

2020 SUMMARY OF DOVE BANDING ACTIVITIES

PERFORMANCE REPORT STATEWIDE WILDLIFE RESEARCH AND SURVEYS

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BACKGROUND

Since 2003, Kansas has participated in a national mourning dove (*Zenaida macroura*) banding program. The data produced from this project are an important component to estimating vital rates necessary for managing mourning dove populations, and are currently utilized in the mourning dove harvest strategy. With the termination of the mourning dove call count survey in 2013, dove banding and the data from Harvest Information Program (HIP) surveys are now the primary means for monitoring the population of mourning doves in Kansas and nationwide. Kansas, like other states that participate in dove banding, has annual banding quotas necessary to provide sufficient information on mourning dove populations. Through the efforts of banding crews stationed across the state, Kansas Department of Wildlife Parks & Tourism and its partners have been able to fulfil the majority of banding quotas each year of the project.

METHODS

Each year, KDWPT staff and cooperators band mourning doves between July 1st and August 21st. Banding locations vary annually, but an attempt is made to maintain sites when possible to provide consistency in banding data. Mourning doves are primarily captured using modified Kniffin funnel traps baited with sunflowers or small grains. After capture, the dove's age, sex, and flight feather molt progress are determined by plumage characteristics. Birds are fitted with a size 3A federal aluminum tarsus band and immediately released in the same location of capture. Each federal band has a unique 9-digit number and the website (www.reportband.gov) for reporting band recoveries. Banding data is submitted to the USGS Bird Banding Lab (BBL) in Laurel, Maryland. Any doves captured during banding that have been previously banded are documented and immediately released. Recapture events that represent more than 1 day between original banding and recapture are also reported to the BBL.

RESULTS

During the 2020 banding season, 2,548 mourning doves were banded, and 234 recaptures were documented across 51 locations by 28 banding crews. The number of doves banded in 2020 was 16% below the average since 2008, but similar to the previous two banding seasons. Banding quotas were met for both hatch year (HY) and after-hatch year (AHY) birds in Bird Conservation Region (BCR) 22, for AHY birds in BCR 19, and for HY birds in BCR 18. Quotas were not met for HY birds in BCR 19 and AHY birds for BCR 18 (Table 1).

Distribution of banding within the state was similar to recent years, with two new banding crews and nine new local banding sites for 2020 (Figure 2). Banding occurred in 29 different counties, and 150 or more doves were banded in 7 of the 29 counties.

The overall age ratio (number of hatch year / after hatch year) of doves banded in 2020 in Kansas was 0.87, which is the fifth highest since intensive banding began in 2003 (Figure 3). Hatch year birds were most numerous in BCRs 18 and 22, with age ratios of 1.23 and 1.26 respectively. The age ratio in BCR 19, however, was only 0.60. Annual estimates of age ratio of banded mourning doves can vary with changes in locations and timing of banding, but years with higher age ratios when combining sites and dates gives some indication of good production. Although the age ratio of doves banded is not representative of that of the population (due to trapping bias, etc.), annual comparisons are still useful, and preliminary analysis suggests it

correlates relatively well with age ratios in dove harvest during the fall hunting season that follows.

There were 234 recaptures documented during banding operations in 2020 (Figure 7). All birds were initially banded in Kansas by the same banding crew that recaptured the doves. The initial banding year of recaptured birds was primarily (50%) 2020, but included birds banded every year since 2015 (Table 2). Recapture data is now provided to the BBL and is being used to assess new models for population estimation.

As of July 15, 2020, 126 recoveries of mourning doves banded in Kansas have been reported for 2019 (Figure 4). Of the 126 reported recoveries, 117 were shot, with the additional birds generally being reported as found dead. Typically for doves banded in Kansas, 45% to 75% of recoveries are birds that were banded the same year, but year cohorts of banded birds show up as a significant portion of recoveries for as many as five years following banding (Figure 5). During 2019, 53% of the bands recovered were birds banded in the same year. The oldest recoveries were two birds banded in 2012 (Table 3). Recoveries occurred in seven states, Mexico, and Guatemala. Kansas, Texas and Mexico were again the three most common recovery locations. (Table 4).

The primary use of dove banding data in the current mourning dove harvest strategy is to estimate harvest rate, which is then used in conjunction with total harvest estimates from the Harvest Information Program (HIP) and age ratio estimates from the dove wing bee to estimate overall population size. The preliminary estimate of harvest rate of doves of known age banded in Kansas (calculated for direct recoveries only) for 2019 was 0.062 (Figure 6), which is similar to the mean since 2003 of 0.065.

SUMMARY/CONCLUSIONS

Although quotas were not met in all BCRs in 2020, this season continued the trend of successful years for the mourning dove banding program in Kansas. With limitations associated with COVID-19 affecting the majority of migratory bird monitoring programs, the success of the dove banding program in Kansas in 2020 is the direct result of the commitment of banding crews and cooperators, and the supervisors and administrators that support this effort. Although quotas were not met in all regions, we remain one of the leaders in dove banding efforts nationally. Given the importance of this data in dove management, continued commitment to this effort should remain a priority for KDWPT.

Table 1. Distribution and age of mourning doves banded in Kansas in 2020. (HY = hatch year age birds, AHY = after hatch year age birds, and UNK = unknown age birds).

BCR	HY	AHY	UNK	Total Bands
18 (western)	147	120	6	273
19 (central)	469	784	45	1298
22 (eastern)	533	423	21	977

Table 2. Banding season origin of bands recaptured during 2020 dove banding

Year Banded	Number of Bands Recaptured in 2020	% of Bands Recaptured in 2020
2020	116	50%
2019	63	27%
2018	30	13%
2017	13	6%
2016	8	3%
2015	4	2%
Total	234	

Table 3. Banding season origin of bands recovered in 2019

Year Banded	Number of Bands Recovered in 2019	% of Bands Recovered in 2019
2019	67	53.17%
2018	23	18.25%
2017	22	17.46%
2015	8	6.35%
2014	2	1.59%
2013	2	1.59%
2012	2	1.59%
Total	126	

Table 4. Recovery locations of mourning doves banded in Kansas

Location	Number of Bands Recovered in 2019	% of Bands Recovered in 2019
Kansas	104	82.54%
Texas	9	7.14%
Mexico	5	3.97%
Oklahoma	2	1.59%
Missouri	2	1.59%
Louisiana	1	0.79%
Colorado	1	0.79%
Guatemala	1	0.79%
South Dakota	1	0.79%
Total	126	

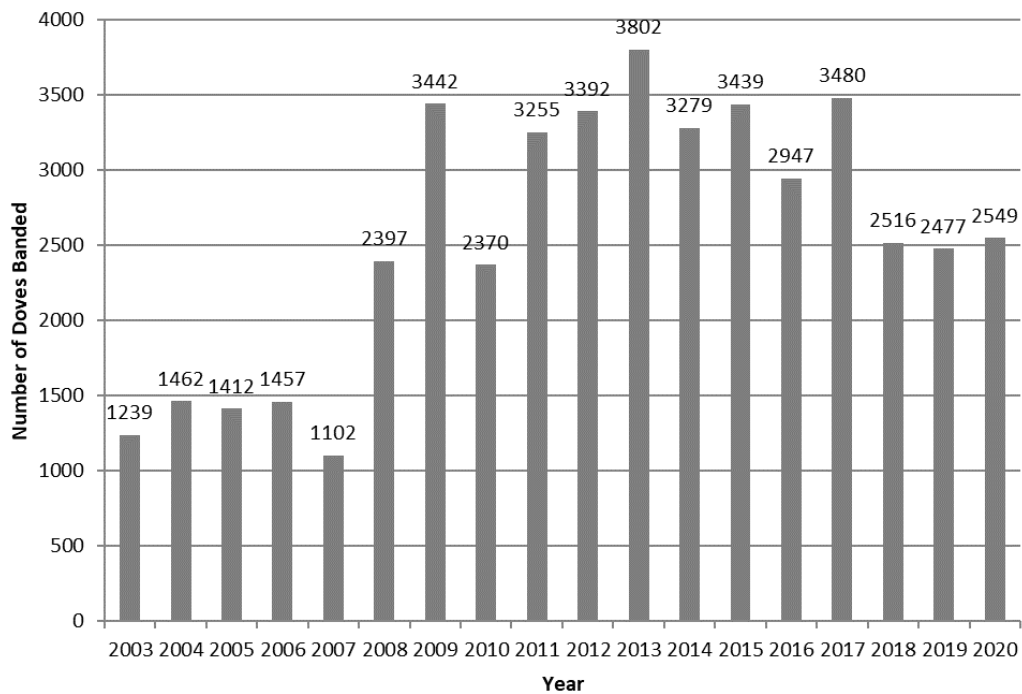


Figure 1. Number of mourning doves banded in Kansas since 2003

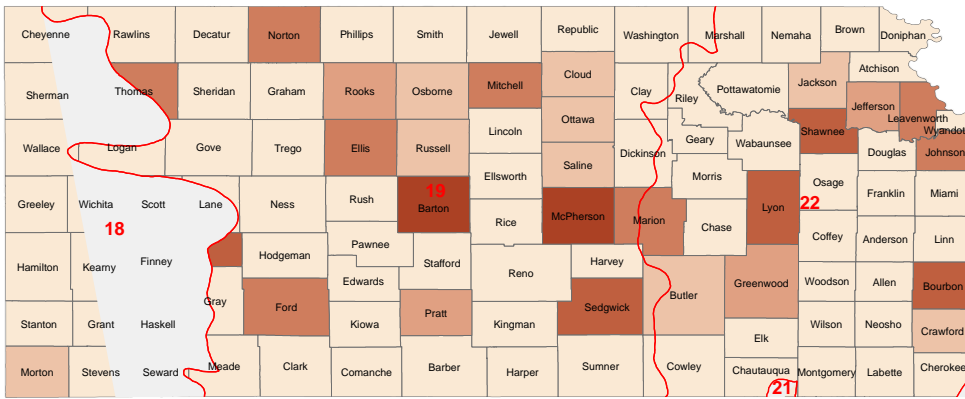


Figure 2. Distribution of doves banded in Kansas during the 2020 banding season

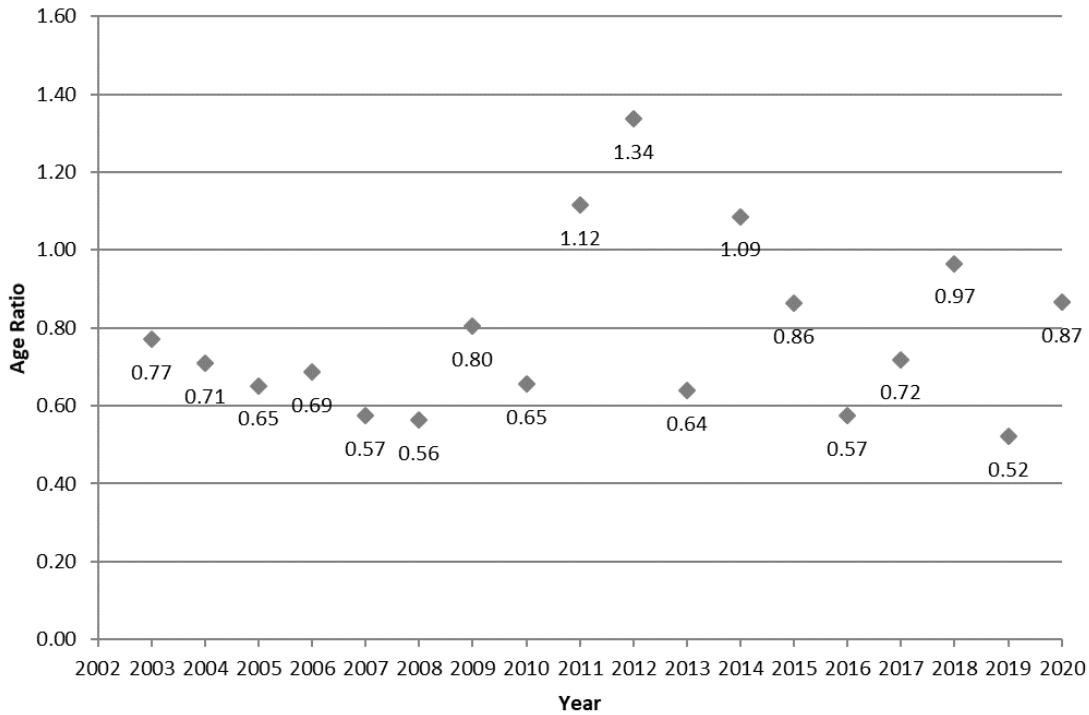


Figure 3. Age ratio (Hatch Year/After Hatch Year) of doves banded in Kansas since 2003

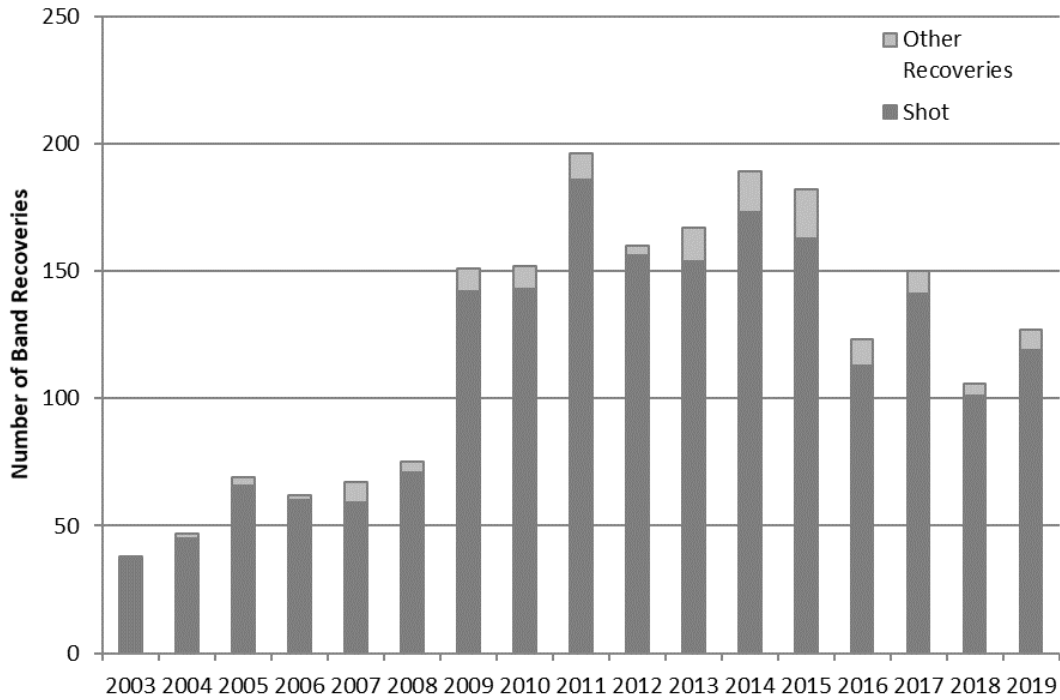


Figure 4. Recoveries of mourning doves banded in Kansas since 2003

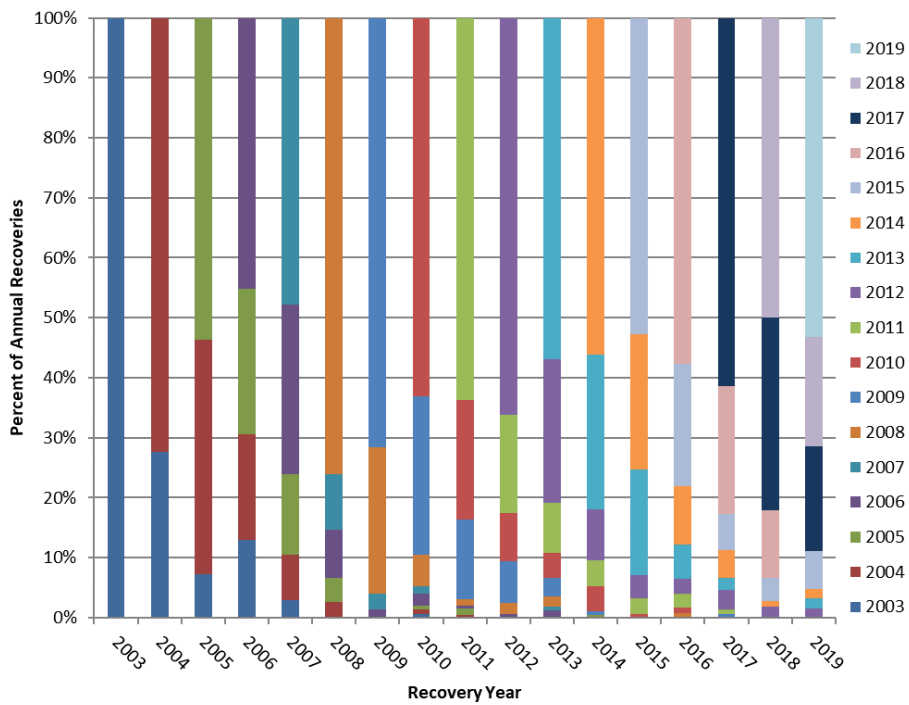


Figure 5. Percent of annual recoveries contributed by each banding season for doves banded in Kansas

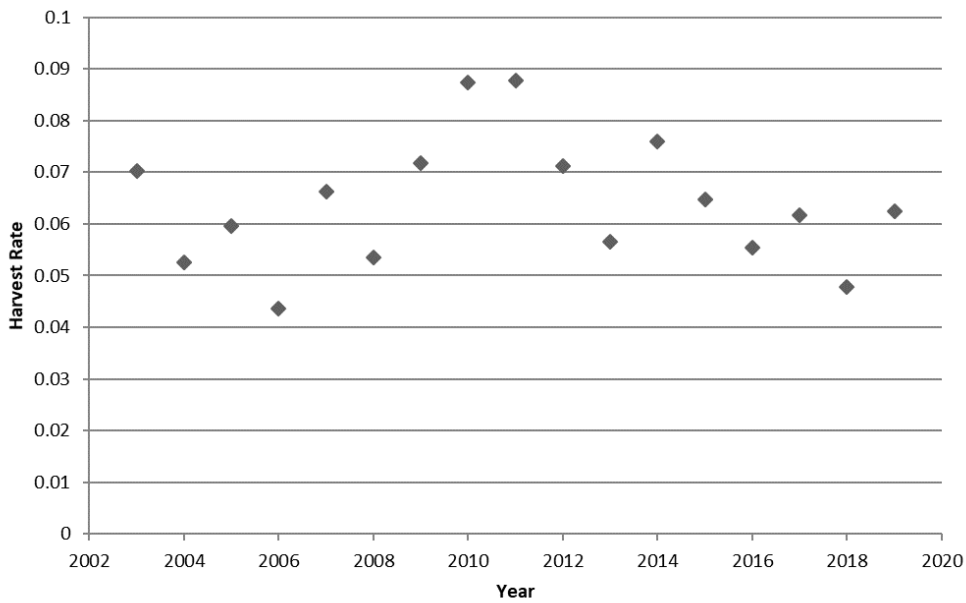


Figure 6. Harvest rate of doves banded in Kansas since 2003

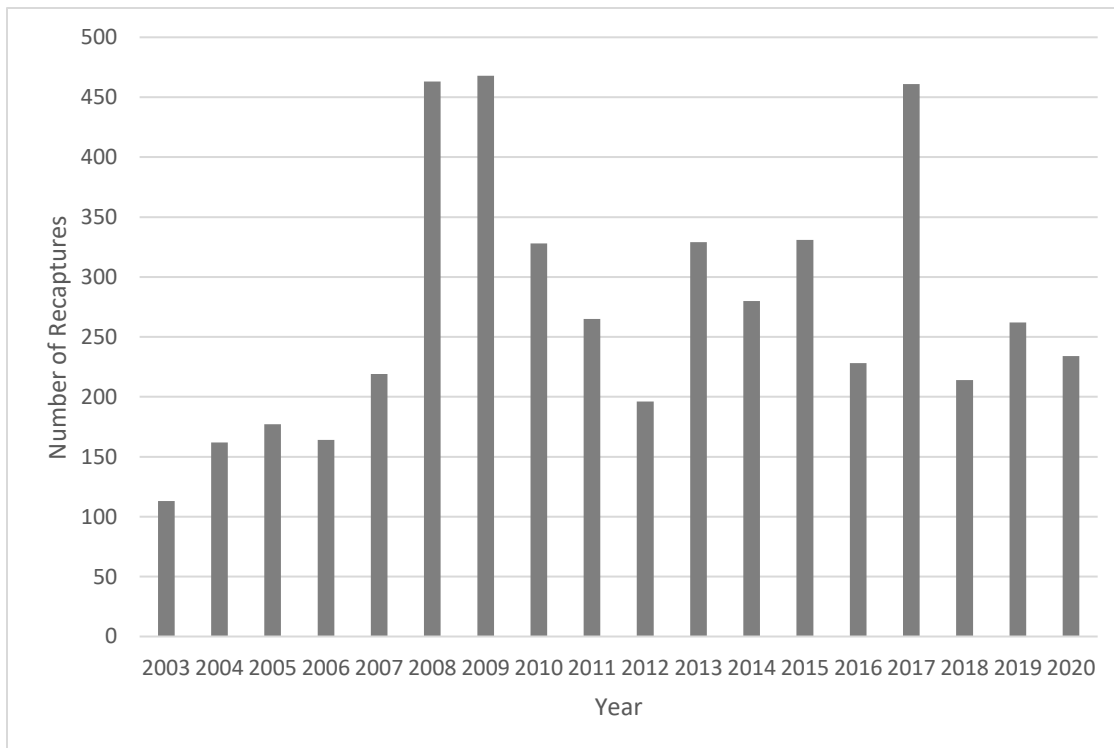


Figure 7. Number of dove recaptures documented during dove banding operations.