2018

MISSOURI WILD TURKEY HARVEST AND POPULATION STATUS REPORT

Missouri Department of Conservation

Resource Science Division

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POPULATION STATUS

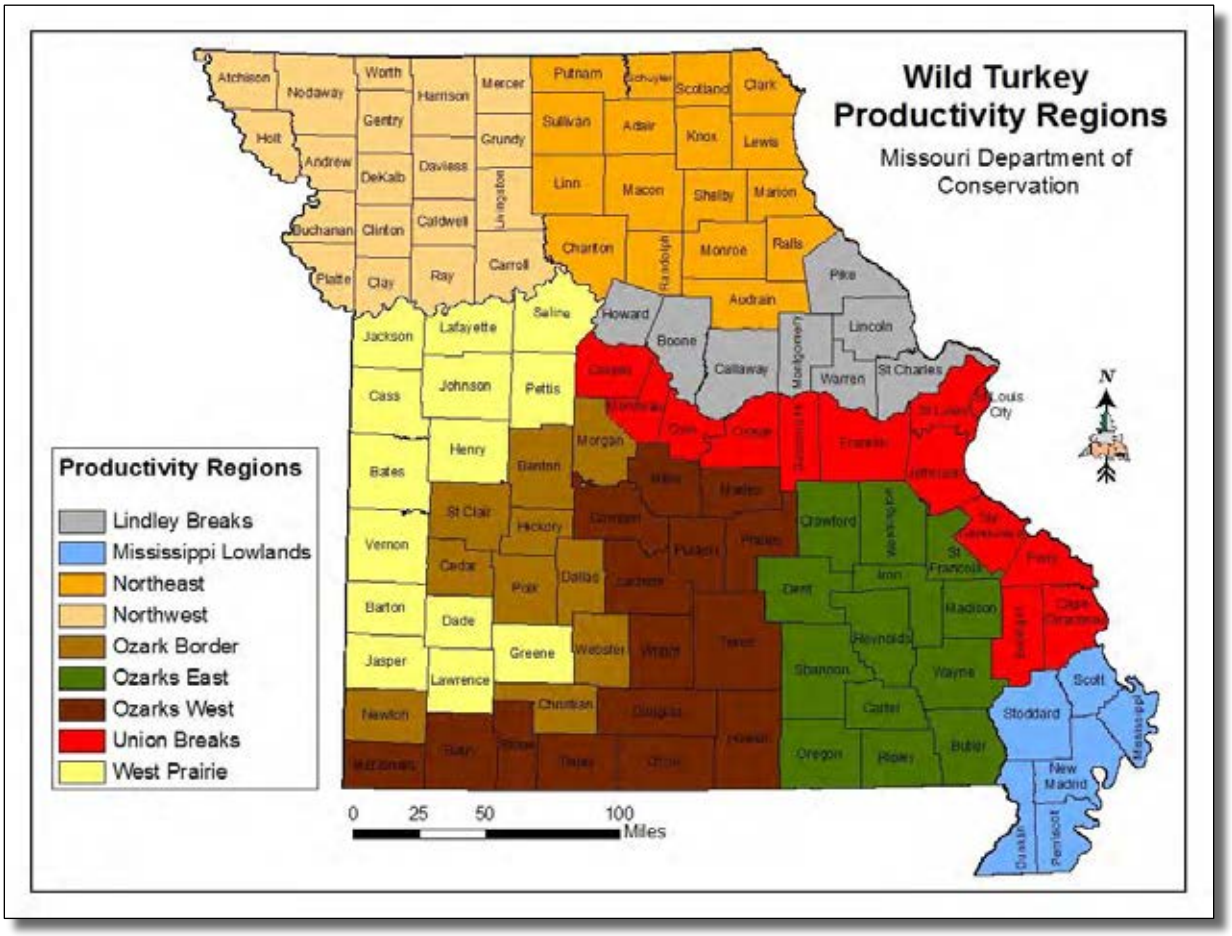
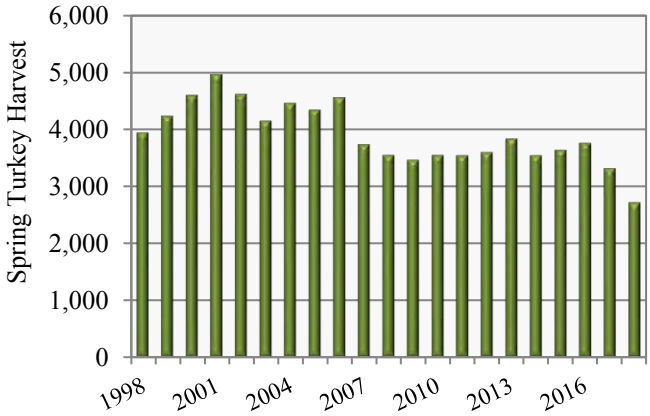


Figure 1. Turkey Productivity Regions in Missouri. Regions consist of counties grouped by similar land cover composition.

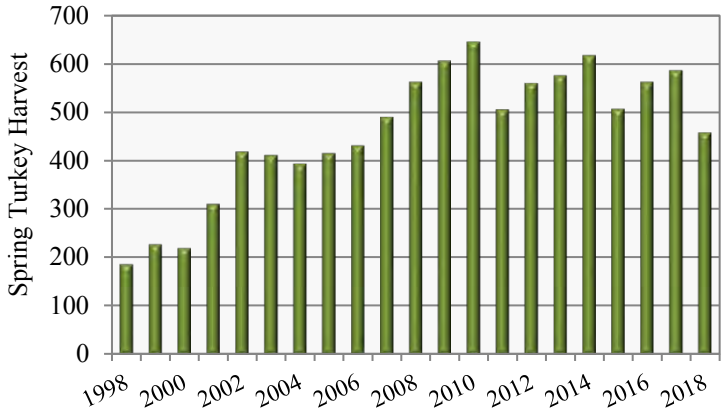
Lindley Breaks Region

Turkey numbers in the Lindley Breaks region (Figure 1) peaked in the early 2000s before declining by approximately 30% from 2001–2009. Harvest data suggest stable population numbers from 2009–2016, however, spring harvest numbers suggests a decline the last two years when turkey production has been especially poor.



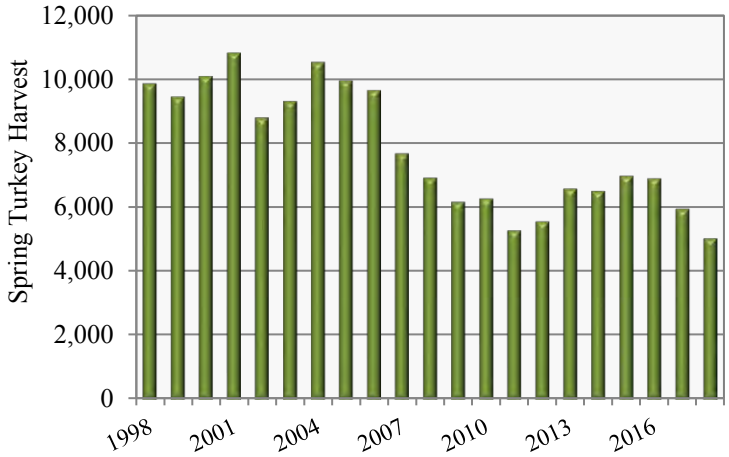
Mississippi Lowlands Region

Turkey numbers in the Mississippi Lowlands region (Figure 1) increased during the 2000s. Spring harvest data suggest that regional turkey numbers have been stable for the last decade. Turkey habitat within the region is limited, resulting in low harvests compared to other regions.



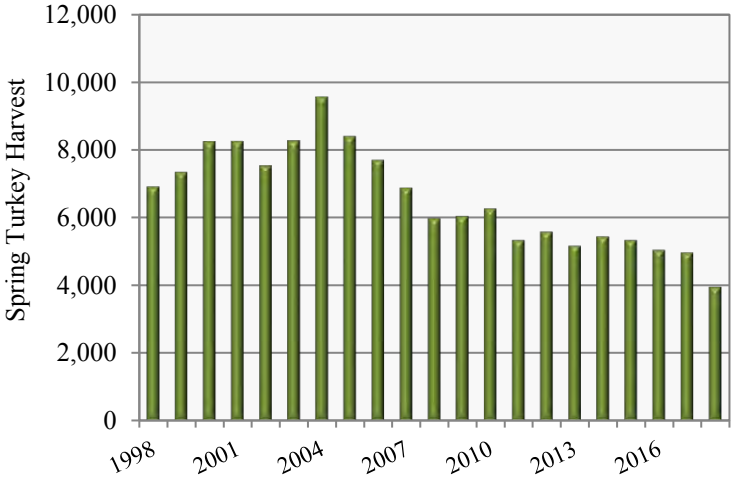
Northeast Region

Six consecutive years of poor production caused turkey numbers in the Northeast region (Figure 1) to decline by approximately 40% during the late 2000s. Following two years of improved production in 2011 and 2014, harvest data suggest an increase in regional populations. Poor production the last several years, however, has resulted in harvest declines.



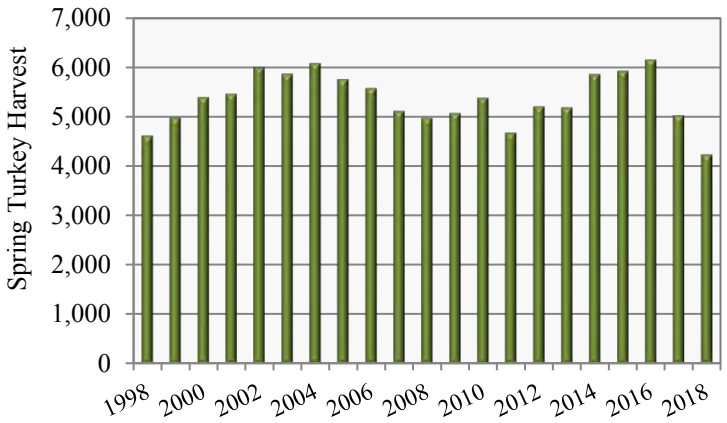
Northwest Region

Similar to the Northeast region, poor production caused turkey numbers to decline sharply in the Northwest region (Figure 1) during the late 2000s. Although spring harvest data displayed a trend towards stabilization from 2011–2015, harvest numbers have since declined considerably, particularly in 2018.



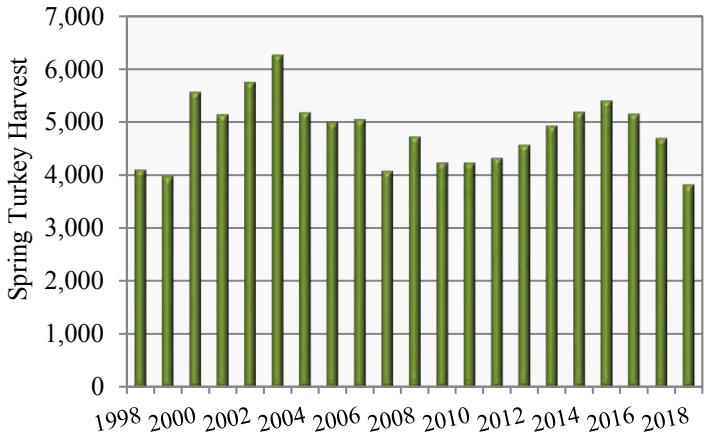
Ozark Border Region

Turkey numbers in the Ozark Border region (Figure 1) peaked in the early 2000s, as they did in most of the state before declining during the mid-to-late 2000s. Spring harvest data suggest a population increase within the region from 2011–2016 before numbers dropped sharply the past two years.



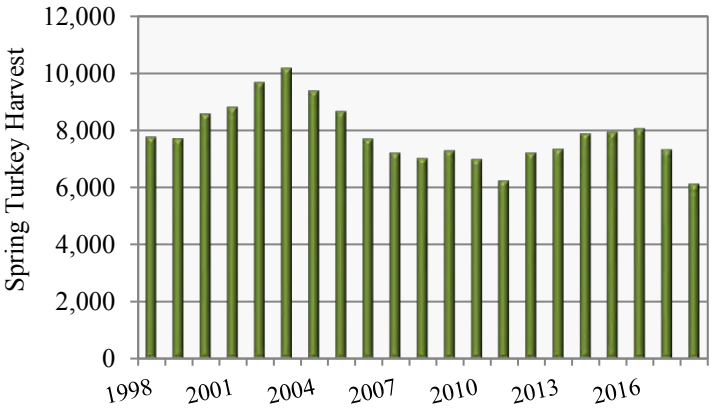
Ozarks East Region

Spring harvest data indicate that turkey numbers in the Ozarks East region (Figure 1) declined during the late 2000s. Following several years of improved production, spring harvests increased markedly from 2011–2015 before declining over the last several years.



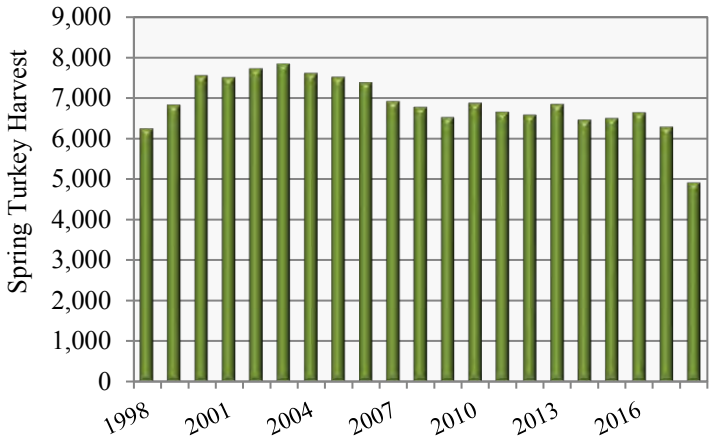
Ozarks West Region

Following a population peak that occurred during the early 2000s, turkey numbers in the Ozarks West region (Figure 1) declined sharply during the mid-to-late 2000s. Improved production resulted in an increasing trend in spring harvest from 2011–2016. Simlilar to the Ozarks East region, spring harvest has declined the last two years.



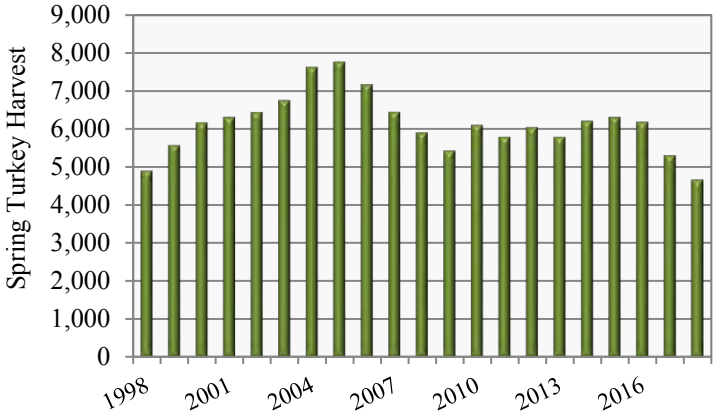
Union Breaks Region

Following a peak in the early 2000s, turkey numbers in the Union Breaks region (Figure 1) declined during the mid-to-late 2000s. Harvest data suggest stable numbers from 2009–2017, however, harvest declined in 2018.



West Prairie Region

Similar to the population trend in the Northwest region, turkey numbers in the West Prairie region (Figure 1) peaked during the early-to-mid 2000s. Spring harvest data suggest a population increase from 2009–2015. Harvest has since declined following several years of poor production.



REPRODUCTION – WILD TURKEY BROOD SURVEY

The Missouri Department of Conservation (MDC) has been conducting a Wild Turkey Brood Survey annually since 1959. During the survey, Department staff and citizen volunteers record observations of hens, poults, and gobblers during June, July, and August. Turkey sightings are recorded on observation cards, which the MDC mails to participants at the beginning of each survey month. By recording observations of hens and poults, survey participants provide information that serves as an index to turkey production. It is through this survey that the MDC determines the success of each year's turkey hatch. Turkey observations are collected at the county-level and analyzed by Turkey Productivity Region (Figure 1), which are counties grouped by similar land cover composition.

Conservation Department staff determines the percentage of hens observed with and without poults, and the average number of poults per hen for those hens observed with a brood. Observations of hens and poults are used to determine the poult-to-hen ratio (PHR), which is the average number of poults per hen. The PHR includes observations of hens with a brood and those observed without a brood.

In 2018, MDC staff and citizen volunteers recorded observations of over 84,000 turkeys during the three-month survey. At the statewide scale, 36% of hens were observed with a brood (Table 1), which is up from 27% in 2017 and the same as the previous five-year average. The percentage of hens observed with a brood ranged from 25% in the Ozarks West region to 46% in Northwest region. Statewide, the average brood size was 3.8 poults (Table 1), which is up from 3.5 in 2017 and 3% less than the previous five-year average. Average brood size ranged from 3.4 in the West Prairie region to 4.2 in the Lindley Breaks region. The 2018 statewide PHR of 0.9 was 13% higher than the 2017 ratio, 25% less than the previous five-year average, and 31% less than the 10-year average (Figure 2, Table 2). The 2018 PHR was 40% less than the 20-year average. Among Turkey Productivity Regions, PHRs ranged from 0.7 in the Ozarks West to 1.4 in the Northwest (Table 2).

Table 1. Wild Turkey Brood Survey data by Turkey Productivity Region (Figure 1). Data were obtained from Missouri's Wild Turkey Brood Survey conducted in June, July, and August, 2018.

Productivity Region	% Hens w/ Poults	Average Brood Size	Poult-to-Hen Ratio	Gobbler-to-Hen Ratio
Lindley Breaks	42%	4.2	1.3	0.47
Mississippi Lowlands	41%	3.9	1.2	0.54
Northeast	43%	3.9	1.3	0.59
Northwest	46%	4.0	1.4	0.64
Ozark Border	36%	3.5	0.8	0.81
Ozarks East	28%	3.7	0.8	0.66
Ozarks West	25%	3.9	0.7	0.64
Union Breaks	38%	3.7	0.9	0.49
West Prairie	37%	3.4	0.8	0.84
Statewide[a]	**36%**	**3.8**	**0.9**	**0.63**

[a]Statewide totals include observations where Productivity Region was not recorded on the survey form.

Table 2. Index (poult-to-hen ratio) of Missouri turkey production by Turkey Productivity Region (Figure 1). Data were obtained during the 2018 Wild Turkey Brood Survey and are compared to previous years. For each interval value, the percent change indicates how the 2018 index compares to the previous year or the average for periodic intervals.

Productivity Region	2018 Index	1-year (2017) Change	5-year (2013–2017) Change	10-year (2008–2017) Change	20-year (1998–2017) Change
Lindley Breaks	1.3	+63%	+8%	-7%	-24%
Mississippi Lowlands	1.2	No change	No change	-20%	-45%
Northeast	1.3	+18%	No change	No change	-13%
Northwest	1.4	+8%	No change	+8%	-13%
Ozark Border	0.8	+14%	-27%	-33%	-47%
Ozarks East	0.8	No change	-43%	-50%	-56%
Ozarks West	0.7	+17%	-42%	-42%	-53%
Union Breaks	0.9	No change	-25%	-31%	-40%
West Prairie	0.8	+33%	-20%	-27%	-43%
Statewide[a]	**0.9**	**+13%**	**-25%**	**-31%**	**-40%**

[a]Statewide totals include observations where Productivity Region was not recorded on the survey form.

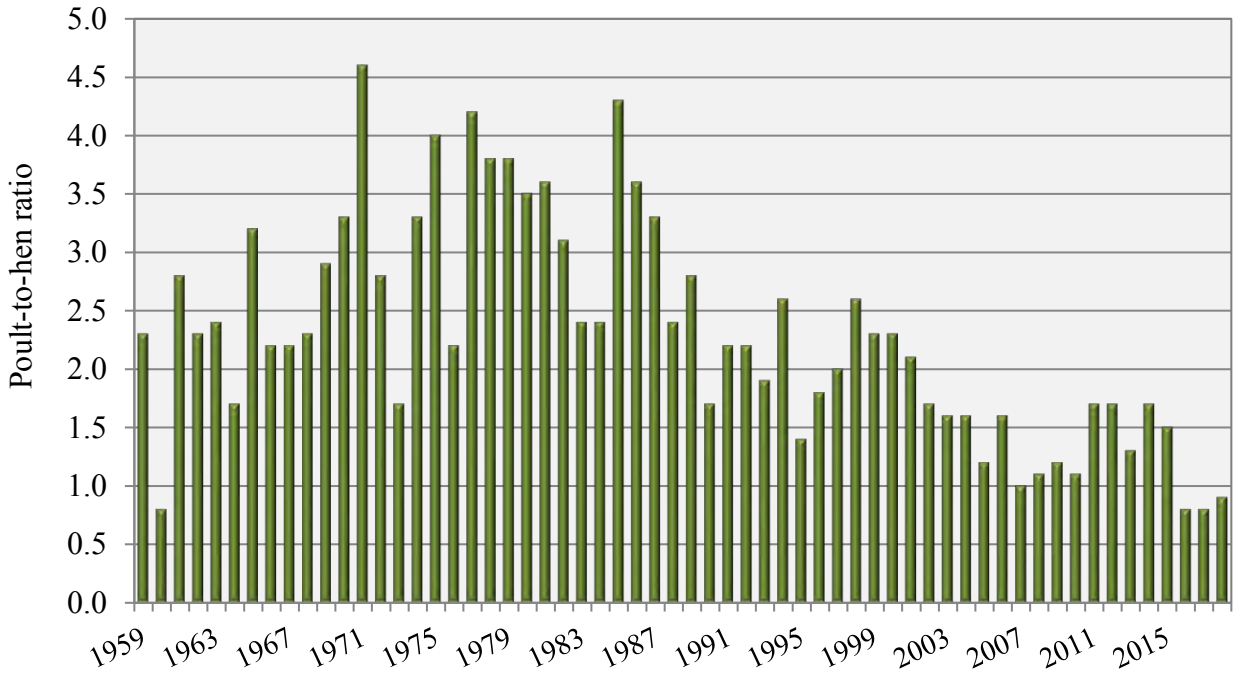


Figure 2. Missouri statewide poult-to-hen ratios derived from the Wild Turkey Brood Survey conducted in June, July, and August, 1959–2018.

HARVEST

2018 Spring Turkey Season

During the 2018 youth spring turkey season, which took place April 7–8, hunters harvested 1,723 turkeys. This harvest total represented a 58% decrease from the 2017 youth season and was 59% less than the previous five-year average. The large drop in harvest can be attributed mostly to the unseasonably cold weather that blanketed the state during the two-day hunt. Not only did this reduce the amount of time that young hunters spent in the field during the weekend, but it also reduced permit sales. Specifically, on the Friday before the youth season, permit sales were down about 30% from where they were at that point in 2017.

Hunters harvested 34,071 turkeys during the 21-day regular spring turkey season, which occurred April 16 – May 6. The regular season harvest was 13% less than the 2017 harvest. Juvenile male turkeys represented 15% of the regular season harvest (Figure 3), which was 32% less than the previous five-year average. The total 2018 spring harvest, including both the youth and regular seasons was 35,805. This harvest total was 17% less than the 2017 harvest total, and was 23% less than the previous five-year average. Counties with the highest total spring harvest were Franklin, Texas, and Laclede, where 760, 732, and 657 turkeys were harvested, respectively (Figure 4).

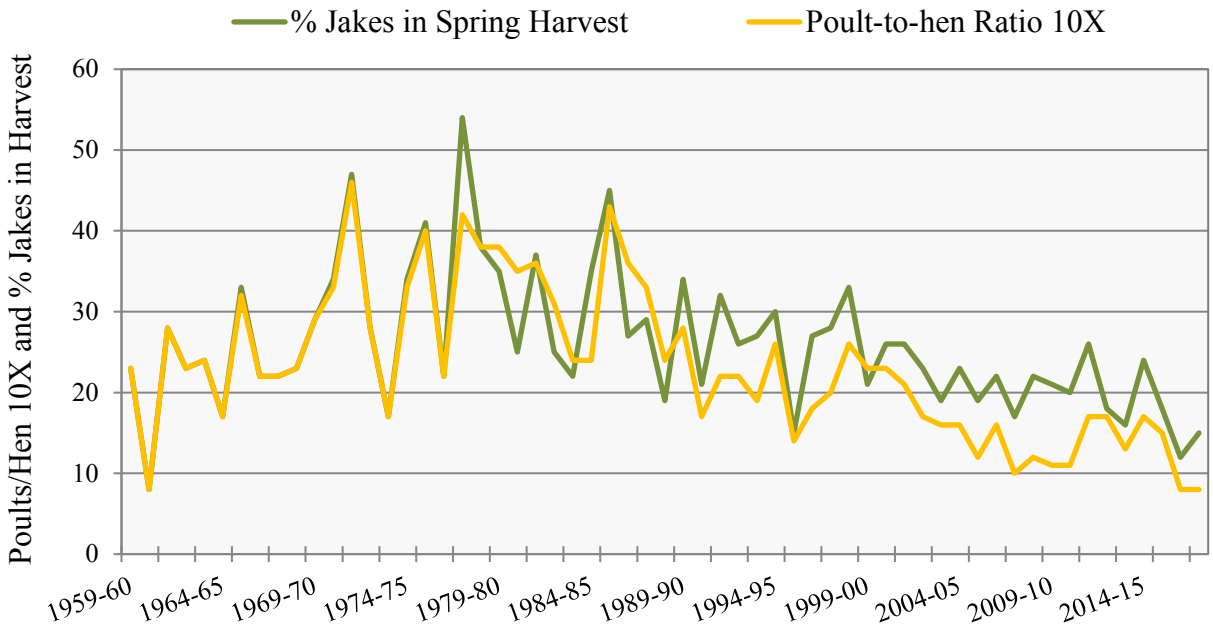


Figure 3. Missouri's statewide poult-to-hen ratio multiplied by 10, compared with the percentage of jakes in the following year's regular season spring harvest, 1959–2018.

Total permit sales for the 2018 spring turkey season (97,051; excluding no-cost landowner permits) were 4% less than in 2017 (Figure 5). Spring turkey permit sales in 2018 included 88,774 (91%) resident permits and 8,277 (9%) nonresident permits. An additional 38,175 no-cost permits were distributed to resident landowners. The total number of spring turkey hunters in Missouri in 2018 was 129,882, which was 5% less than in 2017. The total number of hunters does not equal the permit sales total because some hunters purchase a permit in addition to receiving a no-cost landowner permit.

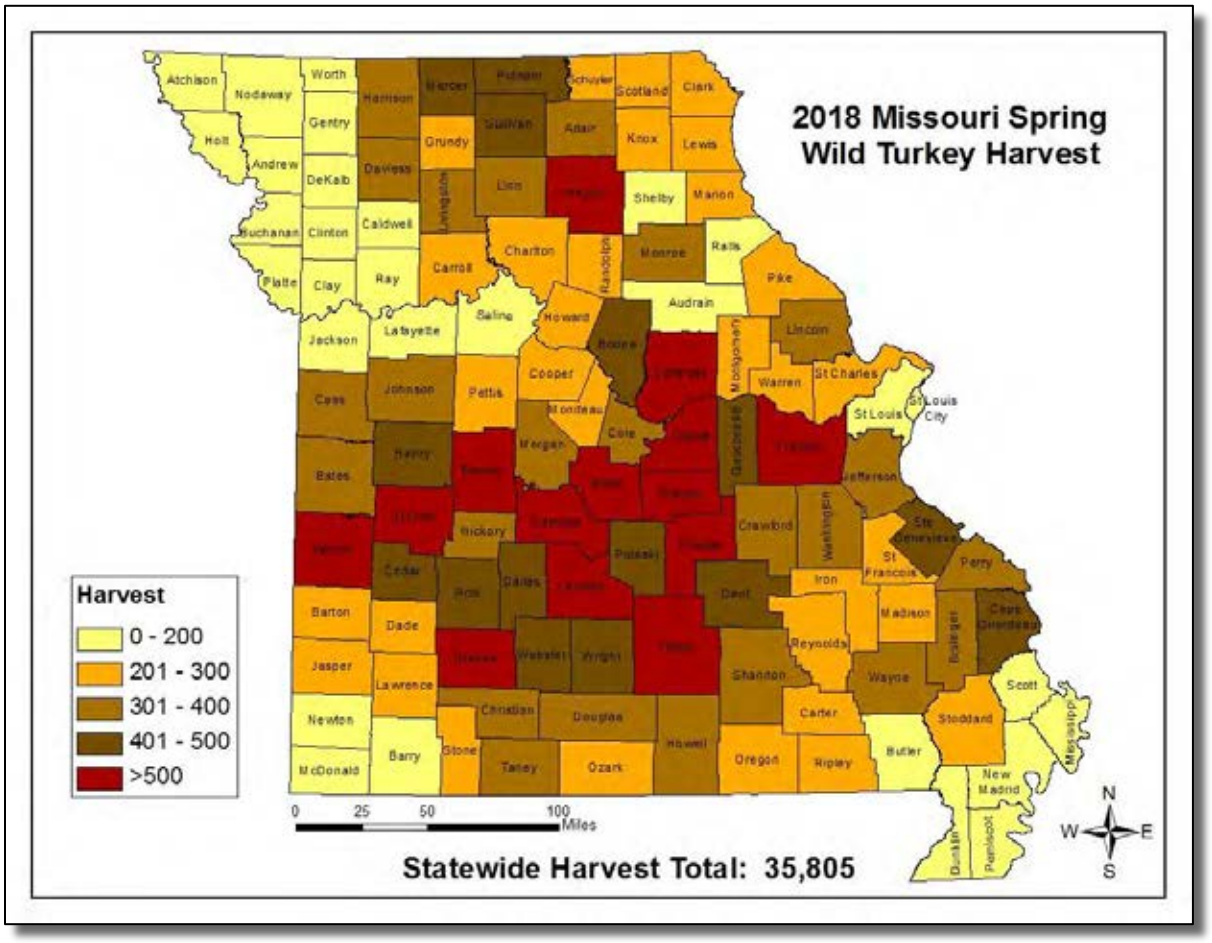


Figure 4. Total (youth and regular season) spring wild turkey harvest in Missouri, 2018.

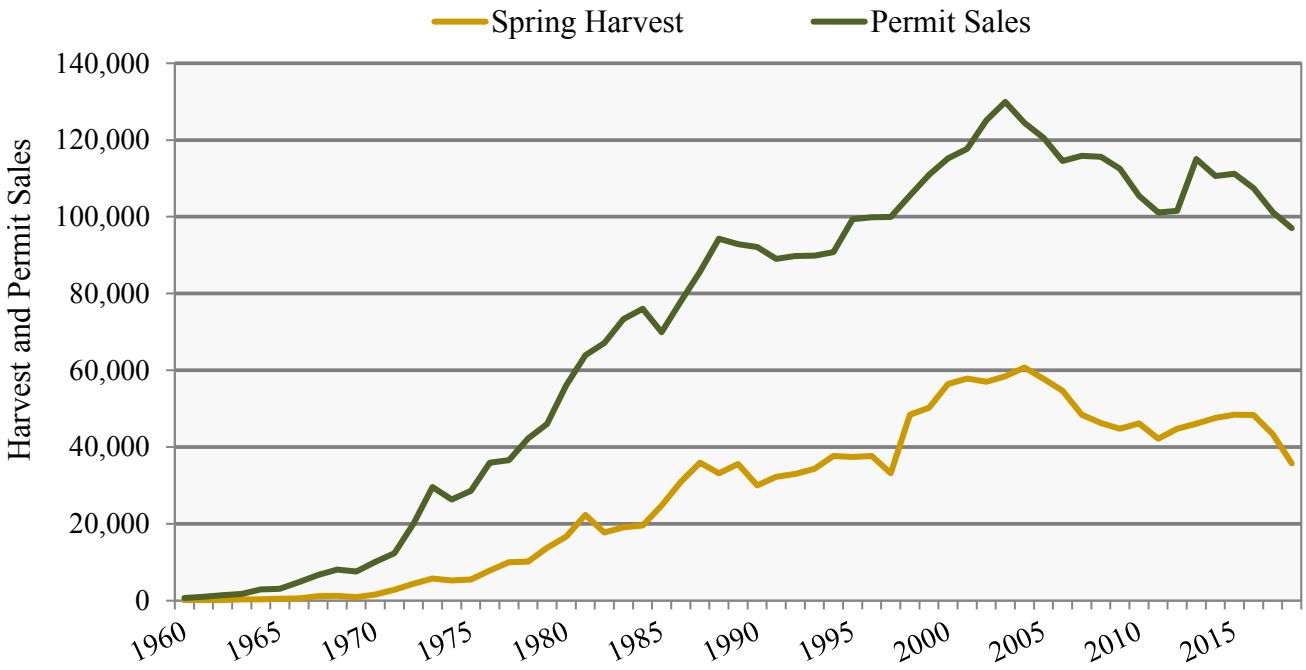


Figure 5. Number of wild turkeys harvested during the spring season (youth and regular season) in Missouri and the number of turkey hunting permits sold for the spring season, 1960–2018. Permit sales do not include no-cost landowner permits.

2018 Fall Firearms Turkey Season

The 2018 fall firearms turkey harvest total of 2,169 was 25% less than the 2017 harvest total and was 56% below the previous five-year average. The majority of the fall firerams harvest occurred in southern Missouri (Figure 6). The top three harvest counties were Greene (57), Henry, (48), and Laclede (47).

Fall firearms turkey permit sales in 2018 were slightly (< 1%) higher than in 2017. Of the 10,262 permits sold, 10,039 (98%) were purchased by Missouri residents and 223 (2%) by nonresidents. Fall firearms turkey hunting in Missouri has been declining in popularity since the late 1980s when over 50,000 permits were sold and more than 28,000 turkeys were harvested during the 14-day season (Figure 7).

Although the novelty of the fall firearms turkey season may have worn off for some of Missouri's hunters, the increasing popularity of the archery deer and turkey season is likely to be partially responsible for the declining interest. Additionally, declining turkey numbers during the mid-to-late 2000s, and in recent years, are likely to have reduced hunter participation in the fall season. Missouri is not alone in experiencing a declining trend in fall firearms turkey hunting participation, as a number of other states are seeing similar trends.

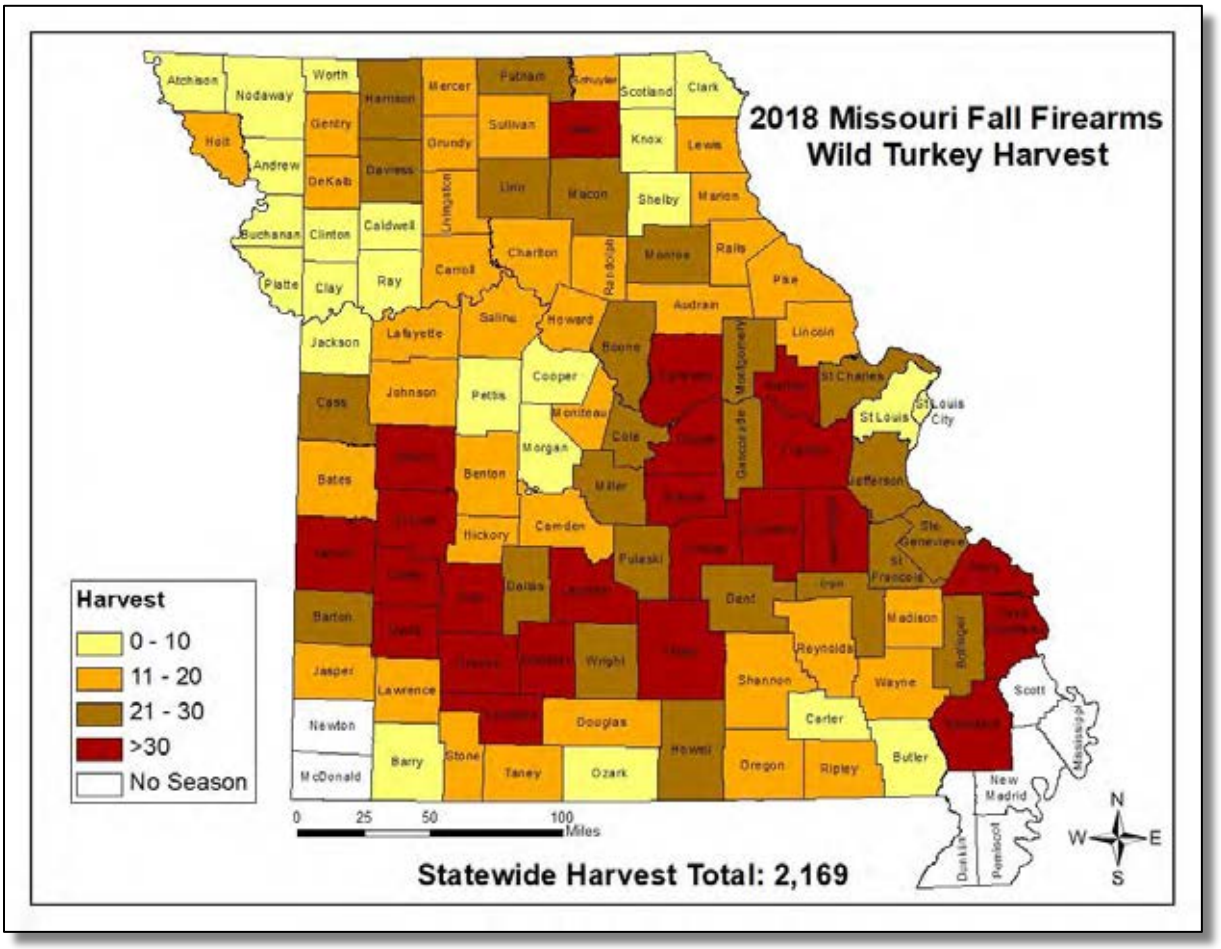


Figure 6. Missouri fall firearms wild turkey harvest, 2018.

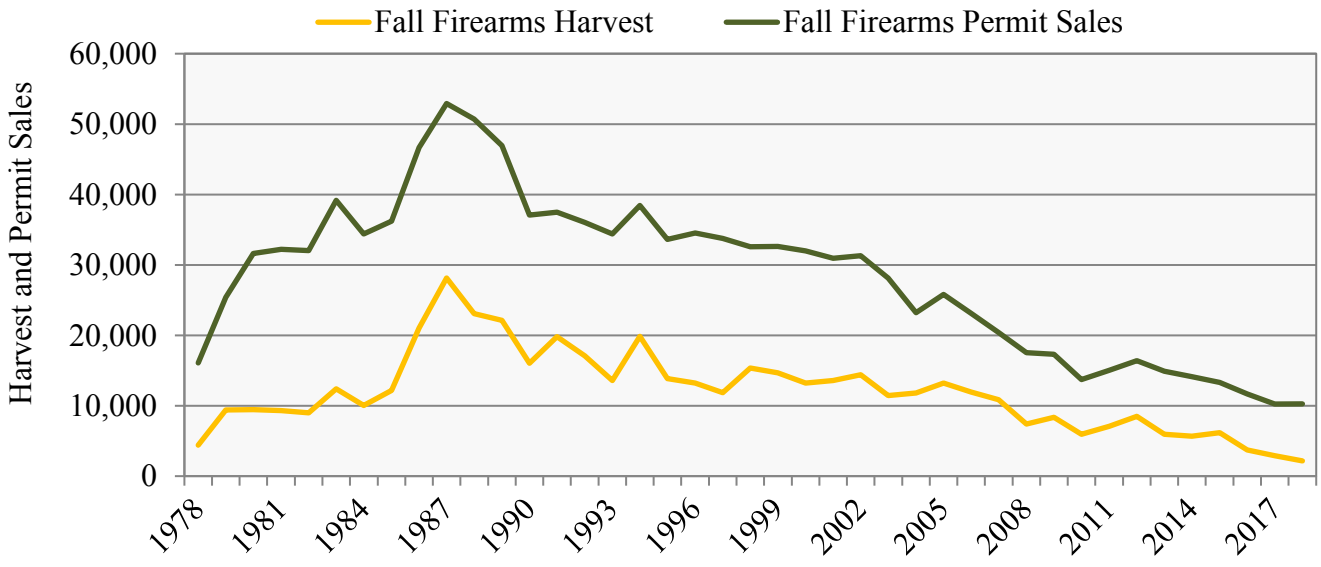


Figure 7. Number of wild turkeys harvested during the fall firearms turkey season in Missouri and the number of fall firearms permits sold, 1978–2018. Permit sales do not include no-cost landowner permits.

2018 Fall Archery Turkey Season

Hunters harvested 2,095 turkeys during the 2018 fall archery deer and turkey seasons (Figures 8, 9). The 2018 archery turkey harvest total was 14% less than the 2017 harvest total and nearly 20% less than the previous five-year average. The top three harvest counties were Callaway (54), Franklin (43), and Monroe (37) (Figure 8). Unlike the fall firearms turkey harvest, which has shown a declining trend since the late 1980s (Figure 7), the fall archery harvest increased until the mid-2000s. Since 2005, archery turkey harvests have fluctuated substantially on an annual basis, while exhibiting a declining trend over the last several years (Figure 9).

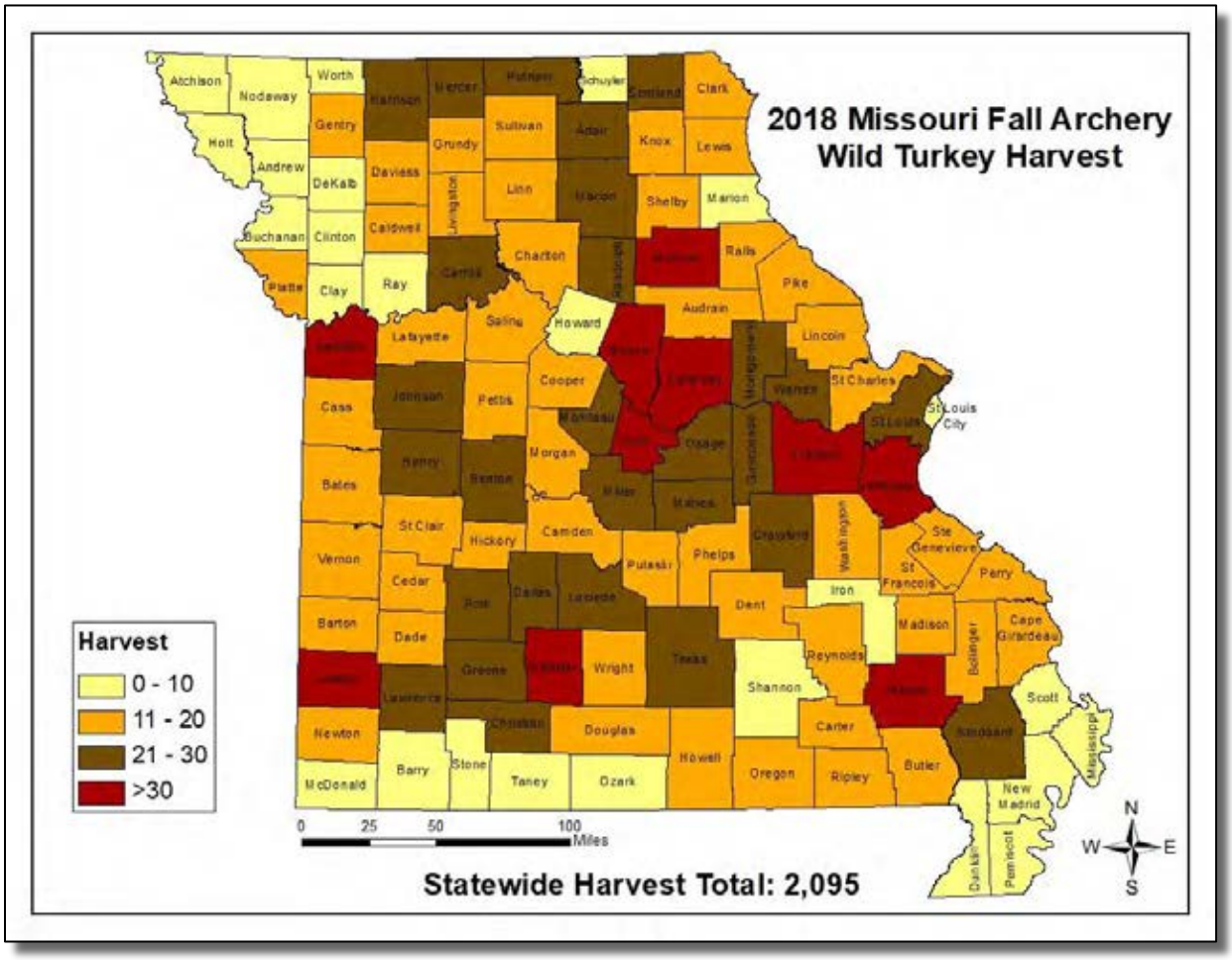


Figure 8. Wild turkey harvest in Missouri during the 2018 fall archery season.

Although archery permit sales were relatively stable from the mid-1990s through the mid-2000s, sales have since shown an increasing trend (Figure 10). In 2018, 123,882 archer's hunting permits were sold, the highest number since the season's inception. Of the archery permits sold in 2018, 112,071 (90%) were purchased by Missouri residents and 11,811 (10%) by nonresidents.

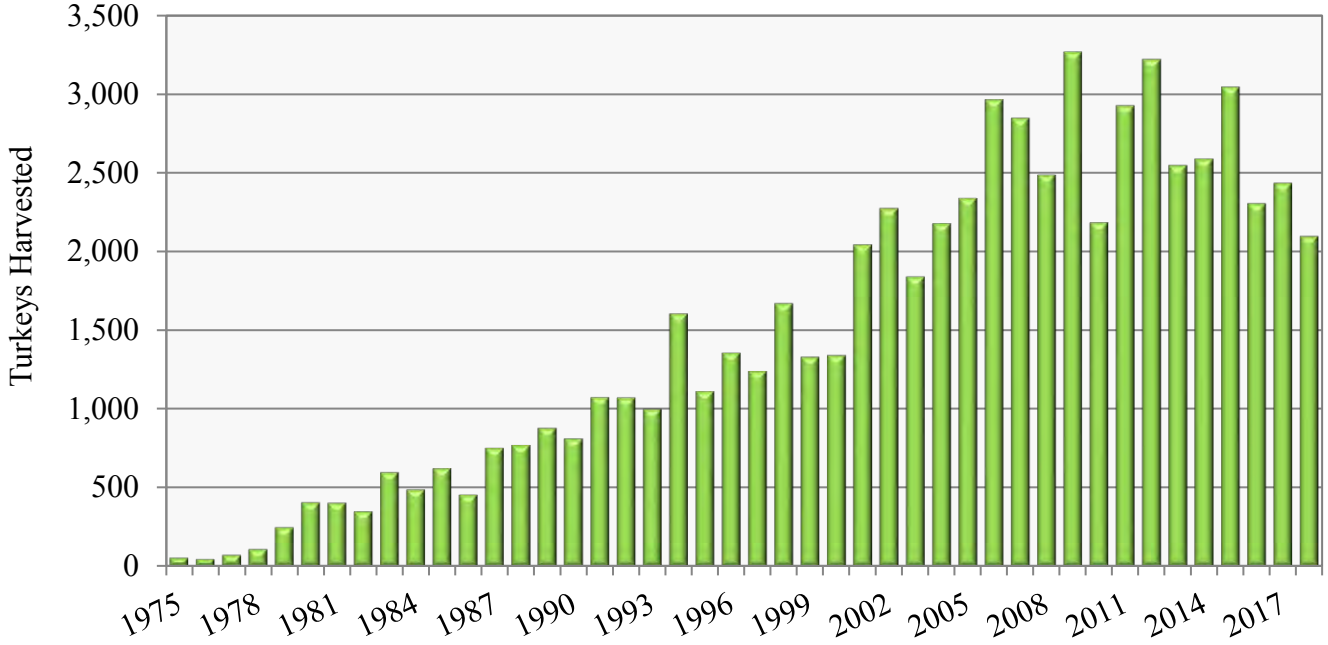
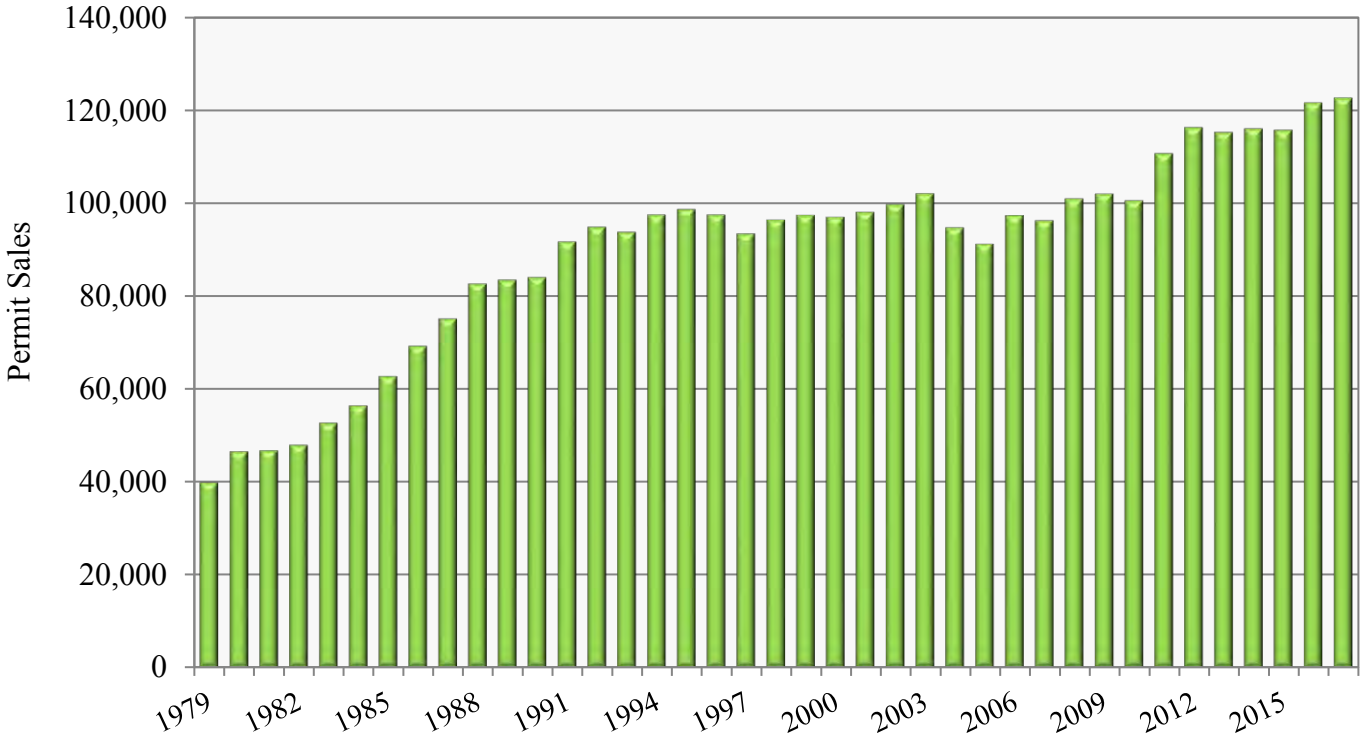
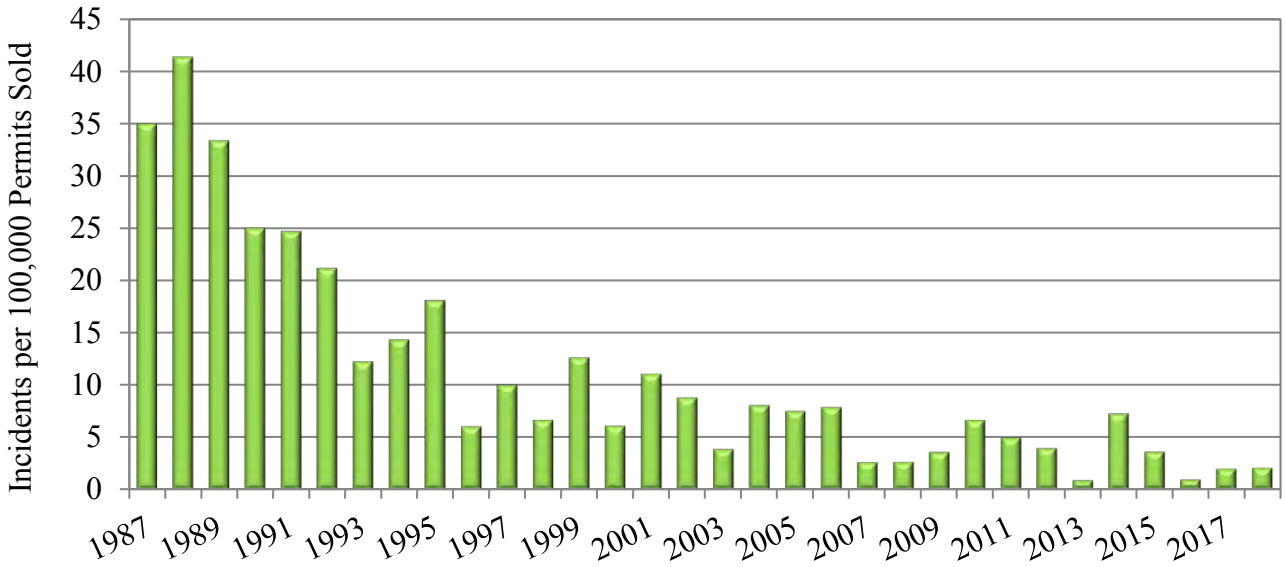


Figure 9. Missouri fall archery wild turkey harvest, 1975–2018.



HUNTING INCIDENTS

There were two non-fatal hunting incidents during the 2018 spring turkey season. The number of spring turkey hunting incidents in Missouri has declined considerably over the course of the last three decades. During the late 1980s, more than 30 incidents occurred annually for every 100,000 permits sold. During the last five hunting seasons, the average number of incidents per 100,000 permits sold is 3.2 (Figure 11).



RECENT REGULATION CHANGES

Other than changes to some conservation area and managed turkey hunts, no turkey hunting regulation changes occurred in 2018.

NORTHEAST MISSOURI WILD TURKEY RESEARCH PROJECT UPDATE

Introduction

In 2013, the MDC began a five-year wild turkey research project in north Missouri in partnership with the University of Missouri and the University of Washington. The study was conducted in Putnam, Schuyler, Monroe, and Marion Counties. Funding for the project was provided by the MDC and grants from the U.S. Fish and Wildlife Service's Wildlife Restoration Program and the George Clark Missouri State Chapter of the National Wild Turkey Federation. The research project will provide information that will be used by the Conservation Department's Wild Turkey Management Program to monitor the turkey population and assist with making decisions about hunting regulations. The Conservation Department uses a science-based approach to manage the state's wild turkey population and this research project is just one of the many ways that the Department obtains the information used in its program.

The goal of the research project is to develop population models, which will provide annual estimates of turkey population size, survival rates, harvest rates (percentage of the population shot by hunters), recruitment (number of young produced that enter the population), and the growth rate of the turkey population. A computer software program will also be developed to facilitate use of the population models. During the field-based portion of the project, researchers captured, banded, and radio-tagged turkeys throughout the four-county study area. All turkeys were released in the same fields where they are captured. The field-based portion of the research project will provide the Conservation Department with estimates of seasonal and annual survival for adult gobblers, jakes, and hens, as well as harvest rate estimates during the spring and fall hunting seasons.

Fitting wild turkeys with radio-transmitters allowed researchers to track the birds and monitor their survival throughout the year, in addition to identifying the various sources of mortality. Of central importance was determining what percentage of adult gobblers and jakes are harvested during the spring hunting season. To allow harvest rates to be estimated, a toll-free phone number was inscribed on each turkey band. For hunters that shoot a banded turkey, in addition to reporting their bird through the Telecheck Reporting System, the Conservation Department asked that they call the toll-free number on the band. The information gained from band returns is critically important to the success of the project.

In addition to determining the percentage of adult gobblers and jakes that are harvested during the spring hunting season, researchers will also determine the percentage of banded turkeys that are harvested during the fall season. Researchers also monitored hens closely during the nesting and brood-rearing seasons. The study will allow researchers to answer some basic questions about turkey reproduction, including: What proportion of hens attempt to nest each year? What percentage of hens nest successfully? Of those hens that nest successfully, what is the survival rate of their poults? Although previous research projects have shed light on the answers to these questions, brood survey results indicate considerable declines in turkey production since the last turkey research project was conducted in Missouri, and having updated information is important.

Years 1–4: Project Summary

Researchers captured nearly 1,700 turkeys during the five winter field seasons including 458 males and 1,217 hens. All males were banded and radio-tagged; 160 hens were banded and radio-tagged, and 1,057 hens were marked only with bands. Analysis of the fifth year of project data is currently being conducted. The following paragarphs provide a summary of project results for the first four years.

Annual survival rates of radio-tagged hens have ranged from 50–71%. Spring and summer survival rates have ranged from 81–90% and from 78–92%, respectively. Fall and winter survival rates have ranged from 84–95% and from 86–98%, respectively. Annual survival of adult gobblers (39–46%) was lower than that of hens and jakes (68–79%). Spring survival of adult gobblers and jakes has ranged from 56–69% and from 85–94%, respectively. Survival rates of adult gobblers and jakes during summer have ranged from 85–96% and from 91–100%, respectively. During fall, survival rates of adult gobblers and jakes have ranged from 90–94% and from 89–100%, respectively. Lastly, winter survival rates of adult gobblers and jakes have ranged from 89–98% and from 90–95%, respectively.

Predation was the leading cause of death of female turkeys, accounting for 87% of mortalities where cause could be determined (47 of 54 deaths). Predation was also the leading cause of death of jakes. Of the 96 jakes that died where cause could be determined, 57 (59%) were suspected to have been killed by predators. Hunter harvest has been the leading cause of death for adult gobblers, accounting for 57% of mortalities where cause could be determined (63 of 111 deaths). During the first four years of the project, the percentage of adult gobblers harvested during the spring season has ranged from 15–31%. Not surprisingly, the percentage of jakes harvested during the spring season (0–6%) has been considerably lower than that of adult gobblers. During the first four years of the project, fall harvest rates of radio-tagged male turkeys have ranged from 0–3%. Fall harvest rates of radio-tagged hens have also ranged from 0–3%. With banding data included, the fall harvest rate of hens over the first four years of the project has been about 1%.

Of the hens radio-tracked during the first four years of the project, the median date of initial nest incubation initiation has ranged from May 7–16. Most radio-tagged adult hens (69–88%) have initiated incubation of at least one nest, whereas only 40–60% of juvenile hens have initiated incubation. Of the adult hens that failed their initial nesting attempt, 30–60% initiated incubation of a second nest. One-third of juvenile hens have renested during the first four years of the study. During years 1–4, the percentage of hens that have been successful at hatching poults (female success) has ranged from 17–33%. Female success has been greater for adult hens (19–33%) than for juvenile hens (0–20%). Average first nest clutch size has ranged from 10–12 eggs, respectively. Of the eggs laid in successful nests, the percentage that have hatched has ranged from 82–97%. Poult survival has ranged from 6–47%.

Appendix A.

2018 Missouri spring turkey harvest (youth and regular seasons combined).

County	Adult Males	Juvenile Males	Bearded Hens	Total	Rank[a]
Adair	308	77	8	393	30
Andrew	144	30	0	174	92
Atchison	92	27	2	121	102
Audrain	99	29	6	134	100
Barry	132	13	1	146	98
Barton	249	27	6	282	61
Bates	298	73	2	373	40
Benton	512	43	7	562	9
Bollinger	316	55	7	378	37
Boone	406	57	9	472	17
Buchanan	75	16	0	91	108
Butler	101	13	1	115	103
Caldwell	128	39	0	167	96
Callaway	484	112	9	605	6
Camden	495	51	7	553	10
Cape Girardeau	341	76	8	425	26
Carroll	203	69	4	276	66
Carter	204	9	2	215	83
Cass	294	63	3	360	44
Cedar	406	46	17	469	18
Chariton	200	49	0	249	74
Christian	335	30	4	369	42
Clark	250	44	3	297	55
Clay	86	21	1	108	105
Clinton	52	34	1	87	109
Cole	271	67	5	343	48
Cooper	201	37	4	242	76
Crawford	308	71	4	383	35
Dade	237	41	1	279	63
Dallas	374	49	7	430	24
Daviess	295	74	3	372	41
DeKalb	115	49	2	166	97
Dent	388	69	11	468	19
Douglas	310	29	5	344	47
Dunklin	8	2	0	10	114
Franklin	607	136	17	760	1

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix A. Continued.

County	Adult Males	Juvenile Males	Bearded Hens	Total	Rank[a]
Gasconade	375	90	8	473	16
Gentry	146	27	1	174	93
Greene	473	83	9	565	8
Grundy	242	33	4	279	64
Harrison	309	62	5	376	38
Henry	369	73	7	449	22
Hickory	341	32	7	380	36
Holt	154	21	4	179	90
Howard	206	52	7	265	70
Howell	289	37	4	330	50
Iron	190	26	2	218	82
Jackson	140	35	2	177	91
Jasper	246	48	4	298	54
Jefferson	308	78	5	391	31
Johnson	309	75	1	385	34
Knox	199	24	1	224	80
Laclede	558	93	6	657	3
Lafayette	129	52	4	185	88
Lawrence	252	31	5	288	57
Lewis	188	36	1	225	79
Lincoln	235	69	9	313	53
Linn	282	57	4	343	49
Livingston	250	65	8	323	51
Macon	414	84	3	501	14
Madison	240	26	2	268	69
Maries	418	88	5	511	13
Marion	174	38	0	212	84
McDonald	69	7	2	78	110
Mercer	407	44	4	455	21
Miller	442	80	10	532	12
Mississippi	57	3	0	60	111
Moniteau	238	42	5	285	59
Monroe	317	52	5	374	39
Montgomery	192	80	4	276	67
Morgan	349	36	5	390	33
New Madrid	44	4	0	48	112

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix A. Continued.

County	Adult Males	Juvenile Males	Bearded Hens	Total	Rank[a]
Newton	106	17	1	124	101
Nodaway	136	31	3	170	94
Oregon	258	29	1	288	58
Osage	541	99	7	647	4
Ozark	188	32	4	224	81
Pemiscot	22	1	0	23	113
Perry	285	76	5	366	43
Pettis	209	43	3	255	73
Phelps	465	75	6	546	11
Pike	230	34	7	271	68
Platte	148	34	2	184	89
Polk	392	58	7	457	20
Pulaski	366	48	7	421	27
Putnam	377	65	6	448	23
Ralls	157	31	2	190	87
Randolph	224	56	2	282	62
Ray	107	28	2	137	99
Reynolds	256	27	2	285	60
Ripley	209	28	4	241	77
Saint Charles	200	44	1	245	75
Saint Clair	566	56	13	635	5
Saint Francois	227	45	5	277	65
Saint Louis	86	14	0	100	106
Sainte Genevieve	410	82	4	496	15
Saline	146	50	2	198	86
Schuyler	180	44	5	229	78
Scotland	241	48	5	294	56
Scott	96	18	0	114	104
Shannon	363	26	2	391	32
Shelby	135	32	3	170	95
Stoddard	153	45	4	202	85
Stone	230	29	4	263	71
Sullivan	337	59	6	402	29
Taney	316	24	6	346	46
Texas	618	101	13	732	2
Vernon	494	69	8	571	7

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix A. Continued.

County	Adult Males	Juvenile Males	Bearded Hens	Total	Rank[a]
Warren	200	57	6	263	72
Washington	256	58	7	321	52
Wayne	332	19	4	355	45
Webster	342	60	8	410	28
Worth	92	4	2	98	107
Wright	359	63	7	429	25
Totals	**29,930**	**506**	**5,369**	**35,805**	

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix B.

2018 Missouri fall turkey harvest (firearms and archery seasons combined).

County	Adult Males	Adult Females	Juvenile Males	Juvenile Females	Total	Rank[a]
Adair	16	13	8	20	57	18
Andrew	2	5	1	3	11	103
Atchison	5	4	1	3	13	99
Audrain	6	11	4	4	25	82
Barry	2	4	0	2	8	107
Barton	9	12	4	15	40	48
Bates	9	12	3	9	33	64
Benton	8	14	6	11	39	52
Bollinger	7	12	7	18	44	37
Boone	9	25	9	17	60	13
Buchanan	1	1	0	0	2	112
Butler	8	14	1	5	28	72
Caldwell	4	6	0	3	13	100
Callaway	21	43	7	26	97	1
Camden	13	9	6	11	39	53
Cape Girardeau	10	14	5	22	51	28
Carroll	15	10	4	8	37	57
Carter	6	5	3	6	20	94
Cass	11	13	8	8	40	49
Cedar	11	21	9	10	51	29
Chariton	6	9	2	15	32	67
Christian	16	21	5	14	56	19
Clark	4	8	6	2	20	95
Clay	5	6	1	3	15	97
Clinton	0	7	1	1	9	105
Cole	15	20	8	18	61	12
Cooper	7	10	3	2	22	91
Crawford	9	14	8	22	53	26
Dade	7	12	4	19	42	42
Dallas	18	13	4	15	50	31
Daviess	13	16	6	10	45	36
DeKalb	5	8	4	6	23	87
Dent	11	10	9	13	43	38
Douglas	4	7	5	12	28	73
Dunklin	1	0	1	0	2	113

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix B. Continued.

County	Adult Males	Adult Females	Juvenile Males	Juvenile Females	Total	Rank[a]
Franklin	13	29	15	31	88	2
Gasconade	12	22	9	12	55	22
Gentry	9	4	4	7	24	84
Greene	22	36	6	20	84	3
Grundy	11	9	0	12	32	68
Harrison	11	16	12	7	46	34
Henry	12	25	10	26	73	4
Hickory	7	13	8	8	36	60
Holt	4	11	0	6	21	92
Howard	5	7	4	7	23	88
Howell	7	15	8	11	41	46
Iron	8	10	4	11	33	65
Jackson	15	13	3	11	42	43
Jasper	15	22	3	3	43	39
Jefferson	12	30	8	9	59	15
Johnson	12	17	2	11	42	44
Knox	7	7	2	5	21	93
Laclede	21	20	11	20	72	5
Lafayette	8	15	3	8	34	63
Lawrence	14	13	1	8	36	61
Lewis	8	9	2	8	27	78
Lincoln	5	18	7	7	37	58
Linn	10	19	3	9	41	47
Livingston	8	16	3	10	37	59
Macon	11	17	8	20	56	20
Madison	8	7	4	12	31	69
Maries	12	18	8	22	60	14
Marion	6	13	3	4	26	81
McDonald	0	0	0	0	0	114
Mercer	16	13	5	5	39	54
Miller	13	13	9	14	49	32
Mississippi	2	2	0	1	5	109
Moniteau	8	11	7	13	39	55
Monroe	16	20	9	18	63	9
Montgomery	12	13	6	15	46	35

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix B. Continued

County	Adult Males	Adult Females	Juvenile Males	Juvenile Females	Total	Rank[a]
Morgan	6	10	4	4	24	85
New Madrid	1	4	0	0	5	110
Newton	4	6	2	2	14	98
Nodaway	3	4	2	2	11	104
Oregon	5	9	11	8	33	66
Osage	15	18	6	19	58	16
Ozark	3	2	0	3	8	108
Pemiscot	0	2	0	1	3	111
Perry	7	22	11	13	53	27
Pettis	3	9	2	6	20	96
Phelps	11	14	11	15	51	30
Pike	8	14	4	12	38	56
Platte	8	6	3	6	23	89
Polk	17	15	10	20	62	10
Pulaski	20	9	6	12	47	33
Putnam	19	16	5	14	54	23
Ralls	8	8	5	10	31	70
Randolph	5	17	7	11	40	50
Ray	4	3	2	3	12	101
Reynolds	4	10	6	7	27	79
Ripley	7	8	1	12	28	74
Saint Charles	7	19	1	16	43	40
Saint Clair	12	19	7	18	56	21
Saint Francois	7	7	10	16	40	51
Saint Louis	7	11	3	7	28	75
Sainte Genevieve	7	15	7	13	42	45
Saline	1	11	5	10	27	80
Schuyler	6	11	0	7	24	86
Scotland	10	9	5	4	28	76
Scott	4	2	3	0	9	106
Shannon	5	4	3	11	23	90
Shelby	4	7	6	11	28	77
Stoddard	10	19	14	22	65	6
Stone	10	9	1	5	25	83
Sullivan	15	4	9	7	35	62

[a]Rank based on total harvest in Missouri's 114 counties.

Appendix B. Continued.

County	Adult Males	Adult Females	Juvenile Males	Juvenile Females	Total	Rank[a]
Taney	12	7	2	8	29	71
Texas	11	20	6	27	64	7
Vernon	10	18	11	15	54	24
Warren	12	31	6	15	64	8
Washington	15	22	9	12	58	17
Wayne	17	22	3	12	54	25
Webster	21	14	8	19	62	11
Worth	3	5	2	2	12	102
Wright	14	10	7	12	43	41
Totals	**1,032**	**1,434**	**566**	**1,193**	**4,225**	

[a]Rank based on total harvest in Missouri's 114 counties.

Missouri Department of Conservation