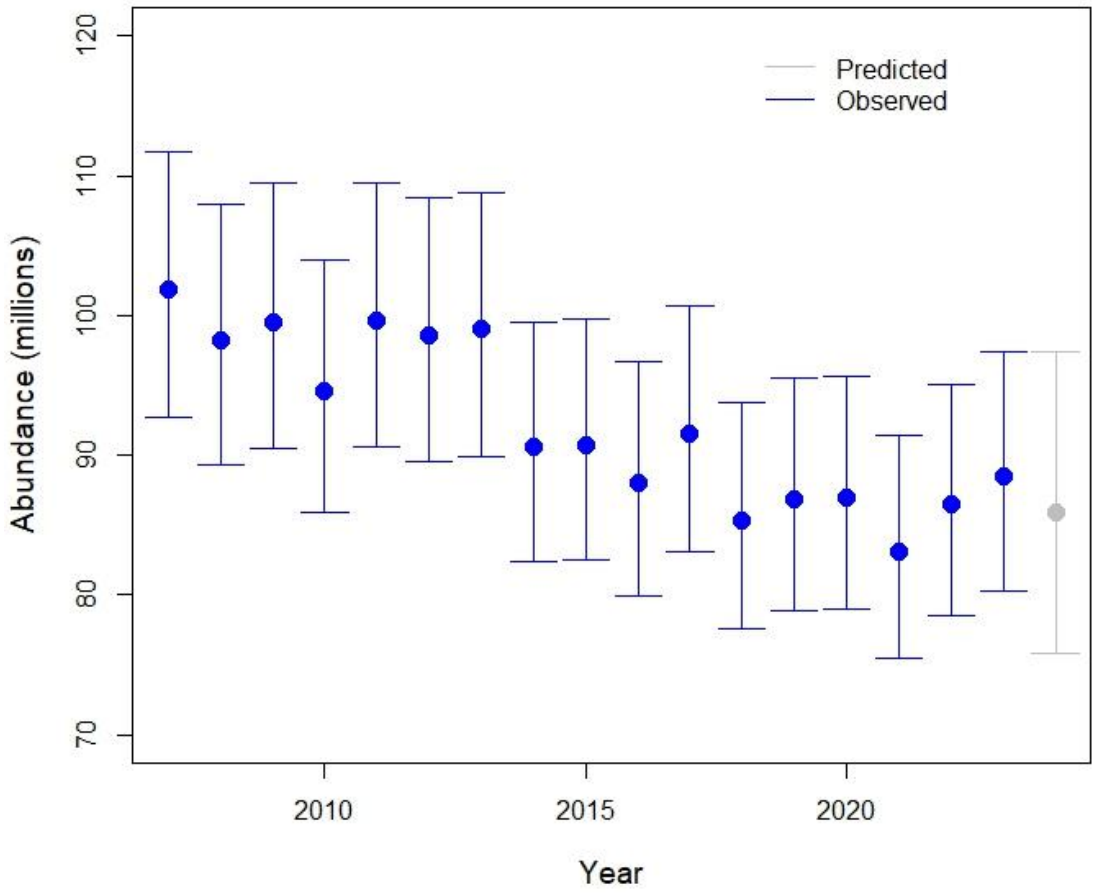

Figure 1. Observed and predicted mourning dove abundance in the **Eastern Management Unit**. Observed abundances are annual estimates from an integrated population model, 2007–2023. The predicted abundance for 2024 is the average of the observed annual estimates from the most recent three years. Error bars represent 95% credible intervals.

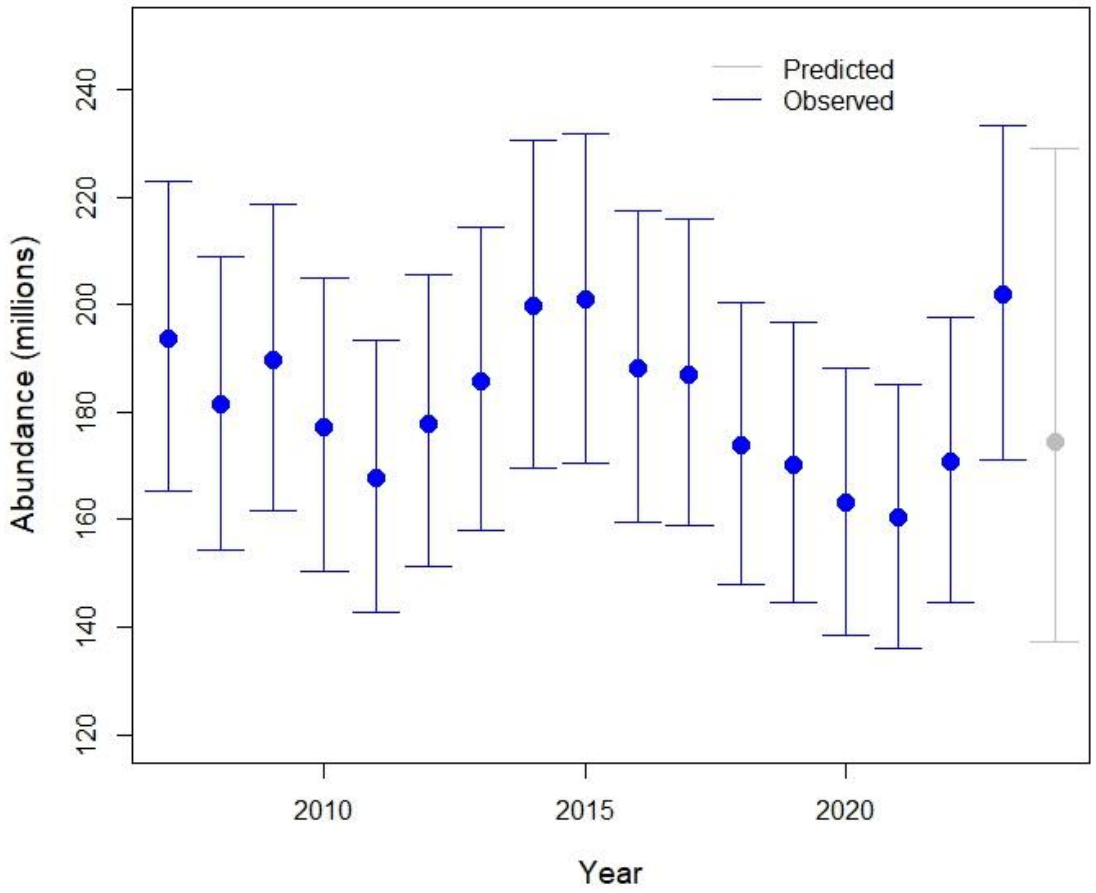

Figure 2. Observed and predicted mourning dove abundance in the **Central Management Unit**. Observed abundances are annual estimates from an integrated population model, 2007–2023. The predicted abundance for 2024 is the average of the observed annual estimates from the most recent three years. Error bars represent 95% credible intervals.

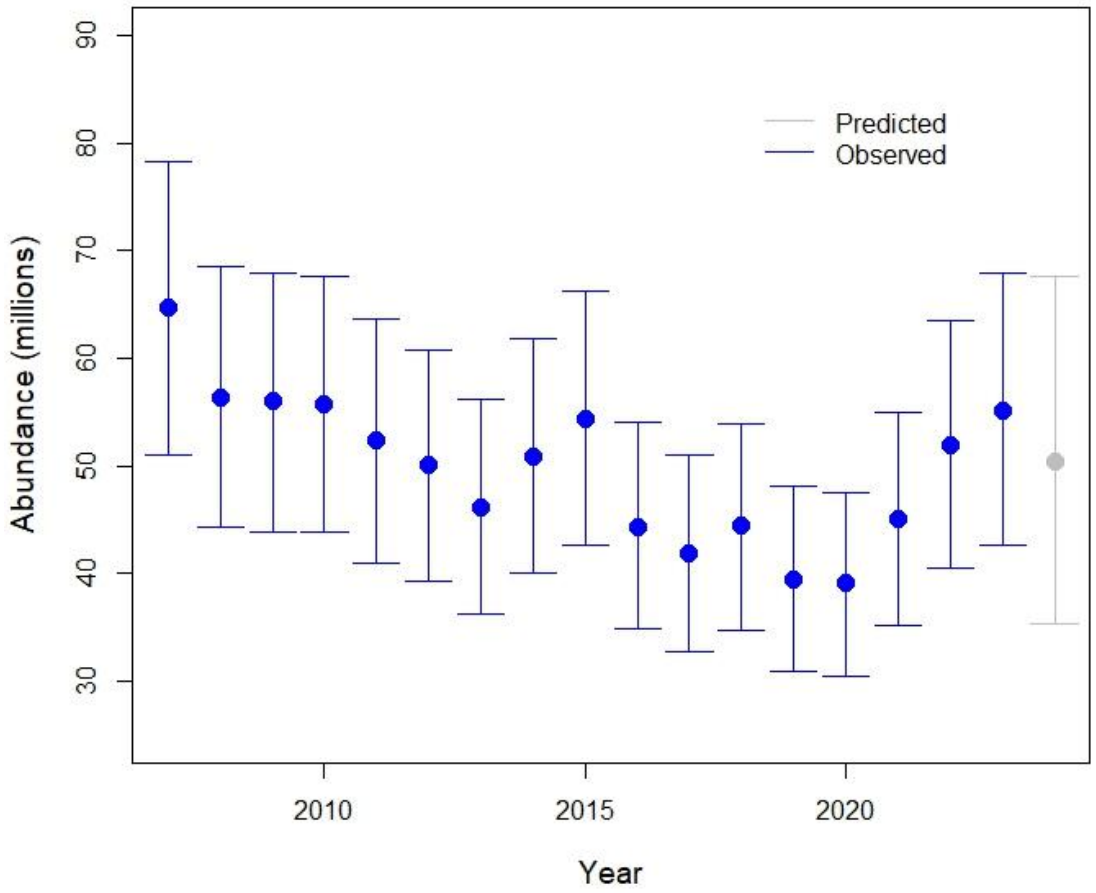

Figure 3. Observed and predicted mourning dove abundance in the **Western Management Unit**. Observed abundances are annual estimates from an integrated population model, 2007–2023. The predicted abundance for 2024 is the average of the observed annual estimates from the most recent three years. Error bars represent 95% credible intervals.