2016 Proceedings

Midwest Deer & Wild Turkey Study Group Meeting

August 22nd – 25th, 2016

Carrollton, Kentucky

Submitted by:

Kentucky Department of Fish & Wildlife Resources

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Background

The Midwest Deer and Wild Turkey Study Group (MDWTSG) meeting is an annual gathering of wildlife managers sanctioned by and affiliated with the Midwest Association of Fish and Wildlife Agencies. Primary objectives of the meeting include dissemination of deer and wild turkey management strategies, discussion of emerging or existing issues associated with deer and wild turkey management, and coordination of regional deer and wild turkey management or research efforts. The meeting location rotates among the Midwestern states that are active within the group.

Forums such as the MDWTSG meeting provide valuable opportunities for state deer and turkey biologists to become acquainted with emerging issues and exchange information and ideas related to deer and turkey research and management. The need for state fish and wildlife agencies to establish and maintain deer and turkey biologist positions and support travel of these biologists to the annual MDWTSG meeting is imperative for exchanging information to promote quality wildlife management and research in each state. It is more important than ever that state agencies are at the forefront of issues related to deer and turkey management in order to protect the heritage and recreational opportunities of hunting for future sportsmen and sportswomen.

Meeting Time and Place

The Kentucky Department of Fish & Wildlife Resources (KDFWR) hosted the 2016 MDWTSG meeting at the General Butler State Resort Park in Carrollton, Kentucky on August 22-25. The MDWTSG appreciates the financial support provided by the Quality Deer Management Association (QDMA) and the Nation Wild Turkey Federation (NWTF) in sponsoring the evening socials. Additionally, we thank Cabela's for donating gift cards.

Attendance

Fifty-1 participants attend the 2016 meeting, including state deer and turkey biologist from 13 Midwest member states (Indiana, Iowa, Illinois, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin) and attendees from other organizations and institutions including the NWTF, the QDMA, the NDA, Michigan State University, South Dakota State University and the University of Kentucky. A complete list of attendees and contact information for deer and turkey state biologists are available in Table 1.

Executive Summary

Attendees at the 2016 MDWTSG meeting were welcomed by Steve Beam, KDFWR Wildlife Director. Following the meeting introduction, there were seven presentations that occurred during the joint session, including the following topics:

- Hunter Legacy
- Field to Fork
- Disease
- Midwest Deer Metrics
- State of Kentucky Deer
- State of Wild Turkey
- Kentucky Access Programs

Following the joint session, a number of presentations were given during both the deer and wild turkey break-out sessions. These topics included:

- Deer Vulnerability
- Deer Mortality
- National Deer Alliance Update
- QDMA Update
- DMAP
- County Deer Advisory Councils
- Deer Dynamics
- Dispersal Rates and Path Selection of Deer in an Agriculture Landscape
- NWTF Update
- Learn to Hunt Programs/Turkey Tracts
- Population Ecology of Wild Turkeys in Northern Missouri
- Changing Turkey Management Zones
- Direction following the 11th Turkey Symposium

State status reports were presented in both the deer and wild turkey break-out sessions.

Business Meeting

The Business Meeting was conducted as a joint session involving both deer and wild turkey program leaders. The 2017 MDWTSG meeting will be hosted by the Iowa Department of Natural Resources.

Table 1: List of Participants

Name	Agency	Email	Phone
Tom Micetich	Illinois Department of Natural Resources	tom.micetich@illinois.gov	309-543-3316
Joe Caudell	Indiana Department of Natural Resources	jcaudell@dnr.in.gov	812-822-3300
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	Resources		
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Jason Isabelle	Missouri Department of Natural Resources	jason.isabelle@mdc.mo.gov	573-825-5368
Nick Pinizzotto	National Deer Alliance	nick@nationaldeeralliance.com	614-259-3566
Ryan Boyer	National Wild Turkey Federation	rboyer@nwtf.net	231-878-5131
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Jason Lupardus	National Wild Turkey Federation	jlupardus@nwtf.net	270-599-1491
Kit Hams	Nebraska Game and Parks Commission	kit.hams@nebraska.gov	402-471-5442
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Keith McCaffery	Wisconsin Department of Natural Resources	keith.mccaffery@wisconsin.gov	715-365-2641

Table 2: Previous Midwest Deer & Wild Turkey Study Group Meeting Locations

Year	State	Location	Date
1977	Missouri	Missouri Fountain Grove Wildlife Area	January 17-19
1978	Wisconsin	Wisconsin Wyalusing State Park	January 16-17
1979	Iowa	Iowa Rathburn Fish Hatchery	January 15-18

1980	Minnesota	Minnesota Whitewater State Park	January 21-24
1981	Indiana	Indiana Harrison-Crawford State Park	January 19-22
1982	Ohio	Ohio Lake Hope State Park	January 18-21
1983	Nebraska	Nebraska Louisbille 4-H Camp	January 17-21
1984	Kansas	Kansas Camp Aldrich	January 16-19
1985	South	South Dakota Black Hills	May 7-10
1986	North	North Dakota Camp-of-the-Cross	January 20-23
1987	Michigan	Michigan Kellogg Biological Station	January 27-29
1988	Illinois	Illinois Touch of Nature	February 1-4
1989	Missouri	Missouri YMCA Camp of the Ozarks	January 23-26
1990	Wisconsin	Wisconsin Bethel Horizons Prairie Center	January 15-18
1991	Iowa	Iowa Conservation Education Center	January14-17
1992	Minnesota	Minnesota Whitewater State Park	January 13-16
1993	Indiana	Indiana Harrison-Crawford State Park	January 11-14
1994	Ohio	Ohio Canter's Cave 4-H Park	January 30-February 2
1995	Nebraska	Nebraska Mahoney State Park	January 15-18
1996	Kansas	Kansas Camp Pecusa	January 14-16
1997	South	South Dakota Camp NeSoDak	August 24-27
1998	North	North Dakota Camp Grafton	August 9-12
1999	Ontario	Ontario Blue Springs Scout Reserve	August 15-18
2000	Michigan	Michigan Thunder Bay Resort	August 20-23
2001	Illinois	Illinois Dixon Springs Ag. Station	August 19-22
2002	Missouri	Missouri Conception Abbey	August 18-21
2003	Wisconsin	Wisconsin Bethel Horizons Prairie Center	August 24-27
2004	Iowa	Iowa Conservation Education Center	August 22-25
2005	Minnesota	Minnesota Eagle Bluff Envir. Learning Center	August 21-24
2006	Indiana	Indiana Camp Ransburg, BSA	August 20-23
2007	Ohio	Ohio Canter's Cave 4-H Park	August 19-22
2008	Nebraska	Nebraska Fort Robinson State Park	September 14-17
2009	Kansas	Kansas Rock Springs 4-H Camp	September 14-17
2010	North	North Dakota Camp Grafton	August 22-25
2011	Michigan	Michigan Ralph A. MacMullen Center	September 25-28
2012	South	South Dakota Custer State Park	October 16-19
2013	Illinois	Illinois Allerton Park	August 18-21
2014	Missouri	Missouri YMCA Camp of the Ozarks	September 9-12
2015	Wisconsin	Wisconsin Perlstein Conference Center	September 8-11
2016	Kentucky	General Butler State Resort Park	August 22-25

Midwest Deer & Wild Turkey Study Group Meeting

General Butler State Resort Park, Carrollton KY

Monday, August 22 – Thursday, August 25, 2016

Agenda

Monday, August 22nd (All times are Eastern Standard)

4:00-8:00 p.m.	Registration	Lodge Office
6:00 p.m.	Dinner	Lodge Dining Room
7:00 p.m.	Evening Social	Cabin 535

Tuesday, August 23rd

7:00-7:45 a.m.	Registration continued	Lodge Office
7:00-8:00 a.m.	Breakfast	Lodge Dining Room

8:00 a.m.	**Joint Meeting (details below)**	**Conference Center**
8:00-8:10 a.m.	House Keeping Items Gabe Jenkins, Kentucky Department of Fish and Wildlife Resources	
8:10-8:15	Welcome Steve Beam, Kentucky Department of Fish & Wildlife Resources	
8:15-8:45 a.m.	Hunter Legacy: Jamie Cook, Kentucky Department of Fish & Wildlife Resources	
8:45-9:15 a.m.	Field to Fork: Brain Clark, Kentucky Department of Fish & Wildlife Resources	
9:15-9:45 a.m.	Disease: Iga Stasiak, Kentucky Department of Fish & Wildlife Resources	
9:45-10:00 a.m.	Break	
10:00-10:30 a.m.	Midwest Deer Metrics: What, How, and Why We Measure Robert Rolley, Wisconsin Department of Natural Resources	
10:30-11:00 a.m.	State of Kentucky Deer: Gabe Jenkins, Kentucky Department of Fish & Wildlife Resources	
11:00-11:30 a.m.	State of Kentucky Wild Turkey: Zak Danks, Kentucky Department of Fish & Wildlife Resources	
11:30- 12:00 p.m.	Kentucky Access Programs: Gabe Jenkins, Kentucky Department of Fish and Wildlife Resources	
12:00-1:00 p.m.	Lunch	Lodge Dining Room
1:00-5:00 p.m.	Breakout Sessions (details below)	
5:00-6:00 p.m.	Free Time	
6:00-7:00 p.m.	Dinner	Stone Shelter
7:00 p.m.	Evening Social	Cabin 535

Deer Breakout Session **Conference Center**

1:00-2:00 p.m. Deer Vulnerability: Rebecca Cain, Michigan State University

2:00-2:20 p.m. Deer Mortality: Joe McDermott, University of Kentucky

2:20-2:40 p.m. National Deer Alliance Update: Nick Pinizzotto, NDA

2:40-3:00 p.m. QDMA Update: Kip Adams, Director of Outreach

3:00-3:15 p.m. Break

3:15-3:45 p.m. DMAP: Kevin Wallenfang, Wisconsin Department of Natural Resources

3:45-4:15 p.m. County Deer Advisory Councils: Kevin Wallenfang, Wisconsin Department of Natural Resources

4:15-4:30 p.m. Deer Dynamics: Dan Storm, Wisconsin Department of Natural Resources

4:30-5:00 p.m. Dispersal Rates and Path Selection of Deer in an Agriculture Landscape: Matt Springer, University of Kentucky

Wild Turkey Break Session **Conference Center**

1:00-1:30 p.m. National Wild Turkey Federation National Updates:
Jason Lupardis, NWTF Kentucky

1:30-2:00 p.m. National Wild Turkey Federation National Updates:
Ryan Boyer, NWTF Michigan

2:00-2:40 p.m. Learn to Hunt Program / Turkey Tracts:
Al Stewart, Michigan Dept. of Natural Resources

2:40-3:00 p.m. Break

3:00-3:30 p.m. Population Ecology of Wild Turkeys in Northern Missouri: Jason Isabelle, Missouri Department of Conservation

3:30-4:00 p.m. Changing Turkey Management Zones: Mark Wiley, Ohio Dept. of Natural Resources

4:00-5:00 p.m.	Discussion – Direction following the 11th Turkey Symposium in Arizona: Chad Parent, Michigan State University	

Wednesday, August 24th

7:00-8:00 a.m.	Breakfast	Lodge Dining Room
8:00-12:00 a.m.	Breakout Session – State Reports	Conference Center
12:00-1:00 p.m.	Lunch	Lodge Dining Room
1:00-2:30 p.m.	Round table Discussion	Conference Center
2:30-3:00 p.m.	Business Meeting	
3:30-6:00 p.m.	Special Event/Free Time	Stone Shelter Parking Lot
6:00-7:00 p.m.	Dinner	Lodge Dining Room
7:00 p.m.	Evening Social	Cabin 535

Thursday, August 25th

7:00-8:00 a.m.	Breakfast	Lodge Dining Room
8:00 a.m.	Departure	

2016 Illinois Deer Report MDWTSG

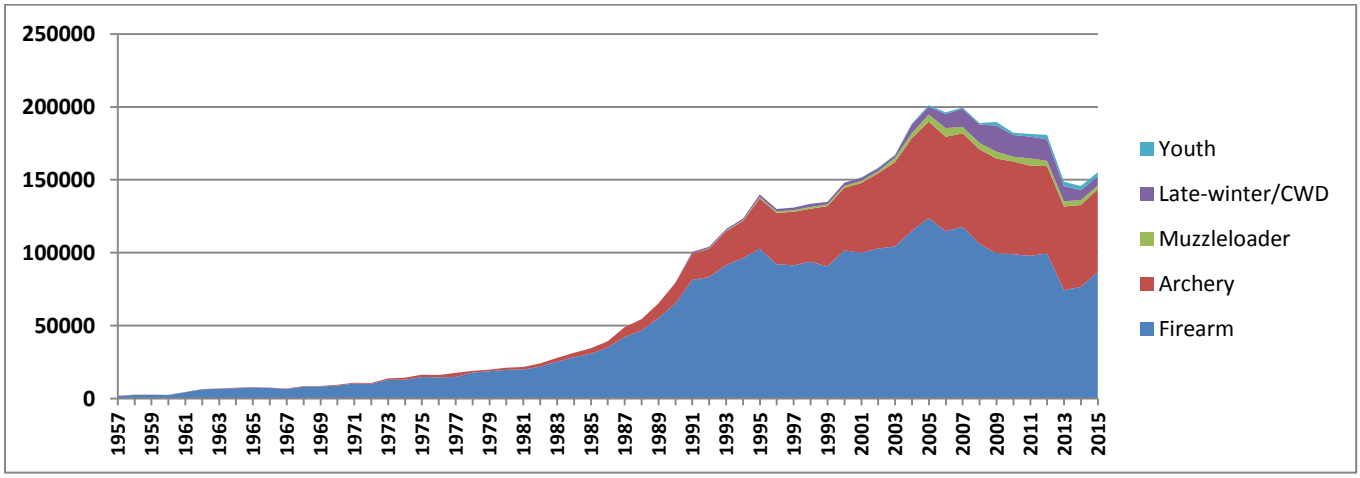
Current Harvest: All seasons deer harvest was 53.6% male: 46.4% female; 43.1% antlered: 56.9% antlerless.

	Antlered			Button Bucks			Does			Total		
Season	**2014**	**2015**	**% Change**	**2014**	**2015**	**% Change**	**2014**	**2015**	**% Change**	**2014**	**2015**	**% Change**
Archery	24508	24860	1.4%	4963	4706	-5.2%	26672	27201	2.0%	56143	56767	1.1%
Youth	1199	1166	-2.8%	301	264	-12.3%	1270	1420	11.8%	2770	2850	2.9%
Muzzle	1105	809	-26.8%	444	338	-23.9%	1922	1256	-34.7%	3471	2403	-30.8%
LWS	137	110	-19.7%	908	794	-12.6%	4107	3633	-11.5%	5152	4537	-11.9%
CWD	371	423	14.0%	229	291	27.1%	1009	1111	-10.1%	1609	1825	13.4%
Firearm	33632	39825	18.4%	9332	9623	3.1%	33611	37398	11.3%	76575	86847	13.4%
Total	**60952**	**67193**	**10.2%**	**16177**	**16016**	**-1.0%**	**68591**	**72019**	**5.0%**	**145720**	**155229**	**6.5%**

NOTE: "LWS antlered" includes animals older than fawn which had already cast antlers. "CWD antlered" includes antlered and cast antlered animals.

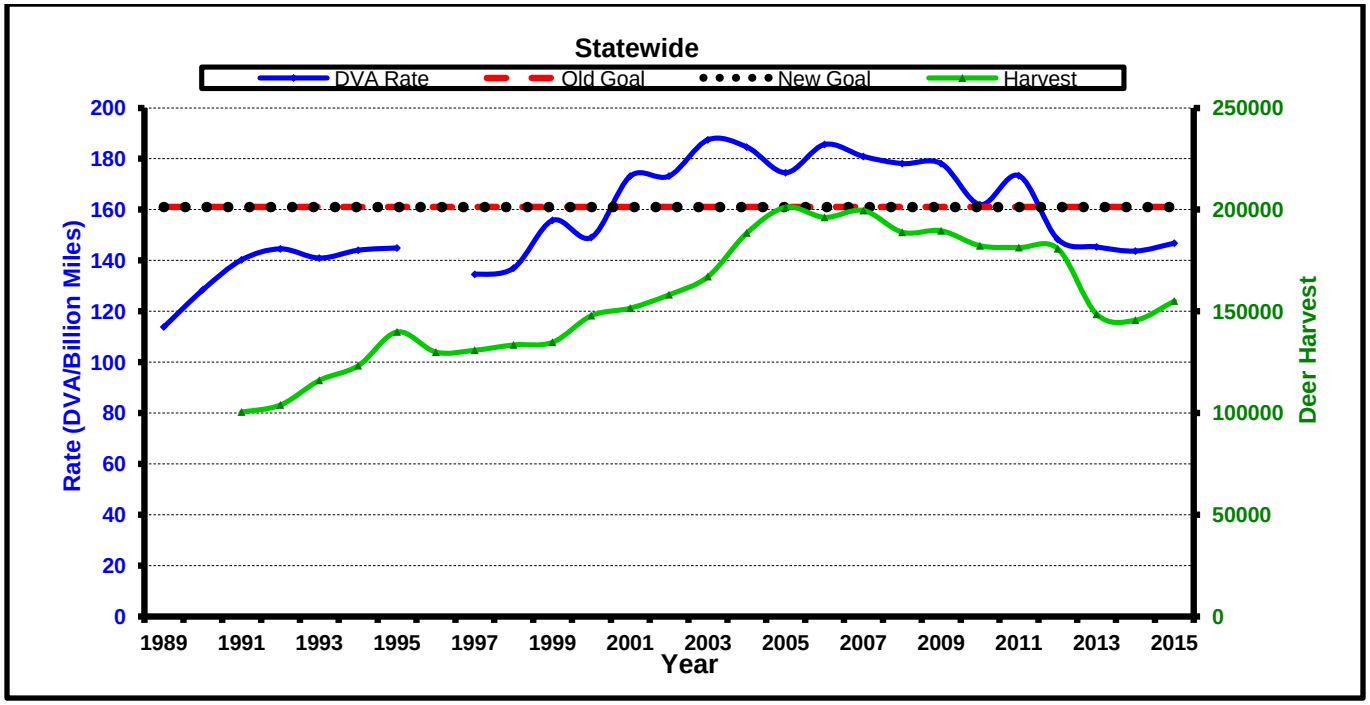
Increased firearm season harvest was attributed to recovery from successive years of EHD and better weather conditions during the 7-day hunting period compared to that of 2014. CWD season increase was due to the addition of two new CWD-positive counties; and, perhaps, increased interest in participating due to meetings which highlighted the importance of hunter harvest/testing in order to *reduce agency sharpshooting* in CWD zones. Factors contributing to recent harvest declines include: 1) the ongoing effort to reduce deer-vehicle accident (DVA) rates to goals established for each county; 2) closure of 8 more late-winter season (LWS) counties which met DVA rate goals; and, 3) More than 15,000 fewer permits allocated, down 2.6% from 2014-15.

Historic Harvest:



Illinois deer harvest peaked at 201,209 in 2005. EHD outbreaks in 2012 & 2013 likely contributed to our reaching DVA rate goals in many of our counties, and the harvest declines witnessed in those years. Harvest has rebounded during the past couple of years.

Population Estimate/Trend (see chart, below): Illinois harvest (green) and deer-vehicle accident rate (blue) trends may be seen below. We achieved the agreed upon goal for statewide DVA rate in 2012. The statewide goal remained unchanged while modifications (upward) were made to 40 or so county goals in early 2014. The discussion regarding the modification of DVA rate goals can be viewed here: http://www.dnr.illinois.gov/conservation/wildlife/Documents/RevisingIllinoisDeerManagementObjectives.pdf



License and Season Information:

All Illinois deer hunters are required to obtain a deer permit prior to hunting. Resident landowners of 40 or more acres may obtain free "property only hunting" permits for archery and/or firearm deer hunting on their own property. Non-resident landowners pay reduced fees for "property only hunting" permits. Permit fee structure is found on page 7 of the annual hunting digest, and may be found at this location**:** http://www.dnr.illinois.gov/hunting/Documents/HuntTrapDigest.pdf

All deer "season dates" are found on page 1, and "permits issued" information by season and residency may be found on page 2 of our annual deer harvest reports. Reports are found on our website at this location: http://www.dnr.illinois.gov/hunting/deer/Pages/AnnualDeerharvestReports.aspx

We had at least 253,466 individuals who obtained permits for at least one of our 2015-16 deer seasons; down 2.3% from last year (259,477). There were 202,535 with gun permits (firearm, muzzleloader, late-winter, CWD, or youth); down 2.3% from last year (207,378). There were 154,273 who had archery permits; down 1.3% (156,324). Of the total number of hunters, 40.8% (103,342) hunted with bow *and* gun; 39.1% (99,193) hunted with gun only; and 20.1% (50,931) hunted only with a bow. Success rates were 26.8 for archery hunters; 35.9% for gun hunters – all gun seasons combined; and 39.9 for all seasons combined.

Management Zones:
Each Illinois County is treated as a separate deer management unit. All 102 counties are open to archery deer hunting, while 99 are open to firearm deer hunting. Only Cook, Du Page and Lake Counties are closed to firearm deer hunting.

There are separate quotas for "either sex" and "antlerless only" permit issuance for each open firearm and muzzleloader deer season county. Quotas are reviewed and adjusted as needed annually by staff from the Forest Wildlife Program. The deer-vehicle accident rate relative to the goal is the primary factor used to determine the amount of pressure to be exerted on antlerless deer, including whether a County is open for the late-winter antlerless only season (LWS). We also take into consideration trends in the number of nuisance deer removal permits issued when determining whether a County may be removed from the LWS, even though it may be at, or below its goal rate. The goal and trends for DVA rates in each County can be found at this location: http://www.dnr.illinois.gov/conservation/wildlife/Documents/DVARate.pdf

The presence of Chronic Wasting Disease removes DVAs as the guiding factor in herd management and herd reduction becomes the management objective.

A map of the Illinois late-winter/CWD season counties may be found here:
http://www.dnr.illinois.gov/conservation/wildlife/PublishingImages/LateWinterDeerSeasonMap.jpg

Regulation/legislation changes:

The 2015-16 season changes included closing 8 additional counties to the Late-winter Season (LWS) as they had reached their deer-vehicle accident rate goals, leaving 27 of 102 open. Kankakee and Livingston counties were opened to the Special CWD Season after the discovery and confirmation of the disease.

Changes proposed for 2016-17 include 2-tier cost for single over-the-counter (OTC) non-resident antlerless only archery deer permits. Those having previously obtained an either-sex archery permit may obtain additional single AO archery permits for $25.50 (no change); while those without an either-sex permit may obtain the same permit at a cost of $100 (plus issuing fee). The maximum age for "Youth" permits was increased from "under 16" to "under 18."

Archery equipment will be legal for use during our 7-day firearm deer season provided the hunter has a Firearm Deer Permit.

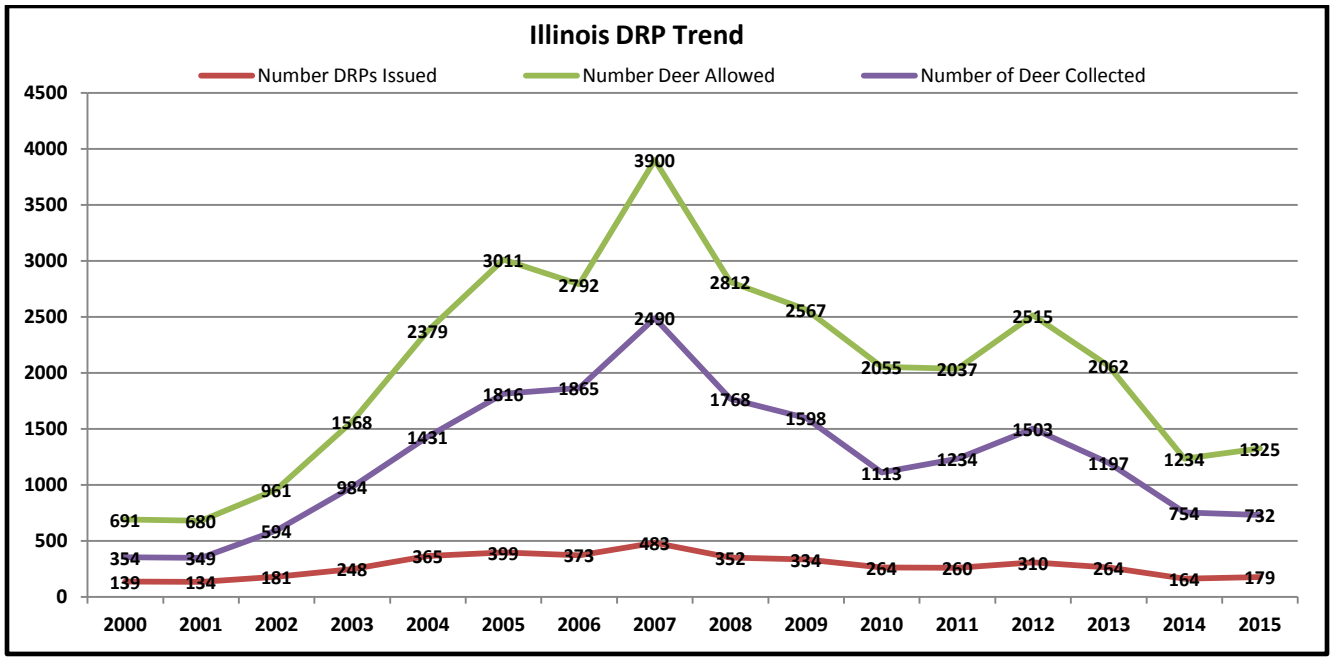
We will add three more mandatory firearm deer check stations (Kankakee, Kendall, and Livingston). We will operate 13 check stations for deer taken in 14 counties during our split 7-day firearm deer season. Kane County deer will be checked in an adjacent county. Lake and Du Page counties are closed to gun deer hunting.

No new counties will be added to the CWD season in 2016-17. Illinois has a total of 16 CWD-positive counties, two of which are represented by a single positive animal; and detected a total of 610 through 30 June 2016 from 97,992+ sampled.

Four counties (Edwards, Marshall, Pike, Saline) which were below their DVA rate goals in 2014 and 2015 will be removed from, and one (Perry) will be added to, the 2016-17 LWS. This leaves 24 (of 102) counties open this year. We had three additional counties which were below their DVA rate goal in 2015. If they remain below goal during 2016 they may be removed from the LWS in 2017-18.

Urban/Special Hunts: Thirty-eight **Deer Population Control Permits (DPCPs)** were issued to 12 municipalities and agencies in seven counties. There were 1,660 deer authorized and 1,520 (91.6%) were collected. Adult animals taken on DPCPs from areas in or near where CWD has been documented (or is likely to be an infection route) are sampled for CWD. No CWD-positive animals were detected during DPCP sampling in 2015-16. (Complete report available upon request)

Deer Management Assistance/Crop Damage: There were 179 **Deer Removal Permits (DRPs)** issued in 48 counties during 2015; compared to 164 issued in 54 counties during 2014. The 176 lethal removal permits authorized take of 1,325 deer (937 antlerless; 7 antlered; 381 either sex) and 732 (55%) were collected. Sixty percent of permits issued were for excessive damage to corn and/or soybeans; 63% of all permits were issued during the months of June and July. Thirty-seven permits were issued for public safety at airports. (Complete report available upon request) Historic Illinois DRP activity is found in the chart below:



DISEASES: After two consecutive years of significant localized **EHD** losses in 2012 & 2013, 2014 was a non-event with ten citizens reporting the loss of 13 animals from ten, mostly southern Illinois counties. EHD impacts in 2015 were 114 reports of 207 animals from 39 mostly western and southern Illinois counties. Pike (17/72) and

Adams (16/24) accounted for 29.2% of the 2015 statewide reports and 46.6% of the reported deaths. The 2012 EHD outbreak had the highest number of citizen reports (977); reported deaths (2,968); and affected counties (87).

Chronic Wasting Disease (CWD) management continued in Illinois. There were 8,544 animals tested (8,489 usable) statewide, with 72 positives (highest) identified in FY'16 (7,902 tested; 71 positives in FY'15). We had positive animals from 13 of our 16 counties this year. Between 15 January and 31 March, 2016, agency sharpshooters took 888 (26 positive) from 117 sections in 13 counties. This compares to 861 deer (24 positive) from 103 sections in 12 counties in FY'15. Additionally, Deer Population Control Permit holders tested 596 animals, 0 positive; and Deer Removal Permit holders tested another 10, one positive. Prevalence rates (hunting): for all adult deer was at 1.09%; adult males, 1.28%; and adult females, 0.88%. We have now documented 610 positives from 97,992+ animals tested to-date. (See complete report, in "Relevant Links" section.)

http://www.dnr.illinois.gov/programs/CWD/Documents/CWDMap.pdf (map of cumulative positive animal locations)

Research: Current research projects include the effects of culling on social affinity of white-tailed deer and its potential to impact disease spread; deer dispersal patterns in highly fragmented environments; and effects of CWD on gene expression in deer.

Hot Topics: Ongoing budget issues are threatening research project funding.

Relevant Links:

2016-17 Illinois Hunting Digest: http://www.dnr.illinois.gov/hunting/Documents/HuntTrapDigest.pdf

Annual Deer Harvest Summary - link to Illinois deer harvest reports (2005-2015) may be found at this location on our website: http://www.dnr.illinois.gov/hunting/deer/Pages/AnnualDeerHarvestReports.aspx

Chronic Wasting Disease Annual Report - link to all Illinois CWD information, including latest annual report, will be found at this location on our website: http://www.dnr.illinois.gov/Programs/CWD/Pages/default.aspx

Late-winter/CWD Season - **2016-17** map will be at this location on our website:
http://www.dnr.illinois.gov/conservation/wildlife/PublishingImages/LateWinterDeerSeasonMap.jpg

These reports were available in meeting handouts and may be provided upon request. No link was available at the time of this report:
Deer Removal Permit Annual Report
Urban Deer Population Control Permit Annual Report

2015-2016 Indiana Deer Program Report
Joe N. Caudell

I. Current Harvest

A total of 123,664 deer were harvested during the 2015-16 hunting season which was a 3% increase from the 2014-15 total of 120,073. The number of antlered deer harvested was 10% higher (50,379) than the previous year (45,686), making it the 8th highest antlered deer harvest since 1951.

Deer Harvested by Season

Season	2014-2015	2015-2016
Youth	2,488	2,467
Archery*	34,600	32,753
Firearms*	67,989	72,555
Muzzleloader	10,825	10,784
Special Antlerless	4,171	5,105
Total	120,073	123,664
Antlered	45,624	50,475
Antlerless	74,449	73,189

*Includes archery or firearms harvest from the Deer Reduction Zones.

Deer Harvested by Type of Equipment Used

Equipment	2014	2015
Bow	22,375	20,227
Shotgun	41,947	43,009
Muzzleloader	23,657	24,596
Handgun	844	913
Rifle	19,527	23,105
Crossbow	11,723	11,815
Total	120,073	123,664

2015-2016 Indiana Deer Program Report
Joe N. Caudell

II. License and Season Information

Indiana Deer Hunting Licenses

License	Resident	Nonresident
Res. Youth Consolidated Hunt/Trap	$7	N/A
Nonres. Youth Deer Hunting	N/A	$24
Nonres. Deer License Bundle (youth)	N/A	$65
Deer Hunting	$24	$150
Deer License Bundle	$65	$295

Number of Licenses Sold

License	Number Sold
Res. Deer Hunting	101,708
Res. Deer License Bundle	65,604
Res. Youth	32,810
Nonresident	16,440
Total	216,562

Individuals exempt from license requirements in Indiana include:

- Resident owners of Indiana farmland or lessees who farm that land, along with their spouses and children, while hunting that farmland
- Trustees and named trust beneficiaries comprised solely of the members of an immediate family when hunting on the trust property
- Residents engaged in full-time military service and who are carrying leave orders and a valid IN driver's license
- Youth participating in free youth hunting weekends

2015-16 Deer Season Dates and Bag Limits

	Hunting Dates	Bag Limit
Reduction Zone*	Sept. 15, 2015 – Jan. 31, 2016	1 antlered deer AND 9 antlerless deer OR 10 antlerless deer
Youth	Sept. 26 and 27, 2015	1 antlered AND the number of bonus antlerless deer per county quota
Archery	Oct. 1, 2015 – Jan 3, 2016	2 antlerless deer OR 1 antlered and 1 antlerless deer (AND bonus antlerless county quota)
Firearms	Nov. 14 – 29, 2015	1 antlered deer (AND bonus antlerless county quota)
Muzzleloader	Dec. 5 – 20, 2015	1 antlered deer OR 1 antlerless deer (AND bonus antlerless county quota)
Special Antlerless**	Dec. 26, 2015 – Jan. 3, 2016	The number of bonus antlerless deer per county with a quota of 4 or more

*Designated counties or portions of counties

**Special Antlerless Season only in counties with a bonus antlerless quota of 4 or more

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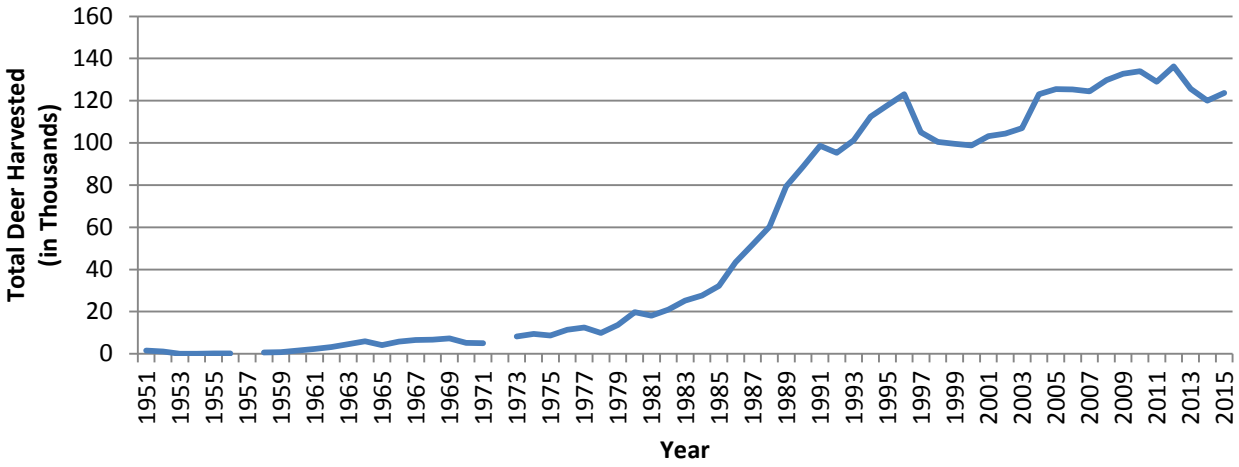
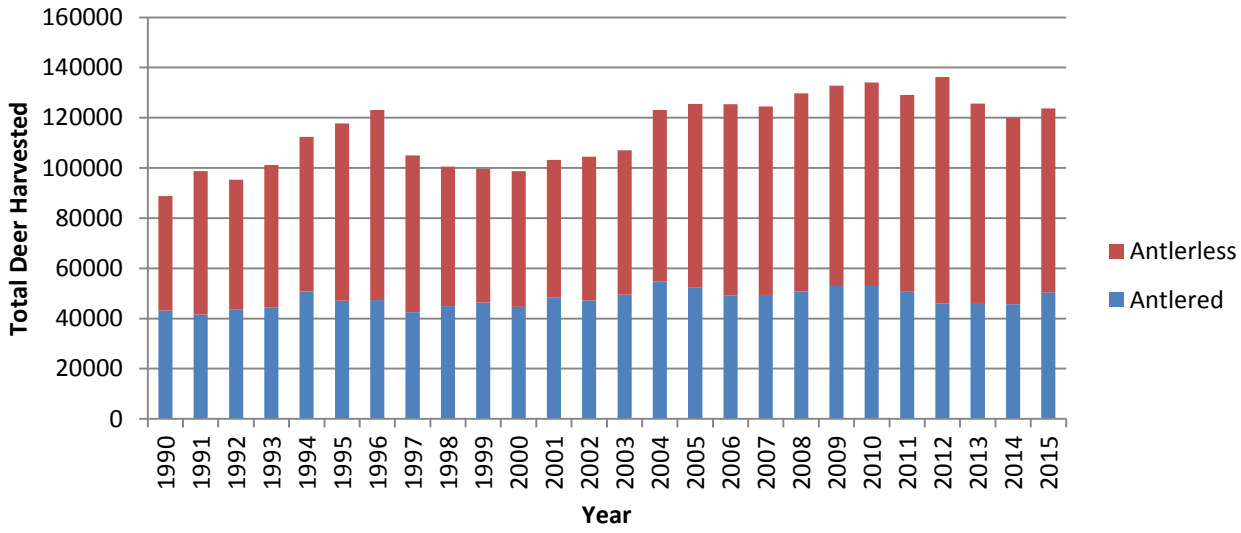
Joe N. Caudell

III. Historical Harvest



The total number of deer harvested in Indiana each year from 1951 to 2015.



The proportions of yearly deer harvest totals that are antlered and antlerless since 1990.

IV. Population Trends

Based on hunter harvest and effort, population size appears to be stable.

V. Management Units

Management units in Indiana are defined by counties. For example, the Bonus Antlerless Program deer quotas are set individually by county.

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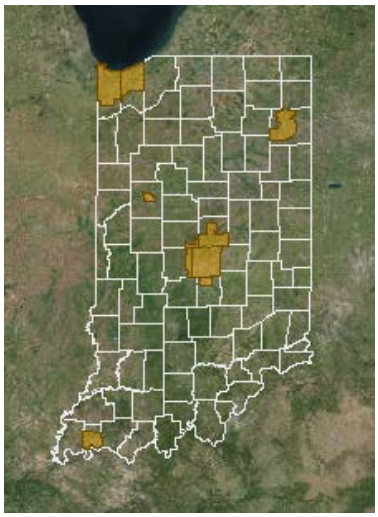
VI. Regulation/legislation Changes
Upcoming changes for the 2016-2017 deer season:

Indiana State Legislature passed a law (House Bill 1231, IC 14-22-2) in March 2016 that allows new rifle options for deer hunting on private land only during the firearms seasons beginning after June 30, 2016, and ending before January 1, 2020. The new law does not affect regulations of other rifles previously allowed for deer hunting. The complete law can be found at https://iga.in.gov/legislative/2016/bills/house/1231. Below is a summary of the new regulations:

- The rifle must have a barrel length of at least 16 inches.
- The cartridge must have a case length of at least 1.16 inches.
- The cartridge must fire a bullet with a diameter that is .243 inches (same as 6mm) or .308 inches (same as 7.62mm).
- Bullets with a diameter smaller than .243 inches, larger than .308 inches, or in between .243 and .308 are not legal.
- A hunter may not possess more than 10 cartridges for each of these rifles while hunting deer.
- Full metal jacketed bullets are illegal.

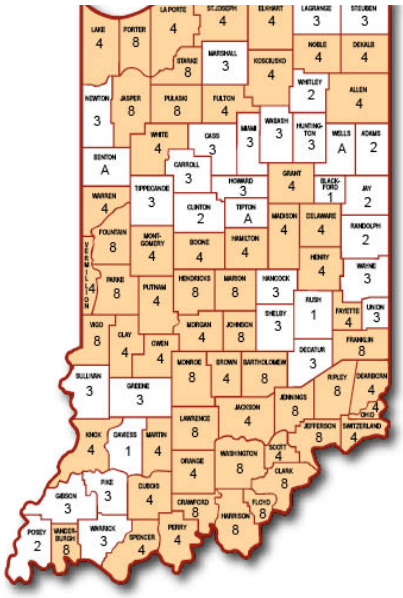
Indiana State Legislature also passed Senate Bill 7 (https://iga.in.gov/legislative/2016/bills/senate/7#) which makes it illegal to use unmanned aerial vehicles (i.e., drones) to search for, scout, locate, or detect a wild animal as an aid to taking that animal during the hunting season, and for 14 days prior to the hunting season for that animal.



Indiana deer reduction zones.

VII. Urban/Special Hunts
In Indiana, there are two special hunts that aim to reduce deer populations and allow hunters to harvest deer in addition to the statewide bag limits. Hunters may participate in the Deer Reduction Zone (previously Urban Deer Zone) season or the Bonus Antlerless program. Deer Reduction Zones allow hunters to harvest up to 10 deer (10 antlerless, or 9 antlerless and 1 antlered) in defined urban areas. Participants aiming to satisfy the Reduction Zone bag limit must harvest an antlerless deer before harvesting an antlered deer. A Deer Reduction Zone license is required for each deer harvested. The Deer Reduction Zone season does not override any local ordinances that restrict shooting firearms and bows. Reduction Zones for the 2015-2016 Deer Reduction Zone season included Allen County (primarily Fort Wayne), Evansville, Indianapolis (all of Marion County and portions of Boone, Hamilton, Hendricks, and Johnson counties), Lafayette, and portions of Lake and Porter counties.

The Bonus Antlerless license allows hunters to harvest additional antlerless deer in any county during all hunting seasons. In 2015, county bag limits (quotas) ranged from A to 8, with "A" designated counties only allowing the harvest of one antlerless deer from November 26, 2015 to January 3, 2016. A license is required for each bonus antlerless deer, and a hunter may purchase an unlimited number of licenses as long as county quotas are observed. The Special Antlerless season allows hunters to harvest antlerless deer using firearms in counties with quotas of 4 or more.



Indiana bonus anterless quotas per county.

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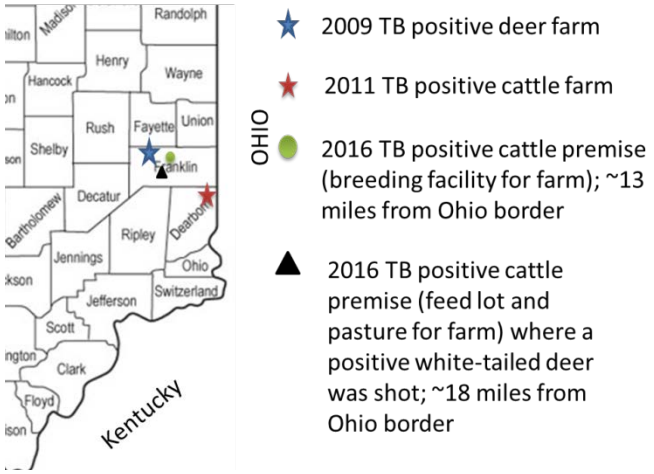
Joe N. Caudell

VIII. Management Assistance/Crop Damage
Indiana DNR provides the option for landowners and managers to apply for a crop depredation permit when damage exceeds $500 or significantly damages natural resources.



Historic and current occurences of bTB in captive deer, cattle, and a wild white-tailed deer.

IX. Disease Issues / Updates

Bovine tuberculosis (bTB) was detected by Indiana Board of Animal Health (BOAH) and US Department of Agriculture on a cattle farm consisting of 2 premises in Franklin County, Indiana in April 2016. As a result of bTB detections in farmed deer and cattle in late 2008 and 2009 in Franklin County and on a Dearborn County cattle farm in 2011, Indiana DNR has tested over 1,400 deer and all have been negative for bTB up until 2016. In July, 2016, as part of the surveillance protocol on the bTB affected farms, USDA APHIS Wildlife Services and Veterinary Services, BOAH, and IDNR began testing wildlife. As of August 17, 2016 one positive wild white-tailed deer has been identified through testing at the National Veterinary Services Laboratory in Ames, IA. IDNR is currently revising surveillance plans and is developing a management plan for Franklin and south Fayette counties. BOAH and Veterinary Services is currently testing farms to a 10-mile radius.

X. Research
In accordance with the new rifle hunting regulations, IDNR will be researching the impact of the use of rifles to hunt deer on Indiana's deer population.

IDNR is proposing a Citizen Science-based research program that utilizes the public to collect data on Indiana's deer population. Interested individuals will be educated on deer biology and management through a series of computer-based lectures and hands-on courses. After learning the importance and methods of managing for deer, participants will collect data and report information to IDNR in order to contribute to the understanding of population demographics and health. Data collection may include setting up trail cameras in semi-permanent locations to gather images over a period of time, spotlight counts, pellet counts and/or other methods to collect population data. This program aims to collect statewide deer data while educating and building stronger relationships with the hunting public.

XI. Hot Topics
One deer interest group in Indiana (Indiana White-tailed Deer Herd Management) is pushing heavily for County Deer Advisory Councils.

Joe Caudell was hired as the State Deer Biologist in Indiana in May 2016. Previously, Joe spent 3 years on the faculty at Murray State University teaching wildlife management, 10 years with USDA APHIS Wildlife Services as a Wildlife Disease Biologist, and 8 years working with the Cooperative Extension Service in Georgia. Joe has a Bachelor's degree from the University of Georgia's Warnell School of Forest Resources and a Master's and Ph.D. from Utah State University.

XII. Relevant Links
Indiana Division of Fish and Wildlife homepage: http://www.in.gov/dnr/fishwild/
DNR: Indiana Deer Hunting, Biology, and Management: http://www.in.gov/dnr/fishwild/8367.htm
2015 Deer Harvest Summary: http://www.in.gov/dnr/fishwild/files/fw-2015-Deer-Harvest-Report.pdf
Deer Reduction Zones: http://www.in.gov/dnr/fishwild/8534.htm
2016-2017 Bonus Antlerless Deer Map: http://www.in.gov/dnr/fishwild/files/fw-bonus_antlerless_deer_map.pdf
Wildlife Diseases including Bovine Tuberculosis: http://www.in.gov/dnr/fishwild/5466.htm

I. Current Reported Harvest

Regulations and antlerless quotas were unchanged in 2015 – 2016. The increased reported harvest was likely the result of an increasing statewide population. License sales were similar to 2014 -2015, and 16% lower than the peak in 2006. There were 172,788 hunters (164,167 residents and 8,622 nonresidents) in 2015 – 2016, slightly down from the previous year, and 5% lower than the peak in 2006.

Comparison of license sales and reported harvest by season for the previous 2 years.

	2014 - 2015		2015 - 2016		% Change	
Season	**Licenses**	**Harvest**	**Licenses**	**Harvest**	**Licenses**	**Harvest**
Youth	10,324	3,351	10,120	3,640	-2%	9%
Disabled	457	155	389	134	-15%	-14%
Archery	86,235	21,128	89,652	22,489	4%	6%
Early Muzzleloader	11,763	3,700	11,803	4,042	0%	9%
Shotgun 1 (Paid)[1]	68,171	27,376	66,043	26,671	-3%	-3%
Shotgun 2 (Paid)[2]	60,668	17,534	58,731	18,543	-3%	6%
Shotgun LOT[3]	42,436	10,701	41,624	11,041	-2%	3%
Late Muzzleloader	36,822	8,793	38,517	9,604	5%	9%
Special Hunts	4,208	1,913	4,225	1,905	0%	0%
Depredation	3,386	1,673	3,543	1,886	5%	13%
Nonresidents[4]	14,514	5,271	14,652	5,420	1%	3%
Total	**338,984**	**101,595**	**339,366**	**105,401**	**0%**	**4%**

[1] – 1st shotgun season (5-days beginning 1st weekend in Dec) for licenses not claiming landowner/tenant preference.

[2] – 2nd shotgun season (9-days beginning 2nd weekend in Dec) for licenses not claiming landowner/tenant preference.

[3] – Both shotgun seasons (14-days) for landowner/tenants choosing the shotgun firearm season.

[4] – Nonresident licenses for either shotgun 1, shotgun 2, archery, late muzzleloader, disabled hunter, or holiday antlerless-only season.

- Quota of 6,000 nonresident general deer/antlerless-only licenses, 35% of which can be archery licenses. An additional 4,500 antlerless-only licenses are available for either one of the shotgun seasons or the disabled hunter season.

License sales, hunters, reported harvest, and success rates by license type and season for 2015 – 2016.

					Reported Harvest					Success
Season	**Group[1]**	**Type**	**Licenses**	**Hunters**	**Does**	**Antlered**	**Buttons**	**Sheds**	**Total**	**Rate[2]**
Youth	Paid	Either-sex	9,549	9,549	1,199	1,959	282	13	3,453	36%
		Antlerless	438	381	125	3	22	0	150	34%
	LOT	Either-Sex	83	83	9	18	0	0	27	33%
		Antlerless	50	50	7	0	3	0	10	20%
		Total	**10,120**	**9,655**	**1,340**	**1,980**	**307**	**13**	**3,640**	**36%**
Disabled	Paid	Either-sex	291	291	45	46	3	0	94	32%
		Antlerless	66	43	28	0	7	0	35	53%
	LOT	Either-Sex	20	20	2	1	0	0	3	15%
		Antlerless	12	11	2	0	0	0	2	17%
		Total	**389**	**315**	**77**	**47**	**10**	**0**	**134**	**34%**
Early	Paid	Either-sex	7,500	7,500	605	1,897	136	0	2,638	35%
Muzzleloader		Antlerless	1,513	1,192	522	7	98	0	627	41%
	LOT	Either-Sex	1,663	1,663	139	302	24	0	465	28%
		Antlerless	1,127	1,052	264	11	37	0	312	28%
		Total	**11,803**	**9,716**	**1,530**	**2,217**	**295**	**0**	**4,042**	**34%**
Shotgun 1	Paid	Either-sex	50,937	50,935	5,390	12,692	1,465	38	19,585	38%
		Antlerless	15,106	9,680	5,901	88	1,081	16	7,086	47%
Shotgun 2	Paid	Either-sex	45,599	45,599	5,058	6,814	1,467	77	13,416	29%
		Antlerless	13,132	8,356	4,210	50	833	34	5,127	39%
Shotgun 1 & 2	LOT	Either-Sex	23,171	23,171	1,583	3,505	398	21	5,507	24%
		Antlerless	18,453	15,244	4,503	140	865	26	5,534	30%
		Total	**166,398**	**130,675**	**26,645**	**23,289**	**6,109**	**212**	**56,255**	**34%**
Late	Paid	Either-sex	21,667	21,667	1,606	3,257	308	110	5,281	24%
Muzzleloader		Antlerless	10,254	7,098	2,497	11	443	84	3,035	30%
	LOT	Either-Sex	2,450	2,450	139	263	30	2	434	18%
		Antlerless	4,146	3,772	714	13	104	23	854	21%
		Total	**38,517**	**29,441**	**4,956**	**3,544**	**885**	**219**	**9,604**	**25%**

Continued

					Reported Harvest					Success
Season	**Group**[1]	**Type**	**Licenses**	**Hunters**	**Does**	**Antlered**	**Buttons**	**Sheds**	**Total**	**Rate**[2]
Archery	Paid	Either-sex	56,297	56,297	1,335	11,603	316	34	13,288	24%
		Antlerless	22,738	15,708	5,519	60	880	18	6,477	28%
	LOT	Either-Sex	5,190	5,190	183	1,176	40	0	1,399	27%
		Antlerless	5,136	4,484	1,112	18	128	4	1,262	25%
		Total	**89,361**	**59,922**	**8,149**	**12,857**	**1,364**	**56**	**22,426**	**25%**
Senior Crossbow	Paid	Antlerless	291	291	52	4	7	0	63	22%
Special Hunts		Antlerless	4,225	1,823	1,546	87	256	16	1,905	45%
Depredation		Antlerless	3,543	1,495	1,662	15	201	8	1,886	53%
Nonresidents[3]	Paid	Either-sex	6,053	6,053	125	2,647	21	5	2,798	46%
		Antlerless	8,599	8,597	2,161	184	265	12	2,622	30%
Total			**339,366**	**172,788**	**48,250**	**46,889**	**9,721**	**541**	**105,401**	**31%**

[1] – LOT = landowner/tenant licenses; Paid = non-landowner/tenant licenses.

[2] – Percent of licenses that reported harvested deer.

[3] – Nonresident licenses for either shotgun 1, shotgun 2, archery, late muzzleloader, disabled hunter, or holiday antlerless-only season.

- Quota of 6,000 nonresident general deer/antlerless-only licenses, 35% of which can be archery licenses. An additional 4,500 antlerless-only licenses are available for either one of the shotgun seasons or the disabled hunter season.

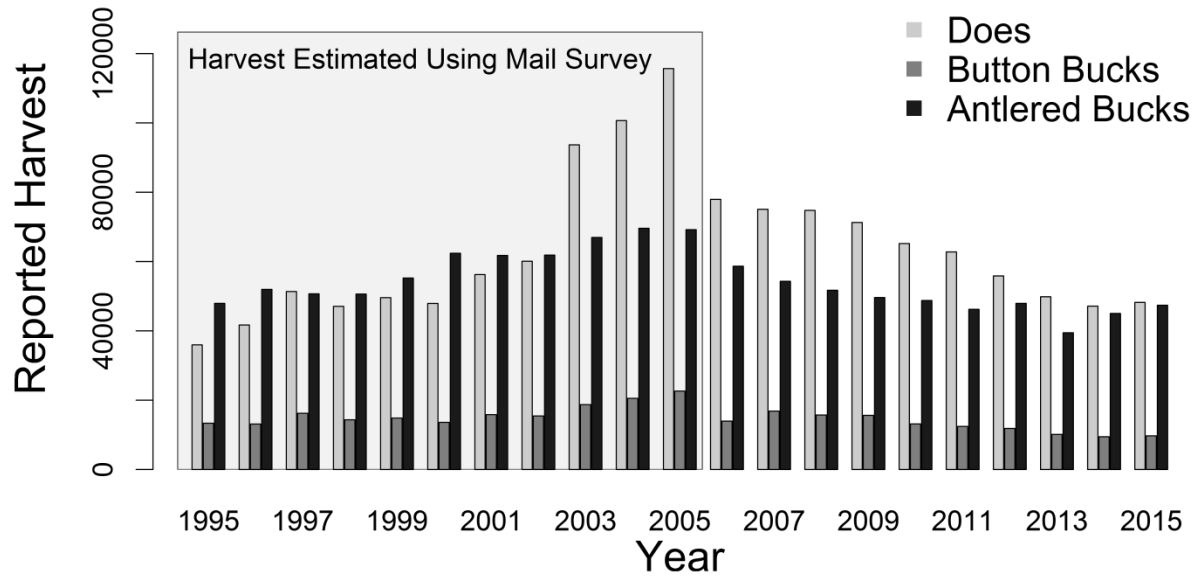
II. Historical Harvest

	Regular Gun			Muzzleloader				Grand
Year	Paid	Landowner	Total	Early	Late	Total	Archery	Total[1]
1953	2,401	1,606	4,007				1	4,008
1954	1,827	586	2,413				10	2,423
1955	2,438	568	3,006				58	3,064
1956	2,000	561	2,561				117	2,678
1957	2,187	480	2,667				138	2,805
1958	2,141	588	2,729				162	2,891
1959	1,935	541	2,476				255	2,731
1960	3,188	804	3,992				277	4,269
1961	4,033	964	4,997				367	5,364
1962	4,281	1,018	5,299				404	5,703
1963	5,595	1,017	6,612				538	7,151
1964	7,274	1,750	9,024				670	9,694
1965	6,588	1,322	7,910				710	8,620
1966	9,070	1,672	10,742				579	11,321
1967	7,628	2,764	10,392				791	11,183
1968	9,051	3,890	12,941				830	13,771
1969	6,952	3,779	10,731				851	11,582
1970	8,398	4,345	12,743				1,037	13,780
1971	7,779	2,680	10,459				1,232	11,691
1972	7,747	2,738	10,485				1,328	11,813
1973	10,017	2,191	12,208				1,822	14,030
1974	11,720	4,097	15,817				2,173	17,990
1975	15,293	3,655	18,948				2,219	21,167
1976	11,728	2,529	14,257				2,350	16,607
1977	10,737	2,051	12,788				2,400	15,188
1978	12,815	2,353	15,168				2,957	18,125
1979	14,178	1,971	16,149				3,305	19,454
1980	16,511	2,346	18,857				3,803	22,660
1981	19,224	2,354	21,578				4,368	25,946
1982	19,269	2,472	21,741				4,720	26,461
1983	27,078	3,297	30,375				5,244	35,619
1984	29,912	3,537	33,449		307	307	5,599	39,355
1985	32,613	5,344	37,957		457	457	5,805	44,219
1986	41,352	10,378	51,730	349	728	1,077	9,895	62,702
1987	53,230	10,270	63,500	1,509	1,027	2,536	9,722	75,758
1988	66,757	13,298	80,055	1,835	1,294	3,129	9,897	93,756
1989	67,606	12,963	80,569	2,619	3,715	6,334	11,857	99,712
1990	69,101	9,095	78,196	2,819	5,884	8,703	10,146	98,002
1991	56,811	11,575	68,386	3,120	2,766	5,886	8,807	83,635
1992	50,822	10,453	61,275	3,316	3,231	6,564	8,814	77,684
1993	52,624	8,354	60,978	2,219	2,883	5,102	9,291	76,430
1994	59,054	8,735	67,789	2,610	3,196	5,806	12,040	87,231
1995	65,206	7,917	73,123	2,831	3,408	6,363	13,372	97,256

Historical Harvest Continued

	Regular Gun			Muzzleloader				Grand
Year	Paid	Landowner	Total	Early	Late	Total	Archery	Total[1]
1996	71,577	10,896	82,473	2,895	4,558	7,453	12,314	107,632
1997	77,169	10,588	87,757	4,062	5,508	9,570	14,313	118,404
1998	73,165	9,989	83,154	4,448	5,343	9,791	12,302	112,608
1999	74,362	12,966	87,328	5,277	5,329	10,606	15,266	121,635
2000	77,743	13,189	90,932	4,585	5,936	10,521	17,727	126,535
2001	82,721	14,801	97,522	4,593	7,320	11,913	18,798	136,655
2002	77,940	18,932	96,872	5,091	7,772	12,863	20,703	140,490
2003	96,757	25,353	122,110	6,155	12,049	18,204	26,486	182,856
2004	97,830	26,333	124,163	6,818	13,550	20,368	30,025	194,512
2005	96,110	27,988	124,098	7,209	13,930	21,139	32,986	211,451
2006	76,218	14,956	91,174	5,431	8,698	14,129	22,008	150,552
2007	67,175	13,862	81,037	4,462	10,530	14,992	22,240	146,214
2008	63,330	12,762	76,092	4,342	10,254	14,596	21,793	142,194
2009	58,801	12,630	71,431	4,495	9,482	13,977	23,172	136,504
2010	56,511	11,455	67,966	4,026	8,838	12,864	21,154	127,094
2011	52,130	11,009	63,139	4,427	8,165	12,592	21,983	121,407
2012	49,110	10,931	60,041	3,896	10,823	14,719	21,981	115,608
2013	42,442	9,271	51,713	4,027	6,828	10,855	20,319	99,414
2014	44,910	10,701	55,611	3,700	8,793	12,493	21,128	101,595
2015	45,214	11,041	56,253	4,042	9,604	13,646	22,489	105,401

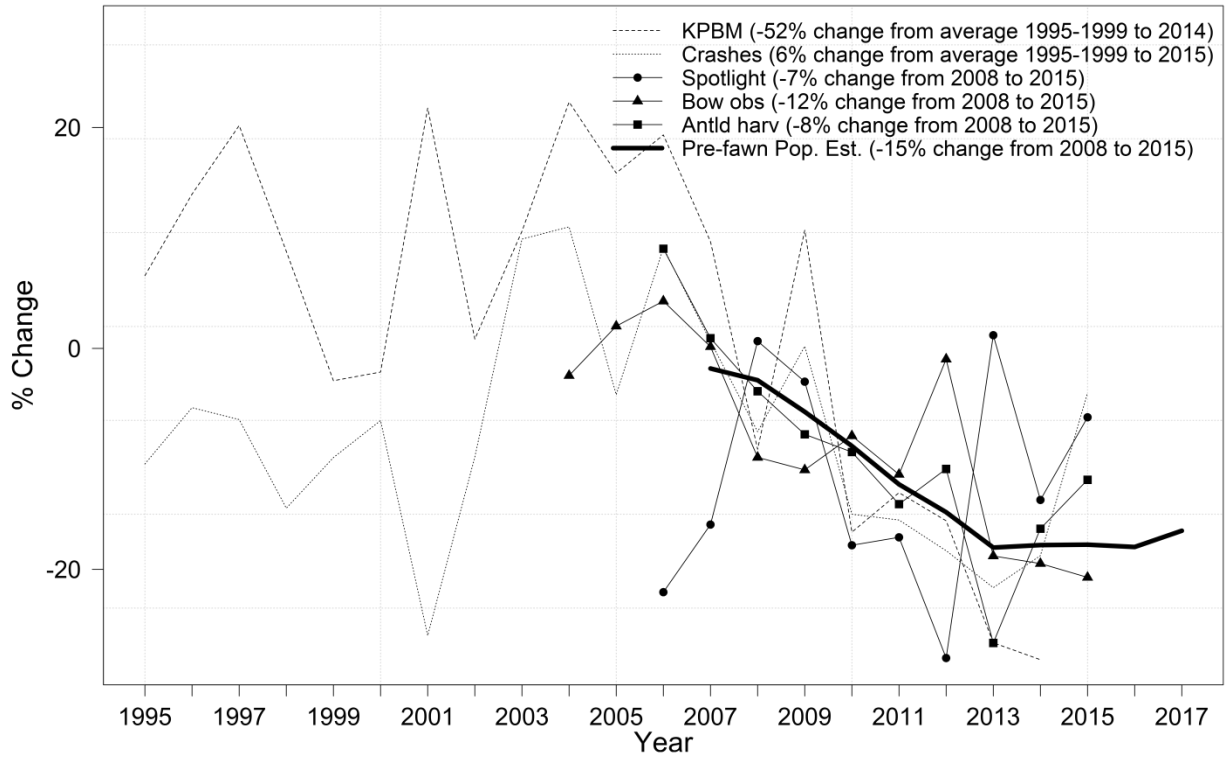
[1] - Grand Total includes IAAP harvest, special management unit hunts, nonresidents and youth. Harvest estimates from 2005 and prior are not comparable to subsequent years.



* Harvest was estimated using mail postcard survey from 1995 to 2005 (electronic reported harvest since 2006).

III. Population Trends

Iowa deer populations peaked in the early to mid-2000's, and liberalized resident county antlerless quotas from 2006 to 2013 reduced populations throughout much of the state. Resident antlerless quotas were reduced in 2014, and have remained unchanged which has resulted in a stabilized to slightly increasing population.



* KPBM = recovered deer-vehicle collisions (IADOT and Salvage Tags) divided by billion miles driven on secondary highways (IADOT estimate).
* Crashes = animal-related crashes reported to IADOT.
* Bow obs = bow hunter observation survey from start of archery season through Friday before 1st weekend in December.
* Antld harv = reported antlered deer harvest.
* Pre-fawn Pop. Est. = pre-fawning (~end-May) population index from deterministic 2-sex, 10-age class accounting model.

IV. License and Season Information

The rule to keep the same county resident antlerless quotas (74,575) has been submitted by the Natural Resources Commission, and is awaiting final review by the bipartisan House-Senate Administrative Rules Review Committee. The nonresident quota of 6,000 general deer/antlerless-only licenses, 35% of which can be archery licenses, distributed among 10 zones remains the same. An additional 4,500 antlerless-only licenses are available for nonresidents. All other regulations remained unchanged, excluding property specific tag allocation via the Special Management Hunts and Depredation programs.

Fees: Landowner/Tenant: $2.00 (Either-sex [farm unit])
$2.00 - General Deer [1]
[1] - Hunting License and Habitat Fee not required

Resident: $60.50 (Either-sex [statewide] or Antlerless-only [county])
- $19.00 – Hunting License (≥16 years)
- $13.00 – Habitat Fee (16 to 64 years old)
- $28.50 – General Deer or Antlerless-only Tag

Nonresident:

$551.00 (Either-sex and Mandatory Antlerless-only [zone])
- $112.00 – Hunting License (≥18 years old; $32 <18 years old)
- $13.00 – Habitat Fee (16 to 64 years old)
- $426.00 – General Deer and Antlerless-only Tag

$353.00 (Optional Antlerless-only [county])
- $112.00 – Hunting License (≥18 years old; $32 <18 years old)
- $13.00 – Habitat Fee (16 to 64 years old)
- $228.00 – Optional Antlerless-only Tag[1,2]
  - [1] - do not have nonresident deer tag
  - [2] – nonresident landowner preference

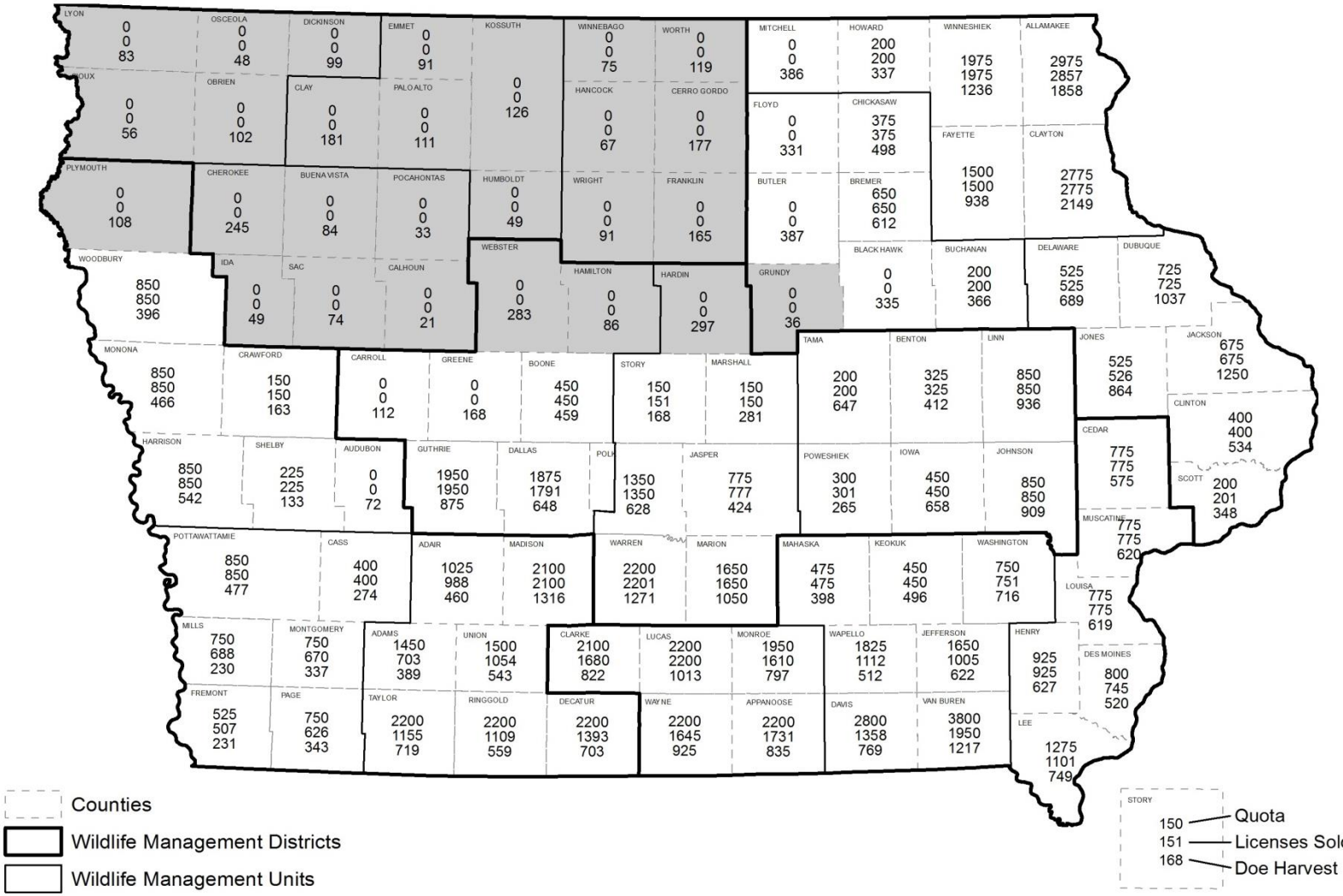
$203.00 (Holiday Antlerless-only [county])
- $112.00 – Hunting License (≥18 years old; $32 <18 years old)
- $13.00 – Habitat Fee (16 to 64 years old)
- $78.00 – Holiday Deer Antlerless-only Tag[1,2]
  - [1] - do not have nonresident deer tag
  - [2] - if leftover Optional Antlerless-only Tags

Minimum Age: None. Must be 12 years old with Hunter Safety to hunt without direct supervision

Season Dates:		
	Archery:	Oct. 1 - Dec. 2 & Dec. 19 – Jan. 10
	Early Muzzleloader:	Oct. 15 – Oct. 23.
	Late Muzzleloader:	Dec. 19 – Jan. 10
	Shotgun 1:	Dec. 3 – Dec. 7
	Shotgun 2:	Dec. 10 – Dec. 18
	Youth/Disabled:	Sep. 17 – Oct. 2
	Holiday Antlerless:	Dec. 24 – Jan. 2 (leftover nonresident tags, only nonresidents)
	Special Mgmt. Hunts:	Season dates vary depending on management unit.

V. Deer Management Units

Antlerless Deer Quota, Antlerless-only Deer Licenses Sold, and Total Doe Deer Harvest by Iowa County, 2015



Shaded Counties: Antlered deer only during first shotgun and early muzzleloader seasons.

Updated 3/28/16

VI. Regulation/Legislative Changes

None to report at this time.

VII. Special Management Hunts

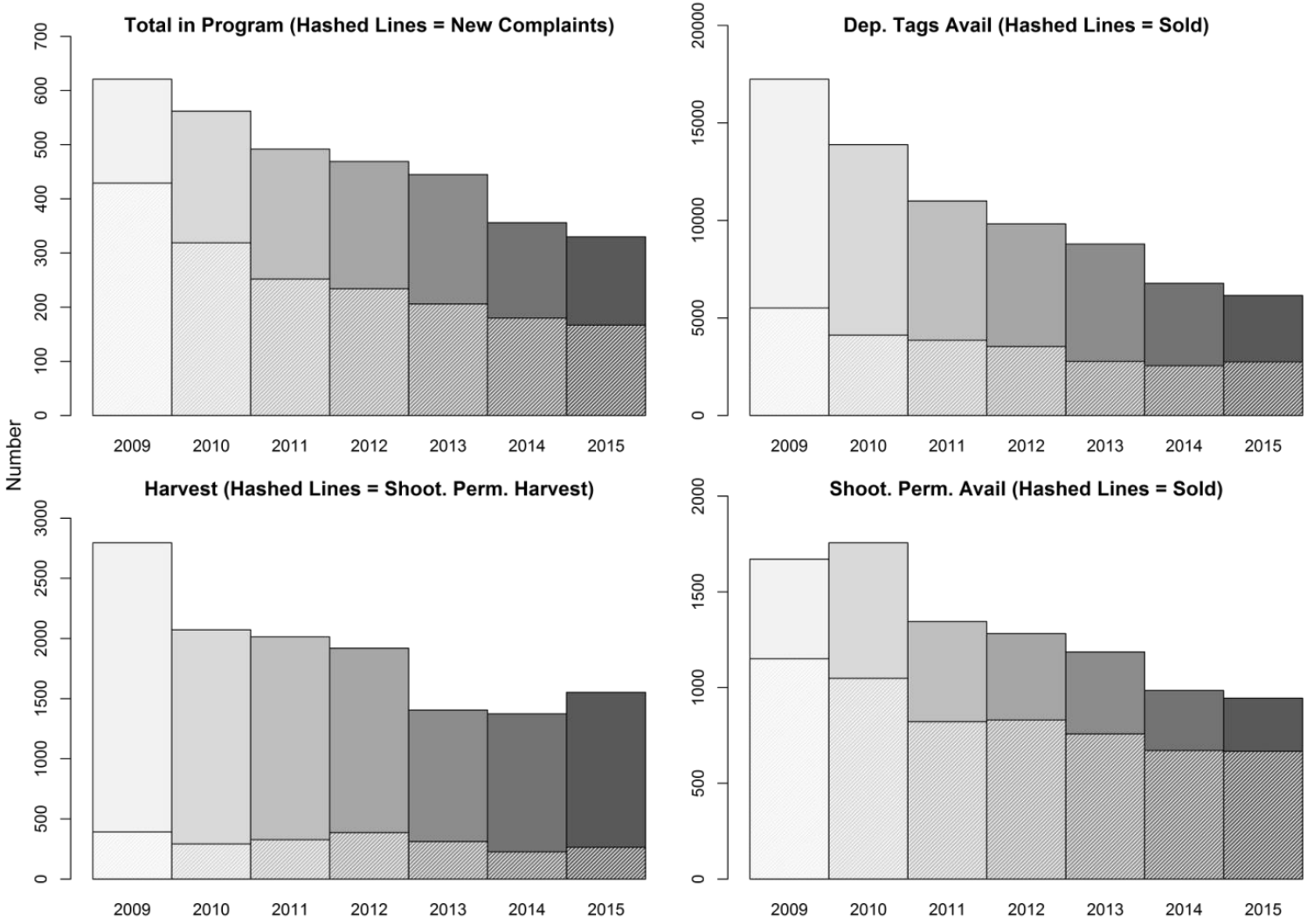
Zone	Licenses Sold	Reported Harvest			
		Does	Button Bucks	Antlered	Shed Antlered
AMANA COLONIES ZONE	129	51	10	0	2
AMES (CITY)	24	12	3	0	0
AMES (PERIMETER)	47	7	6	0	0
OSKALOOSA (CITY)	49	13	3	0	0
BETTENDORF & RIVERDALE	79	40	2	0	0
CEDAR RAPIDS (CITY)	188	82	11	0	0
CLINTON (CITY)	44	15	0	0	0
CORALVILLE (CITY)	130	52	7	0	0
DAVENPORT (CITY)	226	63	9	0	0
DENISON (CITY)	29	8	0	1	0
DE SOTO NWR	26	1	0	0	0
DE SOTO NWR	25	2	0	0	0
DUBUQUE (CITY)	183	95	4	0	0
DUBUQUE COUNTY	96	24	6	0	2
ELK ROCK STATE PARK	24	12	5	0	0
LAKE AHQUABI STATE PARK	11	4	2	0	0
GREEN VALLEY STATE PARK	24	11	6	0	0
IAAP	367	156	54	1	4
IOWA FALLS (PERIMETER)	15	8	2	0	0
IOWA FALLS (CITY)	36	16	0	0	0
JOHNSON COUNTY	475	129	29	0	4
KENT PARK (ARCHERY)	45	15	1	0	0
LAKE AHQUABI STATE PARK	8	3	2	0	0
LAKE MACBRIDE STATE PARK	49	27	2	0	0
LEDGES STATE PARK	23	11	0	0	0
LINN COUNTY	203	64	8	1	0
MOUNT PLEASANT (CITY)	8	3	0	0	0
ELDORA (CITY)	21	6	0	0	0
MUSCATINE (CITY)	69	29	7	0	0
OTTUMWA (CITY)	78	38	2	0	0

Special Management Hunts Continued

Zone	Licenses Sold	Reported Harvest			
		Does	Button Bucks	Antlered	Shed Antlered
PINE LAKE STATE PARK	22	10	0	0	1
POLK-DALLAS ARCHERY ONLY	614	263	40	2	2
SCOTT COUNTY PARK	29	9	1	0	1
SQUAW CREEK PARK	58	11	4	0	0
WATERLOO & CEDAR FALLS	201	70	18	1	0
POLK-DALLAS RURAL ZONE	21	8	2	0	0
JEFFERSON COUNTY PARK	1	0	0	0	0
SMITH WILDLIFE AREA	2	2	0	0	0
SMITH WILDLIFE AREA	3	0	0	0	0
SMITH WILDLIFE AREA	3	1	0	0	0
COUNCIL BLUFFS (CITY)	171	94	0	0	0
LAKE IOWA COUNTY PARK	25	9	1	0	0
LAKE IOWA COUNTY PARK	31	11	2	0	0
REICHELT AREA	12	4	1	0	0
KNOXVILLE (CITY)	2	1	0	0	0
MARSHALLTOWN (CITY)	44	20	2	0	0
MARSHALLTOWN (PERIMETER)	26	2	2	0	0
RIVERSIDE PK CARROLL CCB	12	3	0	0	0
STONE STATE PARK	43	19	1	0	0
KEOKUK (CITY)	17	8	1	0	0

VIII. Deer Depredation Program

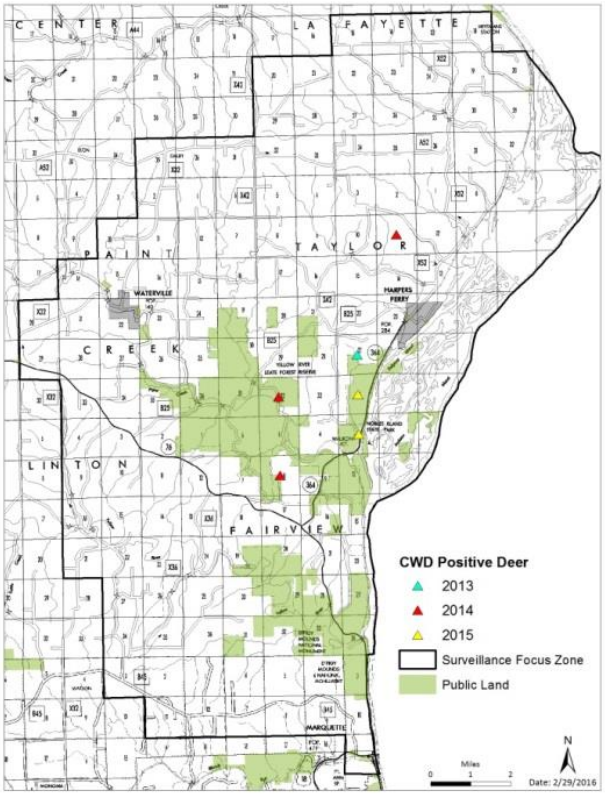
We administered a survey that was mailed to all landowners enrolled in the depredation program. Eighty-five percent of respondents were satisfied with the program, and 90% of respondents would recommend the program. Average reported doe to buck harvest ratio was 3:1 on depredation management properties, which was double the statewide average. The major factor limiting effectiveness was access to adjacent properties.



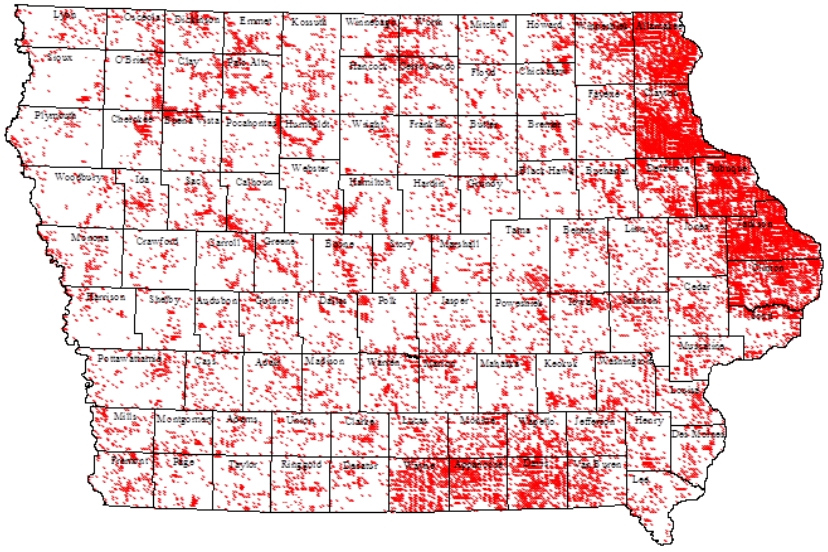
IX. Diseases

CWD – Since the fall of 2013, 6 wild deer have tested positive for presence of PrP protein in northeast Iowa, 2 of which were detected during the 2015 – 2016 hunting season. We continue statewide monitoring with more intensive surveillance in northeast and southcentral Iowa. A total of 57,765 wild deer have been tested since 2002.

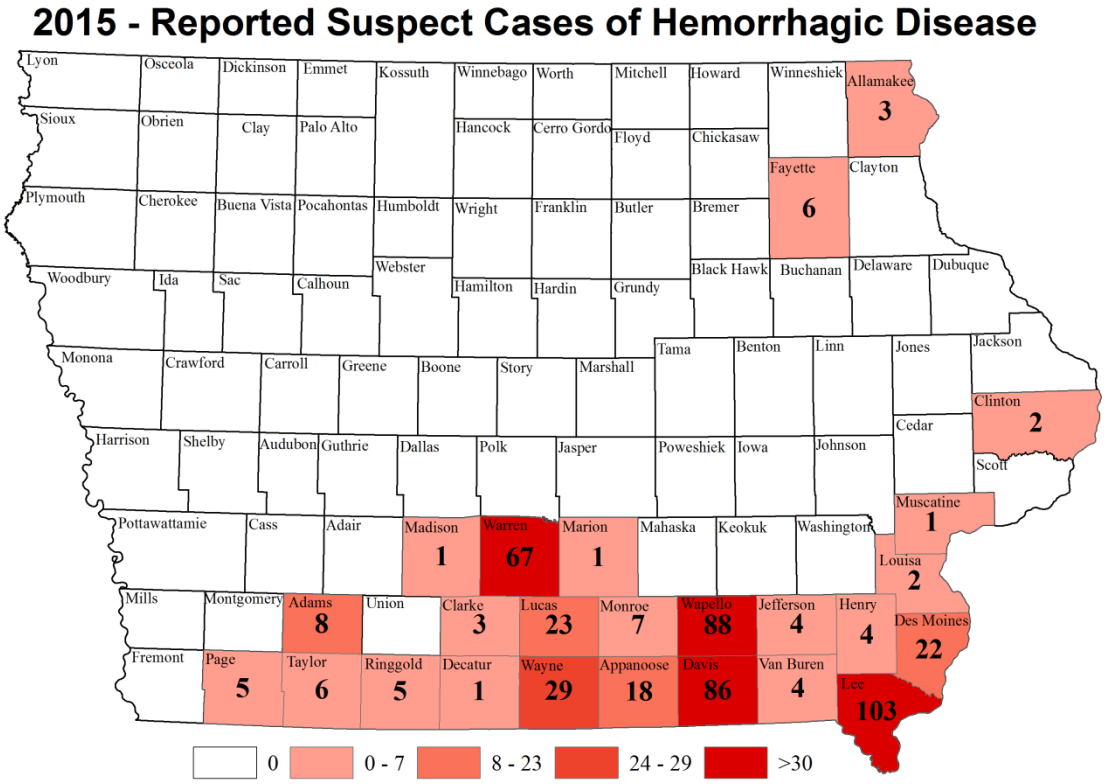
CWD positive wild deer in Allamakee County, 2013 - 2015



Iowa CWD sample location sites for wild deer, 2002-2015.



EHD - In 2015, we received 499 reported cases of suspected hemorrhagic disease in 25 counties. Tissue samples were collected from 1 deer in Marion County that had been dead for less than 24 hours and submitted to the Iowa State Veterinary Diagnostics Lab in Ames, Iowa for virus isolation - EHDV-2 was isolated in the sample.



X. Research

Iowa DNR research projects include an evaluation of distance sampling methods using 10 years of spotlight data conducted on 199, 25-mile transects each year in March or April. We are also developing an integrated population model to combine information from various population indices. We have been piloting a fecundity and deer condition study the past three years. Preliminary results suggest lower young-of-year pregnancy rates compared to data from the 1980's. Last winter we expanded the survey in attempts of colleting additional data across the entire state.

Iowa State University (P.I. Dr. Julie Blanchong) initiated two deer related projects in 2015. The first was designed to evaluate fawn survival and resource selection using radio collared neonatal deer. Researchers at Iowa State have radio collared 36 neonates in Boone County (central Iowa) through the first two years of the study. The second study is evaluating the relationship of antler characteristics across Iowa.

Dr. Blanchong also recently submitted a report titled, "Genetic analysis of white-tailed deer population structure: identifying potential patterns and rates of disease spread", from a recently completed research project.

XI. Hot Topics

Chronic Wasting Disease and management strategies in regards to mitigating prevalence rates in Iowa continue to be the most important priority for both the IA DNR and many Iowa residents. There has also been discussion and bills proposed in regards to baiting and feeding rules.

XII. Links

None.

Kansas Department of Wildlife, Parks and Tourism

Kansas Deer Report 2015-16 Seasons

I. Current Harvest

Hunter harvest of deer during the 2015-16 seasons was estimated to be 95,813, 2.0% more than the 93,940 deer taken in 2014-15 (see table below for breakdown and figure for the distribution). The Kansas Outdoor Automated Licensing System data showed 120,102 people purchased 204,511 permits for the 2015-16 seasons, down 2.5% and 3.3% respectively from values in 2014-15. The number of non-resident deer hunters remained about the same between 2014 and 2015, however, the number of resident deer hunters decreased by 3.2%. Non-residents comprise 23% of the deer hunters in Kansas.

Harvest Age Structure*

	Antlered Ad Bucks	Male Fawns	Adult Does	Female Fawns	Ad Buck Shed Antler	Total
White-tailed Deer	42,434	3,865	42,428	3,923	815	93,465
Mule Deer	1,928	24	355	14	28	2,348
By Residents	32,770	3,614	36,176	3,651	643	76,854
By Non-Residents	11,592	275	6,607	286	200	18,960
Total	**44,362**	**3,889**	**42,783**	**3,937**	**843**	**95,813**

Harvest By Equipment*

	Compound Bow	Recurve / Long Bow	Crossbow	Total
Archery	25,362	779	6,519	32,660

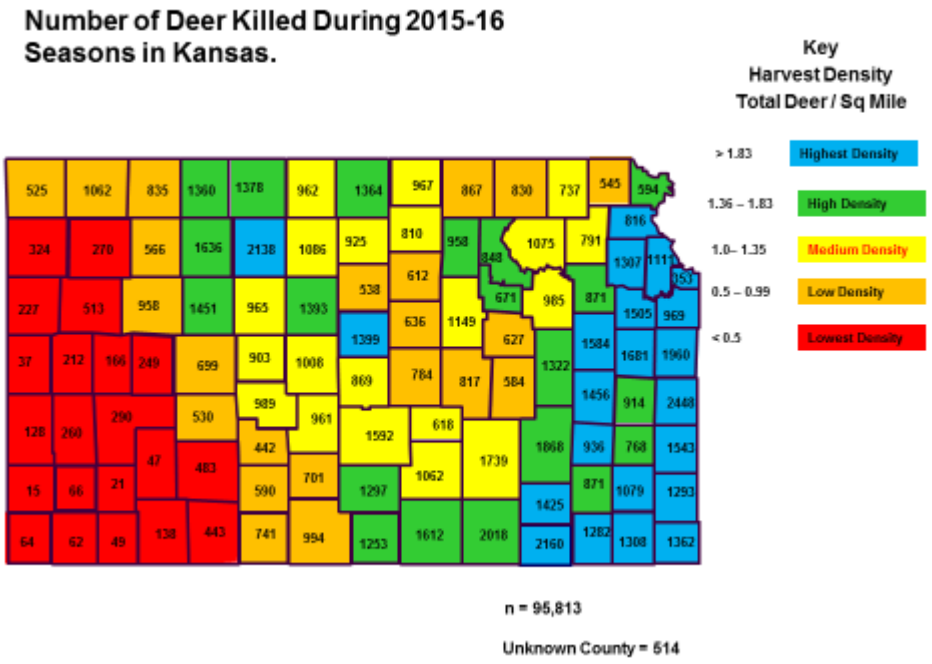
	In-Line MZ	Traditional MZ	Total
Muzzleloader	3,330	448	3,778

	Centerfire Rifle	Shotgun and Slug	Pistol	Total
Firearms	58,787	359	231	59,377

Harvest By Season*

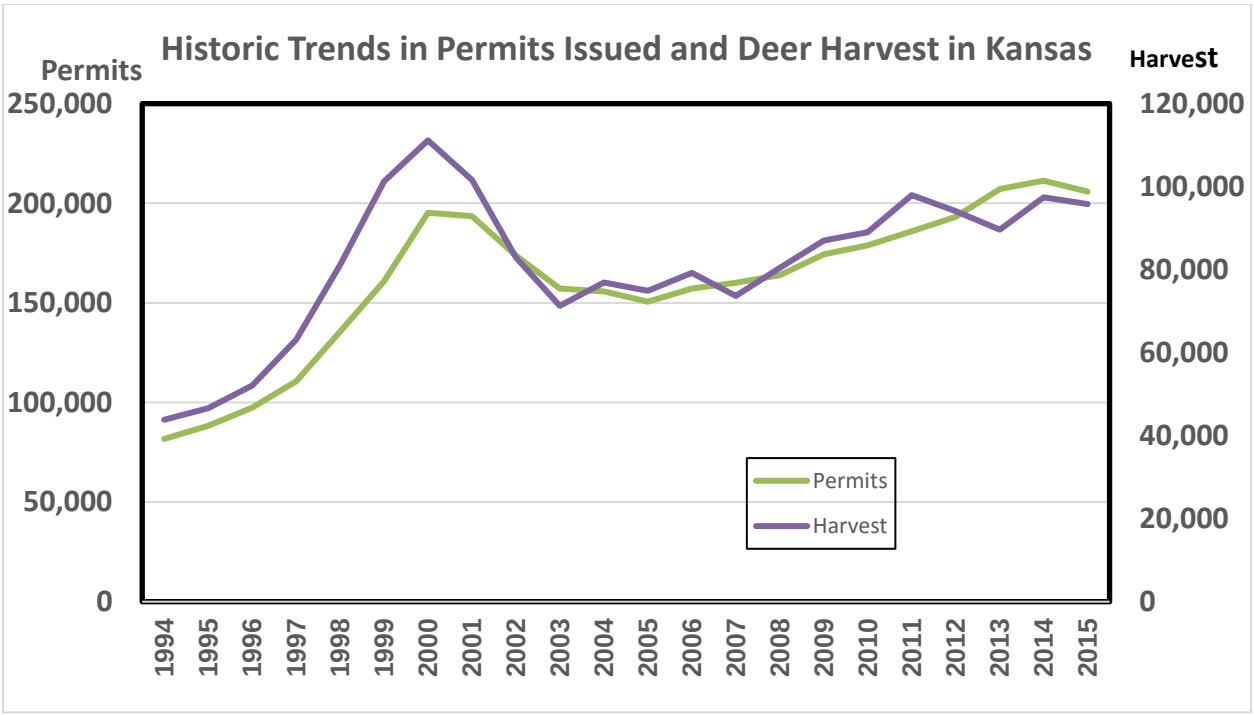
Youth/ Disability	Early MZ	Pre-Rut	Archery	Firearms	Whitetail Antlerless-Only	Total
1,148	3,493	1,823	29,718	45,790	13,842	95,814

- All estimates are rounded to nearest whole number. Sub-totals may not add exactly.



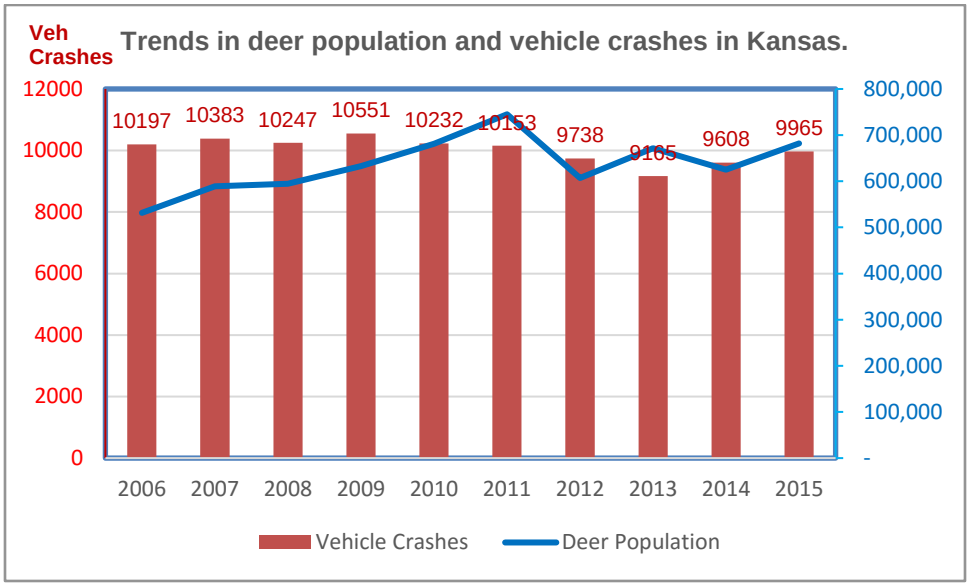
II. Historical Harvest

The trends in the number of deer permits and hunter harvest since 1994 are presented below.

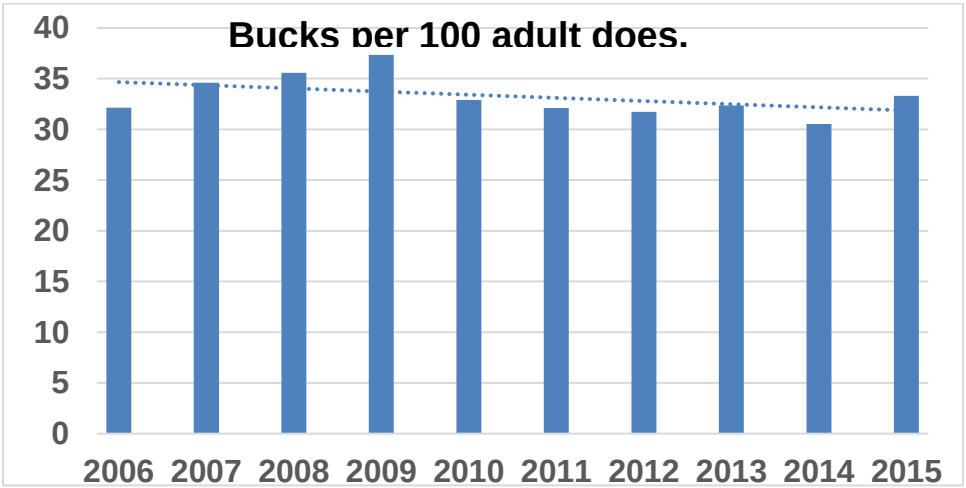


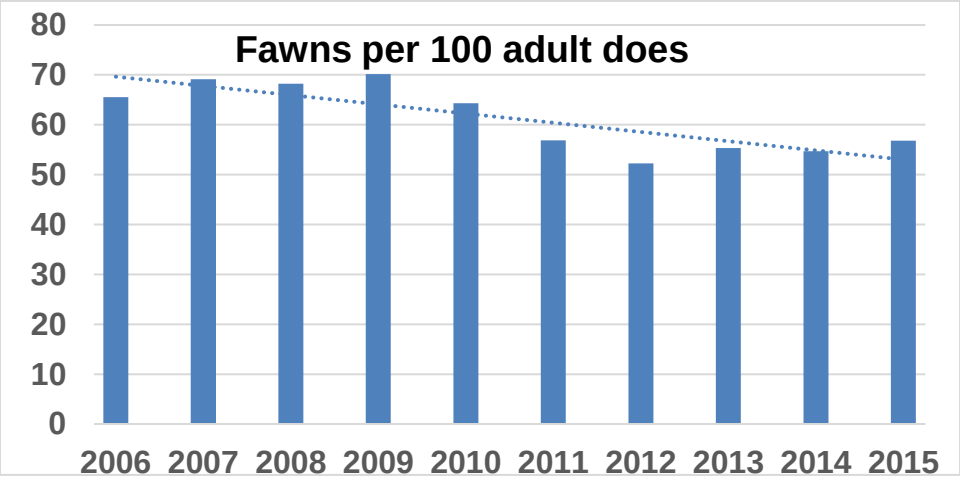
III. Population Estimate/Trends

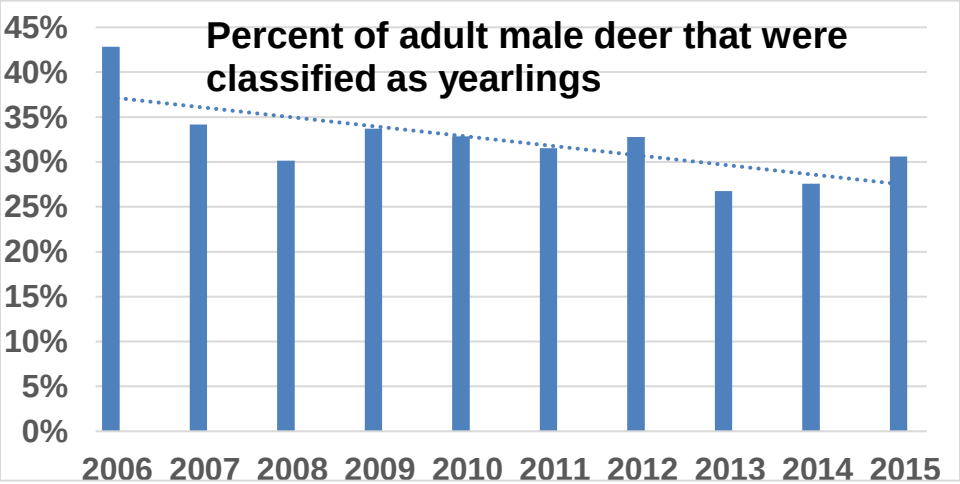
Population – Deer related vehicle accidents have provided a long term deer population trend indicator in Kansas. In the early 2000s we initiated line transect and distance sampling procedures to assist in the monitoring of population trend (see below). Vehicle accident data for 2015 is preliminary.



Demographics –Since 2005 we have classify about 4,500 deer per year during the spotlight / distance survey. Approximately 33 antlered bucks and 62 fawns have been observed per 100 adult does. Approximately a third of the antlered deer have been estimated to be yearlings, however the portion of yearlings in the populations appears to be declining through the years.





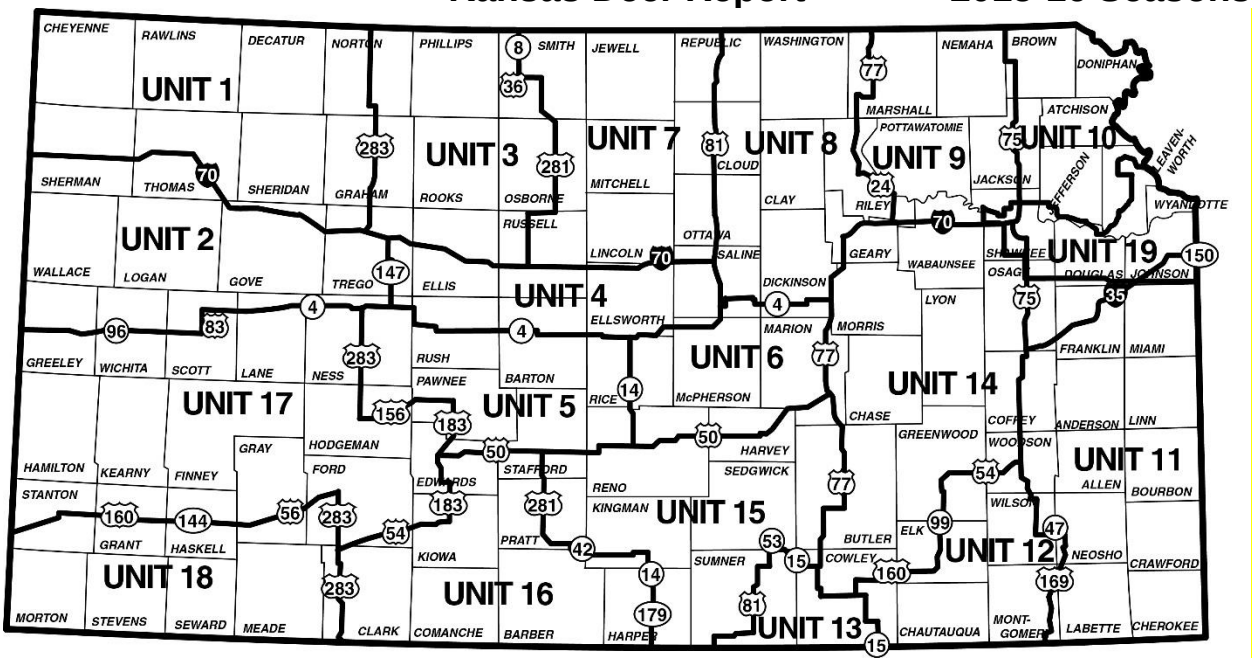


IV. Deer Management Units:

The Kansas Department of Wildlife Parks and Tourism (KDWPT) manages deer at the level of Deer Management Units (DMU). Population trends, harvest and human dimensions aspects to deer management are summarized by these units. Boundaries are established by major state and federal highways easily identified and located by hunters, while the shapes are intended to capture areas of similar physiographic and ecological values. Long term maintenance of unit boundaries is desired for trend analysis.

Kansas Department of Wildlife, Parks and Tourism

Kansas Deer Report 2015-16 Seasons



V. Regulation/legislation

2015-2016 Season

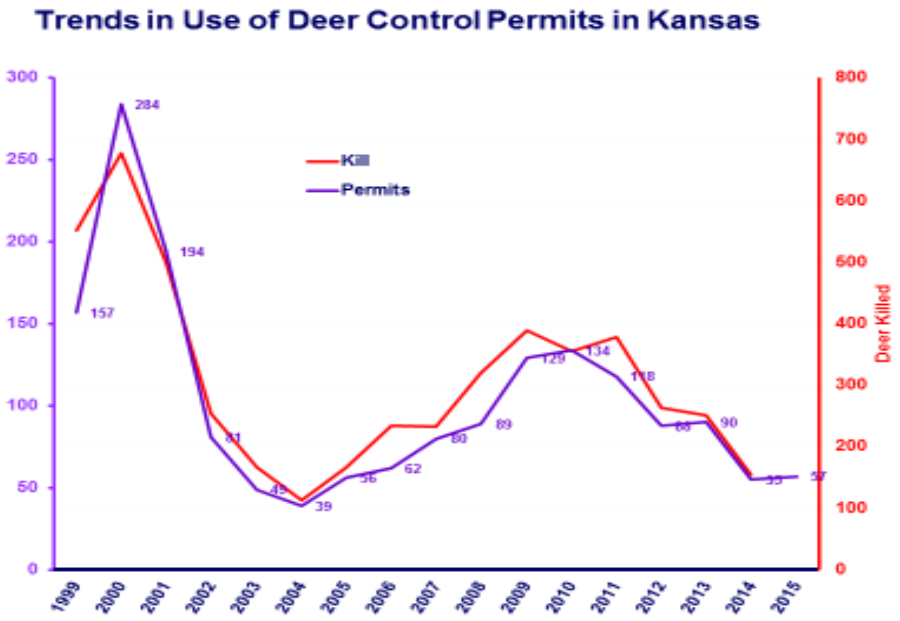
Only minor season date changes and changes in limited quota permits were made from the 2014-15 regulations. Hunters are limited to one permit per year that allows them to take an antlered deer. Quotas are set on the number of non-resident hunters in a DMU, however, hunters may select the type of equipment /season they wish to hunt (i.e., archery, muzzleloader or firearms). Hunters are allowed to purchase an additional 5 white-tailed antlerless-only permits, however, the number of permits that may be used in a DMU varies from 0 to 5. Hunters were allowed to take a mule deer on only 18,162 of the either species, either sex permits sold in 2015. Landowners obtained 52% of the either species, either sex deer permits.

VI. Urban/Special Hunts

Special permits have been issued to municipalities (including parks in suburban areas and airports) to allow culling in areas where local deer abundance created safety or public intolerance of the deer and traditional hunting by citizens had been prohibited by local ordinances. KDWPT continues to create and expand special hunts to encourage the harvest of deer or to provide special access for youth, veterans and individuals with disabilities. Special hunts are used in some areas to create low hunter densities to emphasize quality experiences. They are also used in areas where additional antlerless deer need to be taken. In 2016 there will be 209 special hunts for deer. That included 49 hunts for youth, 31 hunts with mentors, 2 hunts for people with disabilities and 127 hunts that will be open to anybody. The hunts allowed 403 people to participate for a total of 13,797 hunter days on 154,679 acres that would not traditionally be opened to deer hunters.

VII. Deer Management Assistance/Crop Damage

KDWPT District Wildlife Biologists, Public Land Manager and Natural Resource Officers have been authorized since 1999 to issue Deer Control Permits (DCP) to landowners suffering from damage caused by deer. DCP allow landowners and up to two resident agents to kill deer outside the dates of traditional hunting seasons. They allow the use of techniques typically not allowed where fair chase is a goal. The issuing employee reviews each site and confirms damage caused by deer. They specify conditions and times when the permit may be used.



VIII. Diseases

Following two years with unusually high number of reported cases of EHD (2011 and 2012) we initiated a program to encourage the public to assist KDWPT field employees in detecting sick or recently dead deer. The system allows people to report sightings of sick or dead deer at our website. This was done to promote the collection of samples for viral isolation testing. Viral isolation was conducted at SCWDS on 12 deer with EHDV-2 being identified in six of the submitted deer in 2015. Positive deer were detected in the following counties; Labette (1), Greenwood (2) Miami (1) and Osage (2).

Monitoring deer populations for chronic wasting disease was funded through Pittman/Robertson Act (W39 R022 Subproject 8115). The level of funding is less than from 2003-2011 under USDA grants. Sampling rotates to a different region each year. In 2015 we focused on the northwest and north central portion of the state. In addition to the hunter harvested deer we collected samples from selected vehicle killed deer, and all elk killed in the state. The sampling protocol included testing of all suspect deer. We also collected information on deer from hunters who paid for private testing.

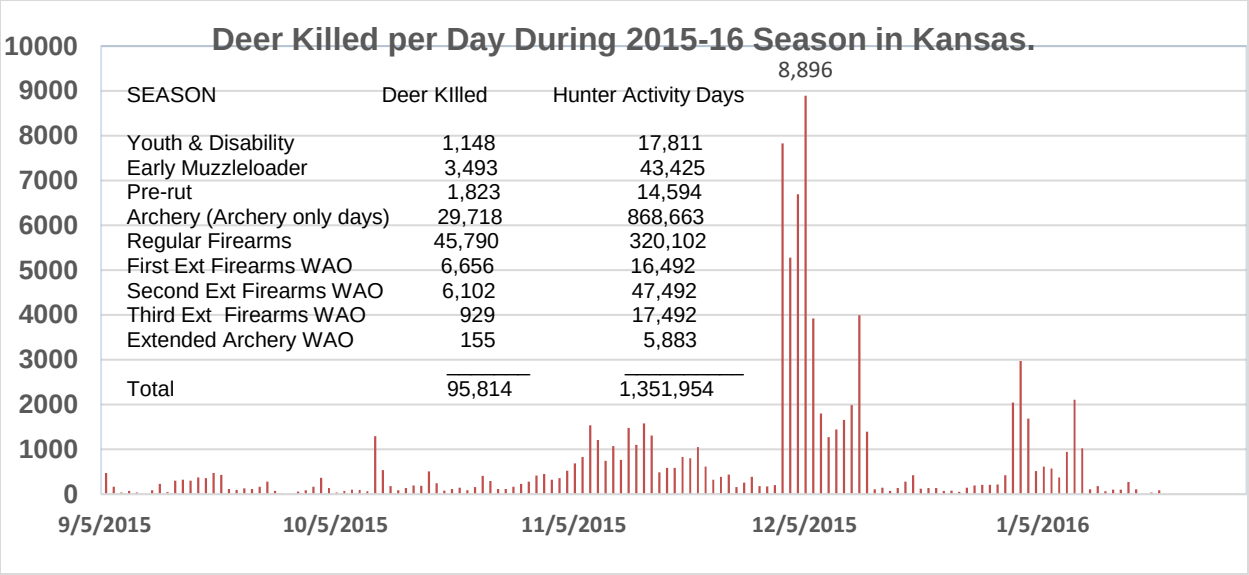
KDWPT collected samples from 739 cervids during 2015. CWD was detected in 57 deer (50 white-tailed deer and 7 mule deer). This is a dramatic increase since the last time a sample of hunter killed deer from this part of the state was tested. Since 1996 KDWPT has tested 25,630 deer and elk with 131 testing positive for the CWD prions.

IX. Research

No research projects emphasizing deer management were conducted in 2015.

Deer Hunter Surveys

Deer hunter harvest surveys are conducted annually to determine harvest, success rates, activity days and participation during various seasons (see figure below). SurveyMonkey® is used to consolidate hunter responses. Hunters are contacted by email and given a hot link to open the survey, or by letter and directed to a website, or they are mailed a paper survey and return envelope. Response rates vary by contact method but answers to questions are similar among contact methods.



SEASON	Deer KIlled	Hunter Activity Days
Youth & Disability	1,148	17,811
Early Muzzleloader	3,493	43,425
Pre-rut	1,823	14,594
Archery (Archery only days)	29,718	868,663
Regular Firearms	45,790	320,102
First Ext Firearms WAO	6,656	16,492
Second Ext Firearms WAO	6,102	47,492
Third Ext Firearms WAO	929	17,492
Extended Archery WAO	155	5,883
Total	95,814	1,351,954

This survey is used to determine deer hunter use and hunter harvest on public hunting areas and the Walk-In-Hunting-Areas. Public lands make up 1.9% of the state. They are used by 12.2% of the deer hunters, who harvest nearly 5,294 deer or 5.5% of the statewide harvest. The harvest density of deer on public managed lands is 3.4 deer per square mile while the corresponding density on private land is 1.1, and the density on private property open in the WIHA program is 2.0.

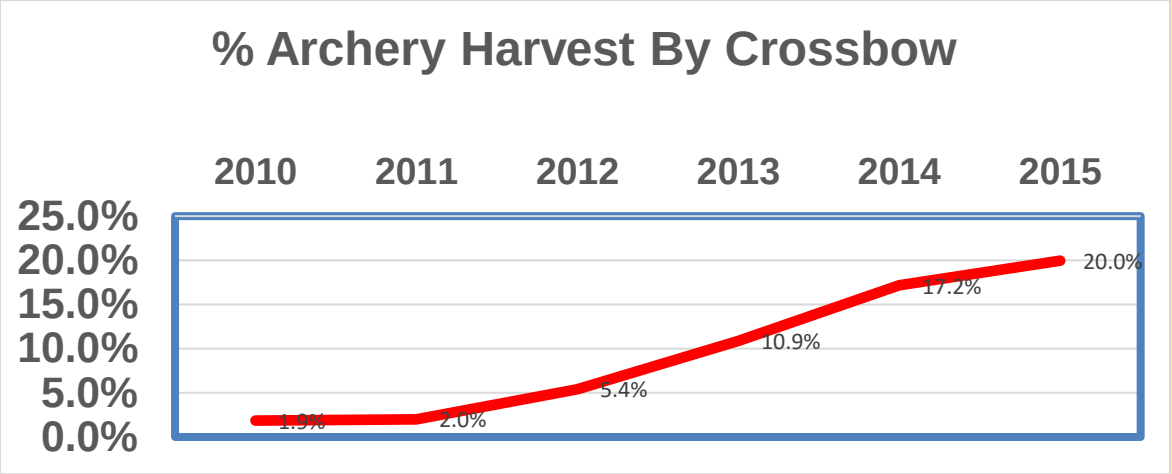
X. Hot Topics

Permit and License Fee Increase

Hunting licenses increased from $18 to $25 for residents and from $70 to $95 for non-residents. The general resident either-sex deer permit increased from $30 to $40, while the non-resident permit that include both an either-sex deer and white-tailed antlerless permit increased from $315 to $415.

Equipment

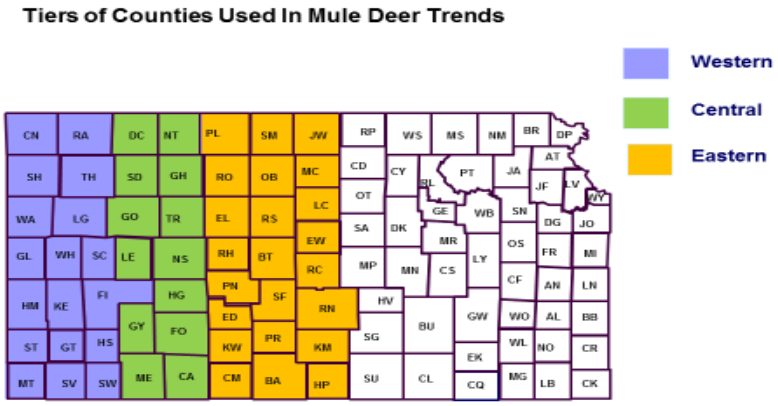
Crossbows continue to increase in popularity in Kansas. We estimated that crossbows were used to harvest 6,519 deer in 2015-16. The portion of the harvest during the archery season that is taken with crossbows has increased from approximately 2% when that equipment was allowed for just people with disabilities to 20% when it is allowed for any person. The total harvest during the archery season has increased from 20,291 in 2010 to 32,660 in 2015.

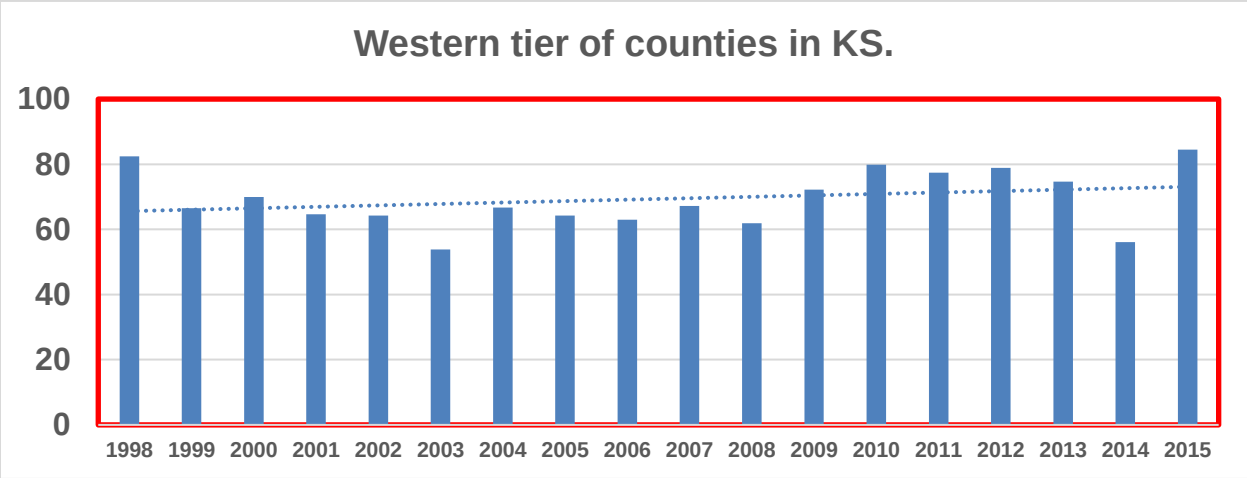


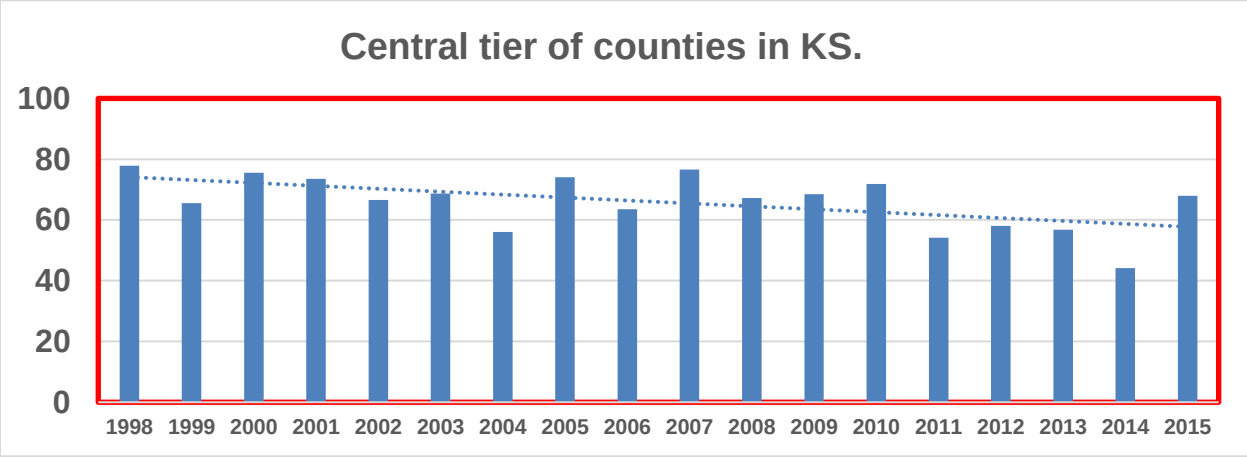
Mule Deer Management

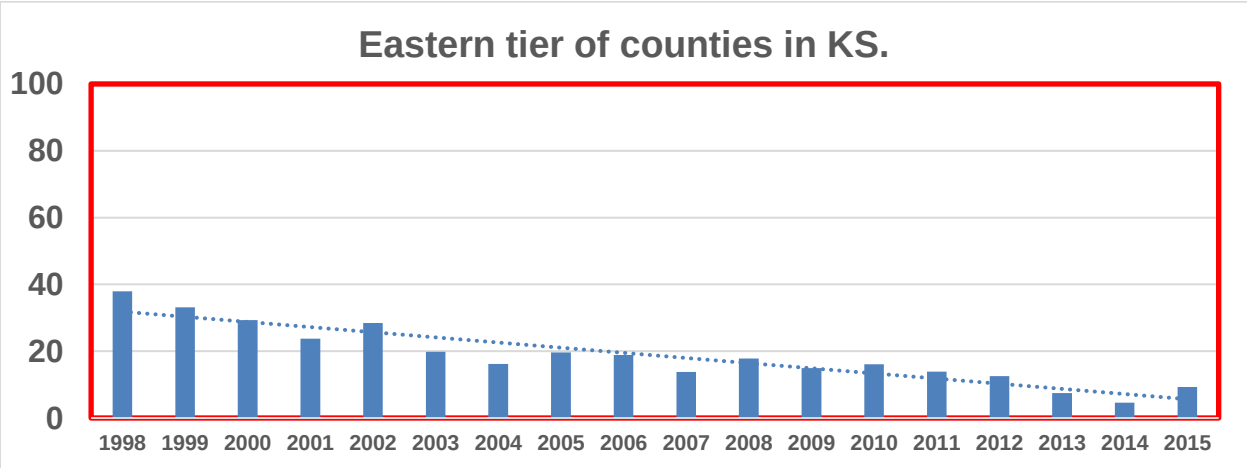
The distribution of mule deer in Kansas appears to be shifting westward. Overall the statewide harvest and our estimate of total population of mule deer has remained constant, however, few mule deer are seen by hunters in counties along the former eastern boundary of their distribution in the state than use to be reported.

Trends in the distribution of mule deer have been examined using both harvest information and population indices. Below is a map of Kansas divided into west to east tiers.









Percent of Kansas bow hunters reporting that they saw mule deer while hunting in a county.

Both hunters and KDWPT employees are concerned about this change. The number of permits issued in Kansas where either species of deer might be taken has decrease in recent years and the recommendation for the 2016-17 seasons has eliminated all of the either species antlerless-only

permits. White-tailed deer antlerless-only permits remain readily available and hunters are allowed to purchase and use as many as 5 of those permits through much of the mule deer range.

Trophies

Last year I asked deer hunters during the annual KS Deer Hunter Survey some questions about trophy deer. Here are some interesting responses:

> **Have you ever killed a deer in Kansas you thought had large enough antlers to be a trophy in the Boone and Crockett, Pope and Young or other official trophy registry system (Including the free KDWPT Awards)?** 29.3% answered "Yes"

People who answered "Yes" about killing a trophy deer were asked:

> **Did you have those antlers measured and officially scored?** 33.1% answered "Yes"

People who answered "Yes" to the measurement question were asked:

> **Did you register your trophy?** 37.1% % answered "Yes"

That suggests that in Kansas only 12.2% of the deer that hunters consider "Trophy Class" are register. That includes being registered in the free award program like the one operated by KDWPT.

To determine the importance of various factors which might keep hunters from registering these memorable class deer we asked all the deer hunters in our sample (n= 16,513) the following:

> **What would prevent you from registering a trophy deer? (check one box)**

7.9% Don't want people to know	15.6% Takes time
11.4% Cost	23.5% Trophy records bring more hunters to my area
13.5% Finding a measurer	28.1% I have no interest in trophies

To determine if they might registering a second but smaller deer we asked:

> **If you killed a trophy deer and registered it and then killed another deer in another year, but that deer was slightly smaller than the first, would you also register the second deer?** 62.3% answered “No”.

Trophy records only tell us part of the story about deer with large antlers. They are limited to people who register their trophies. There are a variety of factors that contribute to a hunter’s decision to register a trophy class deer. Care in the interpretation of those records is necessary.

XI. Relevant Links

KDWPT Regulations are available on-line at:
http://kdwpt.state.ks.us/news/Hunting/Hunting-Regulations

General information on deer management may be located at:
http://kdwpt.state.ks.us/news/Hunting/Big-Game-Information

Chronic wasting disease information and maps may be found at:
http://kdwpt.state.ks.us/news/Hunting/Big-Game-Information/Chronic-Wasting-Disease

2015-16 Kentucky Deer Program Report

Gabe Jenkins, Kyle Sams and David Yancy

I. Current Harvest

The 2015-16 deer harvest was one for the ages with a harvest of 155,734 deer, beating the previous record (144,409 in 2013-14) by 11,325 deer. It was a 12% increase from the 2014-15 season (138,899) and was an 8% increase from 2013-14 season (144,409). Factors that contributed to the harvest were a mast failure and optimal hunting weather during the major hunting timeframes.

Deer Season Harvest Comparison: 2014-15 v 2015-16

Weapon/Sex	2014-15	2015-16	% Difference
Archery	18,369	23,323	27%
Modern Gun	102,893	109,179	6%
Muzzleloader	14,675	18,663	27%
Crossbow	2,962	4,565	54%
Total	138,899	155,730	12%
Females	63,520	70,259	11%
Male Visible	66,080	75,720	15%
Male Not Visible	9,299	9,749	5%
Total	138,899	155,730	12%

2015-16 Hunter Success Rates

Successful hunters	# deer killed	% of successful hunters
85,735	1	67.7%
26,256	2	20.7%
8,519	3	6.7%
6,200	4+	4.9%
Total successful hunters	126,710	
Average Hunter Harvests:	1.23	

II. License and Season Information

License and Permit Fees

License	Resident	Nonresident
Annual Hunting License	$20	$140
Senior/Disabled License	$5	N/A
Sportsman's License	$95	N/A
Youth Sportsman's License	$30	$25
Statewide Deer Permit	$35	$120
Bonus Antlerless Permit	$15	$15
Youth Deer Permit	$10	$15

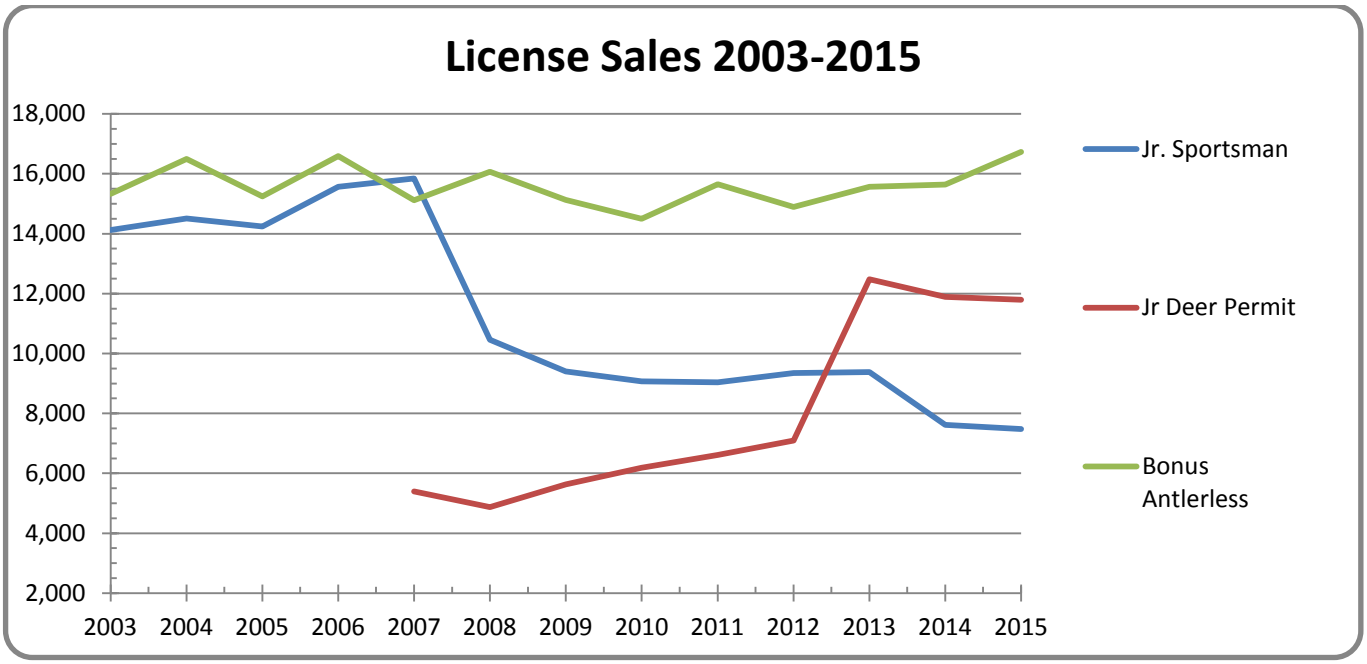
Season Dates and Bag Limits

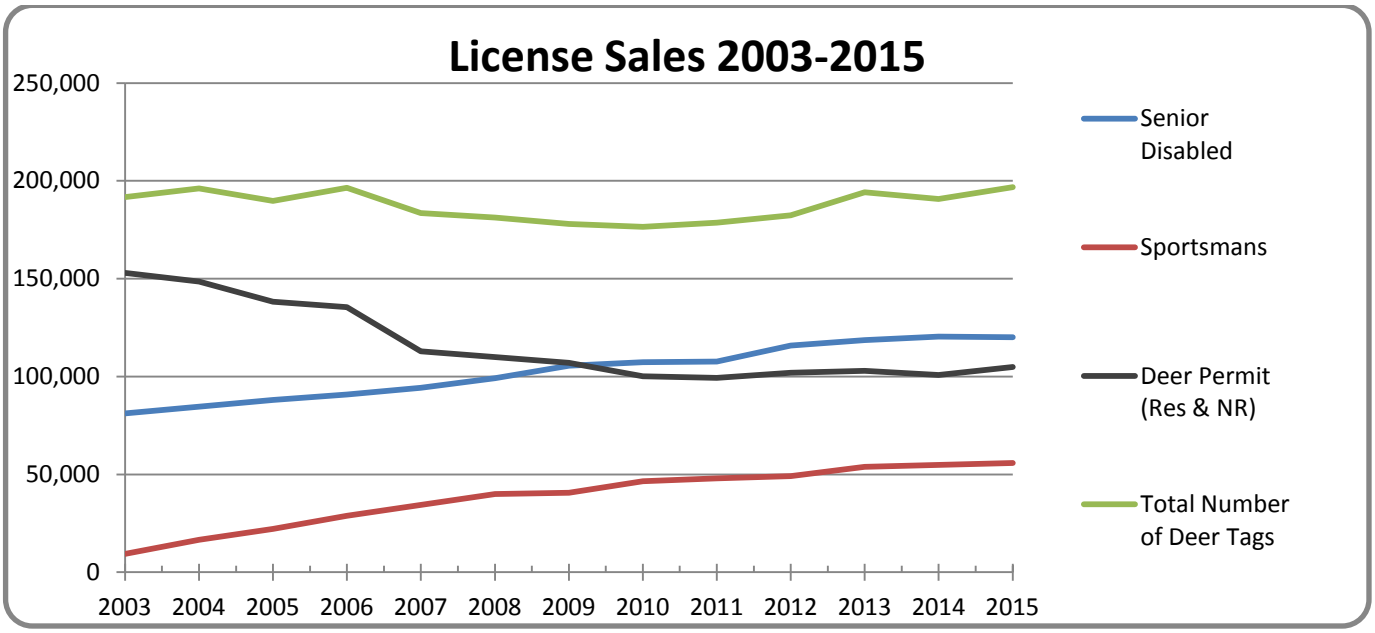
	Statewide	Zone 1	Zone 2	Zone 3	Zone 4
Modern Firearm		Nov 14-29	Nov 14-29	Nov 14-23	Nov 14-23
Archery		Sept 5- Jan 18	Sept 5- Jan 18	Sept 5- Jan 18	Sept 5- Jan 18
Early Crossbow		Oct 1-18	Oct 1-18	Oct 1-18	Oct 1-18
Late Crossbow		Nov 14-Dec 31	Nov 14-Dec 31	Nov 14-Dec 31	Nov 14-Dec 31
Early Muzzleloader		Oct 17-18	Oct 17-18	Oct 17-18	Oct 17-18
Late Muzzleloader		Dec 12-20	Dec 12-20	Dec 12-20	Dec 12-20
Youth-Only Firearms	Oct 10-11				
Free Youth Weekend	Dec 26-27				
Antlered Bag Limit	1				
Antlerless Bag Limit	Based upon zone	Unlimited	Up to 4	Up to 4, only 2 deer with a firearm	Up to 4. Only 2 deer with a firearm, antlerless deer can only be killed with a firearm during the last 3 days of the late Muzzleloader

*Resident Landowners, spouse, and dependent children are not required to purchase a hunting license or deer permit.

License Sales

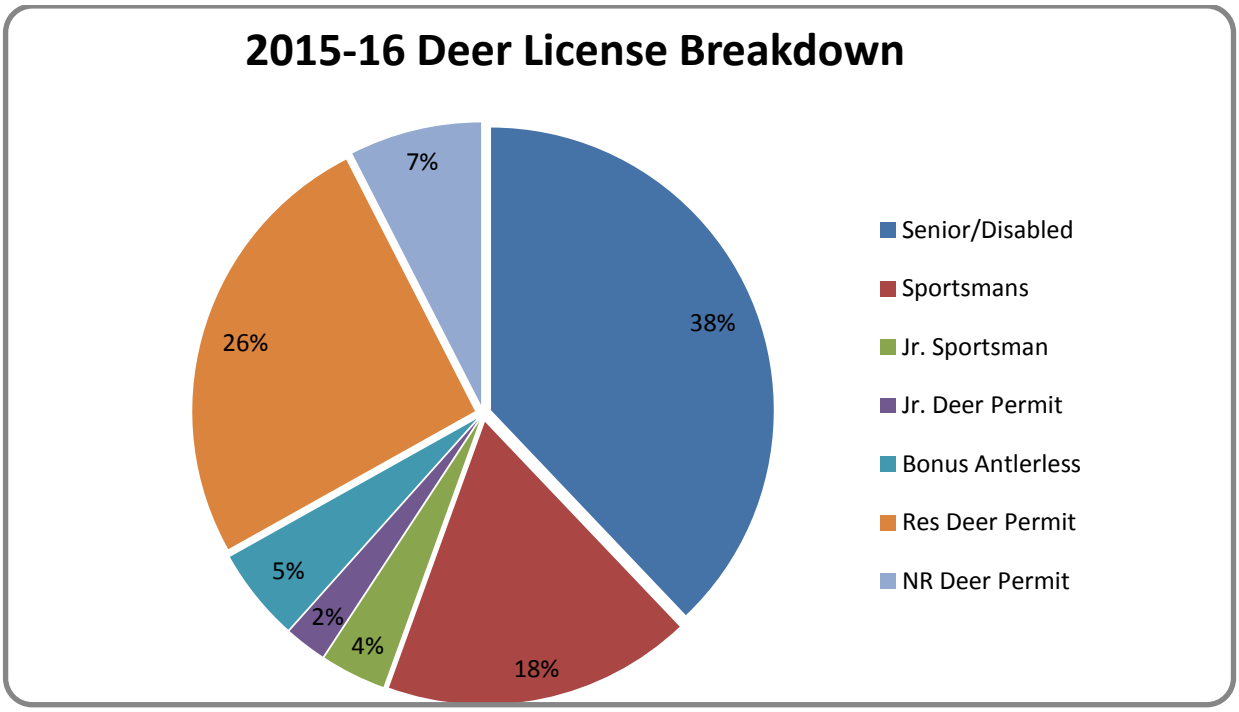
In recent years the number of deer permits sold has declined slightly. When including the license bundles (Sportsman's, Jr. Sportsman's, Jr. Deer Permit, Resident and Non-Resident Deer Permit, and Bonus Antlerless Permit) in the total deer permit numbers there was a slight increase in license sales compared to the 2014-15 season (190,695). Deer license sales increased by 3% from the 2014-15 season to the 2015-16 season (196,707).





Upon further examining license sales, the majority of deer permits are purchased by Senior/Disabled (38%, followed closely by Resident Deer Hunters (26%) and Sportsman License (18%) buyers. Over the last few years there was a steady increase in the number of senior licenses sold and a slow decrease in resident deer permit sales. The overall number of

deer hunters is stable to slightly increasing. However, the number of senior licenses is increasing, indicating that a majority of Kentucky deer hunters are reaching the age of 65 (i.e., the age at which you can purchase as Senior License).



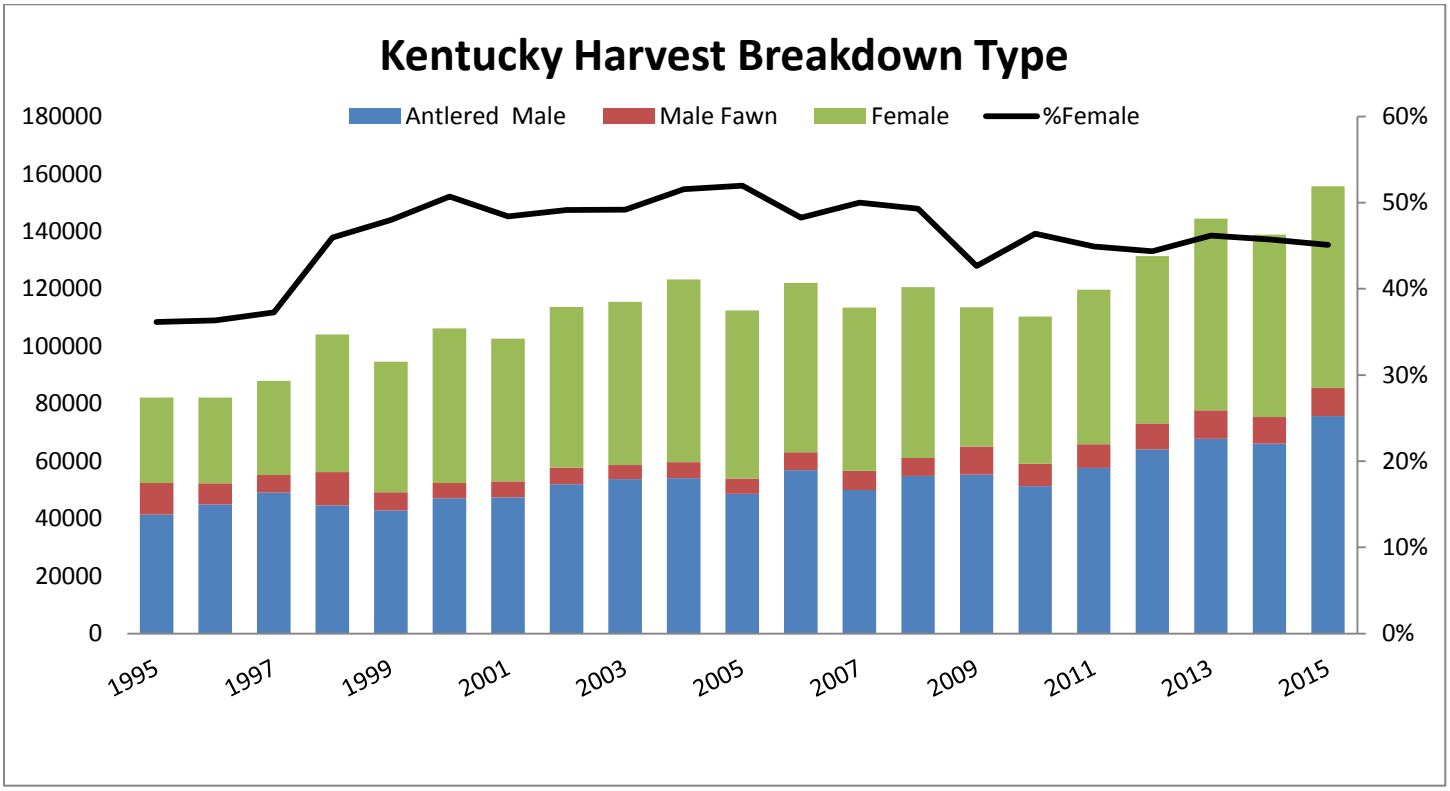
III. Historical Harvest

		Firearms*				Archery**			Grand Total	
Year	Males	Females	Total	% of Grand Total	Males	Females	Total	% of Grand Total	Total	Change
1976	3,042	434	3,476	100%					3,476	
1977	5,257	425	5,682	100%					5,682	63%
1978	5,633	379	6,012	93%	265	156	421		6,433	13%
1979	6,864	578	7,442	92%	426	194	620	8%	8,062	25%
1980	7,323	665	7,988	82%	1,004	710	1,714	18%	9,702	20%
1981	12,079	1,055	13,134	88%	1,145	704	1,849	12%	14,983	54%
1982	13,908	1,896	15,804	88%	1,308	857	2,165	12%	17,969	20%
1983	14,383	1,644	16,027	86%	1,607	1,098	2,705	14%	18,732	4%
1984	17,174	3,170	20,344	88%	1,650	1,018	2,668	12%	23,012	23%
1985	21,551	4,473	26,024	87%	2,724	1,327	4,051	13%	30,075	31%
1986	27,773	6,884	34,657	88%	3,144	1,719	4,863	12%	39,520	31%
1987	37,790	16,582	54,372	90%	3,831	2,169	6,000	10%	60,372	53%
1988	38,528	19,025	57,553	90%	4,444	2,263	6,707	10%	64,260	6%
1989	39,564	23,103	62,667	89%	4,887	2,595	7,482	11%	70,149	9%
1990	42,863	23,288	66,151	89%	4,798	2,969	7,767	11%	73,918	5%
1991	48,881	36,037	84,918	91%	3,979	4,037	8,016	9%	92,934	26%
1992	45,108	28,556	73,664	90%	4,243	4,031	8,274	10%	81,938	-12%
1993	41,809	19,738	61,547	89%	4,148	3,829	7,977	11%	69,524	-15%
1994	47,310	22,387	69,697	88%	4,427	4,665	9,092	12%	78,789	13%
1995	47,854	25,336	73,190	89%	4,591	4,359	8,950	11%	82,140	4%
1996	48,538	25,161	73,699	90%	3,760	4,696	8,456	10%	82,155	0%
1997	51,820	28,996	80,816	92%	3,350	3,776	7,126	8%	87,942	7%
1998	52,125	42,174	94,299	91%	4,115	5,656	9,771	9%	104,070	18%
1999	45,040	38,267	83,307	87%	4,396	7,524	11,920	13%	95,227	-8%
2000	48,212	45,572	93,784	88%	4,175	8,303	12,478	12%	106,262	12%
2001	48,747	41,233	89,980	88%	4,263	8,463	12,726	12%	102,706	-3%
2002	53,972	48,157	102,129	90%	3,837	7,686	11,523	10%	113,652	11%
2003	54,745	49,282	104,027	90%	3,943	7,487	11,430	10%	115,457	2%
2004	55,518	55,083	110,601	89%	4,754	9,247	14,001	11%	124,602	8%
2005	49,670	50,558	100,228	89%	4,322	7,864	12,186	11%	112,414	10%
2006	57,630	49,055	106,685	87%	5,537	9,850	15,387	13%	122,072	9%
2007	51,368	46,780	98,148	87%	5,343	9,945	15,288	13%	113,436	-7%
2008	55,733	49,375	105,108	87%	5,431	10,071	15,502	13%	120,610	6%
2009	58,387	39,135	97,522	86%	6,757	9,305	16,062	14%	113,584	-6%
2010	52,254	39,951	92,205	84%	6,916	11,255	18,171	16%	110,376	-3%
2011	58,159	41,358	99,517	83%	7,765	12,371	20,136	17%	119,653	8%
2012	64,665	45,530	110,195	84%	8,429	12,765	21,194	16%	131,389	10%
2013	68,703	51,559	120,262	83%	9,018	15,128	24,146	17%	144,409	10%
2014	67,221	50,346	117,567	85%	8,157	13,173	21,330	15%	138,897	-4%
2015	74,544	53,302	127,846	82%	9,191	14,132	23,323	15%	155,730	12%

* Includes muzzleloader and modern firearms.

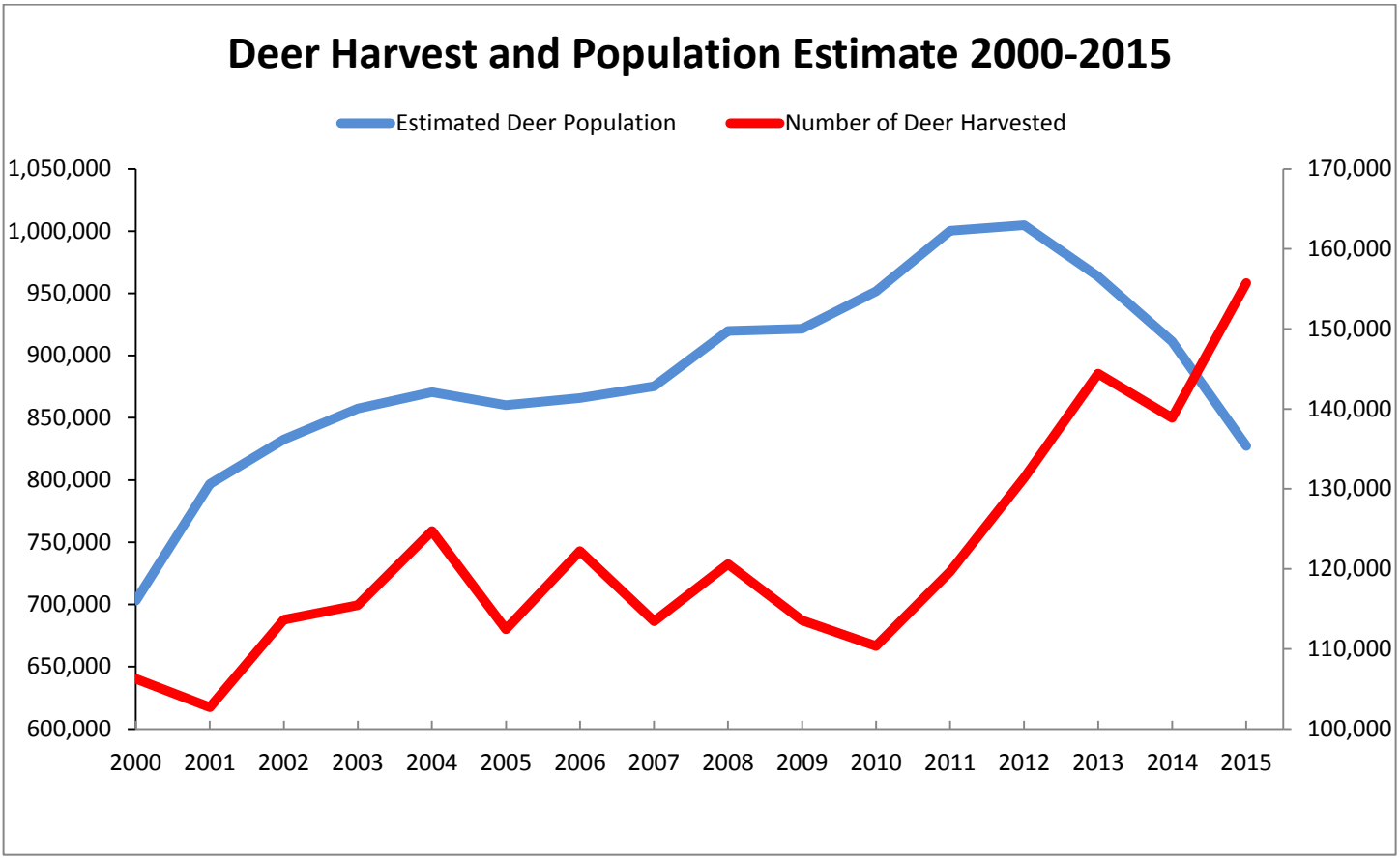
** Records of archery harvest began in 1978. Includes crossbow harvest.

III. Historical Harvest (Continued)



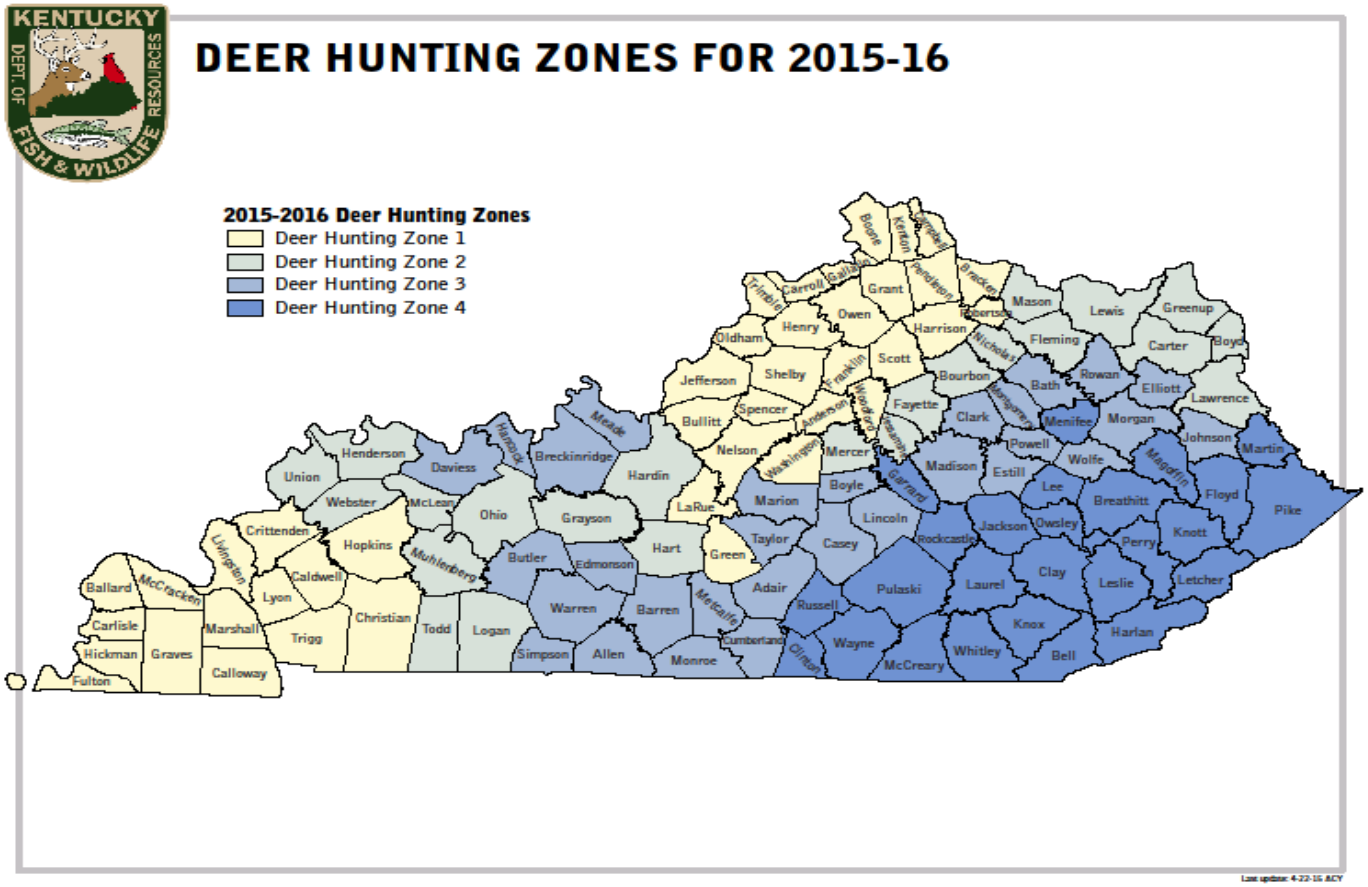
IV. Population Trends

The overall herd estimate shows a stable to slightly increasing trend. The current statewide estimate is 827,355 deer statewide, post 2015-16 hunting season, which is a 3% increase from 2014-15. The estimate is generated from harvest and age structure data. Age structure data is collected by KDFWR staff and telecheck records are used for harvest data in the model.



V. Deer Management Zones

Each of Kentucky's 120 counties serves as an individual management zone. There are currently 4 different zones that are used to influence the herd: Zone 1 being the most liberal and zone 4 being the most restrictive on antlerless harvest. All zones allow for only one antlered deer per person per season. In Zone 1 counties, hunters may take either sex with no season limit on antlerless deer using all weapon types. In Zones 2, 3, and 4 counties, hunters may take a total of 4 deer (1 antlered & 3 antlerless or 4 antlerless). Zone 2 hunters may use all weapon types to harvest the 4 deer limit. Zone 3 hunters may only harvest 2 deer with a firearm. Zone 4 hunters may take no more than 2 deer with a firearm (1 with a modern firearm and one with a muzzleloader, or both with a muzzleloader). Antlerless deer in a zone 4 county may only be taken with a firearm during the last 3 days of the late muzzleloader season.



VI. Regulation/Legislation Changes

Regulation changes for the upcoming 2016-17 season:

Hardin and Webster Counties will be changed from a zone 2 to a zone 1. Marion County will be changed form a zone 3 to a zone 2.

No new legislation changes affecting deer or deer hunting

VII. Urban/Special Hunts

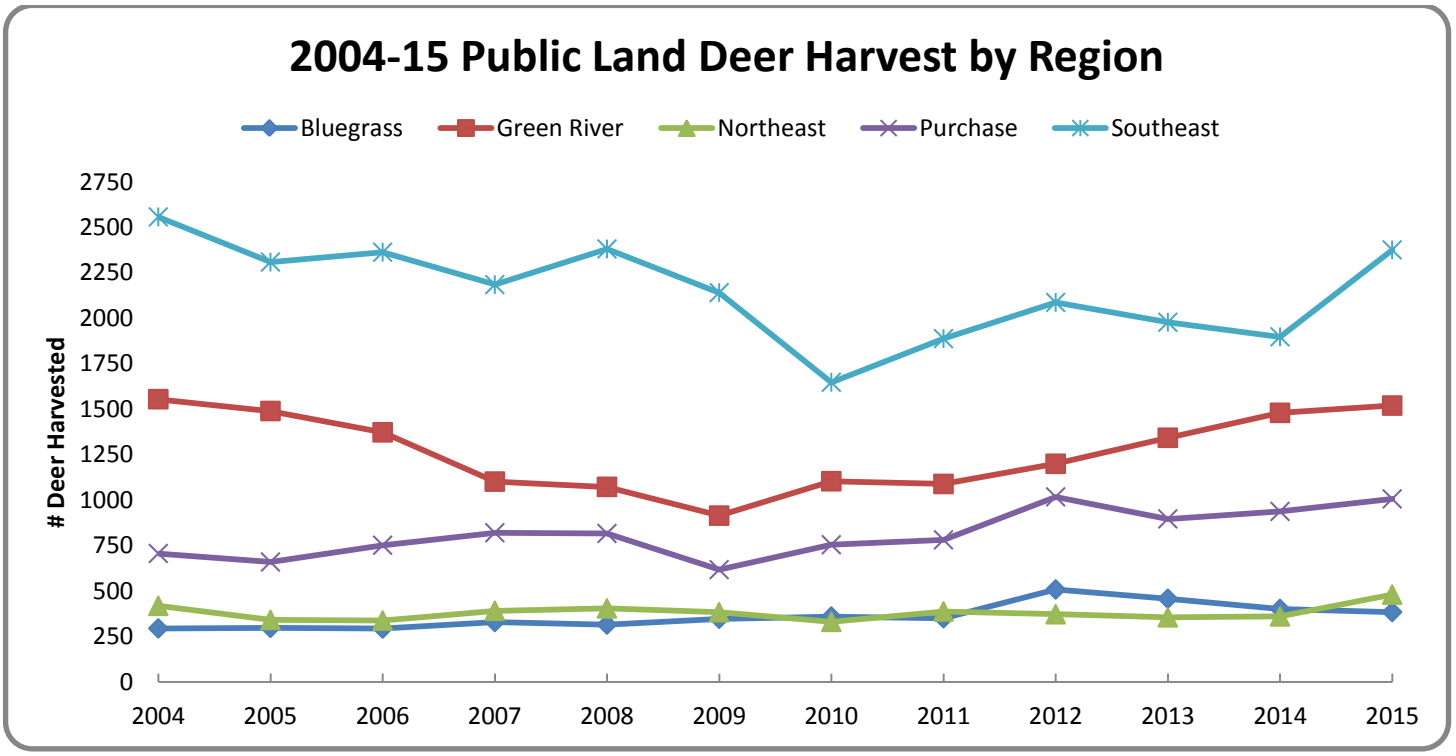
Public Land/Quota Hunts

KDFWR owns, leases, or manages more than 80 Wildlife Management Area's (WMA) across the state for public use. On some areas, users must purchase a user permit. The rest are open to hunting through quota hunts or statewide regulations. The WMA's are separated by five wildlife regions and are managed by regional staff. The number of WMA's per region differs from region to region. The number of WMA's per region are as follows:

Purchase Region (16), Green River Region (14), Bluegrass Region (15), Northeast Region (12), Southeast Region (38).

There are 29 KDFWR quota hunts in the state along with 3 quota hunts on military installations (Ft. Knox, Bluegrass Army Depot, and Ft. Campbell). Any resident or nonresident hunter may apply for a deer quota hunt in the state. Only the persons successfully drawn for quota hunts may hunt. The application period for KDFWR deer quota hunts is the month of September. Applicants can apply online at fw.ky.gov or call 1-877-598-2401. Applicants will be given the option to pick a first and second hunt choice, but may be drawn to participate in only one quota hunt. The non-refundable fee is $3 per hunter to apply. Each hunter who applies correctly, but isn't selected, will receive a preference point that increases the odds of being drawn the next year. Unselected hunters who do not apply the following year will lose all previously credited preference points. Applicants are selected based on individual preference points. Up to five people can apply together with one call. If any one of the group's Social Security numbers is drawn, the others in the group are automatically drawn as well.

For the 29 KDFWR quota hunts held in the 2015-16 season, there were 4,277 spots available in which 8,353 people applied for quota hunts across the state. There are quota hunts for any resident or nonresident hunters, mobility impaired hunters, archery/crossbow hunters, and youth hunters. Some quota hunts are for antlerless deer, some areas have a 15 in minimum spread restriction on bucks and some quota hunts only allow 1 deer to be taken per hunt. Each of the five wildlife regions across the state have deer quotas.



VIII. Deer Management Assistance/Crop Damage

Currently, aside from using the hunting season as a control method, Kentucky has two additional ways to help alleviate damage issues: 1) Deer Control Tags (in-season), are issued to landowners who need additional deer tags during the hunting season and are for antlerless deer only. Each control tag issued has a unique identifying number that is used to report a single harvested deer via telelcheck. During the 2015-16 season, 4,632 deer control tags were issued to landowners, in which only 44% were reported via telechecked. 2) Deer Destruction Permits (out-of-season), are issued to landowners during the growing season to reduce the herd

and diminish damage. These tags can be for either sex, but require landowners to relinquish any antlers to KDFWR. Additionally, KRS 150.170(7) states, "Landowners, their spouses or dependent children, or their designee who must be approved by the commissioner, who kill or trap on their lands any wildlife causing damage to the lands or any personal property situated thereon shall not be required to have a hunting or trapping license and may do so during periods other than the open season for the particular species without a tag and dispose of the carcass onsite. Tenants, their spouses, their dependent children, or other persons approved by the commissioner, shall also have the same privilege."
This program is currently being reviewed and revised to improve reporting and consistency across the state.

Deer Control Tag Issuance

Region	DCT Issued 2014	Used 2014	DCT Issued 2015	Used 2015	% Used
BG	1290	488	1068	492	46%
GR	1505	587	1309	647	49%
NE	719	186	722	320	44%
PR	999	328	923	288	31%
SE	742	213	610	312	51%
Statewide	5255	1802	4632	2059	44%

Out of Season Destruction Permit Issuance

Year	G-43 Report	Property Owners Not Issued Tags	Total Destruction Permits Issued
2013	18	114	5
2014	30	128	18
2015	60	31	323

IX. Diseases Issues

EHD

HD is reported in deer from at least a few counties nearly every year in Kentucky, although outbreaks can be considerably large and widespread. The 2007 outbreak of HD was the most widespread outbreak reported on record. Over 4,000 suspected cases were reported in Kentucky. When possible, KDFWR will test animals that have died of apparent EHD. A total of 130 deer were clinically diagnosed as EHDV positive with serotype-2 in 2015-16.

CWD

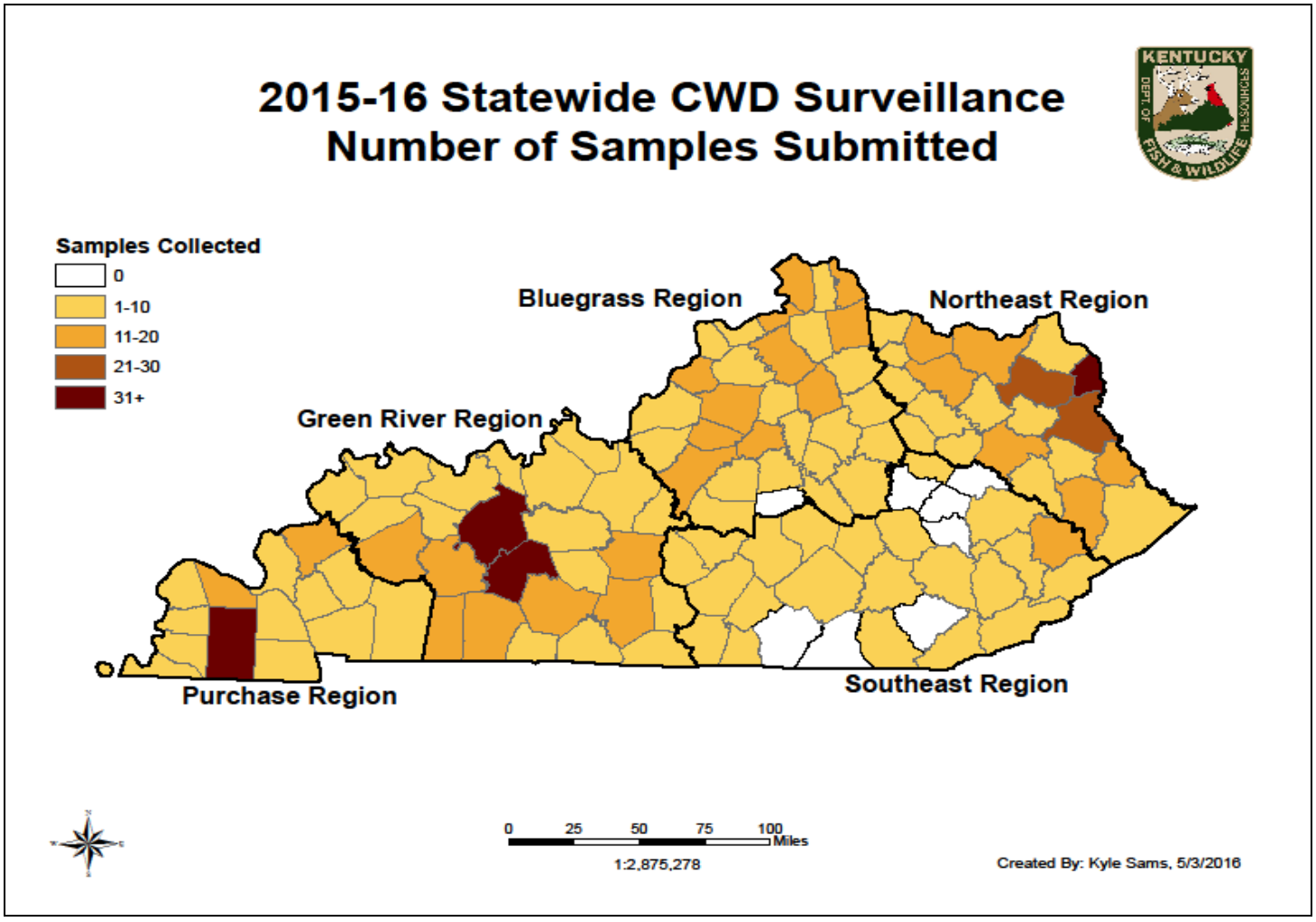
To detect CWD should it arrive in Kentucky, KDFWR adopted a CWD monitoring plan in 2002. That plan is a 4 part monitoring program to test 1) a random sampling of hunter-harvested deer, 2) target or suspect animals (animals that appear ill), 3) a random sample of roadkill deer, and 4) all captive deer mortalities. In 2006, KDFWR adopted a contingency plan to deal with CWD if it was ever found in Kentucky. Since 2002, approximately 25,500 hunter-harvested and roadkill deer samples have been tested. In 2015-16, 1,048 hunter-

harvested, targeted, and roadkill samples were submitted for CWD testing. All samples have tested negative for CWD.

Risk Assessment Strategy for CWD sampling.

- Due to loss of USDA funding and the increase cost of sample testing at SCWDS, a new CWD protocol has been developed. The new strategy will target more "higher risk" animals and focus less on hunter harvested animals.

Assessment is based upon captive cervid locations, number of cervid transportation permits per facility, wild deer density estimates and proximity to CWD + areas.



X. Research

In collaboration with the University of Kentucky, KDFWR has initiated a study of deer in Southeastern Kentucky to evaluate the population dynamics of adult female deer and survival, cause-specific mortality, and recruitment of neonates.

<u>Population Dynamics of Adult Female White-tailed Deer in Southeast Kentucky</u>

Although most of the state contains healthy numbers of deer, many counties in southeastern Kentucky are thought to have stable, low density populations.

Research will focus on adult does in Clay County, KY, in efforts to identify survival, cause-specific mortality, fecundity, and natality of this important reproductive demographic group in an area of relatively low deer density. Does will be captured and immobilized using clover traps, drop-nets, rocket nets, and free-range darting, then fitted with a very high frequency (VHF) radio-transmitter collar. Pregnancy and number of fetuses will be determined using an ultrasound, and a vaginal implant transmitter (VIT) will be inserted in pregnant does to facilitate location of birth-site locations and fawns for a different study. Adult does will be monitored twice weekly for mortality for 18-24 months.

Thus far 72 adult female deer have been captured. These data should inform state wildlife managers about regional deer population dynamics that can be helpful for refinement of population models and overall management of this important game species.

Survival, Cause-Specific Mortality, and Recruitment of White-tailed Deer Neonates in Southeastern Kentucky

An extensive trapping and relocation project that ended in 1999 revealed that white-tailed deer populations in southeastern Kentucky were in decline while populations in the rest of the state were stable or increasing. Because the factors influencing this decline in southeastern Kentucky are unknown, the goal of this research project is to determine the recruitment rate, or the rate at which juveniles survive to adulthood and consequently become part of the breeding population, of deer populations through estimates of survival and cause-specific mortality of fawns. Understanding cause-specific mortality and survival of fawns is important when preparing deer population models that inform management decisions.

Data collection continued through the 2016 fawning season by capturing and collaring fawns during the months of May and June in Clay County. Fawns will be captured using vaginal implant transmitters (VITs) inserted into known females that were captured during a complimentary mortality survey occurring in the same region. Fawns will also be found by utilizing thermal imaging cameras at night to detect the heat signature of these deer. Once captured, fawns will be fitted with an expandable neonate collar that will allow us to monitor the animals until death or until the collar releases at around nine months. Data generated from these fawns will allow us to understand what factors are influencing fawn mortality, as well as how many fawns are surviving into the fall hunting season.

35 fawn collars were deployed during the 2014 fawning season: 20 from VITs and 15 from a combination of ground and thermal searches. At the end of the 2015 fawning season, 31 fawn collars were deployed: 21 from VITs and 10 from a combination of ground and thermal searches. The 2016 fawning season resulted in 36 collars being deployed: 20 from VIT and 16 from ground and thermal searches. Upon completion, the results of this project will support future decisions made by biologists regarding deer management in southeastern Kentucky populations.

XI. Hot Topics

CWD Response Plan

Will be finalized in late July 2016.

Urban Deer

Urban/sub-urban Deer Populations – Management in development.

Captive Cervids

Commercial and Non-commercial Facilities – Abolished the Non-commercial captive cervid permit in 2016, meaning no new permits issued and allowed current non-commercial permittees to be grand-fathered in. Non-commercial permit holders are now required to: 1) not allow breeding, separate the sexes, and 2) not purchase or sell current stock.

Commercial facilities require the owner to renew their application ($150) and be re-inspected annually. Grand-fathered non-commercial facilities are required to renew their application ($75) every three years and be inspected annually. Additionally, KDFWR along with the Kentucky Department of Agriculture (KDA) have joint jurisdiction over captive cervids. The KDA regulates the transportation of captive cervids between facilities and disease testing. White the KDFWR regulates the infrastructure of the facilities themselves. Currently, importation of captive cervids is only allowed from the state of Indiana. An importation ban from Indiana was in place for 4 months in the spring of 2015. The ban was implemented due to concerns of the transportation of animals into Indiana from positive facilities in Ohio and Pennsylvania. A comprehensive epidemiological investigation was completed and the ban was removed and importation was again allowed with a few new restrictions. Those restrictions are that all cervids imported from Indiana to a Kentucky HMP herd for harvesting shall be tested for CWD. HMP facilities shall continue to test the first 10 animals harvested in addition to the Indiana imports. The intent of HMP facilities receiving Indiana cervids, shall be that all of those cervids be harvested and tested within the current season (~ 6 months; August – January). The continued presence of hold-over cervids on a HMP premises may result in issuance of an official herd plan to achieve that goal. Cervids imported into a Kentucky HCP herd that die for any reason shall be tested for CWD.

XII. Relevant Links

KDFWR Home Webpage – http://fw.ky.gov/Pages/default.aspx

KDFWR Deer Regulation Webpage – http://fw.ky.gov/Hunt/Pages/Deer-Hunting-Regs.aspx

KDFWR Diseases & Wildlife Health Webpage – http://fw.ky.gov/Wildlife/Pages/Diseases-and-Wildlife-Health.aspx

KDFWR Live Wildlife Possession Webpage – http://fw.ky.gov/Wildlife/Pages/Live-Wildlife-Possession.aspx

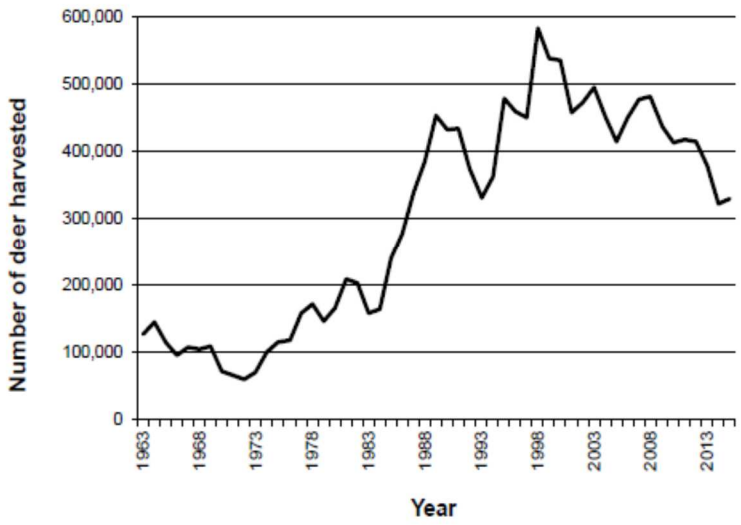
I. Current Harvest

The 2015-16 total deer harvest was estimated to be 328,681; up by 2% from 2014-15. The increase was likely due to slightly better hunting conditions in 2015-2016 than in 2014-2015. Of particular note, the harvest in Michigan's Upper Peninsula (UP) was down 23.2% from the previous year, but was up 3.7% and 4.5% in the Northern Lower and Southern Lower part of Michigan, respectively. This is likely due to the lingering effects of severe winters that had a dramatic effect on the UP deer herd in 2013 and 2014.

	Bucks		Does		Buttons		Total		
	2014	2015	2014	2015	2014	2015	2014	2015	Change (%)
Firearms	**105,258**	**110,721**	**67,503**	**64,553**	**N/A**	**N/A**	**172,761**	**175,274**	**1.5**
Archery									
Crossbow	31,985	39,884	27,281	26,242	N/A	N/A	59,266	66,126	**11.6**
Vertical Bow	29,901	29,040	20,855	16,402	N/A	N/A	50,756	45,442	**-10.5**
Total	**61,886**	**68,924**	**48,136**	**42,644**	**N/A**	**N/A**	**110,022**	**111,568**	**1.4**
Muzzleloader	**6,816**	**6,594**	**13,404**	**11,959**	**N/A**	**N/A**	**20,220**	**18,553**	**-8.2**
Antlerless									
Early Antlerless	N/A	N/A	3,086	3,428	N/A	N/A	3,086	3,428	**11.1**
Late Antlerless	N/A	N/A	10,264	12,266	N/A	N/A	10,264	12,266	**19.5**
Total	**N/A**	**N/A**	**13,350**	**15,694**	**N/A**	**N/A**	**13,350**	**15,694**	**17.6**
Youth	**4,079**	**5,163**	**1,646**	**2,118**	**N/A**	**N/A**	**5,725**	**7,281**	**27.2**
Total*	**178,228**	**191,608**	**144,139**	**137,073**	**N/A**	**N/A**	**322,367**	**328,681**	**2.0**

*Totals include additional disability hunts not previously recorded. An additional 5,931 deer were taken on DMAP permits that are not included in this total.

II. Historical Harvest

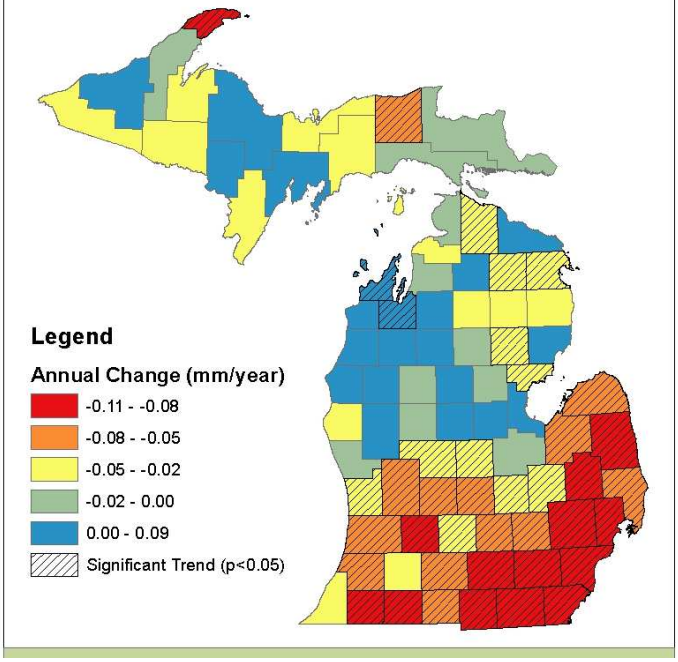


III. Population Estimate/Trends

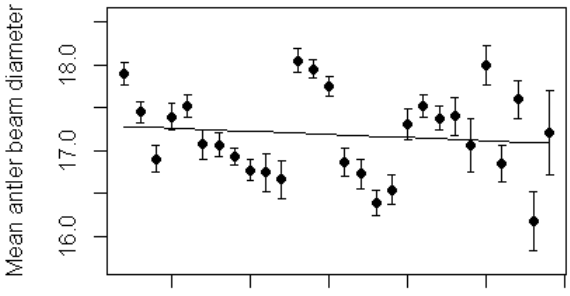
Michigan DNR no longer conducts population estimates.

There has been a decline in yearling antler beam diameter over the past ~30 years, with the most notable declines occurring in the southern part of the state. This is occurring in spite of having reduced deer numbers from a peak in the late 1990's.

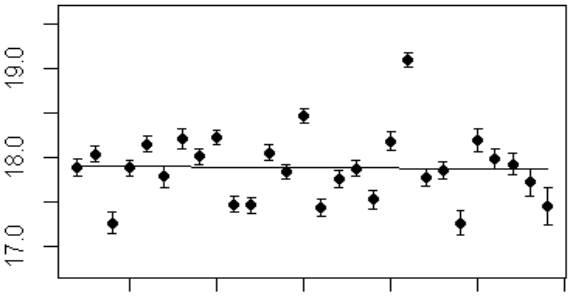
Annual Antler Beam Trends 1987 - 2014

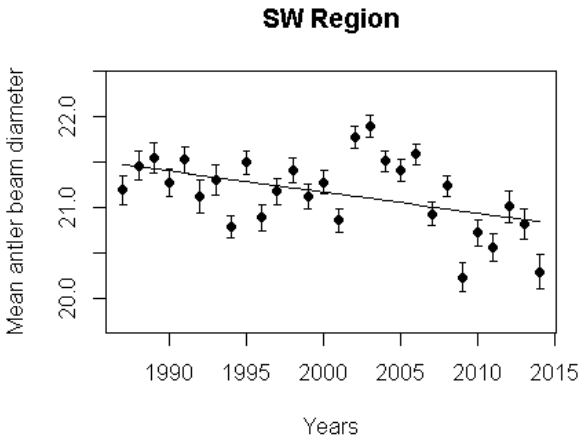


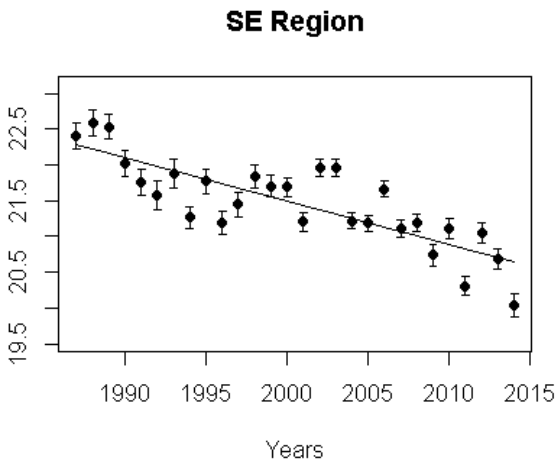
UP Region



NLP Region

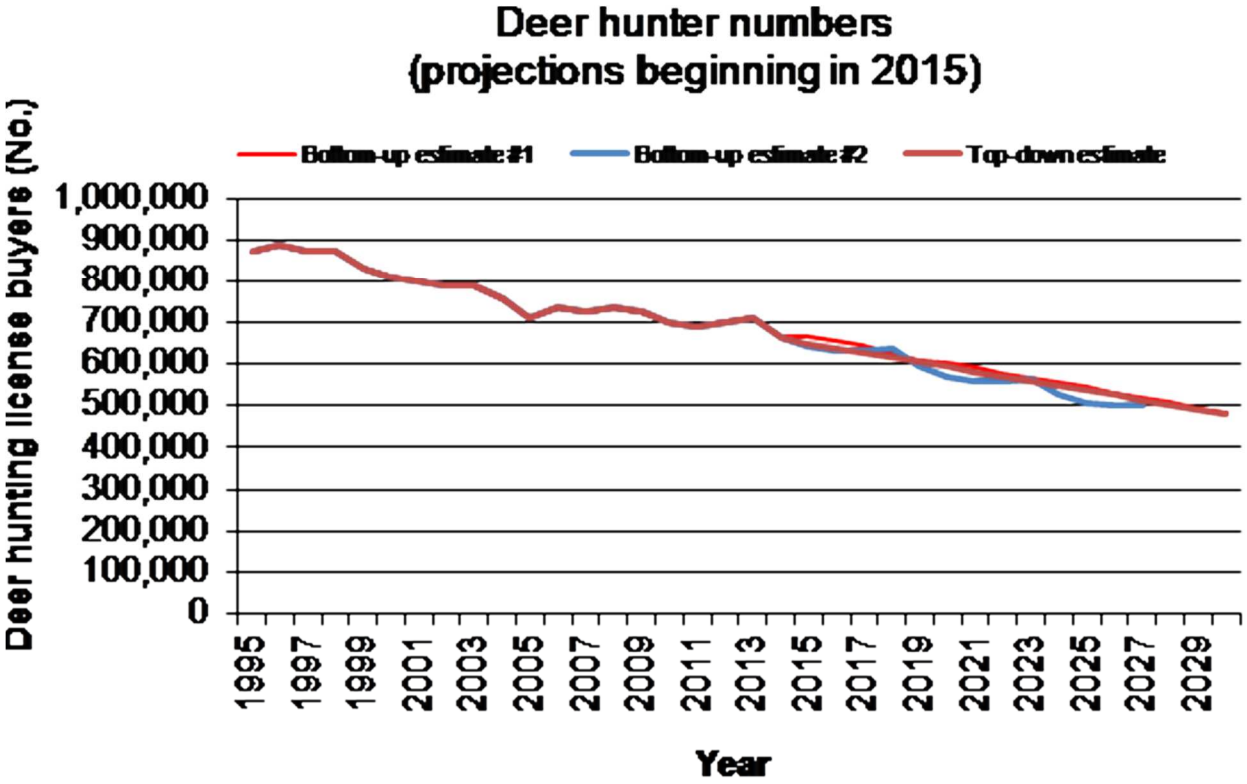




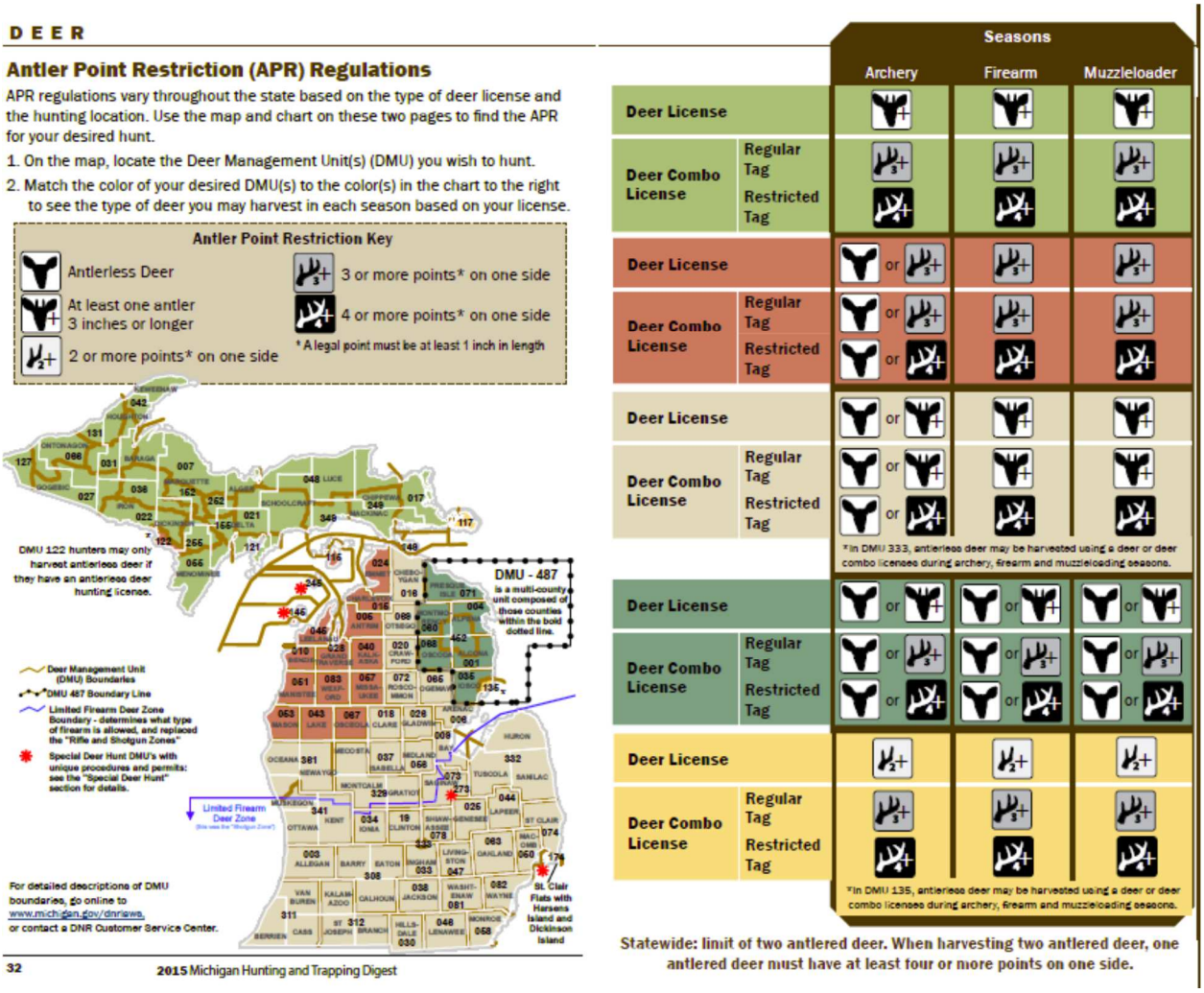


III. Population Estimate/Trends (cont'd)

Demographics –



IV. Deer Management Zones (For 2015):



2014-15 Harvest Regulation Summary

V. Regulation/legislation

1. <u>New for 2016</u>
    a. No new changes have been proposed for the 2016 deer hunting season. However, our CWD core zone and Management Zone have been expanded due to the discovery of additional CWD positive deer outside of the original core zone.

VI. Urban/Special Hunts

Ann Arbor completed a sharpshooting effort that resulted in multiple law suits. The shooters removed 63 deer during the first year removal effort. The city has allocated additional money for deer removal this year, as well as money for nonlethal management/research. It is unknown at this time whether the

law suits will prevent future removal of deer, though it is unlikely. Other cities have begun inquiries into hiring sharpshooters, and their status is yet to be determined.

VII. Deer Management Assistance/Crop Damage

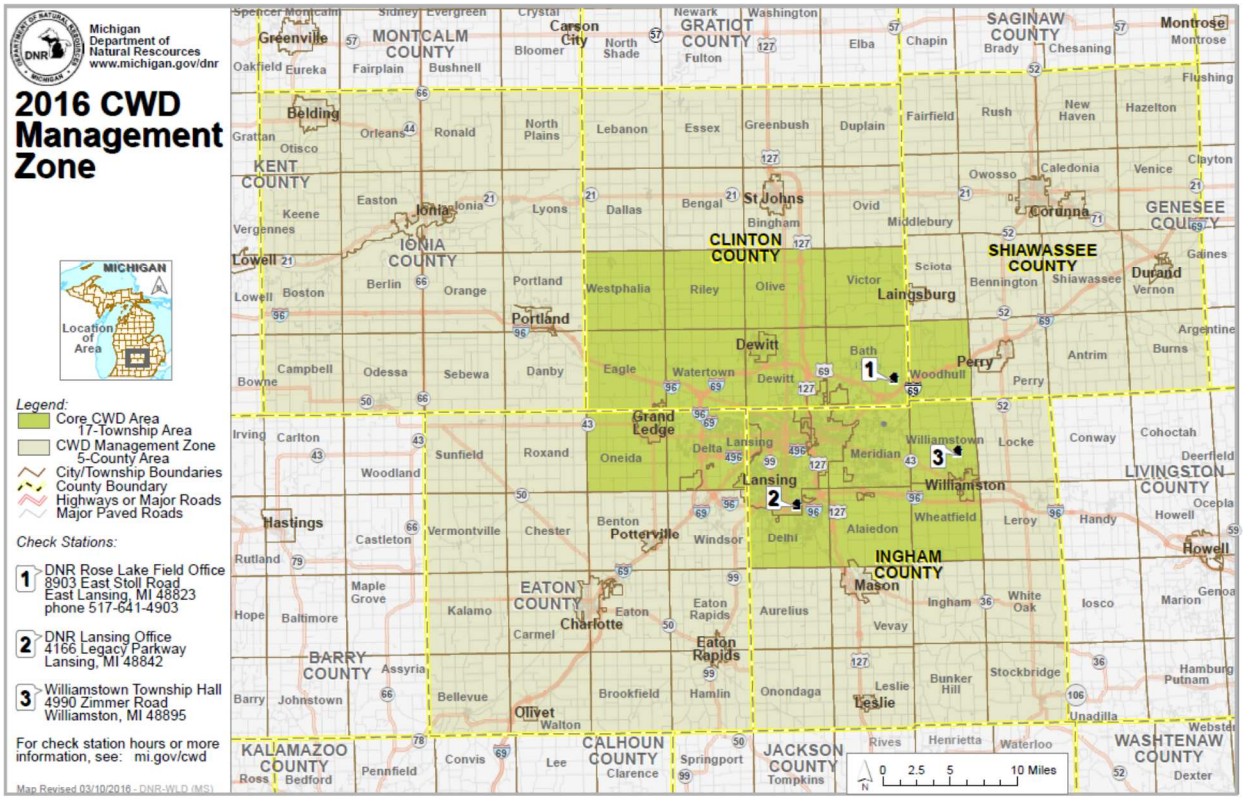
The agency is two years in to a 3 year pilot program to look at an exception to the Deer Management Assistance Permit (DMAP) regulations that allows for the use of firearms/rifles during the archery season (except Oct 1-4 and Nov 10-14) and/or to harvest one antlered deer per year with either method of take by season or with a firearm. This pilot program is located in 5 counties in the orchard belt of Michigan and was created to alleviate concerns with damage to fruit bearing trees. DMAPs were previously only allowed to be used with the proper equipment in the appropriate season. However, several landowners requested additional methods to protect their agricultural interests, such as the allowance of firearms regardless of the season. Results from 2015 show that 53 permittees were granted the firearm exception (i.e. allowance to use firearms with DMAP during the archery season) and contributed to 142 kills to a total of 883 reported DMAP kills in those 5 counties. There were 2 permittees to the antlered deer exception, with 0 reported animals killed. In total, there were 3,150 deer taken on out of season permits, and 5,931 deer taken on DMAPs.

VIII. Diseases - CWD

Since the discovery of CWD in May of 2015, the MDNR has completed one year of surveillance in the designated CWD Management Zone. A total of 4,595 deer were sampled during the first year within the CWD Management Zone (5,385 deer sampled statewide), with the detection of 7 total CWD positive animals. Since some of the positive deer tested outside of the original area, for 2016 our CWD Management Zone and Core area are expanding to include these and surrounding areas where new positives were located. The new Management Zone and core area are located below.

Table 1. Number of deer tested in Michigan for chronic wasting disease since first detected in free-ranging deer, through May 31, 2016.

	Targeted Deer	Roadkill Deer / Deer Found Dead	Deer taken on Disease Control & Crop Damage Permits	Deer Culled by Wildlife Services	Hunter Harvested Deer	Total		CWD Positive Deer
CWD Core Area (9 TWP)	30	825	366	714	1,218	3,153		5
CWD Management Zone* (3 County)	37	262	47	55	1,040	1,442		2
Remainder of State	171	187	12	63	357	790		0
Total	238	1,274	425	832	2,615	5,385		7
*CWD Management Zone totals exclude deer taken from within the Core Area.								



IX. Research

EHD Recovery

Research from MSU is looking at the rebound of deer populations after an EHD outbreak. The project is headed by Sonja Christensen, previous Massachusetts Deer Project Leader, through Michigan State's Boone and Crockett Quantitative Wildlife Center.

Explaining trophy white-tailed deer harvest data

Research from MSU is looking at using trophy white-tailed deer harvest data to help determine possible explanations for the landscape distribution of trophy harvest occurrences that are seen throughout the Midwest. Project is being headed by Rebecca Cain through Michigan State's Boone and Crockett Quantitative Wildlife Center.

Predator-Prey Project

Project is entering its eighth year looking at the complex interactions of deer survival, winter severity, and predators in Michigan's Upper Peninsula. The initial study was set in the low snow fall zone, and the team is currently in the process of completing its research in the mid-snowfall zone. A final three years will begin in the high snow fall zone where deer are obligate migrators. Project is funded by Safari Club International and headed up by researchers at Mississippi State and Northern Michigan University. Visit http://www.fwrc.msstate.edu/carnivore/predatorprey/index.asp for more details.

X. Hot Topics

CWD, UP Deer Regulations, DMAP/Out of Season Permits

XI. Relevant Links

www.michigan.gov/deer

www.michigan.gov/cwd

2016 Minnesota Deer Program Report

Brian Haroldson, Gino D'Angelo, & Adam Murkowski

I. Current Harvest

In 2015, hunters registered 159,343 deer, up 14% from 2014, but down 40-45% from peak harvest levels in the early-to-mid 2000s (Table 1, Figure 1). Increased harvest in 2015 was likely due to additional deer on the landscape following a conservative harvest strategy in 2014, a mild winter in 2014-15, and additional harvest opportunities in 2015. Firearm hunters accounted for 83% of total harvest, while archers and muzzleloader hunters accounted for 13% and 4%, respectively. Total license sales increased 5% between 2014 and 2015.

Table 1. Registered deer harvest in Minnesota, 2013-2015.

	Antlered			Antlerless			Total		
Season	**2013**	**2014**	**2015**	**2013**	**2014**	**2015**	**2013**	**2014**	**2015**
Firearm	77,820	70,466	83,939	68,071	45,248	48,758	145,891	115,714	132,697
Archery	7,573	8,111	9,468	12,231	9,764	10,606	19,804	17,875	20,074
Muzzleloader	2,472	2,459	2,657	4,614	3,394	3,915	7,086	5,853	6,572
Total	87,865	81,036	96,064	84,916	58,406	63,279	172,781	139,442	159,343

II. License and Season Information

Table 2. Statewide deer license sales in Minnesota, 2008-2015.

	2008	2009	2010	2011	2012	2013	2014	2015
FIREARM								
Resident License	381,362	377,085	379,500	381,775	391,615	387,373	372,659	376,942
Non-Resident License	11,883	11,777	11,895	11,945	12,484	12,410	11,642	12,270
Mgmt/Intensive Harvest Permit	190,165	140,926	143,640	137,348	85,336	92,879	28,239	46,017
Youth License	51,358	56,699	59,691	60,921	62,932	64,608	62,673	62,602
Early Antlerless Season Permit	30,974	12,757	9,737	0	0	1,126	1,362	2,117
Disease Management Permit	1,499	1,354	1,531	4,589	4,362	3,308	0	0
Free Landowner License	3,918	3,351	4,235	3,805	4,769	4,800	4,383	4,228
Total License Sales	671,159	603,949	610,229	600,383	561,498	566,504	480,958	504,176
Either-sex Permits Offered	32,325	60,800	60,083	13,776	32,854	36,816	26,326	31,065
Either-sex Permits Issued	27,396	57,631	54,381	11,456	32,766	36,178	26,326	30,855
Either-sex Permit Applications	47,682	90,882	86,783	21,071	67,308	68,811	93,506	95,656
ARCHERY								
Resident License	88,923	89,084	90,171	88,520	93,959	92,459	91,907	94,390
Non-Resident License	1,614	1,614	1,630	1,713	1,810	1,903	1,897	2,032
Mgmt/Intensive Harvest Permit	0	0	0	0	0	0	0	0
Youth License	9,006	9,161	9,562	10,298	11,271	12,169	11,907	11,905
Free Landowner License	147	134	0	0	0	0	0	0
Total License Sales	99,690	99,993	101,363	100,531	107,040	106,531	105,711	108,327
MUZZLELOADER								
Total License Sales	66,447	63,915	55,644	59,346	58,335	51,239	43,950	50,176

Table 3. Deer license fees in Minnesota, 2015.

License	Resident	Nonresident
Landowner	$0	$0
Youth (Age 10-12)	$0	$0
Youth (Age 13-17)	$5	$5
Disease Mgmt	$1.50	$1.50
Early Antlerless	$7.50	$40
Bonus Antlerless	$15	$80
Regular Firearm	$30	$165
Regular Archery	$30	$165
Regular Muzzleloader	$30	$165
Super Sports	$93	N/A

Table 4. Season dates for various deer seasons in Minnesota, 2015.

Season	Zone	Dates
Archery	Statewide	Sept. 19 - Dec. 31
Early Antlerless	*	Oct. 15-18
Youth Firearm	*	Oct. 15-18
Firearm	1	Nov. 7-22
Firearm	2	Nov. 7-15
Firearm	3A	Nov. 7-15
Firearm	3B	Nov. 21-29
Firearm	6	Nov. 7-29
Muzzleloader	Statewide	Nov. 28 - Dec. 13

* = Select DMUs throughout the state.

III. Historical Harvest

The statewide deer harvest generally increased from the mid-1970s through the early-2000s. After a record harvest of 289,421 in 2003, management changes were made to lower densities across much of Minnesota. From 2005-2007, through a public goal-setting process, goals for much of the state were set to lower deer densities. Liberal bag limits and high antlerless harvests contributed to high harvest numbers, and the statewide deer population declined toward goals by the late-2000s. In most DMUs, recent management efforts have focused on maintaining or increasing deer populations.

Figure 1. Total registered deer harvest in Minnesota, 1960-2015.

IV. Population Estimates/Trends

MNDNR estimates deer populations at the DMU level and adjusts management strategies to achieve population goals. Where possible, population estimates from modeling are calibrated with data from aerial surveys. Deer population increases over the past few decades were influenced by relatively mild winter weather and lower antlerless deer quotas in the 1970s, 1980s, and again following the severe winters of 1995-96 and 1996-97. Following deer population goal revisions during 2005-2007, deer densities in most DMUs were intentionally reduced and stabilized through the 2015 deer season. Management strategies are adjusted accordingly as new goals are established through the public goal-setting process.

V. Deer Management Units/Zones

Annually, 1 of 7 management strategies are implemented within each DMU, based upon estimated deer density in relation to population goal. During 2015, DMUs were partitioned into 14 Bucks-Only areas, 3 Youth-Only areas, 70 Lottery areas, 29 Hunter Choice areas, 8 Managed areas, 3 Intensive areas, and 1 No Limit Antlerless area (Figure 2). The statewide management strategy will become more liberal in 2016, with multiple deer allowed in 19% of DMUs vs 9% in 2015.

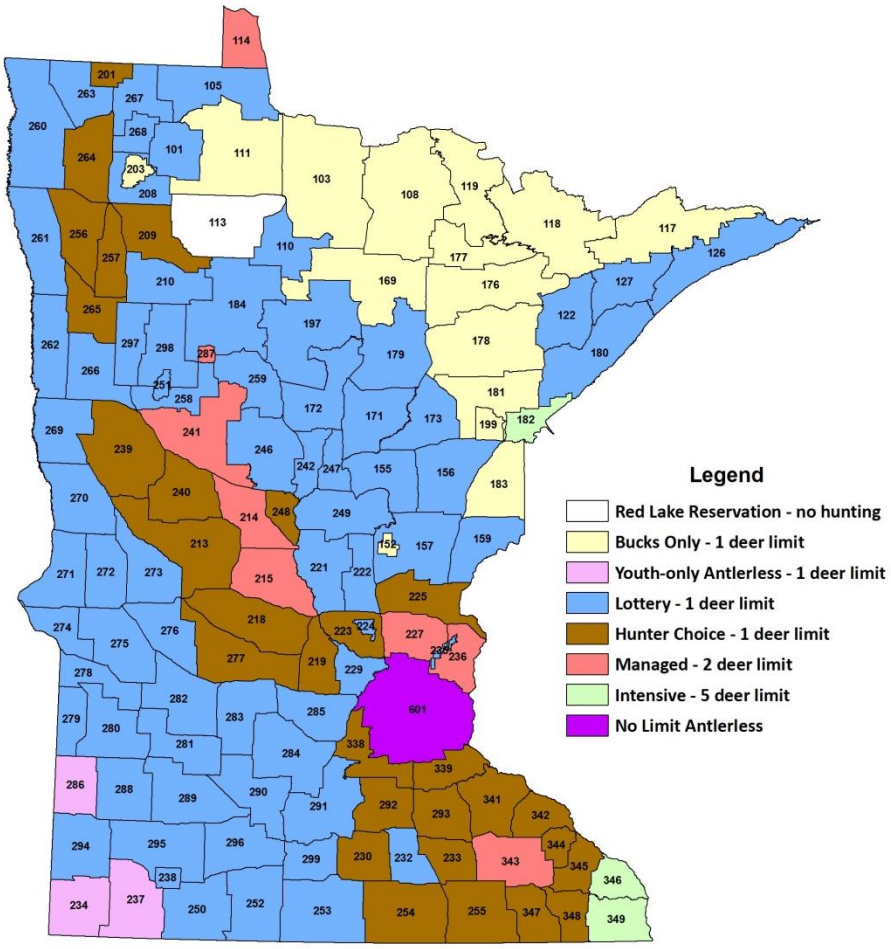


Figure 2. Deer season management designations in Minnesota, 2015.

VI. Regulation/Legislation Changes

<u>New for 2016</u>:

- A nonresident active member of the state's National Guard may obtain a resident license to take fish and game, excluding elk.
- The boundary of DMU 601 has been modified slightly.
- Two southeast DMUs will be open to a 4-day, early antlerless season to address high deer densities and damage to agricultural crops. This season is considered annually when formulating deer management recommendations.
- To prevent the spread of chronic wasting disease (CWD), whole carcasses of deer, elk, moose, and caribou harvested in other states or provinces cannot be brought into Minnesota. Previously, this restriction applied only to cervids harvested in areas of North America where CWD was known to occur. Partial carcasses can continue to be imported if free of spinal and brain tissue, regardless of kill location. In addition, nonresidents transporting whole or partial carcasses on a direct route through Minnesota are exempt from this new import restriction.

VII. Urban/Special Hunts

Special Hunts: MNDNR cooperates with municipalities, state and county parks, and other public land entities throughout Minnesota to administer special hunts in areas where the number of hunters and weapon types must be limited to control the harvest or in the interest of public safety. During the 2015 deer season, special hunts were held in 81 areas and 1,999 deer were harvested.

Urban Deer Damage Management: An approximately 300-square mile area surrounding the Twin Cities metropolitan area is designated a "metro zone" where hunters may harvest an unlimited number of antlerless deer with proper licenses. In rare circumstances, MNDNR issues shooting permits for managing deer in urban areas. When permits are issued, deer may be removed outside of hunting seasons, at night, over bait, and with firearms. Either animal damage contractors or local law enforcement conduct the deer removals and all venison must be donated for charitable food distribution. Approximately 12 permits are issued annually in Minnesota, usually in the metro zone.

VII. Deer Management Assistance/Crop Damage

MNDNR does not compensate farmers financially for crop damage caused by deer. Wildlife managers are available to work cooperatively with agricultural producers to develop strategies to reduce deer damage and to improve deer population management. Farmers who enter into a Cooperative Damage Management Agreement with MNDNR are eligible to receive material assistance from the state, including installation of exclusion fencing. To minimize damage to standing crops, localized population management techniques (including hunting and shooting permits) are used to decrease deer numbers where they are causing damage. If sport-hunting is utilized to the fullest extent and damage is still excessive, MNDNR may issue shooting permits to agricultural producers to harvest deer outside of hunting seasons. In addition, a pilot program was instituted in 2012 in southeastern Minnesota, which allows the use of depredation permits allocated to specific properties where deer damage is occurring. Depredation permits allow increased bag limits for private sport-hunters to harvest additional antlerless deer during regular hunting seasons.

IX. Diseases

CWD Surveillance: To date, CWD has been diagnosed in 3 captive elk herds (2002, 2009), 1 captive white-tailed deer herd (2006), 1 captive European red deer herd (2012), and a single, wild white-tailed deer (2010) within the state of Minnesota. All captive elk and deer herds with positive cases of CWD have subsequently been depopulated, with 4 additional CWD-positive elk found in 1 herd. Due to continued discovery of new cases of CWD in deer from northeast Iowa and western Wisconsin, MNDNR will focus 2016 surveillance efforts on 10 DMUs in southeast Minnesota.

X. Research

Agricultural Deer Damage Research: The primary objective of this study is to evaluate the effectiveness of localized management (i.e., shooting and depredation permits) for reducing fine-scale deer abundance and to examine whether damage caused by deer to agricultural

crops is reduced on properties where deer densities are lowered. Seven private agricultural properties were included in the study, including 4 properties where landowners used shooting permits and depredation permits to harvest extra deer in addition to normal sport-hunting. Producers on properties with integrated management readily utilized extra deer harvest opportunities provided by MNDNR, and management intensity on these properties was more than double the management intensity on properties where normal hunting was used. With integrated management, nearly half of the deer estimated to be utilizing the properties were harvested annually. Despite increased harvest pressure on properties with integrated management, deer damage to corn was similar on all properties regardless of the deer management strategy used (12% mean proportional corn loss). Although corn damage was similar across properties, increased deer harvest pressure on properties with integrated management may have prevented corn damage from being worse had additional deer not been harvested. The results of this study will provide a basis for improving the framework for future application of localized management across the state. The study will be completed after the 2016 deer season.

Distance Sampling – Roadside Spotlight Surveys: Working with MNDNR, Eric Anstedt, a Minnesota State University M.S. student, completed a project to improve spotlight surveys in the agricultural regions of Minnesota using HSI modeling to stratify the landscape. An HSI model previously created for white-tailed deer populations in Illinois (original HSI) and a modified HSI model were evaluated. Spotlight surveys were conducted in spring 2015 and 2016 to test both models on a local level. The modified HSI model was more efficient at predicting where deer could be in agricultural landscapes, in large part, because the original HSI model ignored grassland habitats and many deer were observed in these habitats. The modified HSI model was recommended to stratify habitats for roadside surveys to better predict the distribution and abundance of white-tailed deer in agricultural landscapes, which will improve sampling efficiency. Results of this study will inform additional research to develop sampling methods for estimating deer populations in the farmland of Minnesota.

XI. Hot Topics

Deer Audit: Hunters raised concerns over lower numbers of deer harvested in recent years and the accuracy of MNDNR's deer population estimates. They also expressed dissatisfaction with the availability of information on MNDNR's deer management activities. As a result, the Minnesota Office of the Legislative Auditor (OLA) conducted an audit to examine the extent to which MNDNR uses appropriate data, tools, and techniques for monitoring and estimating deer populations, based on recommended practices in research literature and methods implemented in other states. Assessing MNDNR's deer population estimates also required technical expertise to test the sensitivity of MNDNR's statistical model. To conduct this work, OLA contracted with the Wildlife Management Institute. Key findings of the OLA report and MNDNR responses and intended actions related to those items are as follows (see link for complete report in Relevant Links section):

- MNDNR should develop a deer management plan that defines and prioritizes MNDNR resources, goals, and objectives, and includes strategies to improve and maintain adequate deer hunting and wildlife viewing opportunities.

    - MNDNR is currently developing a deer management plan.
- MNDNR should improve its resources for estimating deer populations; specifically, MNDNR should conduct field research to collect and utilize more information about Minnesota's deer, and to validate MNDNR deer population estimates.
    - MNDNR generally concurred with this recommendation. However, as highlighted in the OLA report, the importance of knowing the precise size of the deer population is often overemphasized, and we believe that any additional research and model validation efforts should be limited to what is necessary for deer managers to effectively model and manage deer populations.
- MNDNR should improve its statistical methodologies, deer model data, and records management system to better simulate changes in deer populations and reduce the risk of staff mistakes.
    - The OLA found that the deer population model used by MNDNR is sound, has no coding errors, and is effective at generating trend estimates that help inform management designations. MNDNR has already incorporated some of the evaluation recommendations related to model improvements to reduce possible errors.
- MNDNR should expand the data and information it uses and provides to Deer Advisory Team members when setting deer population goals. Such data would provide better insight on local deer environments, deer survival rates, deer impact on local environments, and individuals' perspectives about deer. MNDNR should continue with its process to update deer population goals across the state, as defined within a formal deer management plan.
    - MNDNR will continue deer population goal-setting after completion of the statewide deer management plan in 2018, and MNDNR plans to provide additional information as part of the process.

XII. Relevant Links

2016 Hunting & Trapping Regulations –
http://files.dnr.state.mn.us/rlp/regulations/hunting/2016/full_regs.pdf

2016 Deer Hunting Season Information –
http://www.dnr.state.mn.us/hunting/deer/index.html

General information on deer management, including annual season outlook, goal setting, and harvest reports –
http://www.dnr.state.mn.us/mammals/deer/mgmt.html

Minnesota Office of the Legislative Auditor report on deer population management –
http://www.auditor.leg.state.mn.us/ped/2016/deermanagement.htm

Missouri Deer Program Report
By: Barb Keller

I. Current Harvest

The 2015-2016 harvest of 274,447 deer was a 7% increase from 2014-15 and was a slight decrease (3%) in relation to the statewide harvest since 2000. The 2015-2016 seasons were characterized by harvest increases of 8% or higher across much of southern Missouri compared to the previous hunting season. Modest harvest increases of 5% were also recorded in central Missouri. Alternatively, deer harvest across much of northern Missouri was relatively static when compared to the previous year.

Season/Portion	Antlered Deer			Button Bucks			Does			Total		
	2014	*2015*	*% Diff*	*2014*	*2015*	*% Diff.*	*2014*	*2015*	*% Diff.*	*2014*	*2015*	*% Diff.*
Archery	20,395	20,169	-1.1	5,156	5,419	5	22,898	24,171	6	48,449	49,759	3
Urban	3	1	-67	99	66	-33	497	325	-35	599	392	-35
Early Youth	11,621	8,042	-31	1,735	1,514	-13	4,938	4,027	-18	18,294	13,583	-26
November	78,556	90,094	15	19,300	20,911	8	68,527	75,537	10	166,383	186,542	12
alt methods	2,851	2,914	2	1,503	1,555	3	6,713	6,339	-6	11,067	10,808	0
Antlerless - Only	124	146	18	1,642	1,723	5	7,354	7,673	4	9,120	9,542	5
Managed Hunts	427	424	-1	275	224	-19	962	820	-15	1,664	1,468	-12
Late Youth	239	664	178	179	376	110	705	1,313	86	1,123	2,353	110
CWD	34	70	106	6	14	133	14	35	150	54	119	120
Total Firearms	93,428	101,931	9	24,464	26,159	7	88,748	95,249	7	206,640	223,339	8
Total	114,250	122,524	7	29,895	31,802	6	112,608	120,240	7	256,753	274,566	7

II. License and Season Information

Season Dates:

Archery Season: September 15 – January 15, closed during the November portion of the firearms deer season

Firearms Season:

Youth Portion: October 29 – 30 ; November 25 –27

November Portion: November 12 - 22

Antlerless Portion: December 2-4

Alternative Methods Portion: December 24 – January 3

Missouri Deer Program Report
By: Barb Keller

Table 1. Permit prices and sales during 2015-2016.

Permit type	*Cost*	*Number issued*
Resident Archery**	$19.00	99,920
Resident Landowner Archery	$0.00	85,327
Nonresident Archery	$225.00	9,574
Youth Archery	$9.50	6,148
Archery Antlerless**	$7.00	46,677
Landowner Archery Antlerless	$0.00	142,400
Youth Archery Antlerless	$3.50	1,821
Resident Firearms Any-Deer **	$17.00	276,776
Landowner Firearms Any-Deer	$0.00	178,201
Nonresident Firearms Any-Deer	$225.00	17,672
Youth Firearms Any-Deer	$8.50	54,280
Resident Firearms Antlerless**	$7.00	178,459
Landowner Firearms Antlerless	$0.00	154,835
Nonresident Firearms Antlerless	$25.00	8,368
Youth Firearms Antlerless	$3.50	21,335
Resident Managed Deer Hunting Permit	$17.00	3,898
Nonresident Managed Deer Hunting Permit	$225.00	25
Youth Managed Deer Hunting Permit	$8.50	403
Resident Firearms		860,564
Nonresident Firearms		29,362
Resident Archery		381,915
Nonresident Archery		11,915
Permittee Archery & Firearms		727,319
Landowner Archery & Firearms		560,763

III. Historical Harvest

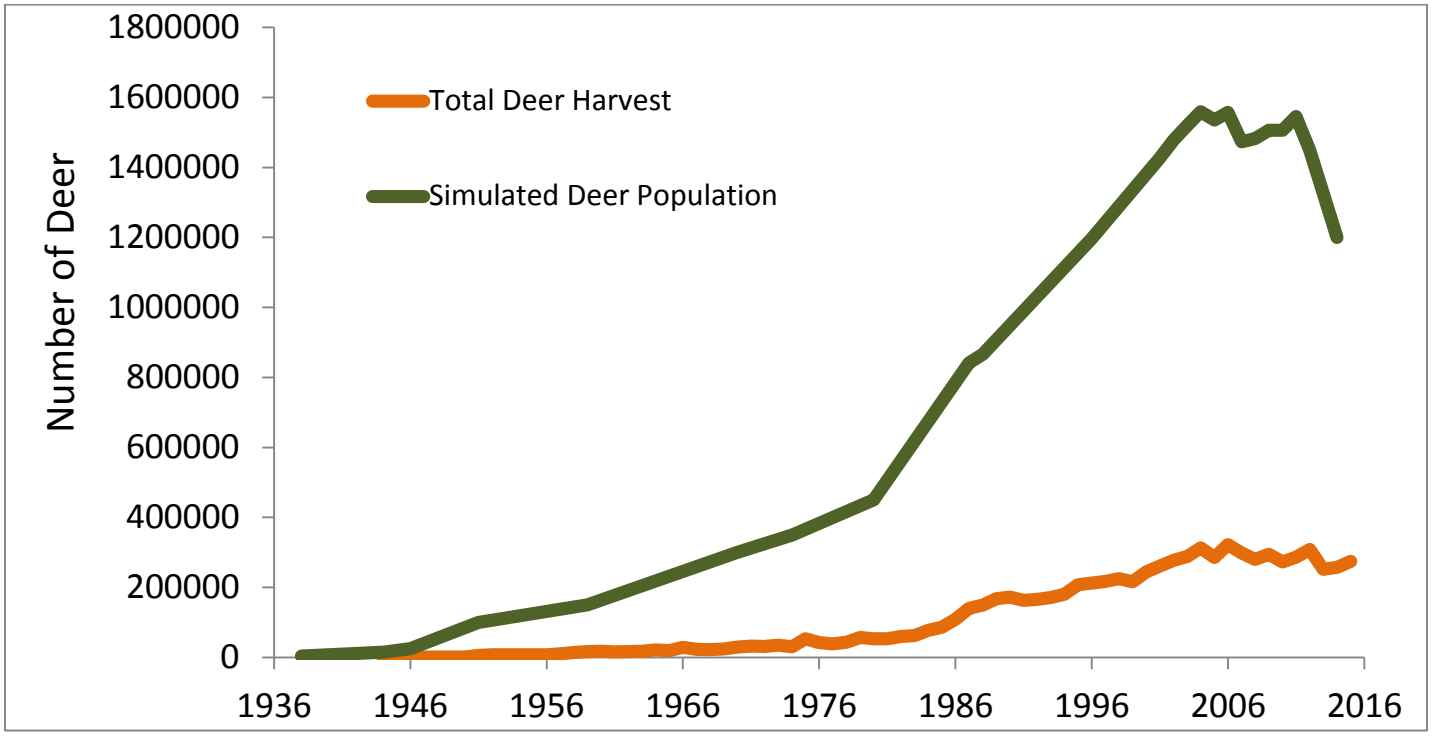


Figure 1. Simulated deer population and total deer harvest in Missouri, 1936–2015.

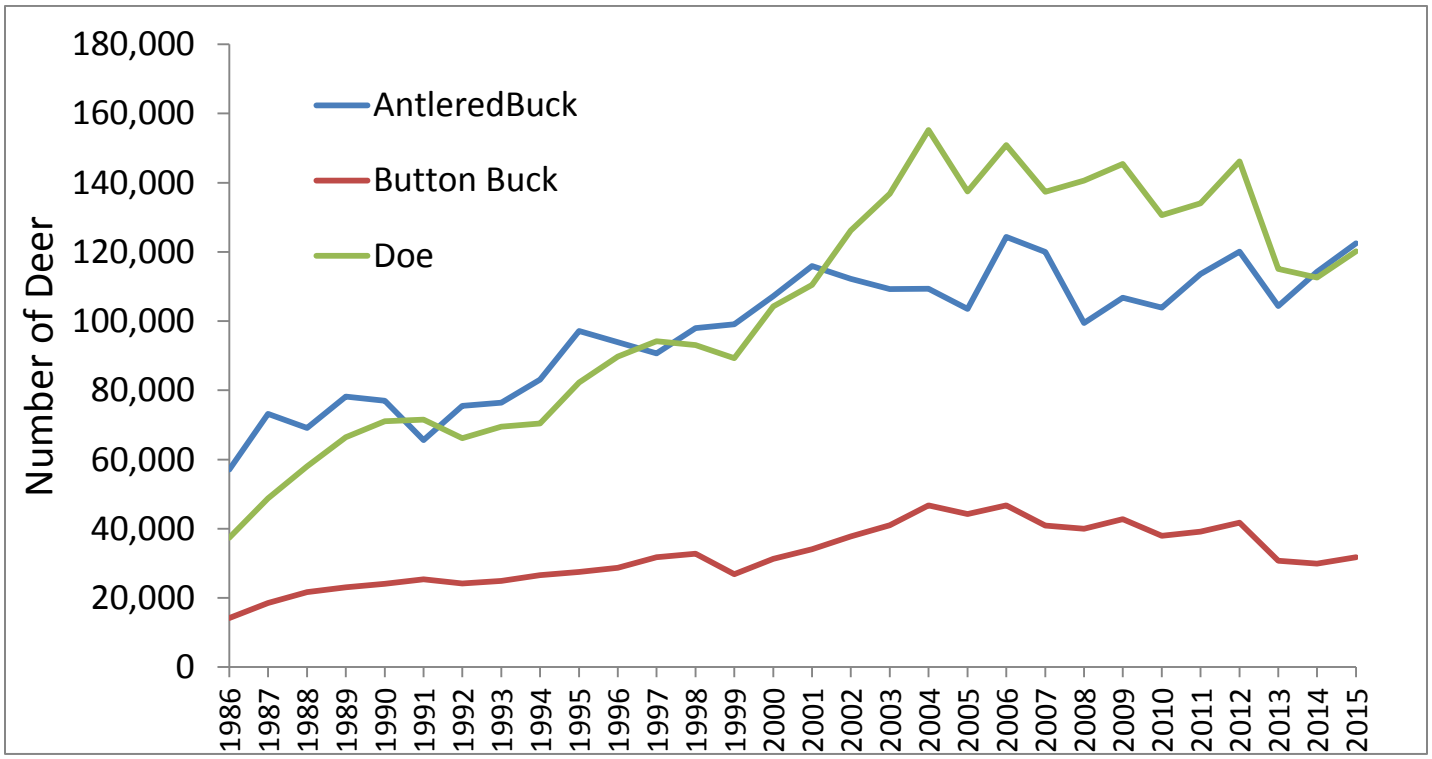
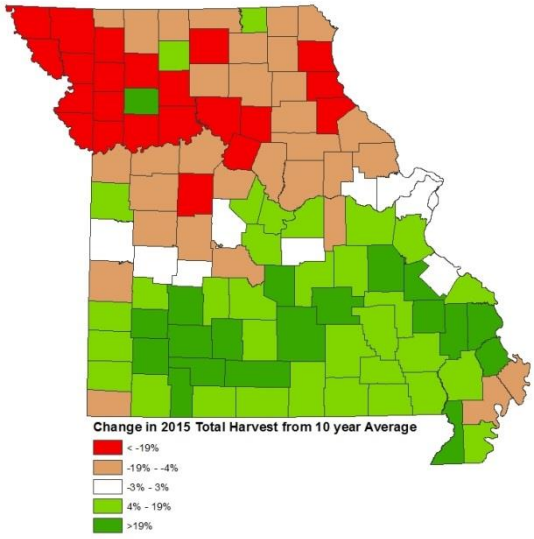


Figure 2. Sex ratio of deer harvest in Missouri, 1986–2015.

Missouri Deer Program Report
By: Barb Keller

IV. Population Trends

Missouri's simulated deer population as a result of a simple, deterministic accounting style model indicates statewide trends of decreasing deer populations with a peak occurring in the early 2000's (see figure in Current Harvest section). However, it is important to note that deer populations vary throughout the state due to habitat use and cover, hunter density and goals, harvest regulations, and hemorrhagic disease outbreaks. Historically higher deer numbers have occurred in northern Missouri that were above culturally acceptable levels, thus harvest opportunities were liberalized to reduce deer numbers. This coupled with hemorrhagic disease outbreaks have reduced deer densities in these areas, in some areas below desirable levels, thus regulations have been changed to promote population stabilization/increase. Generally, areas of southern Missouri have been stable to slightly increasing due to conservative antlerless harvest opportunities.



Percent change in county harvest totals in 2015-16 compared to the 10-year average.

V. Deer Management Units: Each of Missouri's 115 counties serves as a separate deer management unit. Additionally, some counties have portions designated as Urban Zones, thus are considered separate management units.

VI. Regulation/legislation Changes

<u>2016-2017 Season (significant changes)</u>

- Hunters may now take only two antlered deer during the archery and firearms deer season combined. Only one antlered deer may be taken during the firearms season, and only one antlered deer may be taken during archery season prior to the November portion of the firearms season.
- The urban zones portion of the firearms deer season has been eliminated.
- The antlerless portion of the firearms season has been reduced to 3 days and moved to the first weekend in December.
- The late youth portion of the firearms season has been expanded to 3 days and moved to late November.
- Crossbows are now a legal archery method.
- The CWD management zones have been expanded from 19 to a total of 29 counties. Regulation changes that apply to counties in management zones include:
    - Feeding and mineral supplementation ban
    - The 4-point antler point restriction is repealed in those counties where it was previously instituted
    - Antlerless permits are increased from 1 to 2 where not already in effect
    - Hunters harvesting deer during the opening weekend of the firearms season must present the deer or deer head to a sampling station on the day of harvest

<u>Proposed regulation changes for 2016-2017 not passed by Conservation Commission</u>

- Reduce the length of the November portion of the firearms deer season from 11-days to 9-days

Missouri Deer Program Report
By: Barb Keller

VII. Urban/Special Hunts

Annually there are managed deer hunts that occur on state (e.g., parks, some MDC lands) and federal properties that restrict the number of hunters and harvest based on a lottery, quota system. These are approved by the Missouri Department of Conservation annually, and run by the agency with authority over that area.

Currently, there are 2 urban zones in Missouri, including Kansas City and Springfield. These areas include whole or portions of a county and have more liberal regulations than other areas to increase the harvest of deer. In 2016, the St. Louis urban zone was eliminated because these counties have been included in a CWD management zone. The regulations that go into effect within CWD management zones made the urban zone designation redundant. The urban zone portion of the firearms season has also been eliminated due to low hunter participation and harvest.

VIII. Deer Management Assistance/Crop Damage

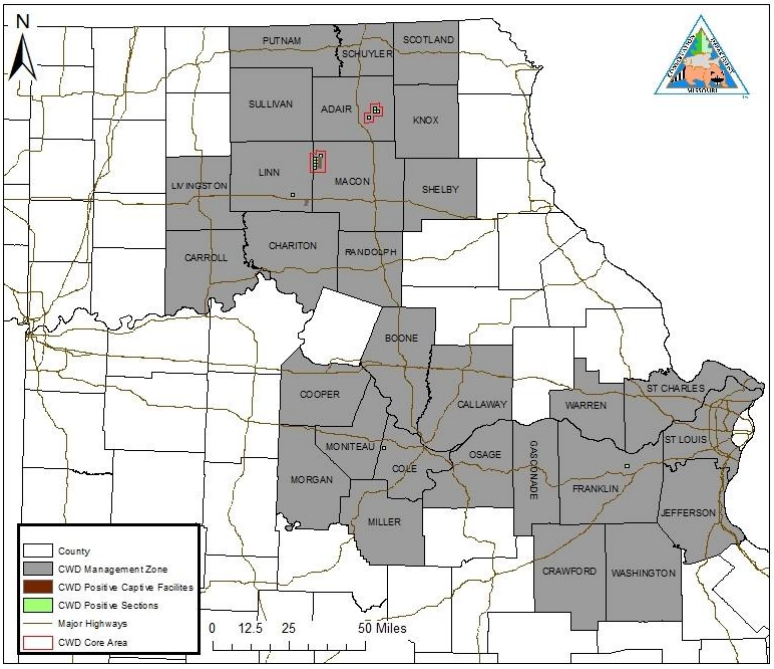
Currently, MDC can provide deer depredation permits to landowners and lessees to address deer conflicts resulting in significant economic losses (e.g., crop damage, nursery damage) and risks to human safety (i.e., airports). However, this program is currently being reviewed and revised to increase program consistency and effectiveness. Additionally, deer depredation permits are not always appropriate or publically acceptable; therefore MDC is currently in the initial stages of developing a deer management assistance program (DMAP) to offer several options to localized deer management issues.

IX. Disease Issues / Updates

<u>Chronic Wasting Disease</u>

During the 2015-2016 surveillance season, CWD-positive deer were discovered in 2 new areas. A CWD positive deer in Southwest Linn county expanded the Northern CWD management zone by 2 counties (Washington and Carroll). A CWD positive deer was detected in Franklin county, 83 miles from the nearest detection in Cole county and 140 miles from the core areas in Linn and Macon counties. The Franklin county deer resulted in the creation of a new CWD zone consisting of 8 counties in east central Missouri. As of June 2016, CWD has been detected in 33 free-ranging deer in Macon (21), Adair (9), Cole (1), Franklin (1) and Linn (1) counties, and 11 captive deer in Linn (1) and Macon (10) counties.

In addition, with the detection and relatively high prevalence rate of CWD in Arkansas, we will be increasing surveillance in AR border counties during 2017.



This map illustrates the distribution of detected CWD-positive deer, CWD Management Zones, and Core Areas as of June 2016.

Missouri Deer Program Report
By: Barb Keller

X. Research

Statistical Population Reconstruction - In collaboration with the University of Missouri and the University of Washington, MDC has investigated a new method of modeling deer populations called Statistical Population Reconstruction (SPR). This new method provides several improvements over current population models that will increase model accuracy and strengthening the foundation for monitoring regional and county-specific deer populations. This modeling approach uses a variety of data that MDC currently collects including age at harvest information, hunter effort, and harvest data. However, additional information will be needed, determining harvest vulnerability of antlered males and survival rates via the Deer Survival Project, as well as expanding the age at harvest data collection samples and methods. One way we are expanding age at harvest data collection is through measurement data collected by hunters. Beginning in 2016, hunters using telecheck or the MOhunting app to check a deer will be asked: Is the length from the inner corner of the eyeball to the upper edge of the nostril greater than 4.5 inches (if checking a does); or Is the circumference of the antler 1 inch above the base greater than 2.5 inches (if checking a antlered buck)? These 2 questions will help us determine if the doe harvested was a fawn or older, or if the buck harvested was a yearling or older. This information will be incorporated in new SPR models.

Modeling Chronic Wasting Disease Dynamics and Impacts - In collaboration with the University of Missouri, MDC has implemented a research project to model CWD distribution and potential impacts on Missouri's deer population. We plan to model the distribution and prevalence of CWD currently and in the future given various scenarios. This will allow us to model potential impacts of CWD on the deer herd, including survival and abundance. Additionally this information may provide insight on management adjustments that could limit CWD distribution and prevalence. In addition to the application to the CWD Management Zones it will allow MDC to evaluate the impact of various management practices on CWD prevalence and distribution. Also, the study will provide the ability to compare various monitoring strategies, thus increase our ability to detect CWD early so that management efforts can be effective, while ensuring the efficient use of resources.

Deer Survival, Recruitment, and Movements in Two Contrasting Habitats

The Missouri Department of Conservation and the University of Missouri have initiated a 5-year study to evaluate deer survival, reproduction, and movement patterns within two contrasting habitats with application to deer population models (e.g., SPR), disease management protocols (e.g., development of CWD Management Zones, Core Areas) and localized deer management efforts.

This study is occurring in both the Ozarks and Northwest portions of Missouri that represent contrasting compositions of public land, habitat, and harvest regulations. Trapping efforts began in January 2015 to capture, GPS-collar, and monitor deer of all age and sex classes within both study areas. Our annual target sample size is a total of 180 deer (i.e., 30 adult bucks, 30 yearling bucks, and 30 does in both regions) between both regions from the winter capture. We captured 100 and 132 deer during winter 2015 and winter 2016, respectively. Including carryover from the previous year, we are currently monitoring 177 collared deer. We capture fawns each spring with the use of VITs implanted in pregnant does during winter captures and also opportunistic methods. Over two years, a total of 142 fawns have been captured, radiocollared, and monitored for survival.

Missouri Deer Program Report
By: Barb Keller

Seasonal Movements of Deer Associated with Small Crop fields

A new research project starting in summer 2016 is aimed at gaining a greater understanding of deer movement ecology related to small cropfields in Southeast Missouri. Browsing by deer can cause damage to soybean fields during the spring and summer, especially if these fields are small and surrounded by forested terrain. Damage permits are sometimes issued to farmers to reduce the local deer densities during the spring and summer, but this method has generally been unsuccessful at reducing damage problems and is unpopular with local hunters. The best option is to work with farmers reporting damage to reduce local deer densities during the fall deer seasons – but it seems deer are no longer present on the properties after the soybean fields are harvested. Are these deer making seasonal migratory movements? Or are they using refugia near the soybean fields during the fall and winter? To answer these questions, MDC staff will be capturing deer during the summer that are using cropfields and fitting them with GPS collars. These collars will allow staff to track movements of deer throughout the year. The results of this project will be used to target efforts to reduce localized deer densities at the appropriate scale surrounding damage areas, and will have application to similar landscapes throughout Missouri.

XI. Hot Topics

Captive Cervid Litigation update: We recently completed the second hearing in the case of Donald Hill et al. (members of the Missouri Deer Association) vs. the Missouri Department of Conservation on June 8-9, 2016. The suit put forward by Hill et al. claims that 1) MDC does not have authority to regulate privately owned deer and 2) the regulations violate the Right to Farm Amendment. A previous injunction instituted in this case September 2015 has blocked MDC from enforcing captive cervid regulations. The ruling from this hearing is expected in August 2016, and will either lift the injunction or keep it in place permanently.

XII. Relevant Links

2016-17 Fall Deer & Turkey Hunting Booklet
https://huntfish.mdc.mo.gov/sites/default/files/downloads/2016FDT.pdf

White-tailed Deer Management Plan
http://mdc.mo.gov/sites/default/files/resources/2014/05/deer_management_plan.pdf

NEBRASKA DEER STATUS REPORT

2016 Midwest Deer & Wild Turkey Group
Kit Hams, Nebraska Game and Parks Commission
Somewhere in Kentucky
August 2016

I. Current Harvest

Total deer harvest was 58,690, consisting of 48,035 whitetail and 10,640 mule deer. Total WT buck harvest increased 14% and ranks 9th all-time. MD buck harvest increased 18% and ranks 4th all-time.

Both species are nearly fully recovered from the EHD/drought losses of 2012 and the meningeal worm losses to mule deer in 2010-2011. It is our intent to grow MD herds to record levels while limiting growth of WT herds to numbers that will sustain a harvest of 30,000 bucks "quality" bucks.

Deer Harvest: 2015-2016

Permit	Adult Bucks		Antlerless		Permits Sold	Success Rate
	MD	WT	MD	WT		
Nov. Firearm	4,891	13,832	270	4,135	42,850	54%
Landowner	1,346	3,768	518	1,879	14,204	53%
Statewide Buck	430	3,635	2	48	12,626	33%
Youth	1,301	3,122	205	1,208	12,384	46%
Archery	467	3,032	57	578	17,477	24%
Muzzleloader	405	855	110	520	7,541	25%
Season Choice AO	30	193	545	5,474	17,253	36%
River Antlerless	0	161	19	5,545	10,501	55%
Total	8,870	28,598	1,726	19,387	134,836	

II. License and Season Information

Deer permit sales have increased 38% over past 15 years as herds have grown. The increase in permit sales is due to a 146% increase in nonresident permits and a 12% increase in resident permits. A permit fee increase is scheduled in 2016.

$6 youth deer permits are an important part of youth recruitment.

Bonus "free" antlerless WT permits are added to existing permits when we are no longer able to increase harvest by increasing permit quotas.

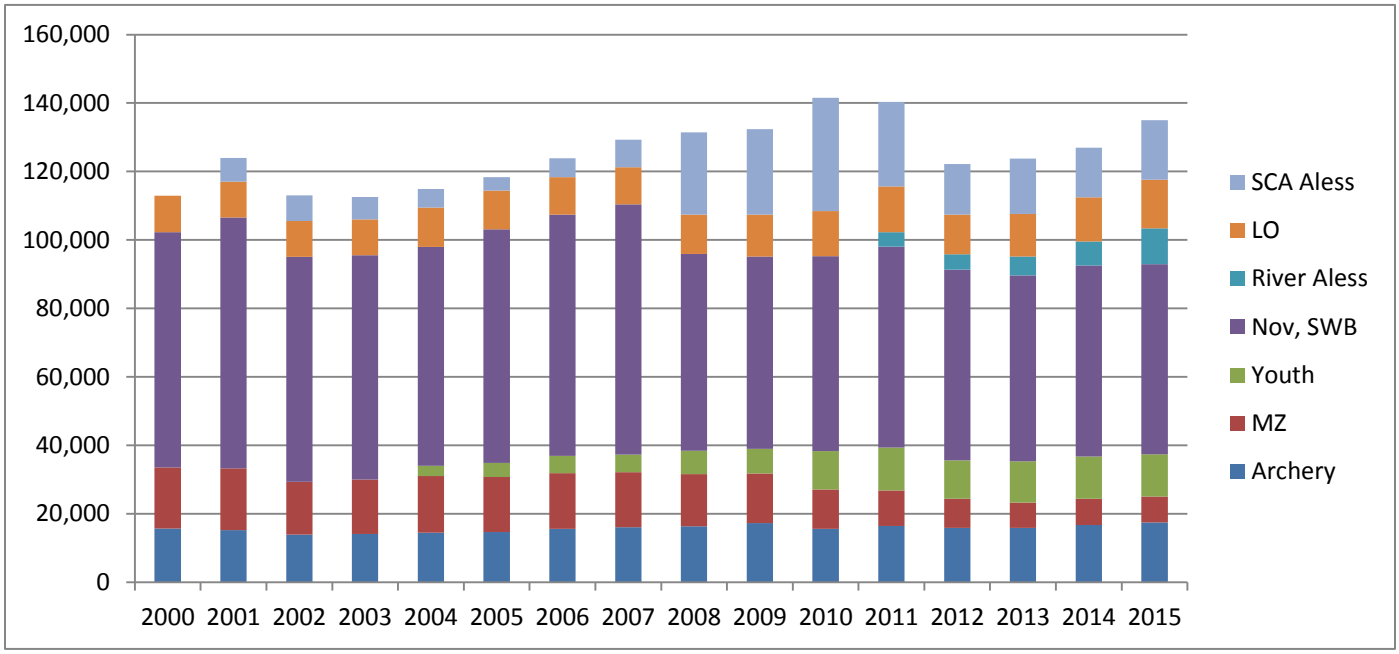
2015 License and Permit Fees

License	Resident	Nonresident
Youth Deer	$6	$6
River Antlerless	$11	$61
SCA Antlerless	$30	$61
Landowner	$16.50	$109
AR, MZ, Firearm	$30	$215
Statewide Buck	$73.50	$536
Habitat Stamp	$20	$20

2015 Season Dates

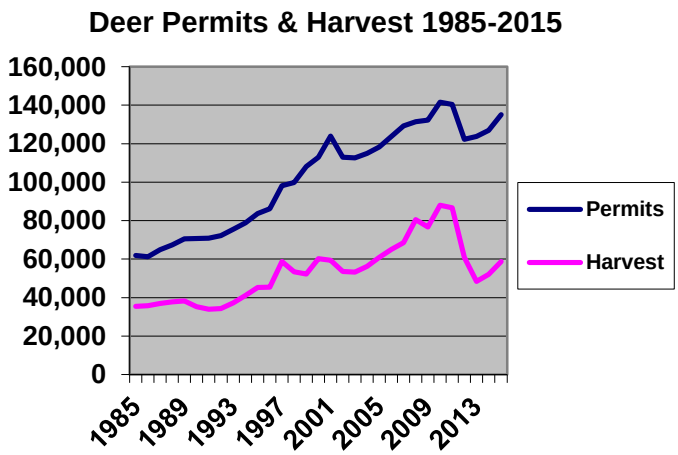
Archery	Sept. 1 – Dec. 31
November Firearm	Nov. 14-22
December MZ	Dec. 1-31
Antlerless	Sept. 1 – Jan. 15
Statewide Buck	Sept. 1 – Dec. 31
Youth and Landowner	Sept. 1 – Jan. 15

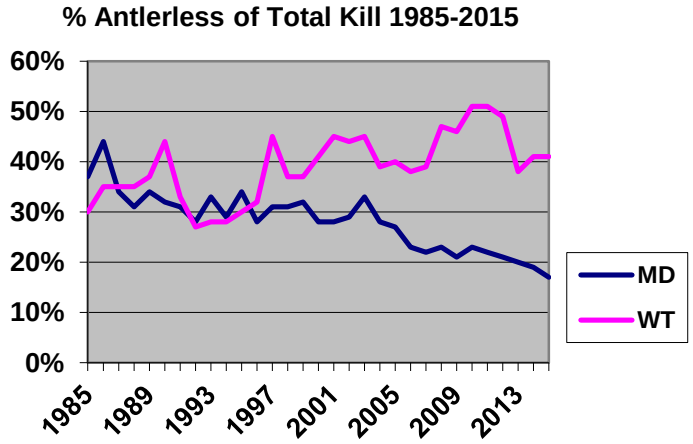
Deer License Sales 2000-2015

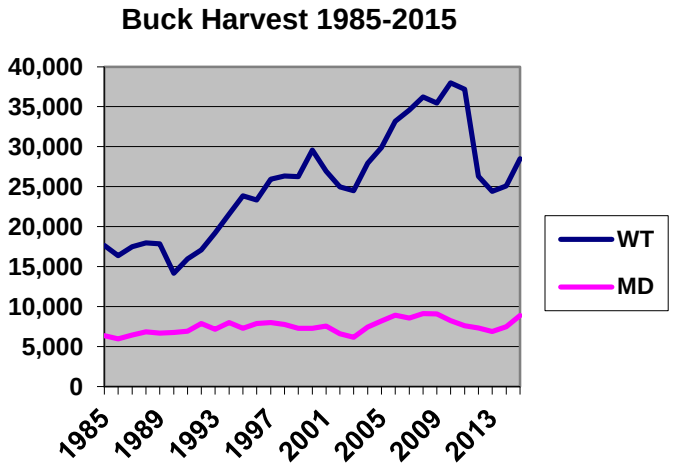


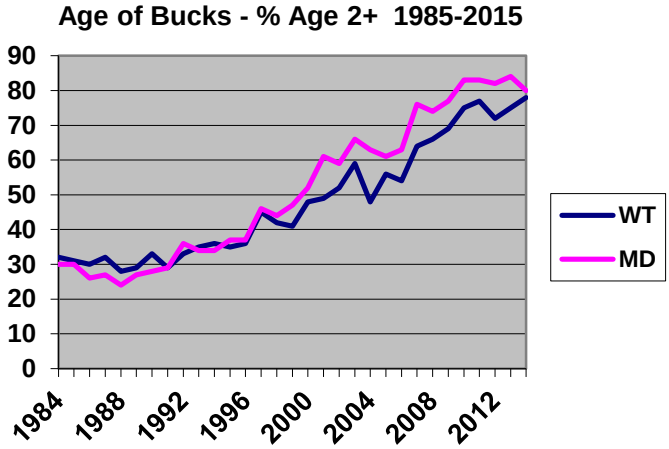
III. Historical Harvest

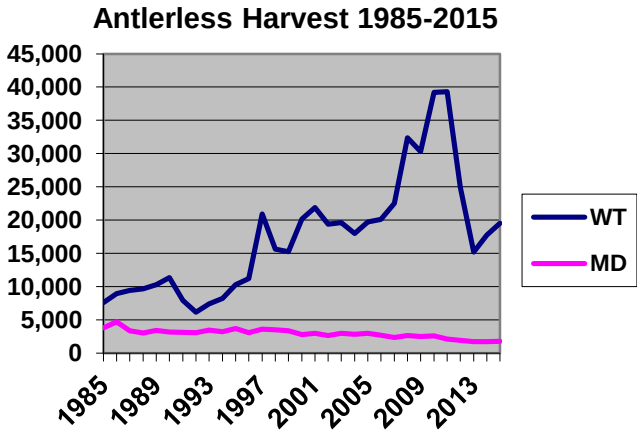
Nebraska's first deer season was in 1945 when 361 mule deer were harvested. Harvest of MD bucks peaked in 2008. Current MD buck harvest was 8,876. Two WT bucks were harvested in 1945. WT buck harvest surpassed MD buck harvest in 1969 when 5,700 WT bucks were harvested. WT herds peaked in 2010 (38,000 bucks harvested) and crop damage exceeded landowner tolerance. Aggressive harvest reduced herds in some units and large EHD losses in 2012 reduced herds by 30% in much of the state. Current deer populations are at acceptable levels.











IV. Population Trends

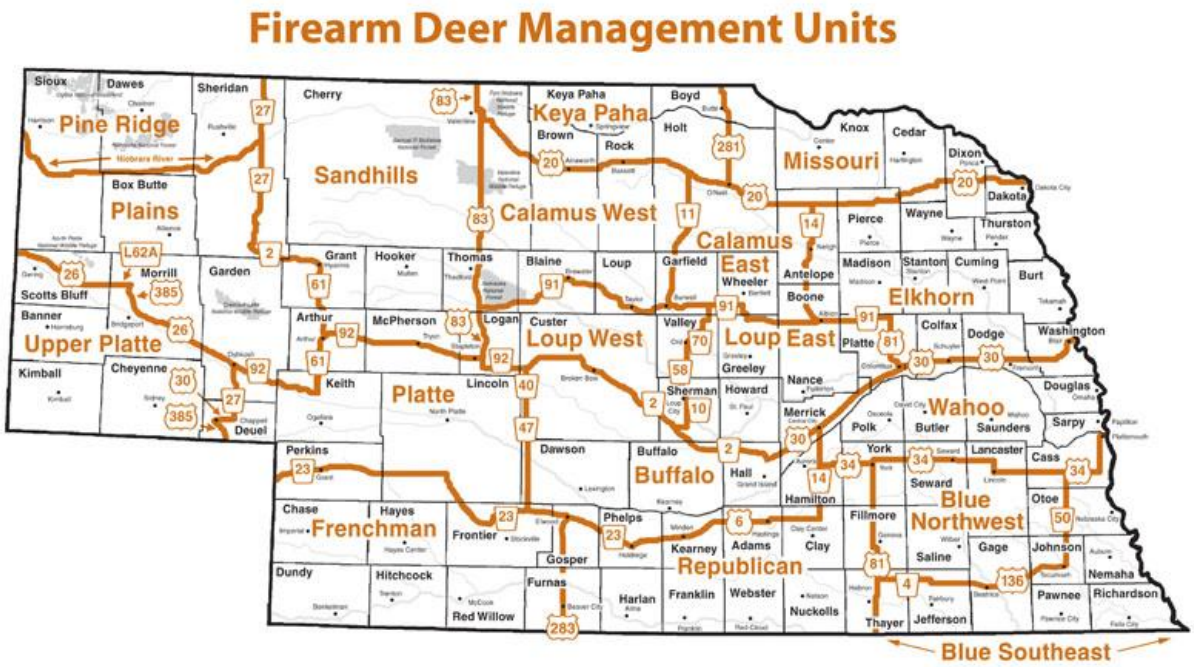
Whitetail populations have generally increased until interrupted by aggressive antlerless harvest and EHD events. Current goals are to allow limited herd growth in units that had large EHD losses in 2012. Increased use of liberal antlerless seasons and permits has been somewhat effective in controlling herd growth.

Mule deer herds are increasing in most western units and generally grow in response to low doe harvest. Eastern MD units struggle to maintain viable populations regardless of management actions. Restricted doe harvest and favorable weather the past 3 years may allow the MD population to reach a new record.

Buck harvest is our primary indicator of population trends.

V. Management Units

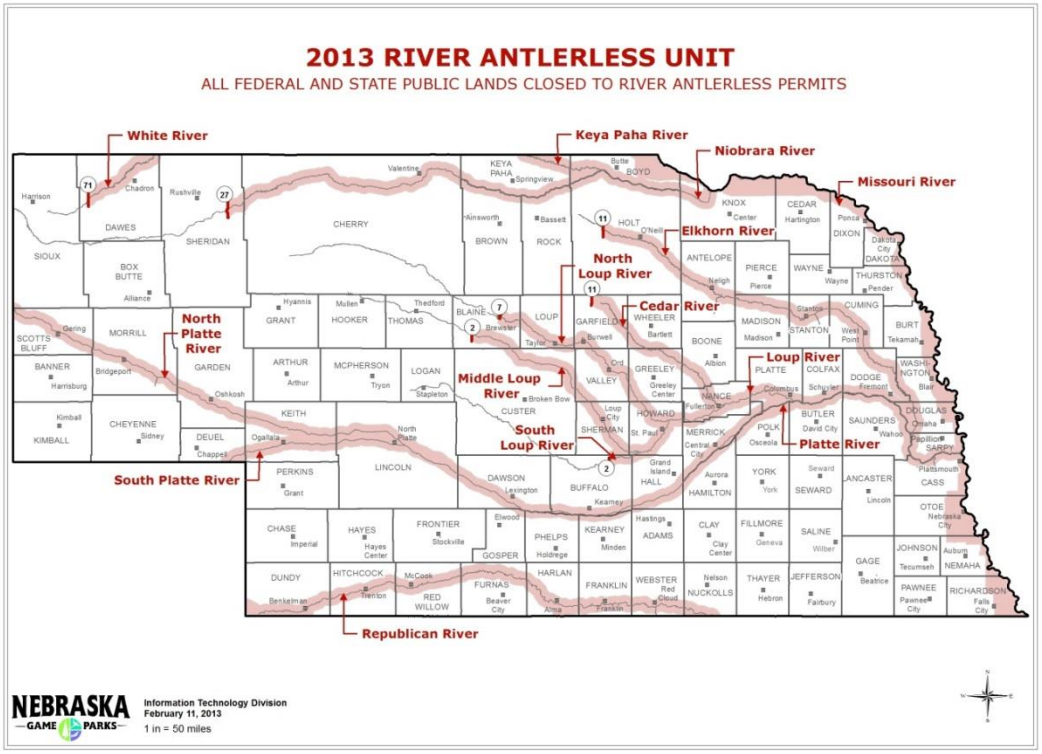
There are 18 deer management units. Harvest objectives are established for each unit.



VI. Urban / Special Hunts

We have a limited number of park and refuge hunts that allow deer hunting in state parks that are normally closed to hunting. Total annual harvest ranges from 100-300.

The "River Antlerless Unit" is used to direct antlerless whitetail harvest to 10,000 sq. miles of river corridors where the majority of crop damage complaints occur. All permits are $11 and valid for two antlerless whitetail during the 137 day season. 12,000 permits for two antlerless WT were authorized. 10,501 permits were issued.



VII. Regulation / Legislation Change

No major regulatory or statute changes in 2015.

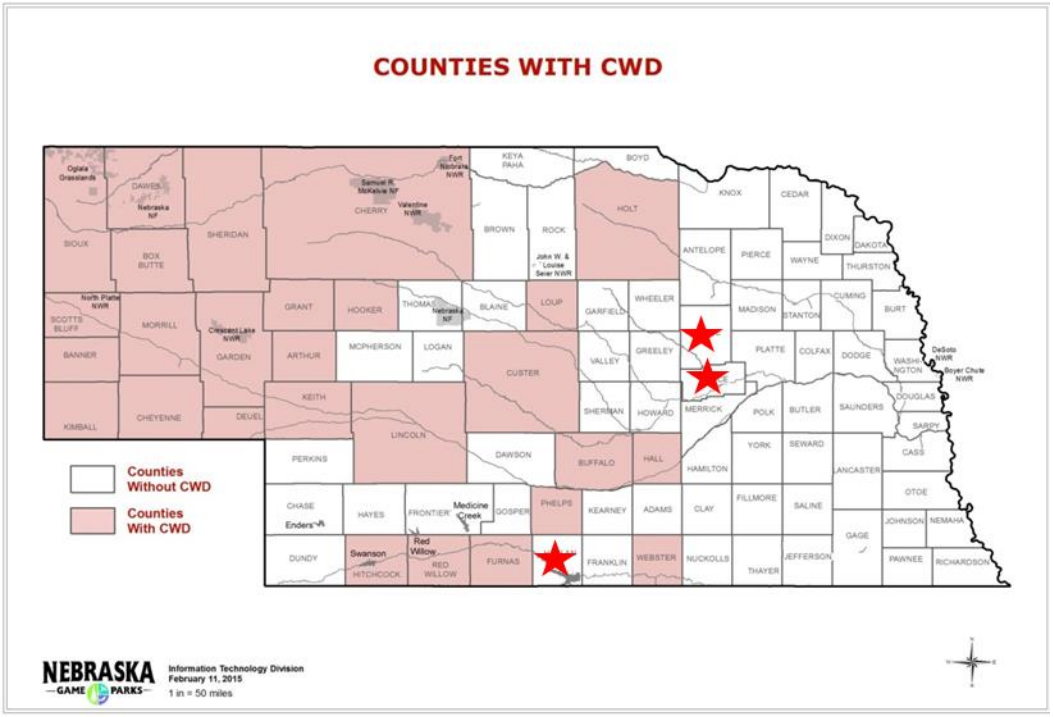
VIII. Management Assistance/Crop Damage

Landowner damage permits are given to landowners experiencing excessive crop damage. Most problems areas are associated with "defacto refuges" where hunting is limited on adjacent private land. Permits are free to landowners experiencing damage. Carcasses must be utilized for human consumption. Annual kill ranges from 50-500 statewide. Less than 100 were killed in 2015.

IX. Disease Issues

No significant losses were reported due to EHD, CWD or Meningeal worm.

CWD has been present in Nebraska for 20 years and is now present in about 50% of the state. Infection rate is highest in the Pine Ridge unit of NW Nebraska (6% in 2011). In 2015 we sampled of 759 deer in the Northeast and found CWD in three deer (.4% infection rate). We will sample SE Nebraska in 2016, SW Nebraska in 2017 and the NW Nebraska in 2018.



X. Research

Population estimate of elk based on DNA in fecal samples was initiated in 2015.

XI. Hot Topics

NONE

XII. Relevant Links

2016 Big Game Guide: http://digital.outdoornebraska.gov/i/678699-big-game-guide-2016

2016 North Dakota Deer Project Report for Midwest Deer and Turkey Study Group

Bill Jensen, Big Game Biologist
North Dakota Game and Fish Department
100 North Bismarck Expressway
Bismarck, ND 58501
E-mail: bjensen@nd.gov Phone: 701-220-5031

I. Current (2015) Deer Harvest

Season	License Issued	White-tailed Deer Harvested	Mule Deer Harvested
Youth Gun[1]	4,004	1916	156
Archery	25,703	6777	750
Regular Deer-Gun	43,275	23,366	3,358
Muzzleloader	826	348	0
Total	73,808	32,407	4,264

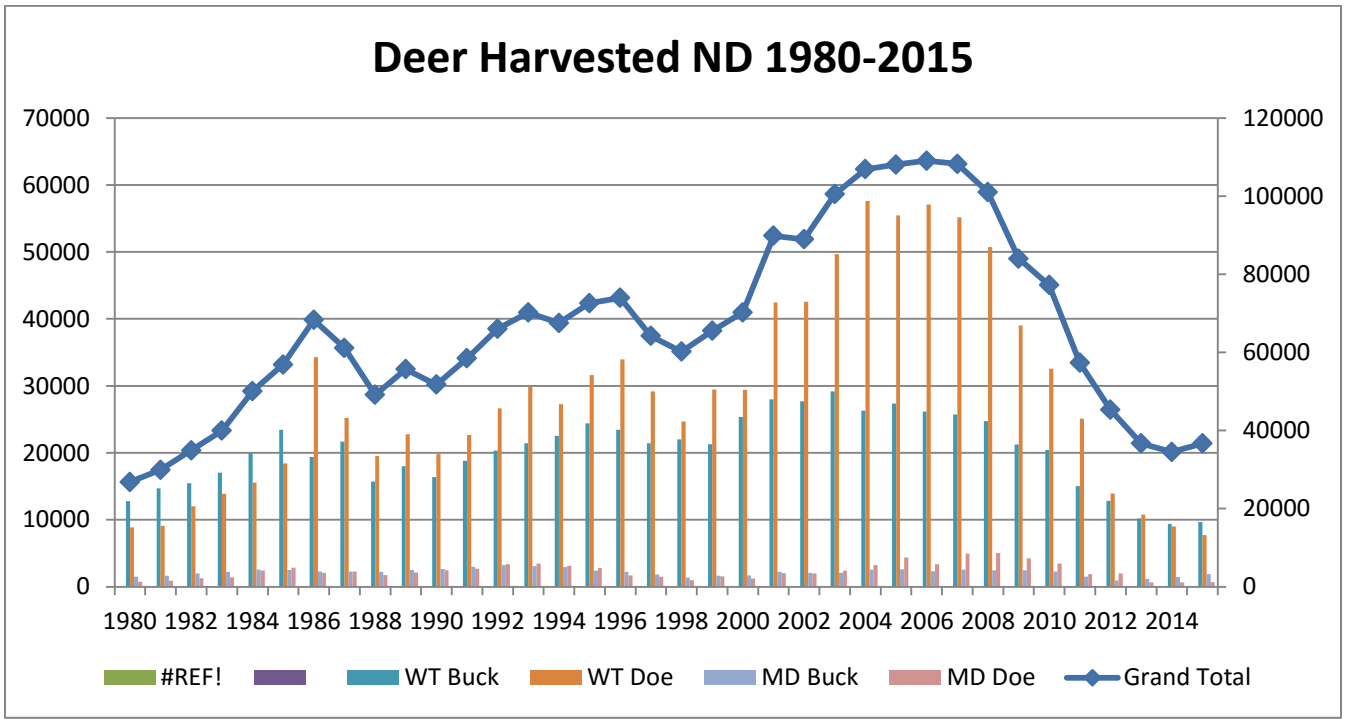
[1]Unsuccessful youth hunters may also hunt during the regular deer gun season.

II. License and Season Information

Season	License Issued	License Description	License Cost	Season Dates
Youth Gun[1]	4,004	11-13Antlerless WTD Statewide (limit of 1) 14 or 15 Any WTD Statewide Lottery on MD (Limit of 1)	$10 (Under 16)	18/09/2015 to 27/09/2015
Archery	25,703	Res. Any Deer Statewide	$30 Res. $250 Non Res.	04/08/2015 to 03/01/2016
Regular Deer-Gun	43,275	Lottery	$30 Res. $250 Non Res.	6/11/2015 to 22/11/2015
Muzzleloader	826	WTD Only Equals 2% of Regular Deer-Gun Licenses	$30 Res. Only	27/11/2015 to 13/12/2015

[1]Unsuccessful youth hunters may also hunt during the regular deer gun season.

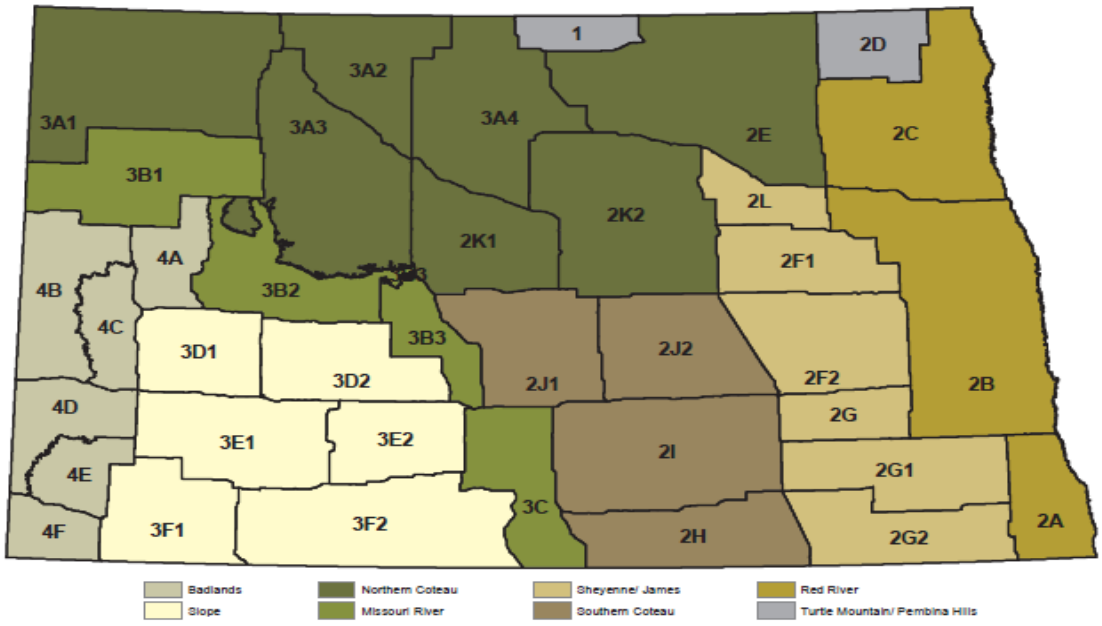
III. Historical Harvest



III. Population Trends

We use a series of population indices to set harvest rates. We do not attempt to estimate the statewide deer population. Due to hard winters and aggressive harvest management, deer numbers are at their lowest levels since the early 1980s but are rebounding.

IV. North Dakota Deer Hunting Units and Major Management Regions



V. Regulation/Legislation Changes/Management Notes

The 2015 North Dakota deer hunting season will include 43,275 licenses, 4,725 fewer than 2014 and the lowest number since 1978. A concurrent season was not held again in 2015, and hunters were allowed only one license for the gun season.

Management Notes:
Even after six years of reducing gun licenses, harvest and survey data revealed that deer populations remain well below management objectives in most units. Therefore, more license reductions are needed to encourage deer populations to increase toward management goals. The statewide hunter success rate in 2014 was 60%, which is slightly higher than 2013 (55%), but well below our goal of 70%. No winter aerial surveys occurred this year due to lack of required snow conditions.

Deer numbers remain below objectives due to prolonged effects of severe winters during 2008-2010, which not only increased adult mortality but also reduced fawn production. The extreme winter conditions followed nearly a decade of aggressive deer management that featured large numbers of antlerless licenses in most units. In addition, the northeastern part of the state experienced severe winters during 2012-2013 and 2013-2014 which continues to impede population recovery. Further, high quality deer habitat continues to be lost statewide and will limit the potential for population recovery.

The 2015 badlands mule deer spring index increased by 24% from 2014. This is the third consecutive year of population growth following three consecutive years with no antlerless harvest and improved fawn production in 2013 and 2014. These three years with population increases follow a 5 year population decline with the badlands mule deer spring index decreasing by 49% and record low fawn production following the winters of 2008-2010. A conservative management approach will continue for mule deer in the badlands for 2015. No antlerless mule deer licenses will be issued for the 2015 deer season in hunting units 3B1, 3B2, 4A, 4B, 4C, 4D, 4E, and 4F. This restriction pertains to sportsmen gun licenses, resident and non-resident any deer bow licenses, gratis licenses, and youth licenses.

* Total licenses available for the 2015 regular season are 43,275. This is a decrease of 4,725 licenses from 2014.
    - Any Antlered licenses reduced by 1,150
    - Any Antlerless licenses reduced by 2,650
    - Antlered white-tailed deer licenses reduced by 650
    - Antlerless white-tailed deer licenses reduced by 800
    - Antlered mule deer licenses increased by 525

* A total of 1,875 antlered mule deer licenses will be available in 2015; however no antlerless licenses will be issued in hunting units 3B1, 3B2, 4A, 4B, 4C, 4D, 4E, and 4F. This is an increase of 525 mule deer licenses from 2014.

* A total of 828 muzzleloader licenses will be available in 2015. The total is comprised of 414 antlered white-tailed deer licenses and 414 antlerless white-tailed deer licenses. This is a decrease of 104 muzzleloader licenses from 2014.

* In 2015 there will be 187 "I" licenses available for the youth deer hunting season. This is an increase of 53 licenses from 2014. "I" licenses are limited in number and are valid for any deer, except antlerless mule deer, in units 4A, 4B, 4C, 4D, 4E, 4F, 3B1, and 3B2. There are unlimited "H" youth deer hunting licenses that are valid for any deer statewide except mule deer in the above restricted units.

* A total of 202 nonresident any deer archery licenses are available for 2015. This is an increase of 30 any deer archery licenses from 2014. The number of nonresident any deer archery licenses will increase to 281 in 2016.

VI. Urban/Special Herd Reduction Deer Seasons

Three special concurrent experimental deer bow seasons are proclaimed for portions of the City of Bismarck, and private land in Burleigh County located adjacent to the City of Bismarck. The private land in Burleigh County is described as follows: starting where the southwest boundary of the city limits of Bismarck joins the east bank of the Missouri River, then following the city limits of Bismarck easterly to the point where it meets the west bank of Apple Creek in the northeast one-quarter of Section 26, Township 138 North, Range 80 West, then following the west bank of Apple Creek in a general southwest direction to its junction with the north boundary of Apple Creek Wildlife Management Area (WMA) and then west and south along the WMA boundary to the Missouri River, then following the east bank of the Missouri River to the point of origin. This does not include the NDDOCR property referred to in Section 4(E).

Hunters who desire to hunt within the city limits of Bismarck must receive a trespass permit from the Bismarck Chief of Police (701-223-1212), prior to being issued up to three special deer bow licenses from the Game and Fish Director. Hunters will be restricted to those dates and locations specified on the trespass permit(s). No orange clothing is required when hunting within the Special Herd Reduction areas unless required by city officials within city limits. In addition, hunters may use their Deer Bow license during the Deer Bow season (August 29, 2014 through January 4, 2015) after obtaining a trespass permit. In the area outside the city limits of Bismarck no trespass permit is needed. These licenses are available only at the North Dakota Game and Fish Department headquarters in Bismarck.

VII. Deer Management Assistance/Crop Damage Harvest

Depredation Assistance Program - provides funding for activities used to alleviate/minimize damage to private livestock feed supplies caused by big game animals (manpower, technical assistance, temporary fencing, repellents, scare devices, and deer-proof hay yard fences). Payments will not be made for damage caused by wildlife. Since 2005 the department has been facilitating a program that couples producers that have chronic deer depredation problems with hunters interested in harvesting antlerless does. Interested hunters enter their

contact information on our website. Landowners determine how many hunters they are willing to host. The predetermined number of hunters are randomly selected from the website and sent a letter with the phone number of a landowner wanting deer removed. Over the past decade the number of landowners in the program has gradually declined as deer depredation problems have been reduced and hunters have developed relationships with landowners.

VIII. Disease Issues

North Dakota Game and Fish Department Wildlife Disease Report for MAFWA WHC Meeting
April 2015
Prepared by Dan Grove, DVM
Wildlife Veterinarian NDGFD

Due to health issues, Dan Grove was not able to provide the information for this section of the report.

IX. Research

Long Term White-tailed Deer Research Project: An Evaluation of Life History Parameters and Management of White-tailed Deer in North Dakota.

The goal of this research project is to collect information on specific life history parameters and evaluate accuracy of various population indices used for predicting changes in North Dakota's white-tailed deer populations. The information gathered from these studies will provide the missing data that has prevented us from developing and implementing an effective population modeling effort. Additionally, ecological information will be collected on adult female white-tailed deer, as opportunity permits, to facilitate sound science-based management.

Specifically the priority objectives are: (1) Enhance the ability to set harvest rates to coincide with population management goals, (2) Determine annual number of fawns per doe surviving until fall, (3) Determine annual hunter harvest rates for yearling and adult females, (4) Determine winter mortality rates for radio-collared females after winter aerial surveys have been completed, (5) Determine the impact of hunter harvest on radio-collared deer and use this information to extrapolate harvest rates, and (6) Determine sightability of deer, via winter aerial surveys, and compare to other population indices. Secondary objectives include: (1) Determine seasonal movements of females for designing disease testing procedures, and (2) Determine important locations for habitat improvement projects.

The long term strategy of this research project is to conduct a multiphase deer study, using the same methodology in various locations around the state. The focus of the deer project was initially the Coteau region (northeastern Burleigh County). Brain Schaffer completed his thesis in 2013.

The second study shifted to the northern Red River Valley (Walsh County). This location for the deer study area was selected for the following reasons. This region of the state contains marginal winter habitat for deer. Based upon an evaluation of the historical Winter Severity Index for the state (1949 to present), on average the northeastern portion of North Dakota has the most severe winter conditions in the state; thus deer within this area are most likely to experience highly variable stresses and responses to winter weather conditions. Secondly, this portion of the state is closest to the TB infected white-tailed deer in Minnesota. Finally, prior to this study, no deer research had been conducted in this portion of the state. Field work was completed in December 2013. Kristin Sternhagen completed her thesis in 2015.

In January 2014 the third phase of the project shifted to the Slope region of the state (Grant and Dunn counties). Additionally, we are working cooperatively with South Dakota Game Fish and Parks (SDGFP) with this research project. SDGFP is sponsoring field work in Perkins County, SD. The reason for selecting these three study areas is to evaluate life history parameters in a portion of the state that has received no research attention

in the past, collect baseline information on a deer population that is infected with CWD (Grant County), and evaluate the impacts of energy development on white-tailed deer (Dunn County). Data from the three study areas (Grant, Dunn, and Perkins counties) will be analyzed collectively. Bailey Gullikson and Katherine Moratz are working on their final reports/theses. Completion is scheduled for December 2016.

An Evaluation of White-tailed Deer Survey Methods and Life History Parameters in Northern Great Plains.

The intent of this project is to collectively reanalyze regional white-tailed deer telemetry datasets (Figure 1 and Table 1). This analysis will evaluate survey methods and compare repeatability and reliability of winter aerial surveys and other survey methods using the comprehensive dataset. Additionally, life history and ecological information will be collected on adult female white-tailed deer to facilitate sound biologically-based management of white-tailed deer in North Dakota. The overriding goals, however, will be to focus on following management questions:

1. Evaluate biotic (e.g., disease, predation, hunting, habitat) and abiotic (e.g., weather) parameters influencing home range size, seasonal movements, and reproductive performance of adult female white-tailed deer in North Dakota, South Dakota and Minnesota (here after referred to as "region").
2. Evaluate biotic and abiotic parameters on influencing survival rates of adult female white-tailed deer in the region.
3. Evaluate biotic and abiotic factors influencing fawn survival rates until fall across the region, and what management strategies might be employed (e.g., optimal fawn bedding site patch size and characteristics).
4. Evaluate winter mortality rates for radio-collared females after winter aerial surveys have been completed in early March.
5. Evaluate impact of hunter harvest on radio-collared deer and use this information to assess harvest management strategies.
6. Evaluate sightability of deer, via winter aerial surveys, and compare to other population indices.

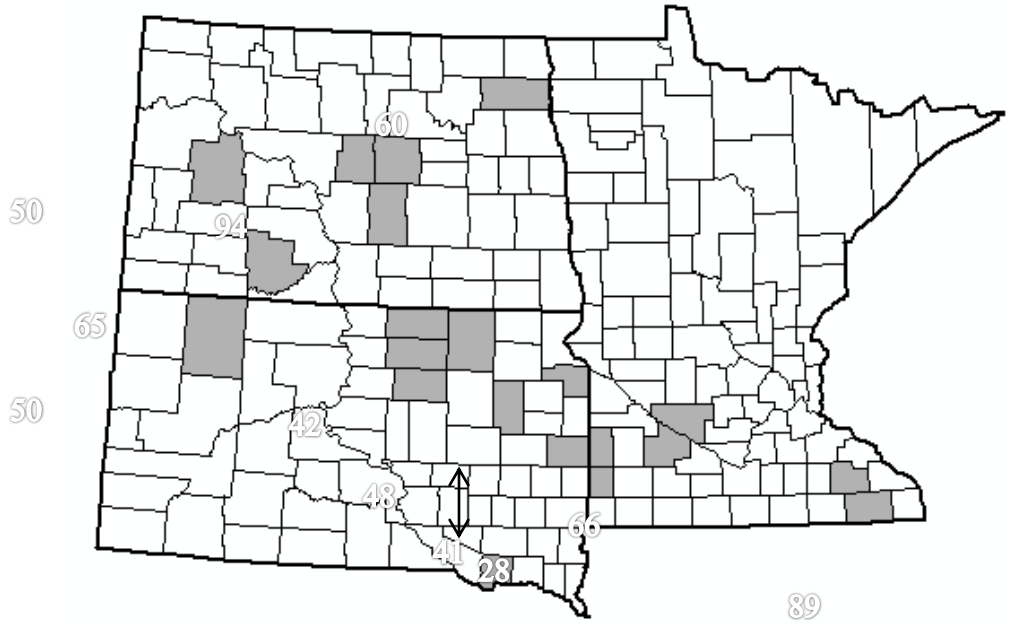


Figure 1. Distribution of radio-collared yearling and adult female white-tailed deer, by counties, in Minnesota, North Dakota and South Dakota.

Table 1. Summary of the distribution of radio-collared and ear-tagged white-tailed deer in the northern Great Plains.

Study Areas Counties &State	Years	Radio-Collared Females	Radio-Collared Fawns	Ear-Tagged Adults	Ear-Tagged Fawns
Olmstead-Fillmore, MN (Swanson 2005)	2000-2002	89			
Renville-Redwood, MN (Brinkman 2003, Swanson 2005)	2001-2004	66	14		
Lincoln-Pipestone, MN (Brinkman 2003, Burris 2005)	2001-2004	28	58		
Grant-Brookings, SD (Burris 2005)	2002-2004	41	22	0	21
Bon Homme, SD (Haffley 2013)	2009-2010	44			
Clark, SD (Robling 2011)	2009-2010	48		2	18
McPherson, Edmunds, Faulk, Brown, SD (Grovenburg 2010)	2005-2009	42	81		
Kidder, ND (Jensen Unpublished)	1999-01	26		5	39
Sheridan, ND (Smith 2005)	2001-03	68		14	28
Burleigh, ND (Schaffer 2013)	2010-11	64	13	4	14
Walsh, ND (Sternhagen 2015)	2012-13	60	37	5	24
Dunn-Grant, ND Perkins, SD (Gullikson and Moratz In Prep.)	2014-15	165	157	0	0
20 Counties	1999-2015	741	382	30	144

Deer Hunting in North Dakota: Hunter Activities, Attitudes and Views.

As a result of the high level of interest in deer hunting, the North Dakota Game and Fish Department is continually asked questions about deer management. These questions range from the biological impacts of predation, winter weather, hunting pressure, habitat conditions, and most recently energy development. In addition to addressing these biological and habitat questions, modern wildlife managers must also address the human dimensions of deer management; including hunter's activities, perceptions, and satisfactions when making informed management decisions. Because opinions regarding deer management differ widely, and decisions are often made without scientifically rigorous data collection and analysis, it is imperative to engage hunters through the most reliable method of measuring support or opposition of issues, the use of probability-based random sampling via mail surveys.

Historically, North Dakota deer hunters tend to be male (~90%), of the baby boomer generation, and rapidly give up deer hunting between ages 61 and 70 (Jensen 1999). Moreover, hunter recruitment in America has been declining nationwide over the last few decades. We do not fully understand which demographic segments of the

state's population are being recruited into deer hunting or what motivates them to hunt. With the recent changes in the state's population demographics, particularly in the west, much of what we thought we knew about our deer hunters may or may not currently hold true.

This research would provide regional information regarding hunter attitudes. Current objectives of this research include:

1. Characterize regional deer hunter demographics, activities, motivations, and satisfactions,
2. Determine hunter attitudes towards current and proposed deer hunting regulations, and
3. Determine, holding all other biological concerns equal, which management actions will generate the greatest public support.

A final report in the form of a thesis would be provided by December 2017.

Pilot Study on presence of neonicotinoid insecticides in white-tailed deer.

Recent studies have suggested that immune suppression by neonicotinoid insecticides are the root cause of declining pollinator insects, and may also be affecting a wide range of wildlife taxa. Laboratory tests have shown neonicotinoids to cause birth defects in mice and rats. We are in the process of retrieving archived liver samples from big game that were necropsied at the Wildlife Health Lab in Bismarck. A total of 264 white-tailed deer liver samples have been tested for Clothianidin. This dataset is currently being analyzed.

Additional Big Game Products:

Publications:

Christie, K.S., W.F. Jensen, and M. S. Boyce. (In Review) Habitat selection and fawn production by pronghorn in a human-altered landscape. Journal of Wildlife Management.

Christie, K.S., W.F. Jensen, J.H. Schmidt, and M. S. Boyce. 2015. Long-term changes in pronghorn abundance index linked to climate and oil development in North Dakota. Biological Conservation. 192: 445-453.

Ciuti, S., W.F. Jensen, S.E. Nielsen, and M.S. Boyce. 2015. Predicting Mule Deer Recruitment From Climate Oscillations for Harvest Management on the Northern Great Plains. Journal of Wildlife Management 79(8):1226-1238.

X. Hot Topics

We are in the process of reviewing and developing an additional white-tailed deer population index. Currently the focus is on late winter ground transects.

XI. Relevant Contact Information and Links

Department Contact Information:
North Dakota Game and Fish Department
100 N. Bismarck Expressway, Bismarck, ND 58501-5095
Phone: 701-328-6300
E-mail: ndgf@nd.gov
Website: http://gf.nd.gov/

Midwest Deer and Turkey Study Group
Website: http://mdwtsg.org/

Mike Tonkovich, Deer Program Administrator
Clint McCoy, Deer Biologist

I. Current Harvest

The 2015-16 deer harvest was 188,335; up 7.1% over the 175,801 reported in 2014-15. This year's increase was only partly due to slight population growth. Early crop harvest, poor mast crop, and favorable weather on key harvest dates likely played a greater role in the observed increase. Archers accounted for 44% of all deer harvested last year.

	Bucks[1]		Does		Buttons		Total		
	2014	**2015**	2014	**2015**	2014	**2015**	2014	**2015**	**Change (%)**
Gun									
7-day	23,807	**27,290**	33,842	**37,663**	7,835	**8,439**	65,484	**73,392**	**12.1**
2-day	-	**2,882**	-	**5,389**	-	**1,176**	-	**9,447**	**-**
Archery									
Crossbow	21,843	**24,763**	21,023	**21,438**	4,672	**4,533**	47,538	**50,734**	**6.7**
Vertical Bow	15,091	**15,873**	16,260	**14,662**	2,761	**2,456**	34,112	**32,991**	**-3.3**
Total	36,934	**40,636**	37,283	**36,100**	7,433	**6,989**	81,650	**83,725**	**2.5**
Muzzleloader									
Early Antlerless[2]	112	**-**	5,521	**-**	980	**-**	6,613	**-**	**-**
Late Either-sex	4,078	**3,659**	8,001	**7,374**	1,645	**1,470**	13,724	**12,503**	**-8.9**
Youth	2,989	**3,929**	2,556	**2,446**	908	**848**	6,453	**7,223**	**11.9**
Total	68,515	**79,176**	88,241	**90,021**	19,045	**19,138**	175,801	**188,335**	**7.1**

[1]All bucks ≥1.5 years old, including those reported as antlerless deer (antlers < 3 inches or shed bucks).
[2]Suspended after the 2014-15 season.

II. License and Season Information

A hunting license and an either-sex or antlerless deer permit are required to hunt deer in Ohio.* Antlerless permits were only valid in 10 urban counties during the first nine weeks of the 2015-16 archery season (see 'Management Units'). Seniors born on or before 12/31/1937 and disabled veterans are eligible for free licenses and permits.

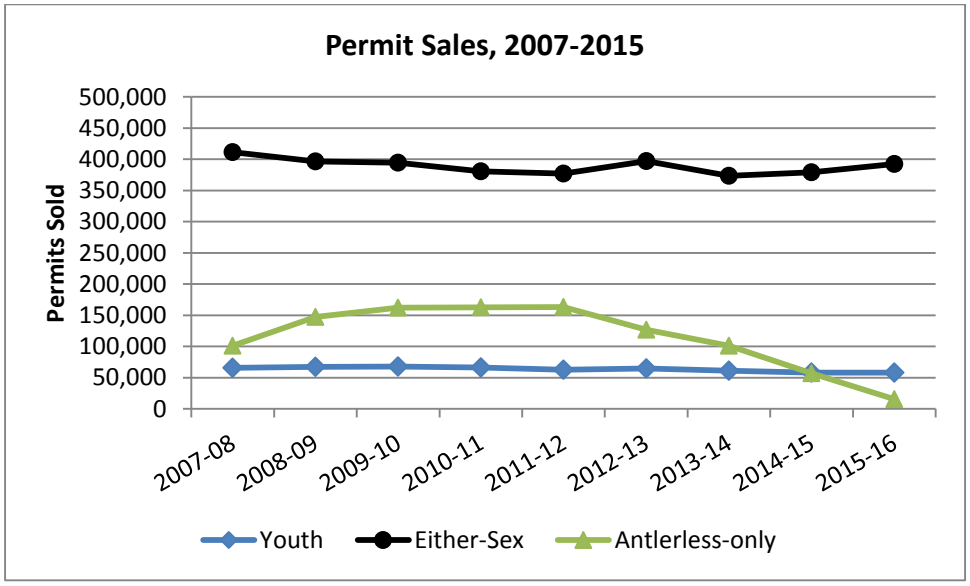
2015-16 License and Permit Fees

License/Permit	Resident	Nonresident
Adult Hunting License	$19	$125
Youth Hunting License	$10	$10
Senior License (66+)	$10	N/A
Adult Either-sex Deer Permit	$24	$24
Youth Either-sex Deer Permit	$12	$12
Senior Either-sex Deer Permit (66+)	$12	N/A
Antlerless Permit	$15	$15

*Landowners, spouse, and children are license and permit-exempt in Ohio.

2015-16 Seasons (all statewide)

Archery	Sep. 26, 2015 - Feb. 7, 2016
Youth	Nov. 21 - 22
Gun	Nov. 30 - Dec. 6
Bonus gun	Dec. 28 - 29
Muzzleloader	Jan. 9 - 12, 2016

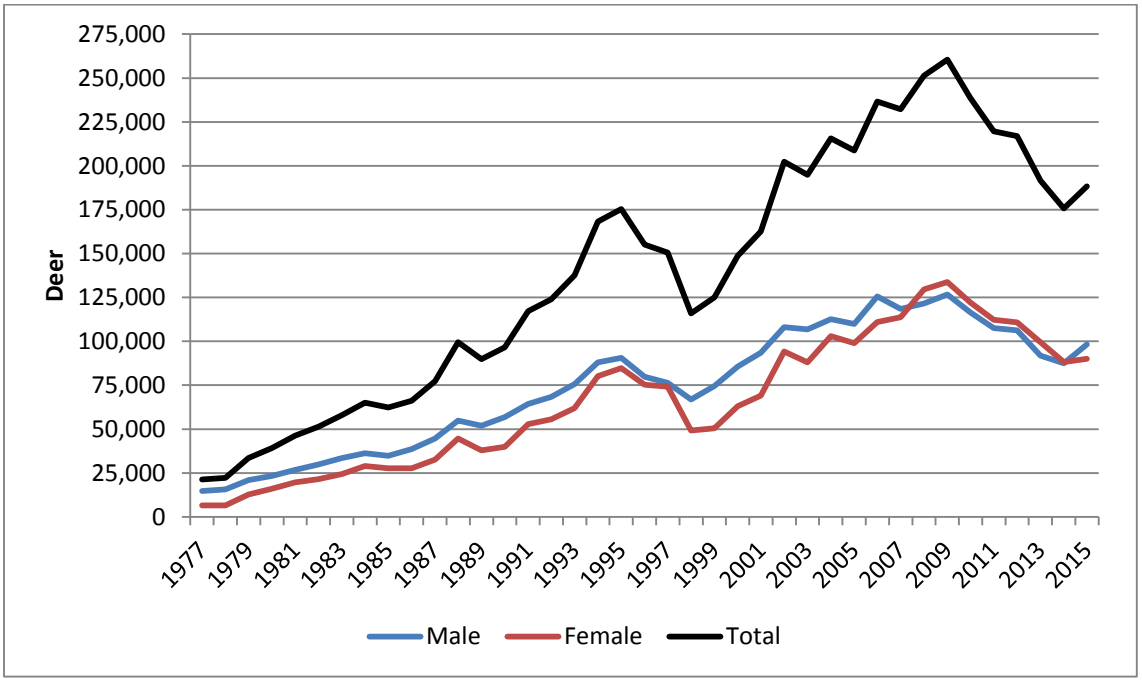


Approximate Number of Deer Hunters in 2015-16*

Type	Count
Adult Resident	225,000
Adult Nonresident	38,000
Youth Resident	44,000
Youth Nonresident	3,000
Reduced Cost Senior	18,000
Free Senior or Disabled Veteran	8,000
Total	336,000

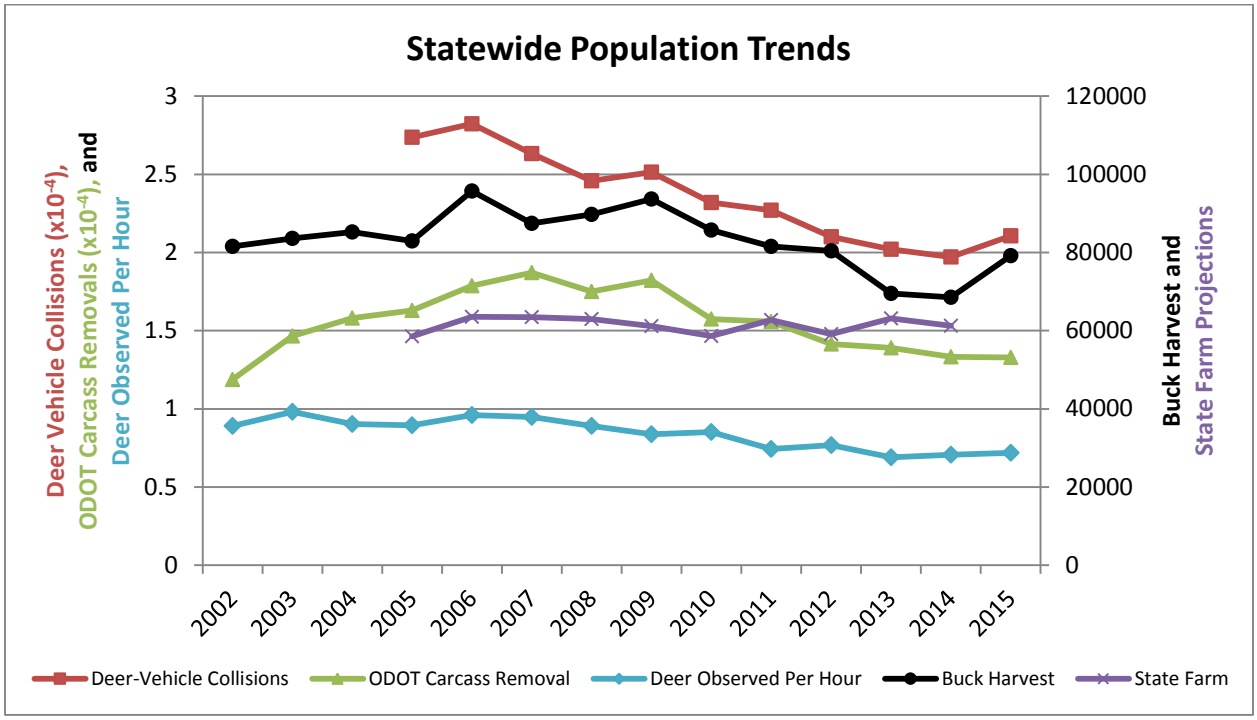
*Based on number of unique permit buyers. Does not include unknown number of landowners.

III. Historical Harvest

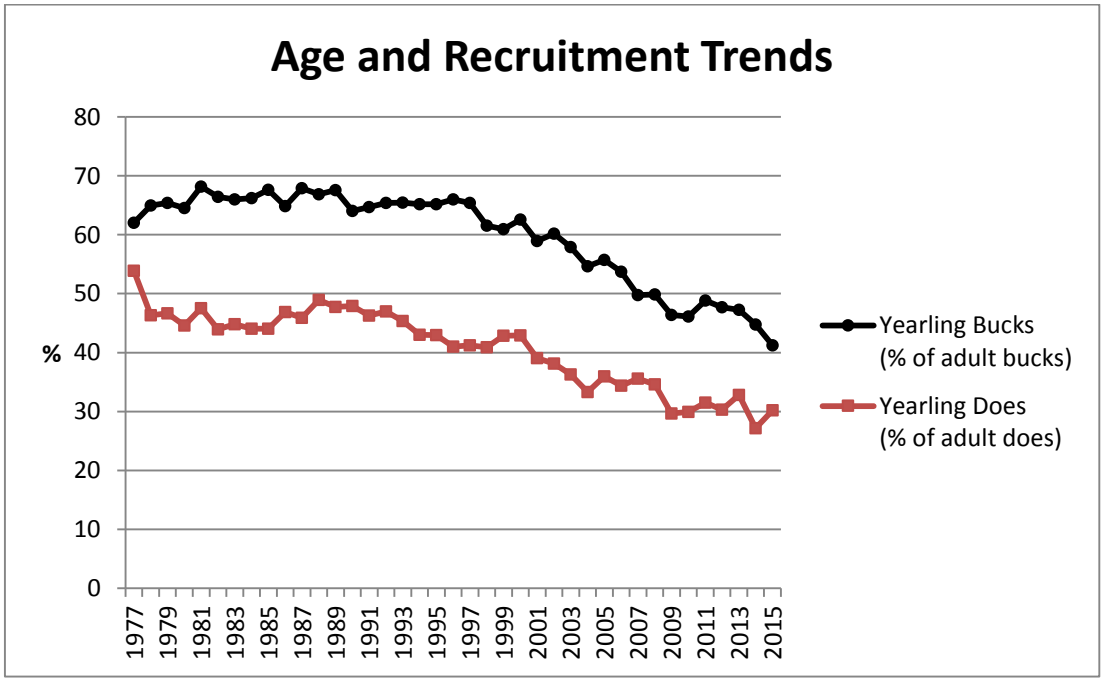


IV. Population Estimate/Trends

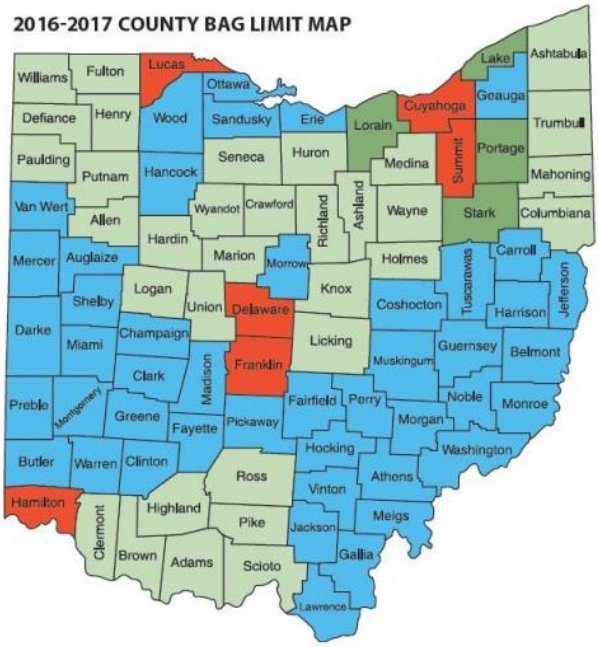
Population – Trend data suggest that our statewide population peaked in the mid- to late 2000s. With the introduction of the reduced-cost $15 antlerless permit in 2007, significant progress was made in reducing deer populations to goal across much of the state. Outside of our urban areas, focus has shifted to limited growth, a response to new population goals established in 2015.



Demographics – The average age of antlered bucks in the harvest has increased steadily since the late '90s as evidenced by the sharp decrease in percent yearling bucks in the aged harvest sample. The percent yearlings among adult does has declined steadily since the late '80s, corroborating data from reproductive studies that show a decline in herd productivity.



V. Deer Management Zones: Each of Ohio's 88 counties serves as a separate deer management unit.



VI. Regulation/legislation

2014-2015 Season

1. A limited selection of straight-walled cartridge rifles was legal for use during the 2-day youth and 7-day firearm seasons. Because of the difficulty in plugging some of these rifles, Ohio's "3-shot plug rule" has been eliminated. However, hunters are still restricted to loading no more than three rounds in any firearm.
2. Reductions in bag limits and antlerless harvest opportunities imposed to stabilize populations.
3. Non-resident license fee increase failed.

2015-2016 Season

1. The mid-October 2-day antlerless-only muzzleloader season was suspended.
2. The 2-day either-sex gun season was reinstated between Christmas and New Year's.
3. Further reductions in bag limits and antlerless harvest opportunities to stabilize populations.
4. Non-resident license fee increase failed.

2016-2017 Season

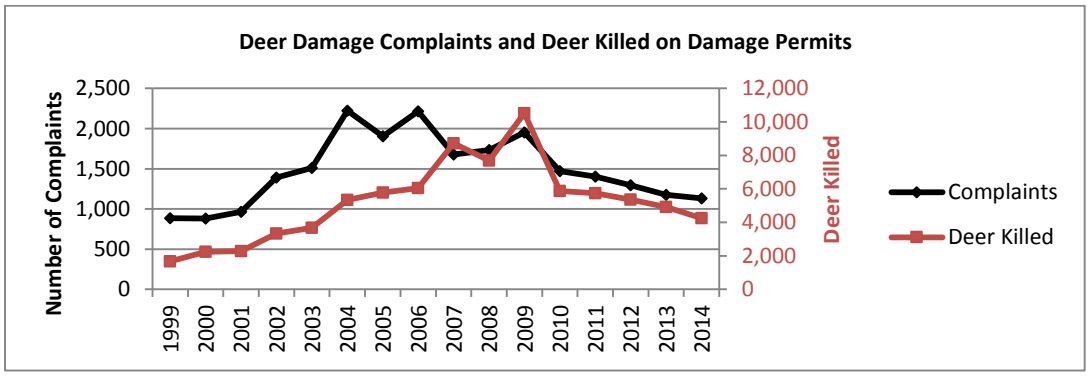
1. The 2-day either-sex gun season moved to mid-December (Dec. 17-18, 2016).
2. New directive concerning 'orphaned' or 'pet' deer originating from the wild. Effective June 1, 2016, those possessing deer taken from the wild will have a choice to keep it provided they: 1) apply for a free letter permit, 2) pay restitution value of the deer ($250 for a doe, $500 for a buck), 3) keep deer in an approved fenced enclosure (8-ft woven-wire).

VII. Urban/Special Hunts

Thanks to the success of their urban deer management programs, specifically in their metro parks, Lucas County (Toledo) and Hamilton County (Cincinnati) ranked 5th and 8th (out of 88), respectively, in public land deer harvest as a percentage of the county's total. In March of 2016, citizens voted in favor of using bowhunters to help control deer populations in six Cleveland suburbs: North Royalton, Broadview Heights, Parma, Parma Heights, Seven Hills and Strongsville. Several additional cities in NE Ohio began culling operations last year (Lyndhurst, Bedford, and North Olmsted) with others planning activities this year (Shaker Heights and Westlake). The only national park in Ohio, Cuyahoga Valley National Park, also began deer control efforts this year. White Buffalo Inc. is conducting a 2-year white-tailed deer sterilization project in conjunction with Cincinnati Parks in southwest Ohio. The project began this past winter, and 44 deer were captured (41 females, 3 male fawns). All captured females were sterilized via ovariectomy. Post-capture camera surveys estimated that 86% of the adult females in the study area were sterilized. The stated goal of the study is to document the lowest achievable deer density using only nonlethal control methods.

VIII. Deer Management Assistance/Crop Damage

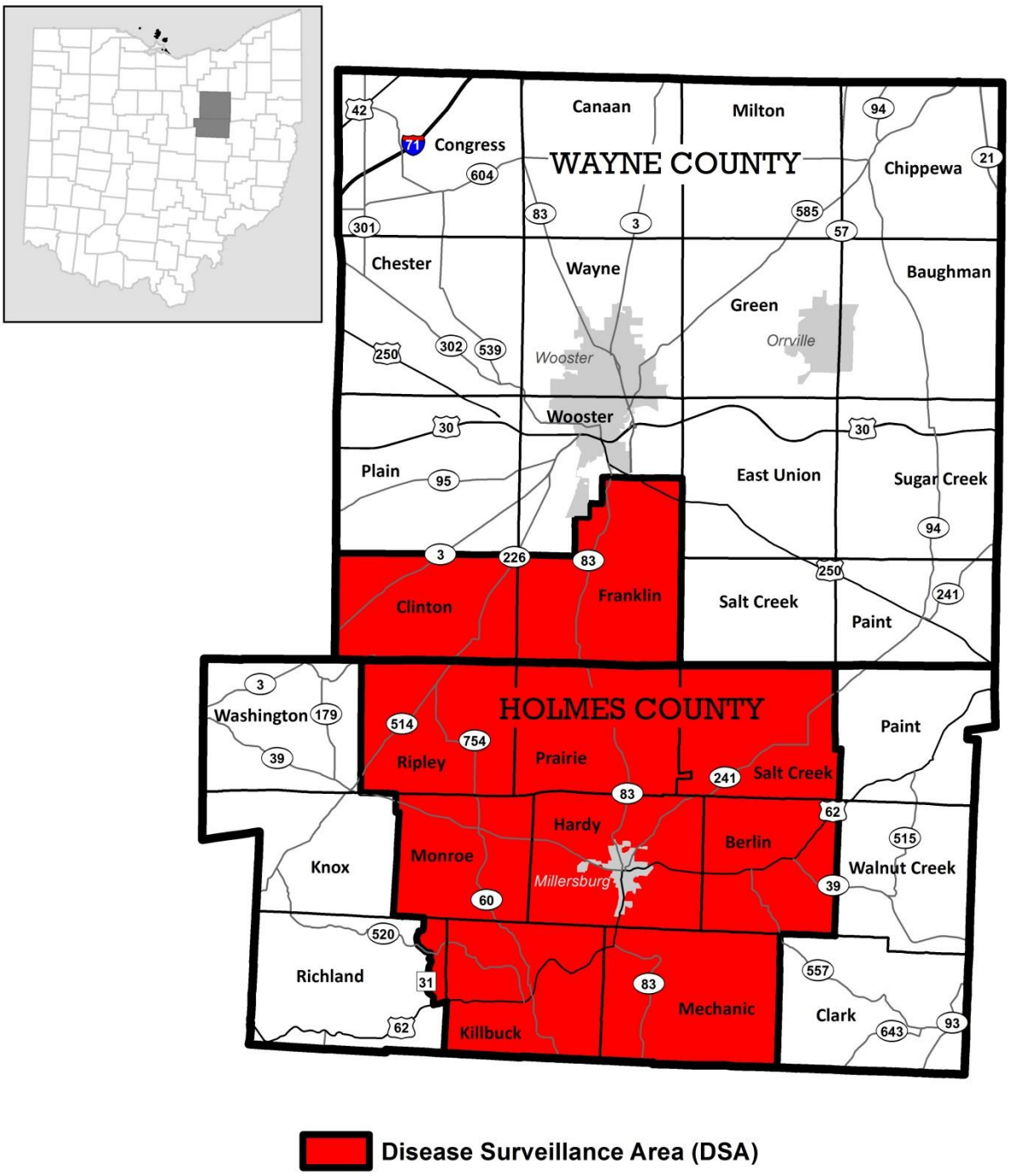
Landowners may be issued Deer Damage Control Permits (DDCP) at the time damage is occurring to kill deer during the dates and under the conditions specified on the permit. For most agricultural problems, these permits will be valid from January 1 until the start of the archery season. Under limited circumstances, permits may be extended until the start of the youth gun season (mid-November). Permits may be valid year-round to control damage at orchards, nurseries, inside municipalities, and airports. Except in the case of rub damage, permit holders are strongly encouraged to kill antlerless deer. The entire damage permitting procedure (aside from the initial field investigation) was moved to an online system in 2015 to improve efficiency. Unfortunately, because the move was made during the permitting year, 2015 deer damage permit data was unavailable. We present 2014 data here. In 2014, a total of 1,130 crop damage complaints was received by the Division of Wildlife, 4% fewer than the previous year. This was the fifth year in a row that both the number of complaints received and the number of deer killed on damage permits have declined. In 2014, damage permits resulted in 4,244 deer killed, 14% fewer than the 4,923 killed in 2013.



IX. Diseases - CWD

The Ohio Department of Agriculture (ODA) and the U.S. Department of Agriculture (USDA) are integral partners in all disease surveillance plans, and ODNR has worked with these partners to test more than 14,500 free-ranging deer since 2002. To date, there has yet to be a wild, free-ranging deer test positive for the disease in Ohio. In 2014, Division of Wildlife personnel collected 837 road-killed deer from 57 counties. As in previous years, CWD was not detected in any of the road-killed deer samples. In 2015, Division of Wildlife staff collected 824 road-killed deer from 57 counties. An additional 1,000 deer harvested by hunters during the 2015-16 season (752 submitted by hunters and 248 collected from taxidermists) and 51 suspect deer were tested for the disease. As in previous years, CWD was not detected in any of the wild deer tested. However, in October of 2014, a mature buck from a shooting preserve in Holmes County tested positive for CWD, becoming the first-ever CWD-positive deer in Ohio. The shooting preserve was depopulated in April of 2015, and testing revealed no additional CWD-positive animals. Subsequent testing of nearly 300 free-ranging deer in an 8-township area around the shooting preserve failed to detect any CWD-positive deer as well. However, in spring of 2015, two more positives were reported from a captive breeding pen in Holmes County. This herd was depopulated in June 2015, and 16 additional deer tested positive, bringing the grand total of positives in Ohio to 19 (all in captive herds). In response to these findings, the Division of Wildlife conducted targeted surveillance in the immediate vicinity of the infected facility during the summer of 2015. Staff collected 18 deer, including two that had escaped from captive facilities, with none testing positive for CWD.

Additionally, the focus area in 2015 was expanded to include two townships in southern Wayne County, and the 10-township focus area was declared a Disease Surveillance Area. This DSA designation will remain in effect for a minimum of three years and the following regulations apply: 1) required submission of deer harvested within the DSA to Division of Wildlife inspection stations for sampling during the gun and muzzleloader seasons, 2) prohibit the placement of or use of salt, mineral supplement, grain, fruit, vegetables or other feed to attract or feed deer within the DSA boundaries, 3) prohibit the hunting of deer by the aid of salt, mineral supplement, grain, fruit, vegetables or other feed within the DSA boundaries, and 4) prohibit the removal of a deer carcass killed by motor vehicle within the DSA boundaries unless the carcass complies with the cervidae carcass regulations (see wildohio.gov for additional information on carcass regulations). Under the new rule requiring mandatory submission of deer harvested in the DSA, hunters presented nearly 550 deer for testing at inspection stations during the gun, bonus gun, and muzzleloader seasons this past year. Combining all methods of sample collection (roadkill, mandatory submission of hunter harvests during the gun seasons, voluntary submission of hunter harvests during the archery season, and targeted surveillance), 752 deer were tested from the DSA.


WAYNE COUNTY
HOLMES COUNTY
Canaan
Milton
Congress
Chippewa
Chester
Wayne
Baughman
Green
Orrville
Wooster
Plain
East Union
Sugar Creek
Clinton
Franklin
Salt Creek
Paint
Washington
Ripley
Prairie
Hardy
Berlin
Knox
Monroe
Millersburg
Walnut Creek
Richland
Killbuck
Mechanic
Clark
Disease Surveillance Area (DSA)

X. Research

New Deer Management Units (DMUs)

A post-doc from The Ohio State University, Gabe Karns, has completed a project that divided Ohio into Deer Management Units. The intent of the project was to use empirical data to maximize the homogeneity of sociological, ecological, and biological factors affecting antlerless harvest. The project was designed so that deer populations within each DMU would respond similarly to harvest regulations. Additionally, reducing the number of management units would allow for more efficient collection of age, condition, and survey data while increasing precision of estimated parameters. Implementation of the proposed DMUs (n = 26) was originally scheduled for the 2017-18 season, but this will be delayed at least until a 10-year Deer Management Plan is completed with substantial constituent input (see 'Hot Topics').

Deer Hunter Surveys

We have conducted deer hunter surveys annually since 2011 to quantify hunter effort, participation and success rates, and to survey hunter opinions on various hot-button topics such as baiting, leasing, and restrictions on public land access. Further details and results can be found in the 2014-15 and 2015-16 Deer Season Summaries in the 'Relevant Links' section.

XI. Hot Topics

Quality vs. Quantity

We published *Quality vs. Quantity: A closer look at deer herd condition trends in Ohio*, a document that summarized trends in herd productivity, condition, and trophy buck entries for the past three decades. All three metrics – productivity, yearling beam diameter, and trophy buck entries – exhibited declines coincident with increases in the size of Ohio's deer herd and simultaneous loss of high quality, early successional habitats. A summary of our results was presented and a copy of the publication was distributed to participants at each of five "Deer Summits" held around the state in early February 2015. See 'Relevant Links' section for the complete publication.

Goal Setting

Population reduction measures have been largely successful, but have caused concern among some of the hunting public. Many opposed to these reductions point to the dated population goals, which are based on farmer attitude surveys, the last one being in 2000. Thus, we contracted with the National Agricultural Statistics Service (NASS) to conduct two separate surveys in the fall of 2015 – one for production landowners and one for deer hunters. We asked each group if there were too many, too few, or just about the right number of deer in the area they farm or hunt. With 50% of hunters responding "too few" and 29% of farmers reporting "too many" deer, survey results indicate a desire for slight population growth in most areas of the state.

XI. Hot Topics (cont'd)

10-year Deer Management Plan

A planning team has been developed to begin writing a 10-year Deer Management Plan. A draft plan is expected to be completed by March 2017, at which time a group of external stakeholders will hold 5 quarterly meetings to become familiar with deer management in Ohio, review the plan, and provide feedback. A revised plan will be completed by summer 2018 and posted online for public comment. A final revision is planned for approval by November 2018. We are seeking several improvements to our deer management program via this planning process including a move from 88 counties to 26 DMUs, the use of antlerless allocations to control harvest rather than bag limits, a Deer Management Assistance Program, and a requirement for landowners to acquire a deer permit prior to hunting.

XII. Relevant Links

Ohio Deer Hunting Regulations
http://wildlife.ohiodnr.gov/hunting-trapping-and-shooting-sports/hunting-trapping-regulations/deer-hunting-regulations

Deer Season Summaries
2014-15
http://wildlife.ohiodnr.gov/Portals/wildlife/pdfs/publications/hunting/Pub%205304_DeerSummary_FINAL.pdf

2015-16 UPDATE LINK WHEN AVAILABLE

Quality vs Quantity: A Closer Look at Deer Herd Condition Trends in Ohio
http://wildlife.ohiodnr.gov/Portals/wildlife/pdfs/hunting/OhioDeerHerdUpdate_Web.pdf

South Dakota Deer Program Report 2016
By: Andy Lindbloom

I. Current Harvest

There were 49,881 resident deer licenses (plus unlimited licenses) available in 2015 and 91,896 were issued. Nonresidents had 2,267 licenses (plus unlimited licenses) available and 7,440 were issued. Statewide, there were a total of 99,336 licenses sold that represented a total of 111,050 tags, an increase in 5,062 licenses and 6,586 tags from 2014. No triple-tag licenses were offered for either East or West River seasons in 2015. A total of 61,108 individual hunters were issued deer licenses in 2015, up from 58,383 in 2014.

Random samplings were taken for each unit within each season unless the numbers of hunters were low enough that all were sampled to satisfy the statistical analyses. Response rates ranged from 71% for Landowner West River to 92% for Custer State Park (online only).

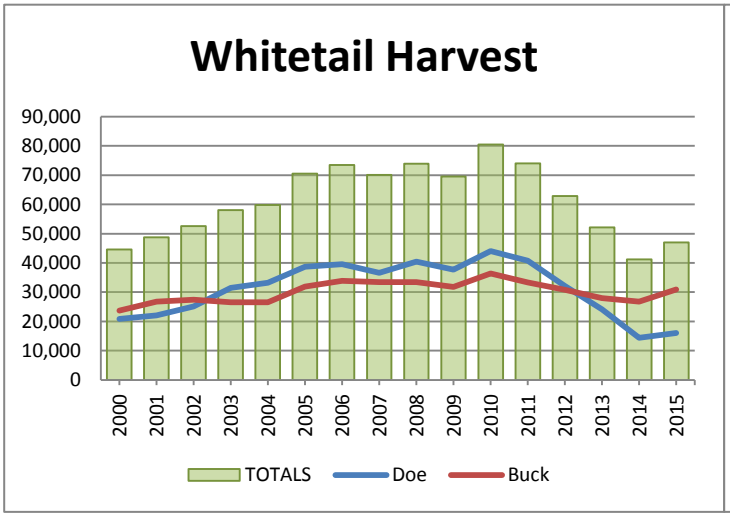
The projected statewide deer harvest was 52,589, a 13% increase from 2014. This estimate included 30,687 whitetail bucks, 15,997 whitetail does, 4,888 mule bucks and 1,017 mule does. An increase in overall harvest of over 6,000 deer with a moderate increase in the number of tags issued resulted in a 2% increase in harvest success from 2014.

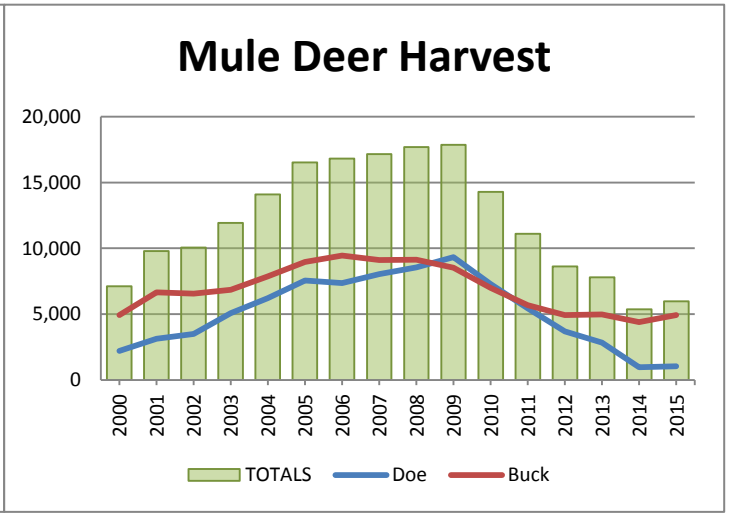
Increases in buck harvest accounted for most of the increase from 2014, however, doe harvest also increased. Both whitetail and mule doe harvest estimates increased from 2014 by 1,544 and 44 respectively. Whitetail and mule buck harvest increased from 2014 by 3,983 and 492 respectively. Mule deer made up approximately 11% of the total harvest.

The 2015 overall statewide harvest success increased slightly to 47% from 45% in 2014. Harvest success ranged from 24% for Waubay Refuge to 79% for West River Special Buck and Custer State Park.

Respondents reported hunting an average of 5.30 days per hunter, which projects to a statewide total of 526,636 recreation days in 2015. The average number of days hunted increased from 2014. That combined with an increase in license sales resulted in an increase of approximately 38,000 total days of recreation from 2014.

Average hunter satisfaction values (1=very dissatisfied to 7=very satisfied) varied between seasons and ranged from 4.06 at Waubay Refuge to 6.33 for Custer State Park.





South Dakota Deer Program Report 2016
By: Andy Lindbloom

2015 Statewide Deer Harvest Projection Summary

last revised: 27 April 2016

SOUTH DAKOTA Harvest Statistic	Season Archery	Youth Antlerless	Mentored Youth	Muzzleloader	Landowner Own Land Antlerless	West River	West River Landowner Own Land	West River Special Buck Unit	East River	East River Landowner Own Land	East River Special Buck Unit	Refuges: Sand Lake NWR	Refuges: Lacreek NWR	Refuges: Waubay NWR	Black Hills	Custer State Park	Grand Totals
Licenses/Tags																	
Resident Licenses																	
Available	Unlimited	Unlimited	Unlimited	Unlimited	0	18,060	Unlimited	500	26,825	Unlimited	556	150	30	30	3,700	30	49,881
Sold	23,507	4,754	3,646	3,303	0	17,671	2,248	498	25,916	5,816	555	152	30	30	3,741	29	91,896
Resident Tags																	
Available	Unlimited	Unlimited	Unlimited	Unlimited	0	19,680	Unlimited	500	31,925	Unlimited	556	150	30	30	3,700	30	56,601
Sold	23,507	4,754	3,646	3,303	0	19,267	3,640	498	30,485	9,380	555	152	30	30	3,741	29	103,017
Nonresident Licenses																	
Available	Unlimited	Unlimited	N/A	Unlimited	N/A	1,449	N/A	500	Leftovers	N/A	N/A	15	4	3	296	N/A	2,267
Sold	3,180	577	N/A	143	N/A	1,894	N/A	500	836	N/A	N/A	13	0	3	294	N/A	7,440
Nonresident Tags																	
Available	Unlimited	Unlimited	N/A	Unlimited	N/A	1,579	N/A	500	Leftovers	N/A	N/A	15	4	3	296	N/A	2,397
Sold	3,180	577	N/A	143	N/A	2,047	N/A	500	1,276	N/A	N/A	13	0	3	294	N/A	8,033
Total Licenses																	
Available	Unlimited	Unlimited	Unlimited	Unlimited	0	19,509	Unlimited	1,000	26,825	Unlimited	556	165	34	33	3,996	30	52,148
Sold	26,687	5,331	3,646	3,446	0	19,565	2,248	998	26,752	5,816	555	165	30	33	4,035	29	99,336
Total Tags																	
Available	Unlimited	Unlimited	Unlimited	Unlimited	0	21,259	Unlimited	1,000	31,925	Unlimited	556	165	34	33	3,996	30	58,998
Sold	26,687	5,331	3,646	3,446	0	21,314	3,640	998	31,761	9,380	555	165	30	33	4,035	29	111,050
Hunters	21,803	5,331	3,646	3,389	0	18,515	2,248	998	25,975	5,816	555	165	30	33	4,035	29	61,108
Recreation																	
Average Days Hunted	11.24	4.54	3.96	4.03		3.12	3.76	3.38	4.15	4.55	4.95	2.89	2.71	2.10	4.61	2.88	5.30
Total Days Hunted	245,077	24,201	14,449	13,661	0	57,754	8,457	3,374	111,125	26,490	2,748	477	81	69	18,589	83	526,636
Mean Satisfaction Score	5.14	5.59	5.89	4.76		5.27	5.26	5.72	4.97	5.02	5.32	4.75	4.33	4.06	5.75	6.33	
Harvest																	
White-tailed Deer																	
Bucks	5,043	329	261	313		7,739	958	394	10,041	2,687	332	30	12	7	2,533	8	30,687
Does	1,593	2,137	1,557	529		2,367	135	20	6,413	908	8	9	0	1	307	15	15,997
Total	6,635	2,466	1,818	842	0	10,106	1,092	414	16,454	3,595	340	39	12	8	2,840	23	46,684
Mule Deer																	
Bucks	632	33	25	77		2,804	504	365	245	103	21	5	0	0	74	0	4,888
Does	73	333	243	16		181	58	5	59	43	2	1	0	0	2	0	1,017
Total	704	365	268	93	0	2,985	562	370	305	146	24	6	0	0	76	0	5,905
Total Deer Harvest																	
Bucks	5,674	362	287	390	0	10,543	1,462	759	10,287	2,790	353	35	12	7	2,607	8	35,575
Does	1,665	2,469	1,799	545	0	2,548	193	24	6,472	951	11	10	0	1	309	15	17,014
Total	7,340	2,831	2,086	935	0	13,091	1,654	783	16,759	3,741	364	45	12	8	2,917	23	52,589
Success	28%	53%	57%	27%		61%	45%	79%	53%	40%	66%	27%	40%	24%	72%	79%	47%

South Dakota Deer Program Report 2016
By: Andy Lindbloom

II. License and Season Information

Season Information	Season Dates	Lic Type/Resident Fee	Lic Type/Non-Resident Fee
Archery Deer	Sept. 24 - Dec. 31, 2016; Antlerless Tags Jan. 1 - Jan. 15, 2017	1 Any Deer / $40.00 1 Doe Tag / $20.00	1 Any Deer / $286.00 1 Doe Tag / $80.00
Black Hills Deer	Nov. 1-30, 2016	1 Any Deer / $40.00	1 Any Deer / $286.00
		1 Any Whitetail / $40.00	1 Any Whitetail / $286.00
Custer State Park Deer	Nov. 5-18, 2016	Any Deer / $156.00 Antlerless Whitetail / $31.00	N/A N/A
East River Deer	Nov. 19 - Dec. 4, 2016; Antlerless Only tags are valid Dec. 31, 2016 - Jan. 8, 2017	1 Any Deer / $40.00	1 Any Deer / $286.00
		1 Any Deer + 1 Doe Tag / $50.00	1 Any Deer + 1 Doe Tag / $336.00
		1 Doe Tag / $20.00	1 Doe Tag / $80.00
		2 Doe Tags / $30.00	2 Doe Tags / $120.00
West River Deer	Nov. 12-27, 2016	1 Any Deer / $40.00 1 Any Deer + 1 Doe Tag / $50.00 1 Doe Tag / $20.00 2 Doe Tags / $30.00	1 Any Deer / $286.00 1 Any Deer + 1 Doe Tag / $336.00 1 Doe Tag / $80.00 2 Doe Tags / $120.00
Mentored Deer	Sept. 10, 2016 - Jan. 15, 2017	Antelope, Turkey or Deer / $5.00	N/A
Muzzleloader Deer	Dec. 1-31 any deer; Jan. 1 - Jan. 15 antlerless whitetail	1 Any Deer / $40.00 1 Doe Tag / $20.00 2 Doe Tags / $30.00	N/A 1 Doe Tag / $80.00 2 Doe Tags / $120.00
National Wildlife Refuge Deer	Varies by refuge	1 Any Deer / $40.00	1 Any Deer / $286.00
		1 Any Deer + 1 Doe Tag / $50.00	1 Any Deer + 1 Doe Tag / $336.00
		1 Doe Tag / $20.00	1 Doe Tag / $80.00
		2 Doe Tags / $30.00	2 Doe Tags / $120.00
Special Buck (East River)	Nov. 19 - Dec. 4, 2016	1 Any Deer / $175.00	N/A
Special Buck (West River)	Nov. 12-27, 2016	1 Any Deer / $175.00	1 Any Deer / $560.00
Youth Deer	Sept. 10, 2016 - Jan. 15, 2017	1 Doe Tag / $5.00	1 Doe Tag / $10.00

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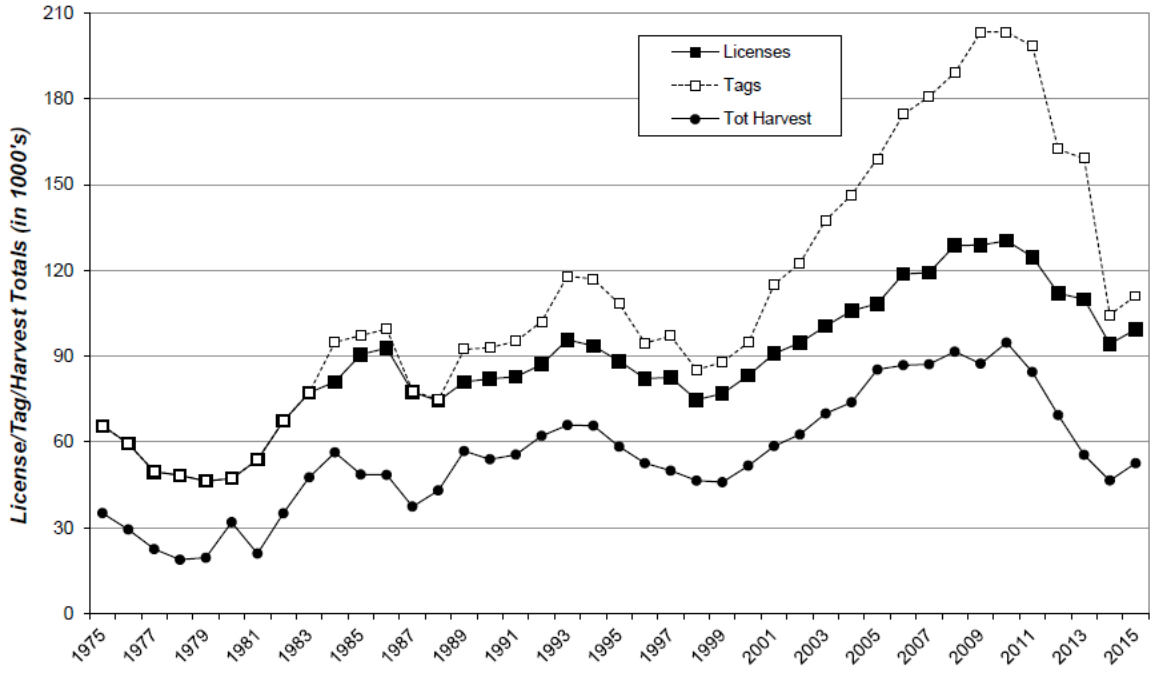
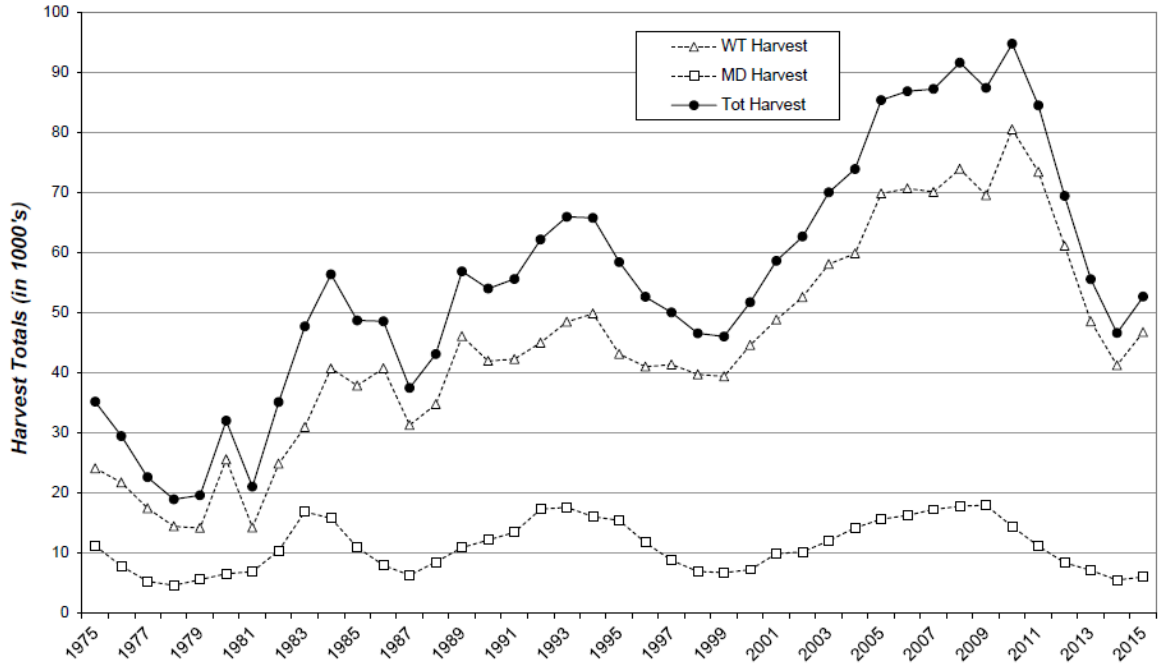
South Dakota Combined Deer Licensing 1975-2015



III. Historical Harvest

South Dakota's Combined Deer Harvest 1975-2015



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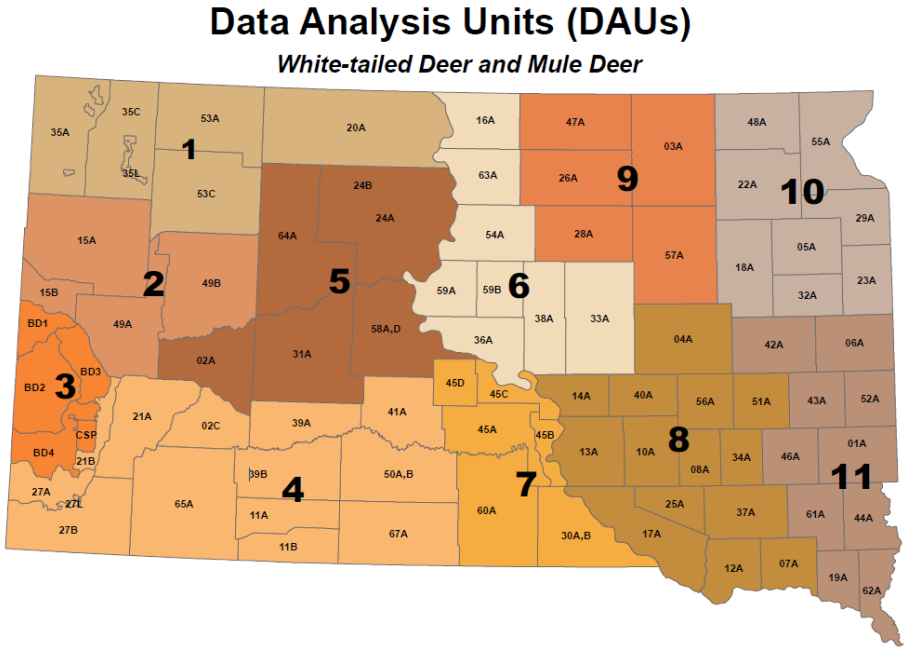
IV. Population Trends

Mule deer and white-tailed deer herds are monitored frequently across their range in South Dakota. Survey efforts are completed to assess herd status and predict population trends in 8 DAUs for mule deer and 11 DAUs for white-tailed deer. Current surveys conducted to evaluate deer populations include harvest surveys, aerial surveys, spotlight abundance surveys, herd composition surveys, reproduction surveys, survival monitoring, and population modeling. Current data analyses indicate that white-tailed deer populations are increasing in all DAUs, with growth rates ranging from 1.14 to 1.33. Mule deer populations are also increasing in every DAU, with growth rates ranging from 1.10 to 1.34.

Data Analysis Units

Recently SDGFP completed a cooperative project with the University of Montana with one of the objectives to develop Data Analysis Units (DAUs) for deer management in South Dakota. A DAU can be defined as an aggregate of management units that is large enough to account for auto-correlated biotic and abiotic factors and processes that uniformly influence vital rates. We implemented a hierarchical cluster analysis technique to find similarity among units. We developed four main working hypotheses and choose multiple covariates to include into each analysis based on abiotic and biotic factors potentially impacting deer ecology across South Dakota. The hypothesis chosen included factors aimed at describing the general biological potential of an area. The covariates used included Vegetative layer, Agricultural layer, net primary productivity, canopy cover, fall and spring snowfall, temperature and precipitation.



Herd Composition Surveys

Pre-season herd composition ground surveys are completed by driving roads or hiking in areas of known deer concentrations in September and October. Surveys are conducted opportunistically and haphazardly distributed according to where deer observations can be completed, either in day time hours or at night with the use of spotlights. All deer herds that are observed in their entirety are classified to numbers of fawns, does, and bucks. Spatial data are also recorded for each observation in order to reduce double-counting occurrences.

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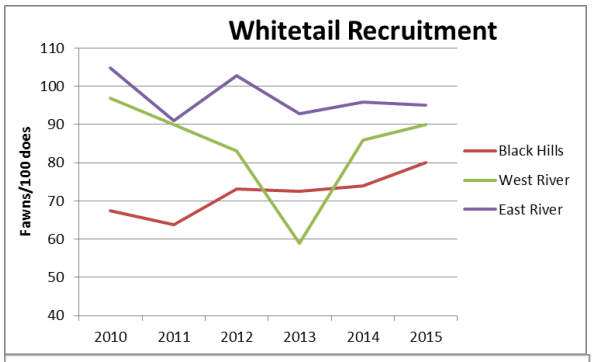
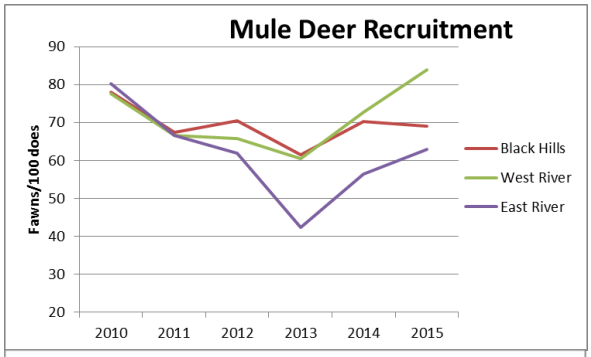
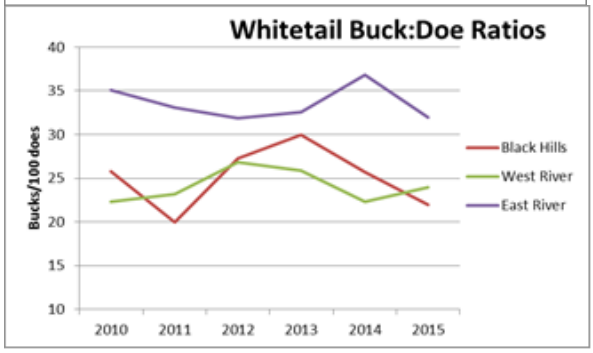
Herd composition survey data are analyzed to assess sex and age ratios at several geographic levels, with estimates and trends evaluated for statewide, west river, east river, and DAU areas. Sex ratios are calculated as bucks:100 does, however, sex ratios warrant cautious interpretation and the greatest utility for these data are in evaluations of trend over time and across areas. Age ratios are calculated as fawns:100 does and are used as an indicator of fall recruitment into the population. Survival rates of radio-collared fawns from 1 October thru 30 September are used in conjunction with fall recruitment ratios in order to estimate annual recruitment rates.

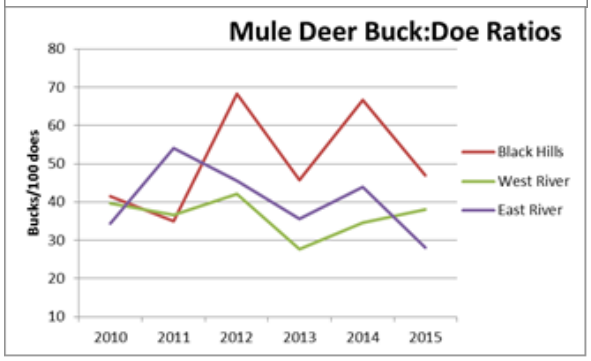
In 2015, 15,028 white-tailed deer and 5,047 mule deer were classified throughout the state during the fall herd composition survey. Age and sex ratios, along with binomial (95%) confidence intervals were calculated for each statistic. Herd composition counts resulted in a statewide white-tailed deer average ratios of 92 (95% CI: 89-96) fawns per 100 does and 29 (95% CI: 28-31) bucks per 100 does. Statewide herd composition for mule deer in 2015 averaged 81 (95% CI: 76-86) fawns per 100 does and 37 (95% CI: 34-40) bucks per 100 does. The 10-year average for statewide fawn to doe ratios for white-tailed deer and mule deer has been 33:100 and 44:100, respectively. Overall trends in statewide age ratios have been up in recent years. Overall, age ratios in DAU 3 (Black Hills) for white-tailed deer have traditionally been lower than west and east river prairie areas of the state. Sex ratio datasets tend to have more variability, but overall East River prairie areas have averaged slightly higher from 2010-2015 at 34 bucks:100 does than West River (24:100) and Black Hills (25:100) areas.

In the summer of 2012 SDGFP began a cooperative project with South Dakota State University to evaluate many of the survey methods used to collect deer herd composition data. Results from this research will be used to better define sample size requirements and methodology of deer herd composition surveys in the future.









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Aerial Surveys

Historically, numerous aerial surveys for white-tailed and mule deer have been conducted across South Dakota. However, non-systematic flights with no correction coefficient for missed individuals had limited use for management purposes and as a result, sightability model development became a priority for the department in the late 1990's and early 2000s. SDGFP currently has a developed a model useful to surveying white-tailed deer population in most management units in eastern South Dakota (Robling 2011). Future aerial surveys will be conducted at the DAU level on a scheduled rotation for the five DAU's east of the Missouri River when snow conditions exist

Spotlight Abundance Surveys

Spotlight road surveys are completed within the boundaries of the Black Hills DAU, where distance sampling models have recently been developed to estimate white-tailed deer abundance. Survey crews follow protocols established in Cudmore 2016. Sixty transect routes have been selected by General Randomized Tessellation Stratified sampling (Stevens and Olsen 2004), with transect lengths varying from 3.5 km to 16 km. Surveys are conducted during the last two weeks of August. Observation data are separated into two habitat categories (i.e., trees and meadows) and analyzed in Program Distance 6.0 (Thomas et al. 2010) using 95% confidence intervals. The most recently completed spotlight survey was in 2014 and resulted in an abundance estimate of 53,000 (95%CI:38,000-67,000) white-tailed deer in the Black Hills. Future estimates of abundance using distance sampling from spotlight surveys will be compared with population reconstruction estimates obtained from radio collared monitoring. Cost: benefit analyses will be completed to evaluate the best survey technique to estimate abundance of white-tailed deer in the Black Hills in the future.

Reproduction

Reproduction surveys are conducted to estimate the growth potential of mule deer and white-tailed deer populations within designated Data Analysis Units across South Dakota. Reproductive rates are estimated using pregnancy rates and fetal counts from adult and juvenile female deer collected during winter months. Samples are collected using 2 methods – 1) necropsy of road kill deer, and 2) ultrasonography of live-captured deer.

Road kill deer samples are collected by GFP personnel and/or contractors in South Dakota that pick up vehicle killed deer. The period of sample collection is February - mid-May. All female road killed deer that are salvageable are field-necropsied to determine the number of fetuses present. Future roadkill sampling efforts will be rotated among existing DAUs, such that each administrative region that is able to participate will have at least one sampling unit.

Deer live-captured during radio collaring efforts are also evaluated for reproduction. All heli-captured adult deer are long-lined back to a processing crew and evaluated for pregnancy status/fetal counts using transabdominal ultrasonography; animals are released at processing station. Deer captured via drop nets or cage traps are processed and released at capture site. Blood samples are also collected and analyzed for levels of pregnancy-specific protein B to confirm pregnancy status on adult deer determined to be non-pregnant during ultrasounds and juvenile deer. Fetal averages for pregnant juveniles are based on road kill data. Sample sizes collected vary by year and area, but in general 100 adult does and 15 juveniles will be assessed for reproduction in those DAUs where deer capture efforts are taking place.

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	WHITETAILS										
				Pregnancy Rate			Fetus average				
Years	Area	Sample	Method	Juveniles	Adults	Overall	Juveniles	Adults	Overall	Per preg animal	
1977-89	East river	977	roadkill	57%	93%	77%	0.77	1.76	1.32	1.72	*437 juv
1977-89	West river	143	roadkill	39%	91%	75%	0.45	1.69	1.31	1.75	*44 juv
1977-89	Black Hills	373	roadkill	0%	88%	78%	0.00	1.37	1.23	1.57	*40 juv
2012-13	Reg3 and 4	176	roadkill	33%	91%	75%	0.43	1.70	1.35	1.74	*49 juv
2015	DAU 3	52	roadkill	33%	80%	69%	0.33	1.18	0.98	1.42	*12 juv
2015	DAU 3	27	ultrasound	-	93%	93%	-	1.19	1.19	1.28	
2016	DAU 3	43	ultrasound	-	86%	86%	-	1.47	1.47	1.7	
2015	DAU 9	55	ultrasound	-	98%	98%	-	1.93	1.93	1.96	
2016	DAU 9	43	ultrasound	-	100%	100%	-	1.93	1.93	1.93	
2016	DAU 11	72	ultrasound	-	99%	99%	-	1.84	1.84	1.86	
	MULE DEER										
				Pregnancy Rate			Fetus average				
Years	Area	Sample	Method	Juveniles	Adults	Overall	Juveniles	Adults	Overall	Per preg animal	
1977-89	West River	125	roadkill	0%	94%	81%	0.00	1.63	1.39	1.72	*18 juv
2015	DAU 3	30	ultrasound	-	97%	97%	-	1.43	1.43	1.48	
2016	DAU 3	73	ultrasound	-	95%	95%	-	1.57	1.57	1.67	
2015	DAU 4	50	ultrasound	-	100%	100%	-	1.8	1.8	1.8	
2016	DAU 4	56	ultrasound	-	98%	98%	-	1.77	1.77	1.8	
2015	DAU 6	50	ultrasound	-	96%	96%	-	1.72	1.72	1.79	
2016	DAU 6	64	ultrasound	-	100%	100%	-	1.84	1.84	1.84	

Reproductive rates are currently used to update SDGFP deterministic population models, and are incorporated into a Bayesian Integrated Population Modeling program. Because current datasets are limited in quantity, comparisons between areas, years, and methods are limited. Data collected in the Black Hills region are currently the most plentiful, and a qualitative comparison between this region and east and west river regions suggests lower reproductive potential in the Black Hills.

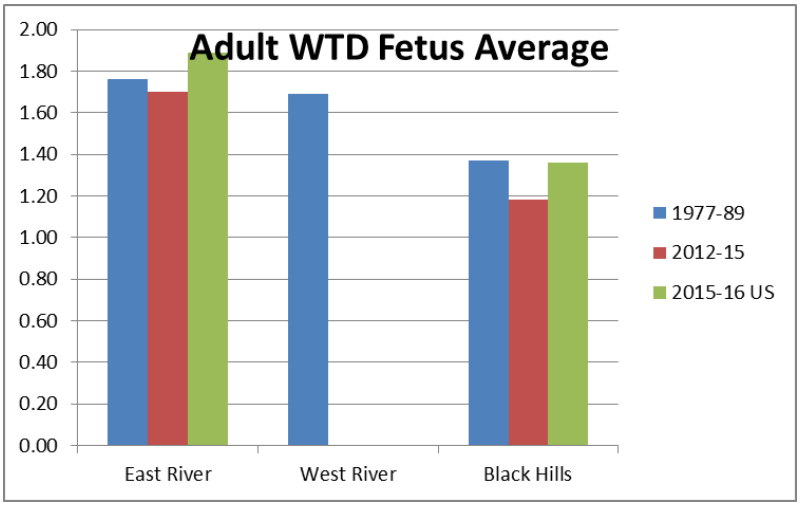

Figure. Average number of fetuses per adult white-tailed deer over time and across different geographic areas in South Dakota. Blue and red bars represent road-kill data collection, green represent ultrasonography.

Mule deer seldom breed their first year as a fawn, and the preponderance of literature on fawn pregnancy rates report zero to very low percentages. Historical road kill evaluations of mule deer fawns (n=18) in South Dakota in the 1970s and 80s detected no pregnant fawns, but recent blood tests results of winter captured fawns detected suggested 0% pregnant in the Badlands DAU (n=17), 23% pregnant in the Black Hills DAU (n=13), and 29% pregnant in the Upper Missouri DAU (n=17).

White-tailed deer fawns, on the other hand, more commonly breed as fawns and rates can be high. Historical reproductive data from road kill animals in South Dakota from 1977-89 detected fawn pregnancy rate averages from 0% to 57% depending on geographical area. Current data in South Dakota on whitetail fawn breeding via blood testing of winter capture fawns show pregnancy rates can vary from 0-43%. Future reproductive rates in South Dakota will be compared between years and between geographical areas to evaluate if temporal or spatial differences exist in mule deer and white-tailed deer herds across the state.

Survival Monitoring

Annual rates of change within a deer population are influenced primarily by adult survival and the number of fawns that reach one year of age. Mule deer and white-tailed deer survival monitoring has been occurring within South Dakota since the 1960's, however, increased efforts to obtain statistically valid survival estimates within a defined analysis unit have been occurring recently and thus sample sizes of radio-collared mule deer and white-tailed deer have increased significantly.

Currently, statistically valid sample sizes exist in 3 of the 9 defined mule deer DAUs and 3 of the 11 defined white-tailed deer DAUs. Within the active monitoring areas, adult males (18+ months; 2 DAUs), females (18+ months) and juveniles (5-18 months) are captured via helicopter net gun or netted cage traps, long-lined back to a processing crew, fitted with a VHF radio-collar, evaluated for pregnancy/fetal counts using ultrasonography, as well as blood sampled to evaluate body condition and to confirm pregnancy status during the winter months. Monitoring for a live/dead signal occurs within 16 days post capture and all mortalities (<16 days post capture) are labeled as capture-related mortalities, with the exception of vehicle mortalities. Monitoring then occurs one time each month between the 1st -15th for each collared individual (Table x.). All mortalities are investigated to verify death of the animal via physical evidence. In most cases, cause-specific mortality is not identifiable with the exception of vehicle collisions and hunter harvest.

Fawns (0-4 months) are captured opportunistically by observing post-partum behavior of does, grid searching and/or driving roads within the DAU. Once an individual is captured, an expandable breakaway VHF radio-collar is attached, the fawn is sexed, weighed, and the distance between the front hoof hair line to growth line is measured to estimate the age of the fawn in approximate days. Monitoring occurs within 2-3 days post capture and all intact carcasses found <3 days post capture are labeled as capture related mortalities. All other mortalities (non-intact carcasses) are labeled according to evidence at the mortality sight and likely recorded as probable predation/scavenged and used in the survival analysis. After 3 days post-capture, evidence at the mortality sight (e.g., carcass, bone fragments, blood, tooth marks on collar etc.) are used to verify death. If no evidence of death is present the animal is censored from the analysis.

All capture, monitoring and mortality data are collected using hand held electronic devices and data are stored in a sequel server database and transferred through an application program interface (API)

connection to a web interface (PopR) created by the University of Montana. Survival rates for each species, sex and age category are calculated within PopR using a staggered-entry known fate analysis. Annual survival and harvest rates are then used in the integrated population model, resulting in abundance estimates and annual rates of change.

Table. Recent statewide estimates of mule deer survival in South Dakota.

Age	Survival Estimate	95% CI	*n*
Fawns (June-Sept 30, 2015)	57%	(48-65)	*148*
Juveniles (Oct 1, 2014-Sept 30, 2015)	80%	(66-90)	*43*
Adult Females (Oct 1, 2014-Sept 30, 2015)	90%	(84-94)	*201*

Table. Recent statewide estimates of white-tailed deer survival in South Dakota.

Age	Survival Estimate	95% CI	*n*
Fawns (June-Sept 30, 2015)	70%	(64-76)	*241*
Juveniles (Oct 1,2014-Sept 30, 2015)	65%	(52-77)	*90*
Adult Females (Oct 1, 2014-Sept 30, 2015)	86%	(81-91)	*257*

Population Models

Through a collaborative effort with the University of Montana (UM), a deer modeling software package currently known as PopR was developed. This web-based application for analysis and management of population data includes Bayesian integrated population models combining multiple sources of data into a single population projection model simultaneously fit to all data across time. IPMs consider all sources of uncertainty and provide prediction intervals on future population size. In addition, IPMs allow information known about deer population dynamics to be incorporated into the analysis through the use of prior distributions on model parameters. PopR and the custom-developed IPM will be used for all future deer modeling in South Dakota.

The current IPM within PopR is divided into a process model and observation model. The process model describes the biological change within a deer population through time, and consists of a 3 age-class {fawns (0-4 months), juveniles (5-18 months) and adults (18+ months)} matrix model including both males and females. The parameterization of the matrix model is dependent upon the biological conditions and data support. The observation model describes the sampling process and has the flexibility to cope with missing data. To properly handle uncertainty, the process and observation models are separated.

During the IPM model run, estimates of survival, reproduction, and abundance simultaneously are formulated while accounting for uncertainty in the field data and noise in the biological process of

interest. To predict how different tag recommendations may impact λ, change in harvest is assumed to be additive, and the potential number of animals added or removed from the population is derived from the previous 3-5 year average success rates for that tag type. This function allows wildlife managers to manipulate future harvest strategies to assess potential population-level effects.

Current pre-season 2016 estimates of white-tailed deer are 51,000 (95% CI:36,000-65,000) in the Black Hills and 375,000 (286,000-464,000) in the remaining prairie and agriculture habitats of the state. Pre-season 2016 estimates of mule deer are 6,500 (4,500-8,500) in the Black Hills and 110,000 (77,000-143,000) in primarily the western half of the state.

Winter Severity

Winter severity is an important metric contributing to survival of free ranging mule deer and white-tailed deer. Relating how climatic conditions impact deer survival has potential predictive value and can assist managers in determining if significant winter loss has occurred, impacting population growth rates. Currently, SDGFP utilizes mean monthly temperature and total monthly snowfall data from November through April as covariates for a linear model that quantifies a winter severity index (Bacannte and Woods 2010).

- Monthly WSI = (Mean monthly temperature * (-0.1) +1) * (Total monthly snowfall)
- Annual WSI Value = Sum (mean monthly WSI values (Nov + Dec + Jan + Feb + Mar +Apr))

Weather data is obtained through an annual data request via the National Oceanic and Atmospheric Administration (NOAA). Monthly summaries are archived in the Global Historical Climatology Network (GHCN) for weather stations across South Dakota and surrounding states. Monthly summary data from approximately 2000 weather stations distributed across South Dakota and surrounding states are requested, received and downloaded. Program R is used to extrapolate weather data across all deer units using an inverse distance weighted interpolation (IDW) function. This method takes station values and fills in areas between stations using an inverse distance weighted average. The R package (Intamap) attempts to optimize the power value for the weights based on removing stations and cross validating. Program R scripts also allow winter severity indices to be quantified at different hierarchical levels (i.e., statewide, DAU and deer unit) dependent upon shapefile boundaries. To increase precision and accuracy, interpolation reps are currently set at ten. Once weather data has been summarized at the deer unit level, a script developed in Program R then calculates a monthly WSI value for each deer unit. Monthly WSI values are then summed together resulting in the annual WSI.

Data analysis efforts regarding how varying degrees of winter severity values impact deer population performance are on-going. The continued compilation of juvenile and adult survival data is necessary in order to make sound scientific relationships between WSI and how those values impact mule deer and white-tailed deer survival spatially and temporally. The occurrence of a severe winter while statistically valid sample sizes of radio-collared deer are available is vitally important in formulating robust regression equations that have the ability to predict survival during years with similar winter severity values.

Over the last 13 years, three consecutive winters (2008/09, 2009/10 and 2010/11) produced WSI values substantially greater than the 30-yr normal (132.4 Index) illustrated by the red line in the figure below. The winter of 2010/11 was the most severe with a statewide WSI value of 288 and winter mortality events within numerous DAU's across the state were reported.

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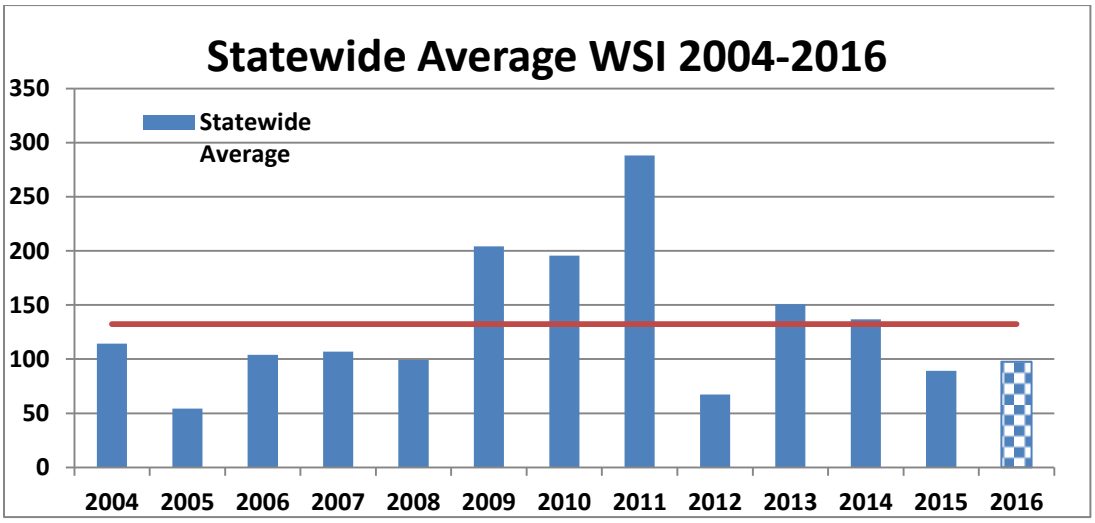

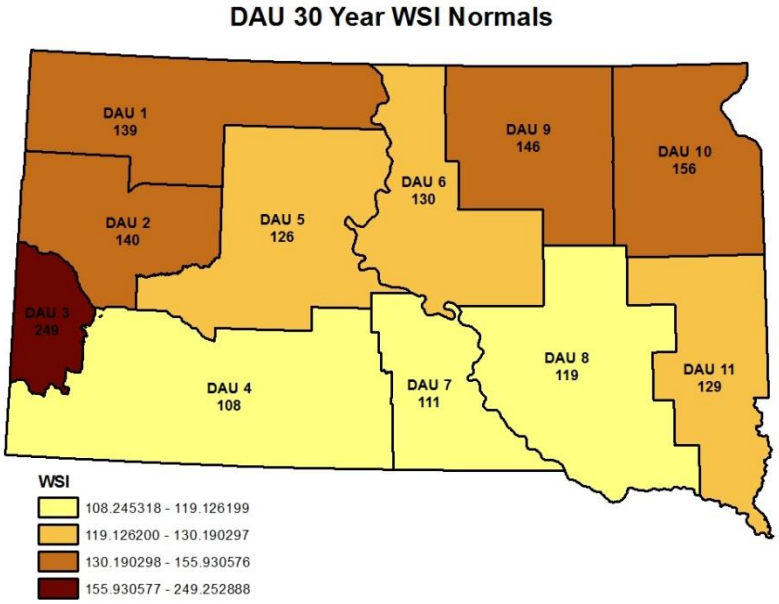

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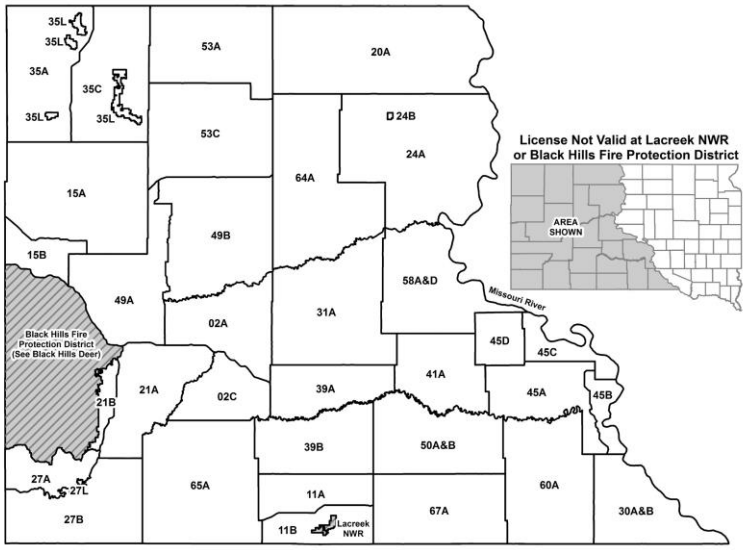
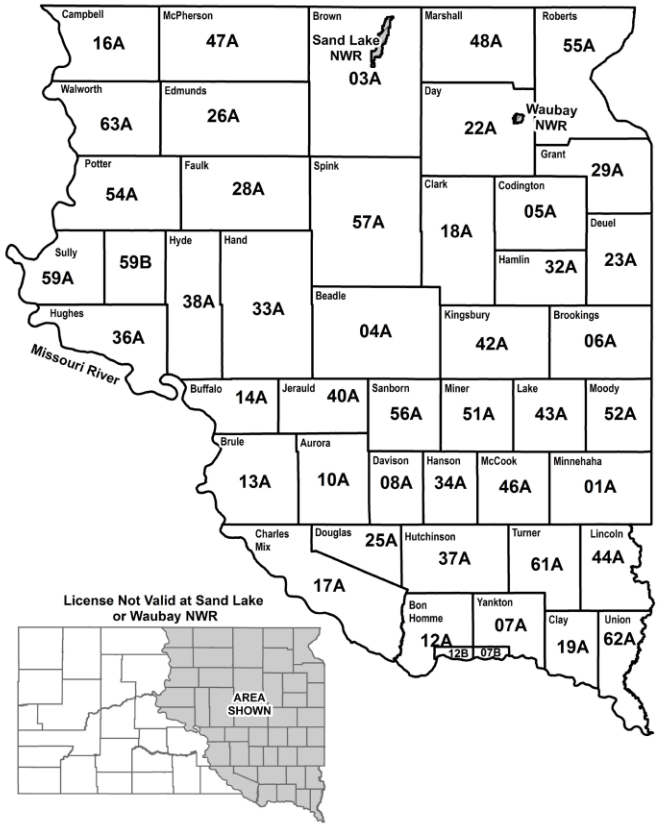
V. Management Units: Harvest units vary by season, below are the units for various deer seasons in 2016:

West River Deer Firearm Season:



East River Deer Firearm Season:



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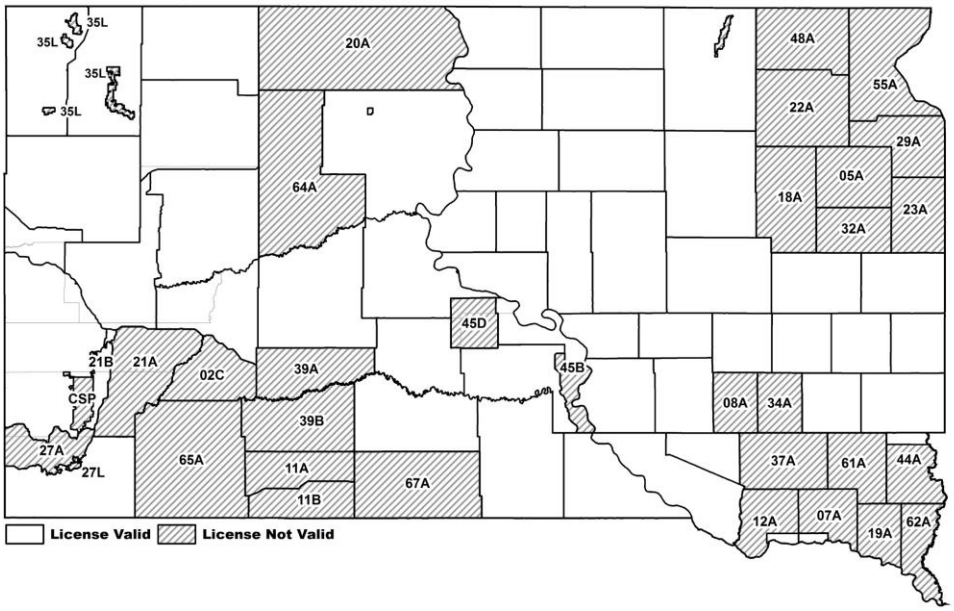
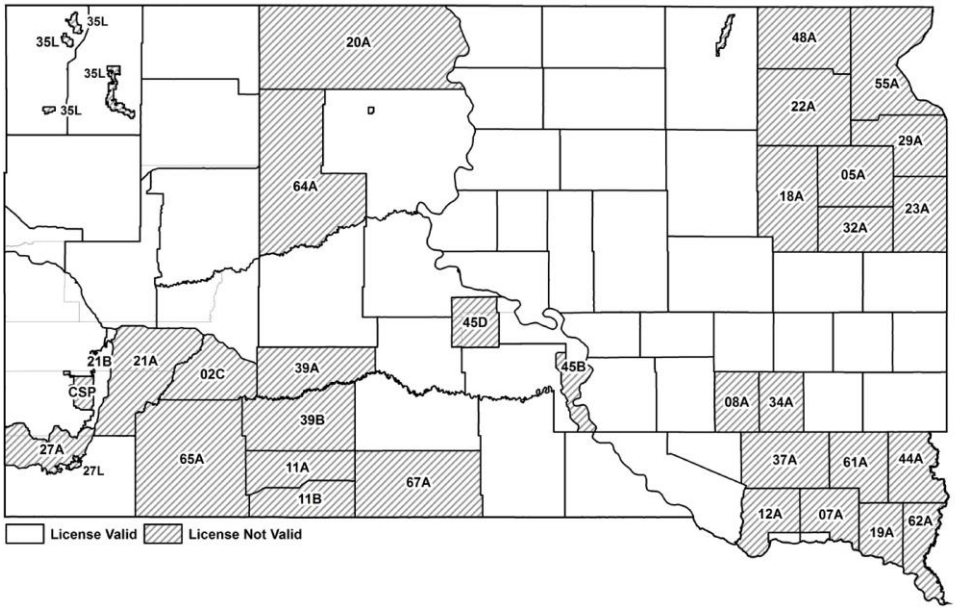
Archery Antlerless Deer Season:



Muzzleloader Antlerless Deer Season:



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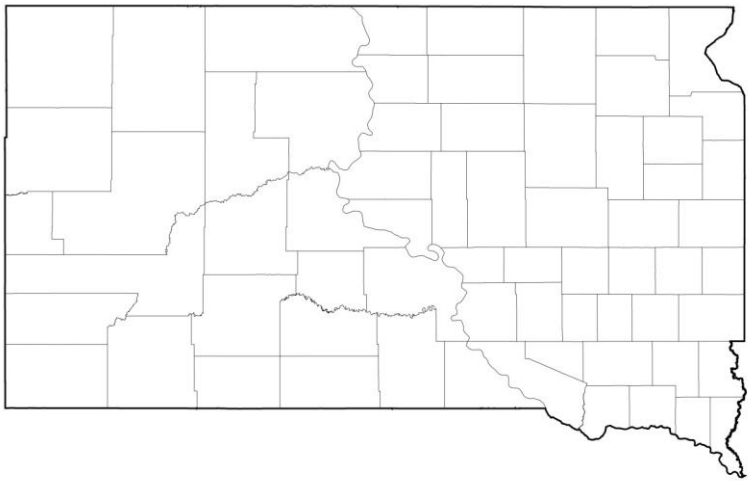
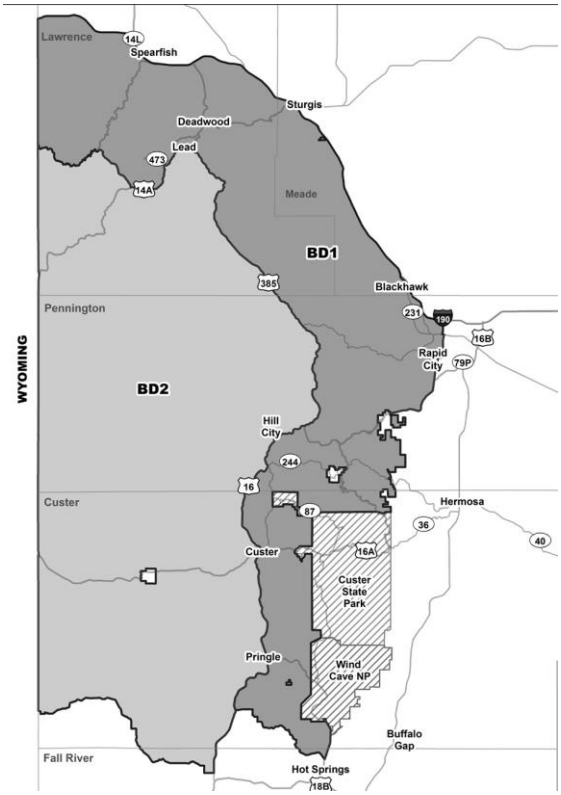
Youth Deer, Muzzleloader Buck, and Archery Buck seasons:

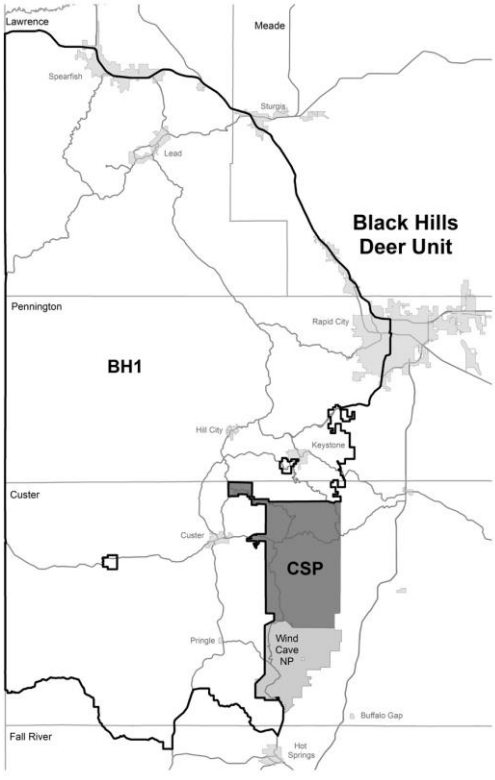


Black Hills Firearm Season:

Antlerless Whitetail



Buck Deer Unit



VI. Regulation/legislation Changes

No state legislation passed in 2016 that impacts deer management significantly.

VII. Urban/Special Hunts

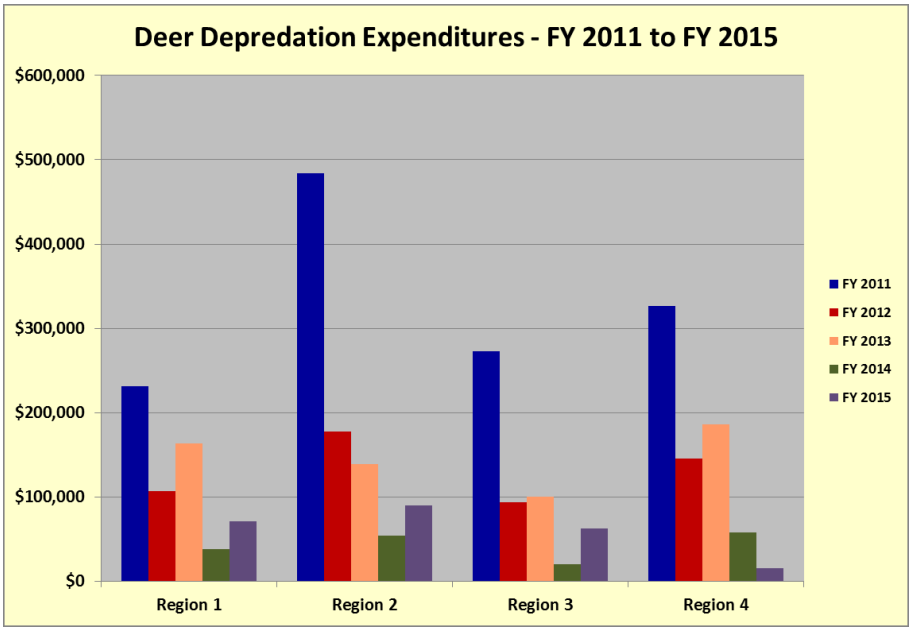
SDGFP in conjunction with the City of Sioux Falls administer a limited public archery hunt within the city limits of Sioux Falls. More information can be found at http://gfp.sd.gov/hunting/big-game/deer/AccessPermit-SFantlerless.pdf

VIII. Management Assistance/Crop Damage

SDGFP employs 27 full-time Wildlife Damage Specialists (WDS) within its Wildlife Damage Management Program. These staff works directly with landowners and producers to reduce or alleviate wildlife damage such as: livestock losses, damage to stored-feed supplies and hay, damage to growing crops, as well as damage to personal property.

Local deer populations and weather events greatly affects the demands for deer damage abatement services. The winter weather of 2015 was near normal, deep snow was never experienced in most areas of South Dakota and temperatures weren't extreme. Additionally, many areas of South Dakota were at or below the management objectives regarding the deer population. Low population levels coupled with minimal deep snow, and over $6.8 million expended in previous deer abatement efforts (the year 2000 through 2015) resulted in the second lightest workload since the program's inception in 1998. GFP has spent considerable resources over the past 15 years providing long-term solutions (protective stackyards which protect hay and stored-feed supplies) to address deer damage. Wildlife damage staff still responded to 59 requests for service, statewide, to address concentrations of deer damaging stored-feed supplies. By working cooperatively with the 67 impacted landowners, wildlife damage staff was able to resolve or minimize these conflicts. Wildlife damage staff also initiated ten stackyard contracts to protect stored-feed supplies and five protective fencing projects to alleviate damage to commercial orchards, nurseries, and gardens. Staff drove more than 19,000 miles and worked more than 1,500 hours to address these concerns. Overall, the total program expenditures for deer depredation assistance were $238,433.

More information on the SDGFP Wildlife Damage Management Program can be found at http://gfp.sd.gov/wildlife/wildlifedamage/default.aspx



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IX. Disease Issues / Updates

The State of South Dakota experienced one area of significant white-tailed deer mortality due to Epizootic Hemorrhagic Disease (EHD) in 2015. This occurred in Sully County where a documented 108 deer were found dead, and one white-tailed deer was confirmed with the EHD virus. Other areas of South Dakota did not experience any significant die-off of deer during 2015, although one positive EHD white-tailed deer was confirmed in Pennington County. Overall, there were a total of 127 deer reported as suspect EHD in South Dakota in 2015. Region 2 reported a total of 114 dead deer in 2 counties (Sully and Dewey), and Region 1 reported a total of 13 dead deer in 3 counties (Bennett, Custer and Pennington). Region 3 and Region 4 reported no suspected EHD in 2015. The two samples that were confirmed with EHD from Pennington County and Sully County were confirmed at the lab at SDSU as the most common serotype of the EHD virus (ehdv-2).

Due to the large number of white-tailed deer that were being lost to the disease in western Sully County, the South Dakota Department of Game, Fish, and Parks offered refunds to hunters who previously received a license for western Sully County if they voluntarily returned their licenses. License returns included a total of 122 licenses (211 tags).

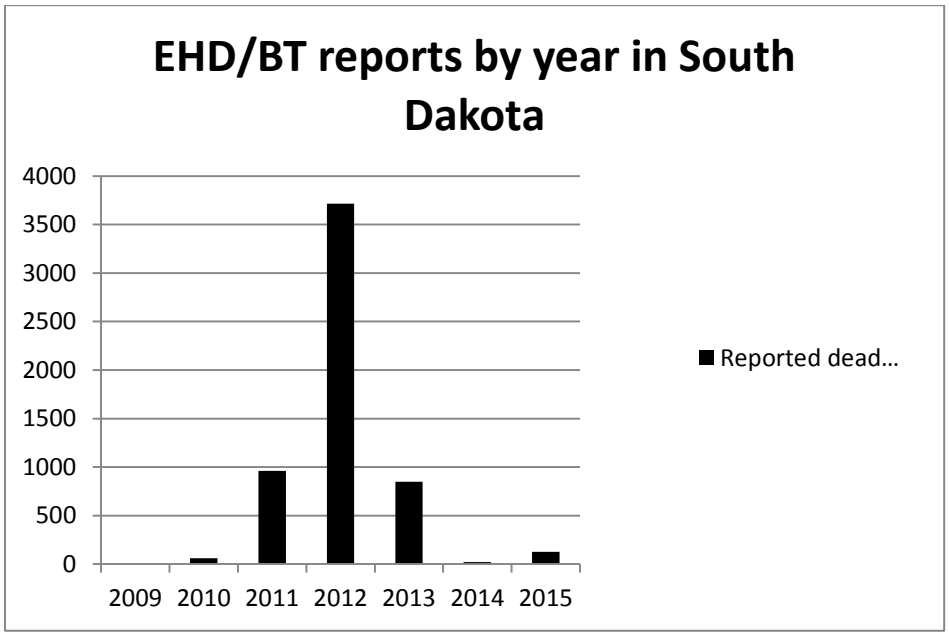


Figure. Annual reported loss of deer, elk, and pronghorn in South Dakota, 2009-2015.

South Dakota Deer Program Report 2016
By: Andy Lindbloom

X. Research. Current deer research projects in South Dakota

Estimating population size of deer in the Black Hills (Kris Cudmore and Jon Jenks. South Dakota State University - SDSU)
Objectives:

1. Estimate population size of deer in the Black Hills using general randomized tessellation stratified samples.
2. Compare estimates of population size of deer among management units by 30 June 2015.
3. Evaluate factors affecting population size of deer relative to management units in the Black Hills by 30 June 2015.
4. Develop population model and survey methodology and recommendations to South Dakota Department of Game, Fish and Parks for implementation in the Black Hills by 30 June 2015.

Evaluation of deer and pronghorn herd composition surveys (Kris Cudmore and Jon Jenks. SDSU) *Objectives:*

1. Determine minimum sample size requirements
2. Compare September and October counts for deer, August and September for pronghorn
3. Compare spotlight and daylight counts
4. Assess feasibility of obtaining male:female ratios
5. Evaluate impacts of other survey variations such as a) counting all animals observed vs. only conclusive counts, b) distance from cover, and c) number of observers.

Dietary preference and nutritional quality of annual forages planted during late summer for white-tailed deer in eastern South Dakota (Troy Wieberg and Jon Jenks. SDSU). *Objectives:*

1. Determine preference and use of purple top turnips, winter rye, Austrian winter pea, Chicory, Daikon radish, and Crimson clover by captive white-tailed deer by 30 June 2015.
2. Quantify physical and nutritional characteristics among forage types and determine crude protein, phosphorus, crude fat and digestible dry matter for each species by 30 June 2015.
3. Assess feasibility of which forage types would be most suitable for late summer planting conditions in eastern SD
4. Formulate management recommendations that directly apply to maximizing deer harvest in highly depredated areas using annual forage plots by 30 June 2015.
5. Determine what annual forage species would be the most successful at luring deer away from winter depredation areas (i.e., hay yards and feedlots) by 30 June 2015.

Effects of Neonicotinoid Insecticides on Physiology and Reproductive Characteristics of Adult and Fawn Captive White-Tailed Deer (Jon Jenks and MS student TBD, SDSU) Objectives:

1. Document thyroid hormones in does exposed to Imidacloprid and control does to determine physiological responses of insecticide exposure via consumption of agricultural crops.
2. Determine Imidacloprid concentrations in milk of lactating female white-tailed deer.
3. Compare jaw and genital characteristics of white-tailed deer fawns born to does exposed to Imidacloprid and control fawns.

An Evaluation of the Impacts of Energy Development on Life History Parameters and Management of White-tailed Deer in the Cedar Creek Anticline of Southwestern North Dakota and Northwestern South Dakota (Jon Jenks and 3 MS grad students, SDGFP/NDGF/SDSU cooperative project) O*bjectives:*

1. Determine the impacts of oil and gas energy development and disturbance on movements and survival rates of white-tailed deer in the Cedar Creek Anticline of North and South Dakota.
2. Determine habitat selection and critical deer seasonal habitats and concentration areas in the Cedar Creek Anticline of North and South Dakota.
3. Determine cause-specific mortality factors on both radio-collared adults and neonate fawns.
4. Determine an annual rate change (λ) for white-tailed deer populations in the Cedar Creek Anticline of North and South Dakota.

XI. Hot Topics

SDGFP completed 2 public opinion surveys on Deer Management this year. One survey was sent to approximately 6,700 randomly selected landowners, while the other survey was sent to approximately 3,800 hunters. Final results and reports will be made available soon, and can be found at http://gfp.sd.gov/hunting/harvest/publicopinion.aspx and/or the SDGFP deer management plan webpage (see link below).

SDGFP is currently writing the first Statewide Deer Management Plan for South Dakota, which will include management topics and strategies for both mule deer and white-tailed deer. Part of the planning process has been the development of a "Deer Management Plan Stakeholder Group". The Deer Management Plan Stakeholder Group is a diverse group of citizen stakeholders who have been asked to assist SDGFP Staff and the SDGFP Commission in conducting a review of the broad range of issues affecting deer management in South Dakota. The stakeholder Group will assist SDGFP by offering insight, ideas, and alternatives that could be considered in regard to the Department and Commission positions on various deer management goals, strategies, challenges and related recreational opportunities.

The Statewide Deer Management Plan draft will be completed and submitted to the SDGFP Commission in March of 2017. More information about the planning process, to include details on the Deer Stakeholder Group, can be found at http://gfp.sd.gov/hunting/big-game/deer/deer-management-plan.aspx

XII. Relevant Links

Information on deer hunting in South Dakota can be found at:
http://gfp.sd.gov/hunting/big-game/deer/default.aspx

Rules and regulations for hunting in South Dakota can be found at:
http://gfp.sd.gov/hunting/regulations/default.aspx

Harvest Survey results and reports can be found at:
http://gfp.sd.gov/hunting/harvest/survey-program.aspx

WISCONSIN DEER STATUS REPORT, 2016

2016 Midwest Deer & Wild Turkey Study Group
General Butler State Resort Park, Carrollton, Kentucky

Robert Rolley, Dan Storm, Kevin Wallenfang

1. Current Harvest

Total harvest was 2% higher in 2015 than in 2014; antlered harvest increased 6% but antlerless harvest was virtually unchanged. Limited antlerless harvests in 2015 were primarily due to "bucks-only" regulations in many Northern Forest and some Central Forest counties together with the elimination of the Holiday Hunt in the Southern Farmland Zone. More than 234,000 hunters killed one or more deer for an overall success rate of 36%.

	Antlered			Antlerless			Total*		
Season	2013	2014	2015	2013	2014	2015	2013	2014	2015
Archery**	41,517	46,201	51,823	45,270	34,577	35,275	87,628	81,701	87,098
Youth Hunt	2,591	3,655	3,307	4,057	4,940	3,904	6,693	8,671	7,211
9-day Gun	96,172	90,701	94,268	132,090	107,838	110,855	229,890	199,583	205,125
Muzzleloader	2,491	2,759	2,158	4,181	4,347	3,320	6,729	7,157	5,478
Holiday Hunt***	902	50		2,491	2,592		3,458	2,711	
Dec. Antlerless****	65	31	24	8,069	4,395	4,893	8,233	4,466	4,917
Off-Reserv. Tribal	542	423	491	817	702	787	1,359	1,125	1,278
Total	144,280	143,820	152,071	196,975	159,391	159,034	343,990	305,414	311,107

* Totals include deer of unknown type.
** Archery season harvests include deer harvested with vertical bows and crossbows. Crossbow licenses were available to all hunters starting in 2014.
***The Dec. 24-Jan. 1 Holiday Hunt was not offered in the Southern Farmland Zone in 2015
**** Disabled hunters and members of the armed forces on leave may harvest antlered deer during antlerless-only seasons.

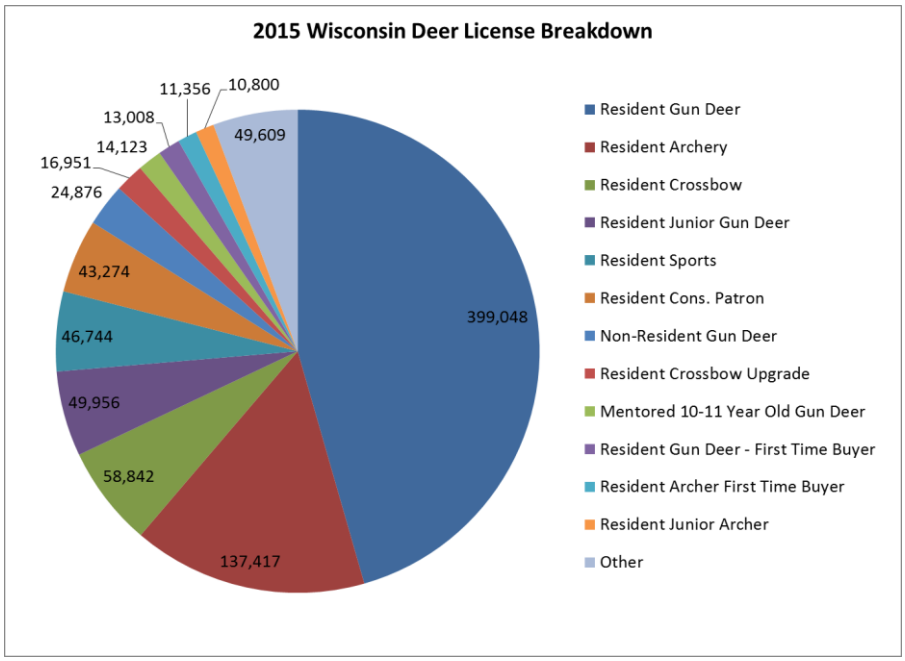
2. License and Season Information

All residents and non-residents are required to purchase a license to hunt deer in Wisconsin. There were 657,013 individuals who purchased a Wisconsin deer hunting license in in 2015, 876,004 licenses were sold (separate licenses are required to hunt with a gun and bow). While over 60% of license buyers purchased a resident gun deer license and over 20% purchased a resident archery license, there were over 40 different types of licenses offered in 2015 that granted deer hunting authority. Some of the specialized licenses

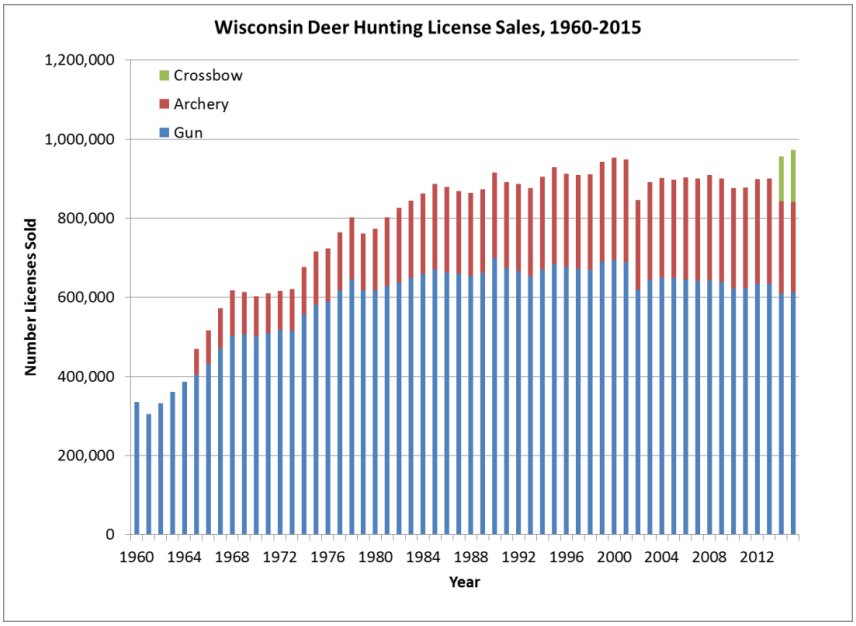
2016 Deer License Costs		
License	Resident	Non-resident
Conservation Patron	$165	$600
Junior Conserv. Patron (ages 12-17)	$75	$77
(Conservation patron includes deer [gun & archery], turkey, small game, trapping, general fishing, stamps [turkey, pheasant, waterfowl], etc.)		
Sports	$60	$275
Junior Sports	$35	$36
(Sports includes gun deer, small game, general fishing)		
Gun Deer	$24	$160
Youth Mentored Only (ages 10-11)	$7	$7
Junior Gun Deer (ages 12-17)	$20	*
Archer (deer and small game)	$24	$160
Junior Archer (ages 12-17)	$20	**
Crossbow (deer and small game)	$24	$160
Junior Crossbow	$20	**
Archer or Crossbow upgrade	$3	$3
Bonus Antlerless Deer Tag	$12	$20

*Non-residents aged 12-17 wishing to hunt with a gun may purchase a Junior Sports license.
** Non-residents aged 12-17 wishing to hunt with bow or crossbow may purchase a Junior Conservation Patron license.

included discounts or additional privileges for non-resident students, first time license buyers, returning license buyers who hadn't purchased in 10+ years, resident and non-resident armed forces members or Purple Heart medal recipients. Wisconsin residents purchased 95% of the licenses sold, 5% were sold to non-residents. Ninety-three percent of license purchasers were authorized to hunt with a gun, 35% with archery, and 20% with crossbows.



Sales of gun licenses increased rapidly during 1960-1990, were relative stable during the 1990s, but have declined 12% since 2000. Sales of archery licenses also increased substantially during 1960-2000, but have plateaued during the past decade. Crossbow licenses were first sold in 2014.



Over 736,700 antlerless permits were issued to deer hunters in 2015, 88% were free farmland zone permits and 12% were bonus antlerless permits.

2016 Deer Season Structure

Archery and Crossbow – Sept. 17 - Jan. 8 - Statewide

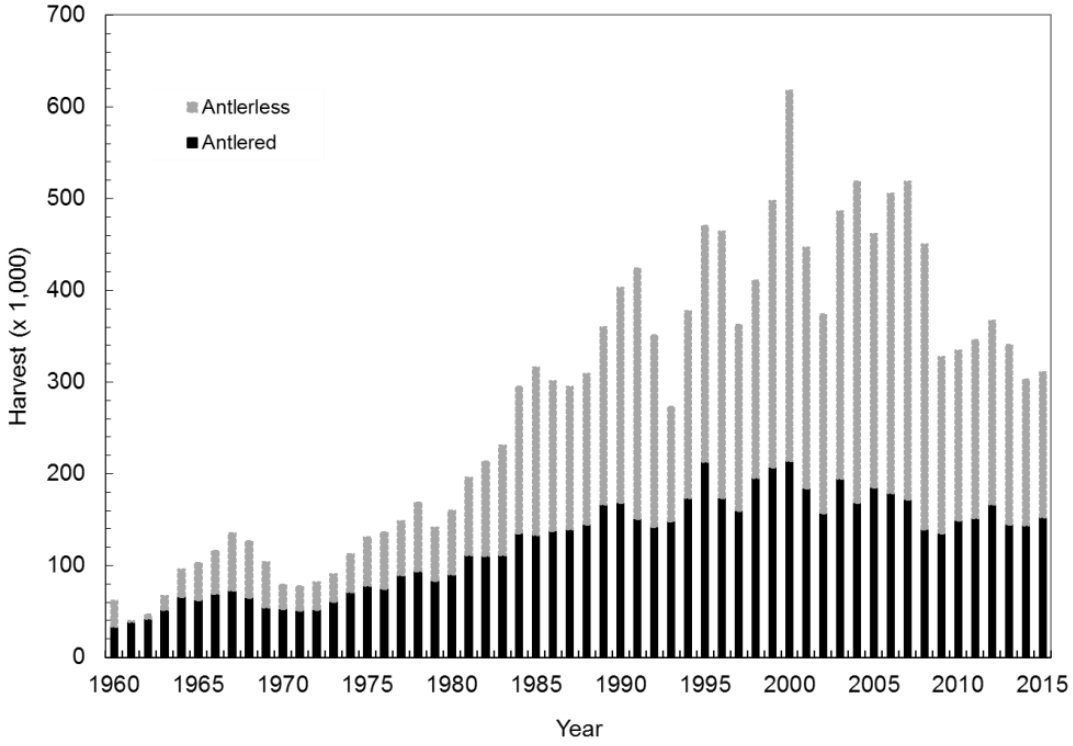
Gun Deer Seasons (Statewide unless indicate otherwise)
- **Disabled** (Oct. 1-9, 9 days, designated properties)
- **Youth** (Oct. 8-9, 2 days)
- **Nov. Gun** (Nov. 19 – 27, 9 days)
- **Muzzleloader** (Nov. 28 - Dec. 7, 10 days)
- **Dec. Antlerless-only** (Dec. 8-11, 4 days)
- **Holiday Hunt Antlerless-only** (Dec 24 - Jan 1, 9 days, selected farmland units)

Metro Subunits -- Archery Season: Sept. 17 - Jan. 31 -- Gun Season: Nov. 19 - Dec. 7

Bag Limits -- 1 antlered buck with a gun license and 1 with a bow or crossbow license
1 antlerless deer per unused antlerless deer tag

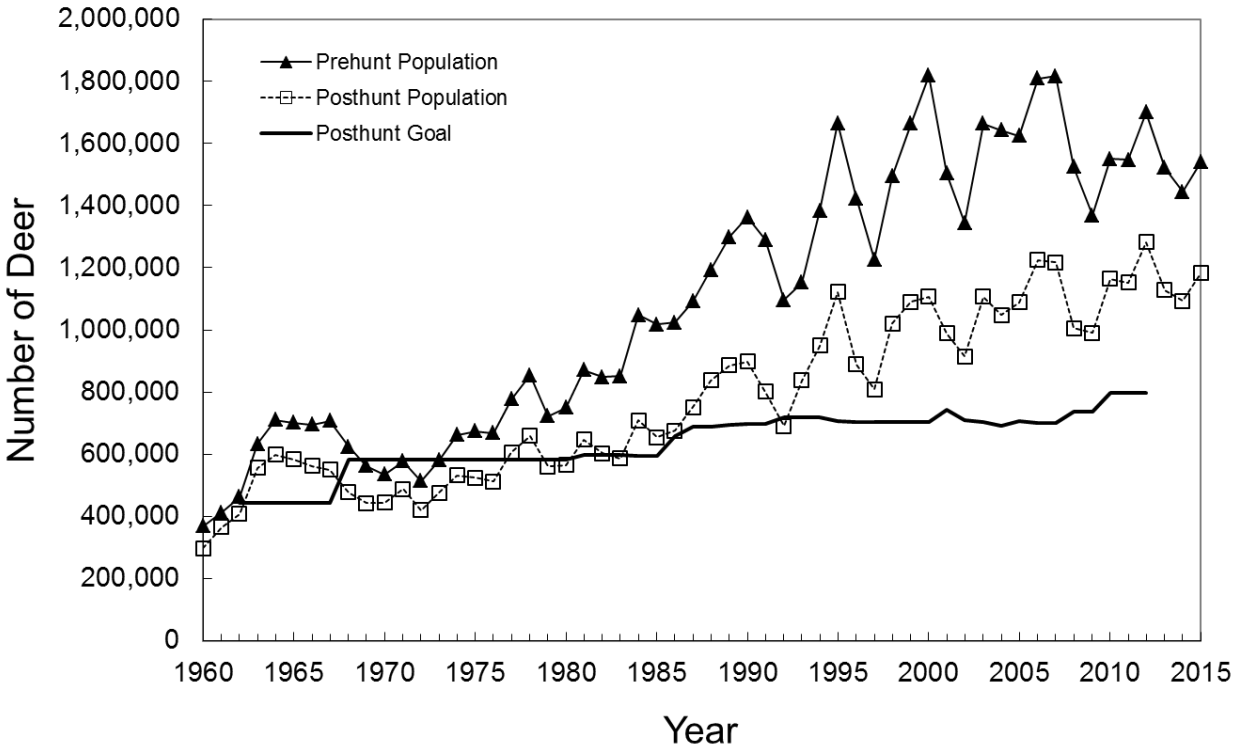
3. Historical Harvest

During the 1960s and early 1970s, total harvest averaged about 90,000. Total harvest increased steadily during the late 1970s and 1980s, largely due to population growth in the farmland regions. An all-time record harvest of 618,274 was set in 2000. After a marked decrease in harvest in 2001 and 2002, harvest during 2003-07 averaged about 500,000 deer, with about 64% of the harvest composed of antlerless deer. Total harvest decreased 42% between 2007 and 2009. During 2009-15, total harvest averaged about 335,000 with approximately 55% of the harvest comprised of antlerless deer. The proportion of harvest taken by archers has increased steadily during the past 50 years to where archers (includes crossbow hunters) accounted for 28% of the total harvest and 32% of the antlered buck harvest in 2015. Eleven percent of the total harvest and 11% of the buck harvest was taken with crossbows in 2015. Buck harvest success by crossbow hunters was 43% greater than by hunters using vertical bows in 2014.



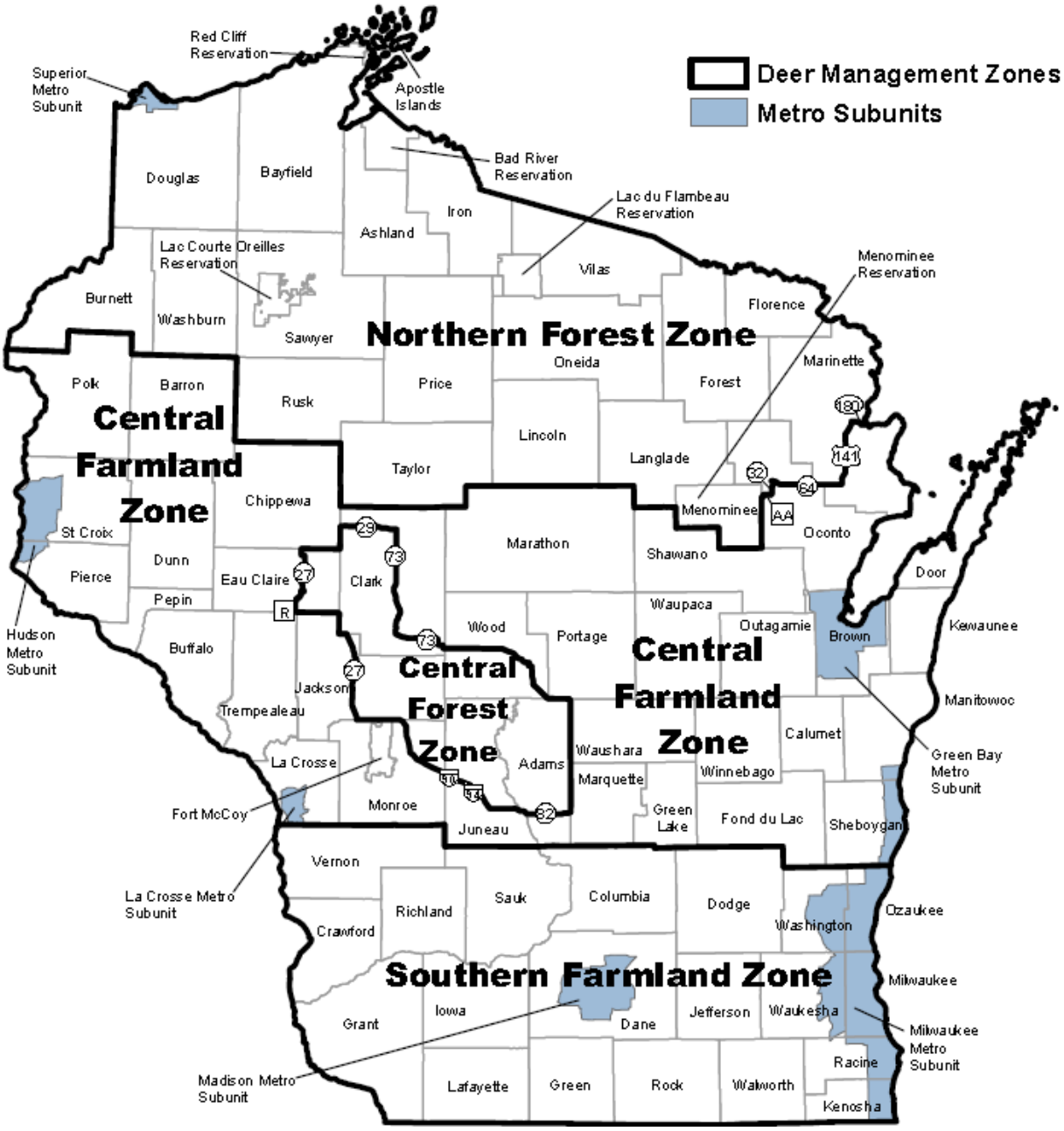
4. Population Estimates and Trends

Population estimates were based on Sex-Age-Kill calculations and accounting models calibrated to aerial surveys. The 2015 prehunt population estimate was approximately 1.5 million and the posthunt estimate was approximately 1.2 million. Posthunt deer populations in Wisconsin fluctuated around 500,000 during the 1960s and 1970s. During the 1980s and 1990s, the population generally increased with occasional short-term declines due to poor recruitment following severe winters and/or intensive antlerless harvests. Most of the statewide increase in deer populations over the past 40 years was due to growth in the farmland regions of the state. Higher antlerless harvests during the mid-2000s together with below average recruitment reduced populations in portions of the state. Reduced antlerless harvests since 2009 have resulted in renewed population growth, especially in the farmland zones.



* Numeric posthunt population goals were discontinued in 2013 and replaced with population trend objectives.

5. Deer Management Units/Zones



6. Regulation/Legislation Changes

The Natural Resources Board approved all recommendations from the County Deer Advisory Councils (CDACs) for the 2016 deer season at its May meeting.

- The number of buck-only units decreased from 12 in 2015 to 10 in 2016. Nine of the units are in the northern forest and one is in the central forest zone.
- In 3 of the buck-only units, Junior license buyers (age 17 or younger who receive a free antlerless tag with each license) will be prohibited from using their antlerless tag.

- Thirteen counties in the central and southern farmland zones opted to offer a 9-day antlerless-only Holiday Hunt (December 24-January 1).
- CDACs in the farmland zones were able to offer a variable number of free farmland zone permits per license sold. Two counties will offer 0 free permits, 38 counties will offer 1, 11 counties will offer 2, and 4 counties will offer 3 free permits per license. These permits are county and land-type (public or private land) specific.
- CDACs recommended a total of 159,650 bonus antlerless permits for purchase (86% on private land, 14% on public land). This was 11% higher than in 2015.

Additional regulation changes were associated with a change in license vendors. Backtags are no longer required to be worn while hunting. Carcass tags will be printed on plain white paper and are now validated by writing on them rather than slitting. Carcass tags are no longer required to be attached to the deer immediately upon recovery.

The legislature authorized wearing of blaze/fluorescent pink clothing in place of blaze orange clothing during any firearm deer seasons.

7. Urban/Special Hunts

Disabled deer hunts - Eighty-three individuals and organizations will sponsor disabled deer hunts during October 1-9 on more than 78,000 acres in 2016. Hunters must possess a valid disabled hunting permit. Shooting from a stationary vehicle, use of laser sights, and use of adaptive devices on firearms are authorized for hunters with specific disabilities. More than 450 hunters participated in sponsored disabled hunts in 2015.

Fort McCoy - Fort McCoy is a 60,000 acre military training center that allows limited entry public deer hunting during the early bow and firearm seasons. Hunters must apply for a random drawing. Approximately 700-800 deer are harvested annually off of Fort McCoy.

Learn to hunt deer - The DNR in cooperation with various partners conducted 13 Learn to Hunt Deer events in 2015. These events include classroom instruction, field work, and a mentored hunt with an experienced hunter. Over 150 participants attended these events. Of the 13 events, 3 were Learn to Hunt for Food classes. These 4 week classes are aimed at young adults and have attracted a high proportion of women. Participants learn about conservation history, deer biology, firearm safety, scouting, shot placement, cleaning game and cooking venison. The classes culminate with a guided hunt with an experienced mentor.

Urban/Suburban/Exurban Special Hunts - Numerous communities throughout Wisconsin are taking various approaches to control local deer populations. These range from contracting with sharpshooters, to participation in DMAP (see below), to conducting special archery hunts. The details of local special hunts vary depending on the needs of the local community. Some require skills tests, ethics agreements, background checks, assigned hunt locations, record keeping, and minimum harvest requirements. Some provide opportunities to distribute extra deer to people willing to take them. Some of these hunts are managed by community staff while others are managed by local hunt clubs. Some communities use nuisance permits to authorize hunting outside of the normal hunting seasons or to allow harvest of antlerless deer in counties that are bucks-only.

One example is Dane County, which manages a limited draw archery hunt on 25 properties totaling 5,000 acres. This hunt accommodates approximately 180 hunters. There is an application for a random drawing and a paid access permit. Youth hunters, less than 16 years of age, may hunt with a parent or guardian.

Another example is the City of Green Bay. Their program provides access for 40-50 hunters to city owned parks, greenways, county park land, and the University of Wisconsin Green Bay campus. Hunters are required to be at least 18 years of age, apply annually, pass an annual proficiency test, clear a local and statewide background check, hunt in designated locations from elevated tree stands, hunt a minimum of 18 hours per year, and harvest at least 1 antlerless deer every 2 years. Hunters must also maintain a detailed log book with dates and times hunted, documentation for all arrows/bolts discharged, records of deer observed while hunting, and harvest records. Hunters are allowed to harvest an additional antlered buck if they have previously harvested an antlerless deer. This program is conducted under the authority of a nuisance permit which allows hunting outside of the state hunting seasons and authorizes the removal of 100 deer/year.

Some communities have discontinued special hunts after the legislature passed legislation in 2013 that barred local units of government from prohibiting hunting with a bow and arrow or crossbow within their jurisdictions with some exceptions. Local governments could still restrict archery and crossbow hunting on land that they own and could prohibit it within 100 yards of a building without the building owner's permission.

8. Management Assistance/Crop Damage

***Deer Management Assistance Program (DMAP)* -** DMAP provides habitat and herd management assistance to landowners interested in managing their property for deer and other wildlife. The department assists landowners with the implementation of forest regeneration and deer hunting practices that emphasize property goals while considering the ecological and social impacts of white-tailed deer. Landowners can enroll in one of three levels. Level 1 participants receive information but have no minimum acreage or enrollment fee and no special eligibility for antlerless permits. Level 2 has a 160 acre minimum and a $75/3 year enrollment fee. Level 3 has a 640 acre minimum and a $150/3 year enrollment fee. Level 2 and 3 participants receive personal interaction with DNR staff and communication on land and herd management, networking with other landowners with common goals, property site visits by a wildlife biologist and forester, written site-specific management plan, and reduced price antlerless tags. Properties can be enrolled by an individual landowner or as a cooperative.

Now in its third year, there are nearly 1,000 landowners, 599 properties and 221,000 acres enrolled in DMAP. Approximately 57% of properties are enrolled in Level 1, 35% in Level 2, and 7% in Level 3. Approximately 600 reduced-cost antlerless tags were distributed to Level 2 and 3 enrollees in 2015.

We continue to survey DMAP cooperators to gain insight into their experience with the program. Most landowners desire to improve habitat for deer and other species of wildlife. Landowners liked the ease of enrollment and the resources provided through the website. Over 90% of landowners were satisfied with the site visit by the local biologist and forester and 82% felt the property management plan was useful. Overall, landowners gave the program high marks for customer service.

In addition to private land enrollments, there are currently 4 local communities that have enrolled in DMAP, 3 county park departments and 1 city. The primary interests of these communities are to work more closely with DNR biologists on habitat projects, documentation of impacts of deer browsing on vegetation, and providing deer hunting opportunities. Agency biologists meet with local property managers to conduct site visits and support managed hunting opportunities by providing DMAP antlerless tags to hunters. Wildlife biologists are working closely with property managers and hunters to collect deer age information and tissue samples for CWD testing.

Six workshops were held around the state in 2016 to share information with enrollees about DNR deer research results, food plots and natural food sources, tree planting strategies, deer browse impacts, and success stories from DMAP cooperators. Workshops included tours of enrolled properties led by the landowner who shared their experiences and lessons learned. DMAP cooperators are encouraged to participate in citizen science opportunities, including summer deer observations and the Snapshot Wisconsin project. Additionally, DMAP cooperators are encouraged to participate in a mentored hunting and trapping program that pairs novice hunters or trappers and mentors to provide positive outdoor experiences and potentially help cooperators achieve their property goals.

Wildlife Damage Abatement and Claims Program (WDACP) - During 2015, 650 crop owners enrolled in WDACP for deer damage abatement assistance. Appraised deer damage totaled $773,582, 14% lower than in 2014. Fifty-two percent of appraised deer damage was to corn; 22% to soybeans; and 6% each to forage, orchards and nursery stock, fruits and vegetables, and Christmas trees. During the past 20 years, appraised deer damage averaged approximately $1,683,000 (range $773,582 - $2,865,572).

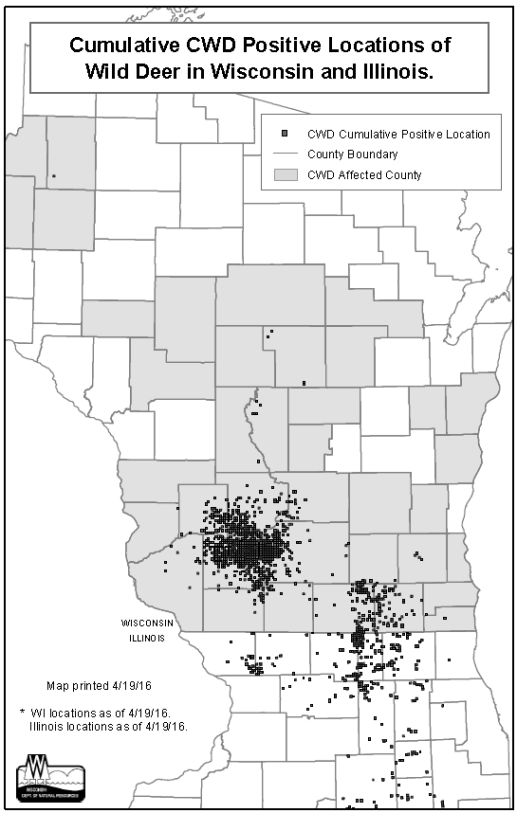
The most commonly used abatement measure was deer damage shooting permits. In 2015, we issued 542 Agricultural Damage Deer Shooting Permits under which 3,080 deer were removed. In addition, 61 Nuisance Deer Shooting Permits were issued for urban, airport, and nuisance situations, resulting in the removal of 805 deer.

In 2015, WDACP paid 75% of the cost for construction of 9 permanent fences to protect over 575 acres on farms with a history of deer damage to high value crops (e.g., cranberries, strawberries, orchards, and tree nurseries). Landowners enter into a 15 year agreement to maintain the fences.

Since 2000, the WDACP has been authorized to pay for processing venison donated to food pantries. In 2015, meat processors in 54 counties participated in the donation program. In those counties, hunters donated 1,228 deer amounting to approximately 55,000 pounds of venison. The cost of the venison donation program in 2015 was approximately $82,600, 90% for venison processing and 10% for advertising and administration.

9. Disease Issues/Updates

Chronic Wasting Disease - CWD has been detected in wild deer in 19 of Wisconsin's 72 counties. Surveillance activities in 2015 focused on the long-term monitoring areas in southern Wisconsin, selected counties along the outer edge of the CWD affected area, and areas in central and northern Wisconsin where outlying positives or CWD positive captive cervid facilities have been identified. Approximately 3,140 deer were tested during 2015. CWD was first detected in Crawford County in 2015.



CWD prevalence continues to increase in southern Wisconsin. In northcentral Iowa County, prevalence in males ≥2.5 years old has risen to more than 40%.

In November 2015, an Eau Claire County captive breeding facility (not shown on map) was depopulated after 3 deer tested positive for CWD during the summer and early fall. A total of 228 deer were killed on the farm, 30 additional deer tested positive. Two CWD positive bucks had escaped from the breeding facility in

May and were killed in fall more than 10 miles away. CWD was detected in 2 bucks harvested from an Oneida County shooting preserve (not shown on map) in fall 2015. CWD was also detected at a petting zoo in Iowa County in January. As of June 2016, CWD has been detected in 14 captive cervid facilities in Wisconsin, 3 of which have not been depopulated at this time.

As of June 2016, 41 of Wisconsin's 72 counties have been designated as a "CWD Affected County" (3 counties added since map was produced). An affected county refers to all counties where CWD has been detected in wild or captive cervids and counties within 10 miles of CWD positives. Baiting and supplemental feeding are banned in the CWD Affected counties.

10. Deer Research Update

The recently completed deer mortality study enabled deer researchers to also study deer dispersal. The research team radio-collared 318 juvenile bucks, which enabled them to estimate the percentage of bucks that dispersed and dispersal distance. Between 30-50% of yearling deer in the northern forest dispersed per year; dispersal rates were higher following mild winters and lower following harsher winters. Approximately 55% of yearlings dispersed in the farmland study area each year. Larger yearling bucks were more likely to disperse than smaller ones. These findings suggest that nutritional condition is an important factor in determining whether or not a deer will disperse. Deer in both study areas dispersed an average of about 3.5 miles, but dispersals as far as 22 miles were observed.

The DNR in cooperation with UW-Madison is starting a new research project to examine methods for estimating late summer/early fall fawn:doe ratios. The DNR has traditionally used observations of deer during routine duty travel in August and September for estimating fawn:doe ratios that are used in Sex-Age-Kill estimates; however, convenience sampling may potentially be biased if habitats are not sampled in proportion to their availability. This study will assess the cost-effectiveness of standardized roadside surveys to estimate fawn:doe ratios with adequate precision for county sized management units. In addition, the study will evaluate the use of camera trap surveys for estimating fawn:doe ratios.

The DNR is also launching a major research project to determine for role of CWD, predation, hunter harvest, and habitat on deer population dynamics in southwestern Wisconsin. Project objectives include estimating temporal patterns of survival and competing sources of mortality due to disease, predation, harvest, and other sources and how mortality patterns are affected by sex and age class, individual CWD status, CWD prevalence, genotype, predator density and habitat composition. Plans are to collar 200 adult deer and 100 fawns along with 40 predators (coyotes and bobcats) across 2 study areas over 4 years. GPS collars will be used on adult deer and predators. One of the study areas for the fawn:doe ratio study will overlap with this project. Additionally, trail camera grids are being established that will provide indices or estimates of abundance and distribution of deer, coyotes, and bobcats. Tissue samples will be collected from captured deer to determine genotype and CWD infection status. All deer mortality events will be investigated to determine cause of death and disease status. These data will be combined with CWD monitoring data from hunter harvested deer in an integrated population-disease dynamics model.

11. Hot Topics

County Deer Advisory Councils (CDACs) - CDACs met twice during spring 2016. At the first meeting they reviewed 2015 harvest data and population metrics and formulated preliminary recommendations for season frameworks, antlerless harvest quotas and permit levels. Antlerless permit recommendations were divided between public and private land. These preliminary recommendations were shared via a public web site and public comments were collected with an internet survey. More than 5,500 individuals responded to the questionnaire. At the second meeting

public comments were reviewed and final recommendations were developed. Both meetings were open public meetings but most were lightly attended. The exception was one county whose initial recommendation was to make all seasons antlerless-only; their second meeting had a standing-room only crowd of 750 people. In response to public comment, that council changed their final recommendation. A number of CDACs in the farmland zones expressed a desire for more tools to use to control population growth. Final recommendations from CDACs were reviewed by the department's deer advisory committee and department administration before being presented to the Natural Resources Board. The Board approved all CDAC recommendations in May.

Electronic Harvest Registration - Electronic registration was fully implemented in fall 2015. Approximately 310,000 were registered via phone or internet with over 110,000 on opening weekend. More than two-thirds were registered via the internet with the majority of these with a mobile app; approximately 1/3 of deer were registered over the phone. Hunters who called the phone line and did not successfully complete their registration in 3 tries were automatically transferred to a customer services representative. Average hold times for a customer services representative on opening weekend was 1 minute on Saturday and about 2 minutes on Sunday.

Some technical difficulties were encountered. System developers attempted to provide real-time reporting of harvest registrations but due to glitches associated with transferring large volumes of data this specific feature crashed, but did not impact a hunter's ability to register. In addition, since the same system was used to registered bears and deer during the same time periods, some hunters were confused by voice commands to push 1 for bear and 2 for deer. This was quickly identified and corrected. Wisconsin has 9 counties that are divided into separate management zones and hunters in these counties experienced some confusion with correctly reporting their harvest.

Meat Locker Collections - The switch from in-person to electronic registration necessitated a change in our aging survey. Staff aged approximately 14,600 deer at about 130 meat processors during the gun and archery seasons. Over 80% of the deer were harvested during the 9-day firearm season. About 25% few antlered bucks were aged in 2015 than in 2014 when aging was conducted at in-person registration stations.

CWD Sampling - Full implementation of electronic registration was also associated with a 43% reduction in deer tested for CWD. Only 3,144 deer were tested in 2015, the lowest number since CWD was detected in Wisconsin.

Deer Hunting Accidents - There were 3 fatal, 6 non-fatal accidents during the 2015 deer season.

Winter 2015-16 - The average winter severity index (WSI) in 2015-16 for the 29 northern Wisconsin recording stations with complete records was 24. This was the 4th mildest winter since 1960 and the second mild winter in a row. Average WSI during the previous 30 years was 55. Approximately 81% of the generated WSI points were "temperature" points and most of these were accumulated during January and February, while 19% of the WSI points were "snow" points. Twenty-six stations reported 'mild' conditions, while 3 reported a 'moderate' WSI and none reported 'severe' conditions. Typically mild winters are associated with population growth in northern Wisconsin.

12. Relevant Links

WDNR Deer Hunting Webpage: http://dnr.wi.gov/topic/hunt/deer.html

WDNR Deer Hunting Regulations Booklet: http://dnr.wi.gov/files/PDF/pubs/wm/WM0431.pdf

2015 Wisconsin Big Game Harvest Summary: http://dnr.wi.gov/files/PDF/pubs/wm/WM0284.pdf

WDNR Chronic Wasting Disease Webpage: http://dnr.wi.gov/topic/wildlifehabitat/regulations.html

Common health issues for Wisconsin deer: http://dnr.wi.gov/topic/wildlifehabitat/deerhealth.html

Deer Management Assistance Program (DMAP): http://dnr.wi.gov/topic/wildlifehabitat/DMAP.html

County Deer Advisory Councils (CDACs): http://dnr.wi.gov/topic/hunt/cdac.html

WDNR Deer Research Webpage: http://dnr.wi.gov/topic/wildlifehabitat/research/whitetaileddeer.html

WDNR Wildlife Survey Reports Webpage: http://dnr.wi.gov/topic/wildlifehabitat/reports.html

INDIANA WILD TURKEY STATUS REPORT

40th Midwest Deer & Wild Turkey Study Group Meeting
General Butler State Resort Park, Carrolton, Kentucky
August 22-25, 2017

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WILD TURKEY HARVESTS (Current and Historic)

Fall Season Results – 2015-16

The 11th modern day fall wild turkey hunting season in Indiana was held with a harvest of 917 wild turkeys, 369 (+67) more than the 548 bird harvest in 2014-15. The combined shotgun and archery portion of the season accounted for 57% of the harvest with archery hunters taking 43% of the total harvest. Adult birds made up 72% of the harvest with a juvenile to adult ratio of 1:2.5. The proportion of adults in the fall harvest is relatively high and likely reflects a combination of low summer brood success, hunter selection for larger adult birds, and age determination errors. Ninety-four percent of the harvest occurred on privately owned lands. The 2015-2016 fall harvest was a new high for fall harvests with an estimated 10,789 hunters harvesting 917 birds for estimated success rate of 8%.

Fall wild turkey harvest by portion of the season - Indiana, 2015-16.

	Portion of the fall wild turkey season						
	Early archery [a]		Combined shotgun & archery [b]		Late archery [c]		Total
	No.	%	No.	%	No.	%	No.
Turkeys Harvested	303	33%	525	57%	89	10%	917

[a] Early archery only portion of fall turkey season. Dates 1-20 October 2015 (20 days); fall archery hunting open statewide (92 counties).
[b] Combined shotgun and archery portion: Dates: 21 October - 1 November (12 days); 43 counties in south and 7 counties in the north.
[c] Late archery only portion 5 December 2015 - 3 January 2016 (30 days); statewide. Total days of archery opportunity for fall season = 62.

Fall wild turkey harvest by permit type - Indiana, 2015-16.

Type of Permit	Harvest by Permit	% of Harvest	No. Licenses Sold by Season End Date[a]	Differences in Licenses Sold from Prior Year (%)
Resident Fall Turkey	280	30.5%	3,488	+598 (+21%)
Non-Resident Fall Turkey	0	0.0%	42	+11 (+36%)
Comprehensive Lifetime	420	45.8%	44,425 [b]	---- [b]
Comprehensive Youth	113	12.3%	33,437	-5,852 (-15%)
Landowner/active military	104	11.3%	Exempt	Exempt
Harvest Subtotal	917			

[a] Apprentices licenses (new 2008) included in respective license type totals.
[b] Comprehensive lifetime hunt and hunt & fish licenses as of July 2005 when the lifetime licenses discontinued. Value represents the number of lifetime license holders who could potentially hunt.

Age and sex structure of the fall wild turkey harvest - Indiana, 2015-16.

	Juvenile [a]		Adult [b]		Total [c]	
	No.	% [c]	No.	% [c]	No.	% [c]
Male	93	10.3%	289	31.9%	382	42.1%
Female	164	18.1%	361	39.8%	525	57.9%
Total [c]	257	28.3%	650	71.7%	907	
					Juvenile : Adult	1 : 2.5

[a] Juvenile were birds estimated to be < 6 months old.

[b] Adults were birds estimated to be ≥ 14 months old.

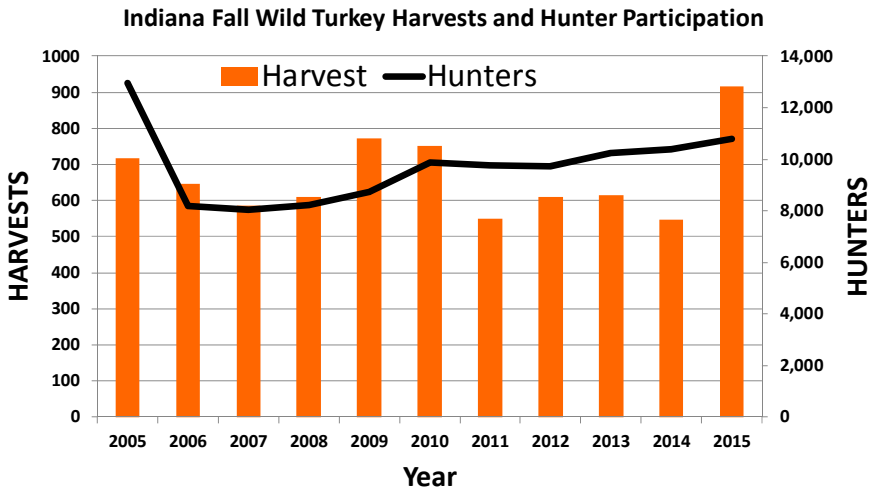
[c] Percents are based on 907 birds; sex/age not recorded for 10 birds of 917 total harvest.

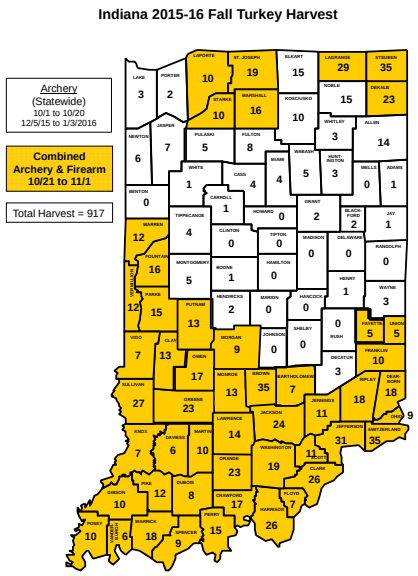
Indiana Fall Wild Turkey Season Summary 2005 to 2015.

	YEAR										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Annual Harvest	716	646	585	610	773	751	549	610	615	548	917
Counties Open to Archery Hunting Only	60	74	74	74	74	92 (ALL)	92	92	92	92	92
Days of Archery Only	18	17	16	14	20	61	65	52	45	56	50
Counties Open to Shotgun and Archery	26	26	26	34	34	43S/7N	43S/7N	43S/7N	43S/7N	43S/7N	43S/7N
Days of Combined Shotgun and Archery	5	5	5	5	5	12S/5N	12S/5N	12S/5N	12S/5N	12S/5N	12
Statewide Fall/Spring Ratio in %	6%	5%	5%	5%	6%	6%	5%	5%	5%	5%	8%
County F:S Ratios (range of values)*	0-15%	0-17%	0-18%	0-11%	0-17%	0-12%	0-25%	0-25%	0-25%	0-63%	0-50%
No. Resident Fall Licenses Sold	2,225	1,682	1,557	1,689	2,054	2,591	2,476	2,411	2,824	2,890	3,488
Estimate of Fall Turkey Hunters**	12,954	8,193	8,035	8,234	8,742	9,869	9,767	9,725	10,256	10,390	10,789
Estimate of Fall Hunting Success	6%	8%	7%	7%	9%	8%	6%	6%	6%	5%	8%

* High side of range related to counties with low spring harvests e.g., 1 fall/4 spring

** Estimate based on rough extrapulation of prior particiaption rates of lifetime license holders, youth hunters resident and nonresidents permitees, and an estimated exempt landowners/active military.





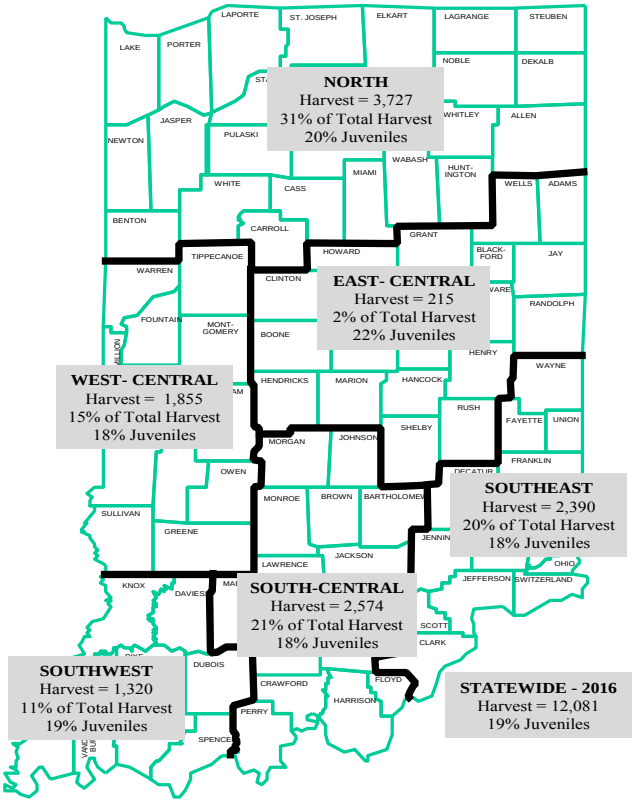
Spring Season Results - 2016

Hunters harvested 12,081 wild turkeys in 89 of the 92 counties during the 2016 (47th) spring wild turkey season (regular season dates 27 April to 15 May 2016; 19 days) as reported by hunters to the "Check-IN-Game" harvest reporting system (98% on-line and 2% tele-check). The 2016 spring harvest was a 2% increase over the 2015 spring harvest of 11,853. Spring harvests in 25 counties exceeded 200 birds with 49 counties showing increased harvests. The majority of the birds was harvested in the early part of the season and the early morning hours. A total of 1,430 birds (12% of total harvest) was taken during the youth-only weekend prior to the regular season. The proportion of juvenile turkeys in the spring harvest was 19% with 39% 2-yr-olds, and 42% ≥ 3 yrs. The northern region, the largest region, supported 31% of the harvest, with 52% of the harvest occurring in the southern regions. The estimated number of hunters afield was 57,332 in 2016, with an estimated hunter success of 21%.

Regional spring turkey harvest and age structure in Indiana, 2005 to 2016.

	Region						
	North	East-central	West-central	South-central	Southeast	Southwest	Statewide
2007							
Harvest	1,758	51	2,104	2,919	2,831	1,500	11,163
% of Total Harvest	16%	0.5%	19%	26%	25%	13%	---
Juvenile %	32%	38%	23%	18%	18%	22%	22%
2008							
Harvest	2,166	60	2,233	3,172	3,057	1,516	12,204
% of Total Harvest	18%	0.5%	18%	26%	25%	12%	---
Juvenile %	34%	25%	22%	19%	18%	18%	22%
2009							
Harvest	2,561	61	2,072	3,314	3,233	1,752	12,993
% of Total Harvest	20%	0.5%	16%	26%	25%	14%	---
Juvenile %	27%	22%	16%	25%	25%	14%	19%
2010							
Harvest	3,088	94	2,021	3,406	3,340	1,793	13,742
% of Total Harvest	23%	0.7%	15%	25%	24%	13%	---
Juvenile %	25%	28%	20%	15%	14%	17%	18%
2011							
Harvest	2,589	77	1,739	2,902	2,800	1,562	11,669
% of Total Harvest	22%	0.7%	15%	25%	24%	13%	---
Juvenile %	25%	27%	24%	20%	19%	16%	21%
2012							
Harvest	3,007	110	2,008	3,069	2,868	1,593	12,655
% of Total Harvest	24%	0.9%	16%	24%	23%	13%	---
Juvenile %	22%	20%	15%	11%	11%	12%	14%
2013							
Harvest	2,834	106	1,742	2,669	2,592	1,431	11,374
% of Total Harvest	25%	1%	15%	24%	23%	13%	---
Juvenile %	25%	31%	29%	22%	22%	24%	24%
2014							
Harvest	2,733	142	1,658	2,510	2,517	1,312	10,872
% of Total Harvest	25%	1%	15%	23%	23%	12%	---
Juvenile %	22%	28%	18%	14%	15%	15%	17%
2015							
Harvest	3,297	167	1,742	2,712	2,485	1,450	11,853
% of Total Harvest	28%	1%	15%	23%	21%	12%	---
Juvenile %	28%	24%	24%	18%	18%	17%	21%
2016							
Harvest	3,727	215	1,855	2,574	2,390	1,320	12,081
% of Total Harvest	31%	2%	15%	21%	20%	11%	---
Juvenile %	20%	22%	18%	18%	18%	19%	19%
2015 to 2016 Differences							
Change in Harvest	430	48	113	-138	-95	-130	228
Percent change in Harvest	13%	29%	6%	-5%	-4%	-9%	2%

2016 Spring wild turkey harvest & age structure by region.



Indiana's spring wild turkey hunting seasons, 1970 to 2016.

Year	Regular Season Dates	Season Length (Days)	No. of Counties	No. of Permits Sold*	Est. No. of Hunters**	Reported Harvest	Hunter Success
1970	5/2-5/5	4	3	75	62	6	9.7%
1971	5/1-5/5	5	9	298	224	11	4.9%
1972	4/26-4/30	5	9	585	422	12	2.8%
1973	4/25-4/29	5	11	625	503	27	5.4%
1974	4/24-4/28	5	11	665	496	26	5.2%
1975	4/29-5/5	7	11	722	501	15	3.0%
1976	4/29-5/5	7	13	666	500	32	6.4%
1977	4/28-5/5	8	16	668	520	46	8.8%
1978	4/26-5/7	12	18	852	619	33	5.3%
1979	4/25-5/6	12	19	932	860	48	5.6%
1980	4/23-5/4	12	17	706	670	54	8.1%
1981	4/22-5/3	12	18	922	814	90	11.1%
1982	4/21-5/2	12	18	1,125	696	73	10.5%
1983	4/20-5/1	12	18	1,218	984	93	9.5%
1984	4/25-5/6	12	18	1,320	1,205	104	8.6%
1985	4/24-5/5	12	25	1,882	1,302	255	19.6%
1986	4/23-5/4	12	25	2,523	1,648	293	17.8%
1987	4/22-5/6	15	33	3,348	2,619	741	28.3%
1988	4/27-5/11	15	33	10,894	4,677	905	19.4%
1989	4/26-5/10	15	39	11,442	6,068	1,359	22.4%
1990	4/25-5/9	15	39	14,379	7,860	1,505	19.1%
1991	4/24-5/8	15	43	16,387	9,643	2,318	24.0%
1992	4/22-5/6	15	43	18,735	13,110	2,531	19.3%
1993	4/28-5/16	19	48	21,078	15,673	3,500	22.3%
1994	4/27-5/15	19	48	23,357	18,622	3,741	20.1%
1995	4/26-5/14	19	52	28,858	20,861	4,706	22.6%
1996	4/24-5/12	19	52	28,733	21,442	4,859	22.6%
1997	4/23-5/11	19	74	32,703	23,085	5,790	25.1%
1998	4/22-5/10	19	74	32,889	22,876	6,384	27.9%
1999	4/21-5/9	19	74	38,730	27,285	6,548	24.0%
2000	4/26-5/14	19	74	***40,801***	***28,615***	7,822	***27%***
2001	4/25-5/13	19	74	***43,815***	***36,103***	9,975	***28%***
2002	4/24-5/12†	19	90	44,333	37,919	10,575	28%
2003	4/23-5/11	19	90	***48,857***	***40,110***	10,366	***26%***
2004	4/21-5/9	19	90	***50,839***	***41,996***	10,765	***26%***
2005	4/27-5/15	19	88	***50,839***	***49,684***	11,159	***22%***
2006	4/26-5/14	19	88	***67,290***	***50,880***	13,193	***26%***
2007	4/25-5/13††	19	91	69,861	53,402	11,163	21%
2008	4/23-5/11	19	91	***71,052***	***55,022***	12,204	***22%***
2009	4/22-5/10	19	92	***75,161***	***59,000***	12,993	***22%***
2010	4/21-5/9	19	92	***73,089***	***56,891***	13,742	***24%***
2011	4/27-5/15	19	92	***72,323***	***56,220***	11,669	***21%***
2012	4/25-5/13	19	92	***71,836***	***57,631***	12,655	***22%***
2013	4/24-5/12	19	92	***74,966***	***60,889***	11,374	***19%***
2014	4/23-5/11	19	92	***73,279***	***59,237***	10,872	***18%***
2015	4/22-5/10	19	92	***69,192***	***55,531***	11,853	***21%***
2016	4/27-5/15	19	92	***70,484***	***57,332***	12,081	***21%***
2017	4/26-5/14	19	92				

* Includes all allowable license types (e.g., lifetime, youth licenses sold by May, non-residnets, and apprentice).

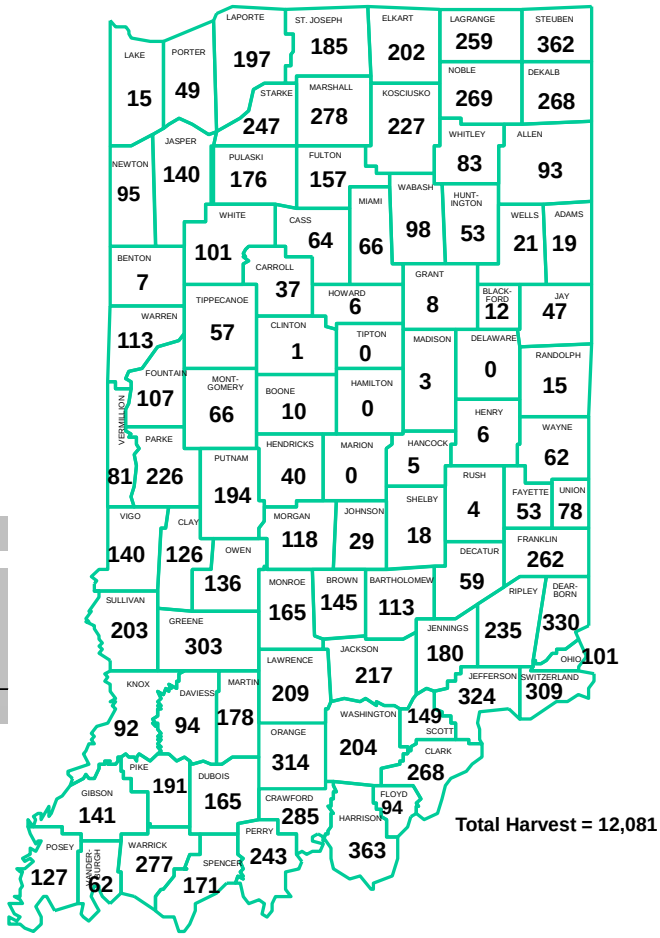
** No. of hunters includes those permit holders who hunted ≥1 day and since 1986, the number of hunters inclde an estimate of license exempt landowners or military hunters on active leave particpating in the spring season.

† "All-day" turkey hunting initiated; 1/2 hr prior to sunrise to sunset.

†† Beginning with the spring 2007 season, a special 2-day youth-only season is held the weekend prior to the regular season opening.

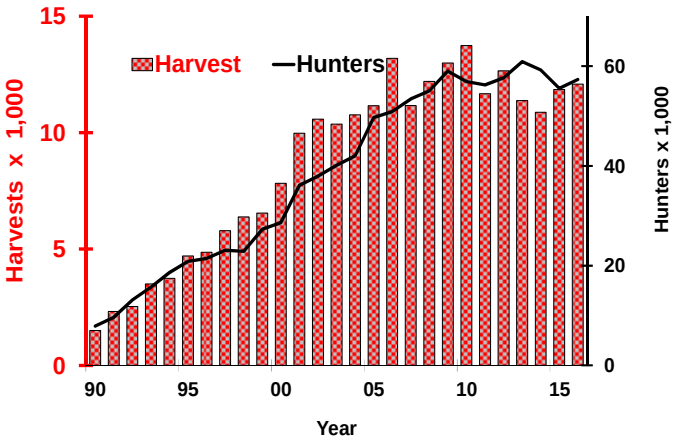
Bold italics = *preliminary estimates based on projecting previous years' trends or means*

2016 Spring Turkey Harvest

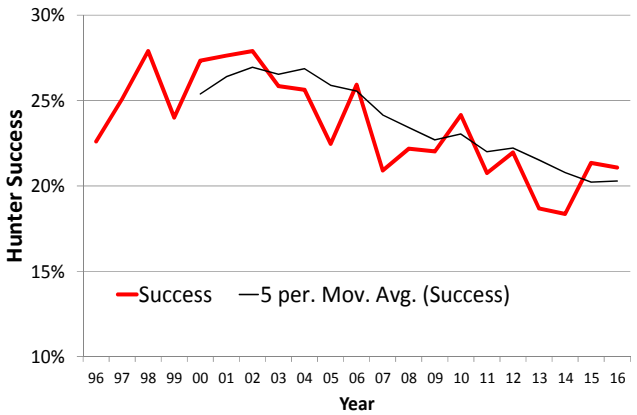


Total Harvest = 12,081

Indiana Spring Turkey Seasons



Estimated Spring Turkey Hunter Success - Indiana



LICENSE AND SEASON INFORMATION

Fall Season (2016)

Early Archery Oct. 1-30; Combined Shotgun/Archery Oct. 19-30; Late Archery Dec. 3 – Jan. 1, 2017.
Bag Limit: 1 bird of either sex no matter what portion of the fall season.
Licenses: Res. $25 + $6.75 game bird stamp; Non-Res. $120 + $6.75 game bird stamp
Res. Comprehensive Youth $7; Non-Res. Youth $25.
Exempt: landowners hunting on own land (no acreage requirement)/active military on leave.
Shooting Hours: "all-day" ½ hour before sunrise to sunset.
Lifetime (Comprehensive): no longer sold; approx. 44,000 sold before no longer available.

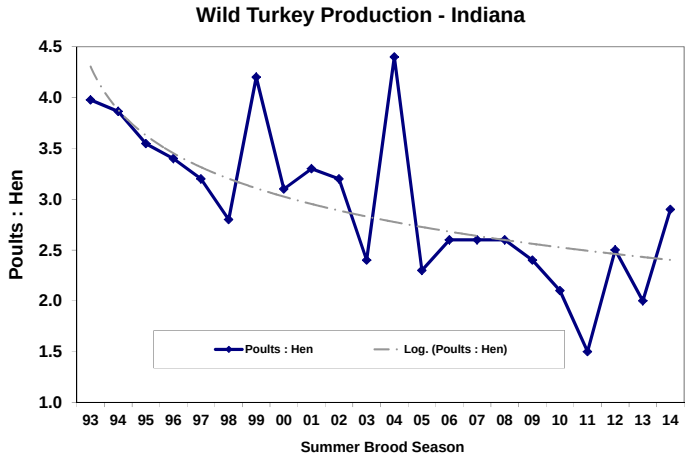
Spring (2017)

Regular Season April 26 – May 14, 2017; Youth Weekend April 22-23, 2017.
Bag Limit: one bearded or male turkey.
License Fees: Separate licenses required for Spring and Fall seasons except for Res. Comp. Youth. Same prices as above.
Shooting Hours: "all-day" ½ hour prior to sunrise to sunset except DFW properties close at noon in spring.

PROPULATION TRENDS

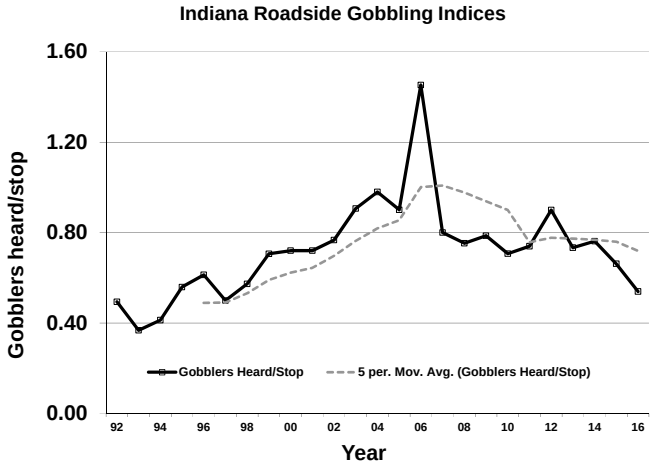
Summer Brood Survey - 2015

District wildlife biologists and conservation officers' record observations of wild turkey hens and poults during normal duty hours in July and August. The statewide mean production index of 2.8 total poults:total adult hens (PI) was 3% less than the 2.9 PI reported in 2014 and statistically within the margin of error for the estimated 2.2 PI of the previous 5 years (2009-2013; $\alpha = 0.05$). Since 1993, the average PI has progressively declined, leveling off at a lower level indicative of a turkey population stabilizing post restoration. Annual fluctuations in the PI around the long term average are expected and characteristic of a stabilized population as it settles to a new level reflective of the suitable habitat conditions across the landscape. Climatically, the spring/early summer of 2015 had above normal precipitation and below normal temperatures, marking the 10th consecutive year of flooding events in various regions of the state associated with the nesting season in April-May or early brood rearing periods of June-July. A new "web-based" brood reporting system was launched in the summer 2016 - see preliminary report in the "Research" section below.



Roadside Gobbling Counts- 2016

Roadside gobbler trend routes (10 routes; 14 counties; 15 stops/route) are conducted annually (late March to April) in conjunction with roadside trend routes for ruffed grouse. The number of male wild turkeys heard gobbling along 14 roadside trend routes during 30 March to 19 April, 2016 was 0.54 gobblers heard per stop (GI), 19% less than the 0.66 heard in 2015. The 5-yr moving average shows a general increase from 1987-2006, followed by a general decrease since the 2006 peak. The 2015 statewide gobbling index of 0.54 was less than the 5 yr-mean of 0.71 ($P < 0.05$) and was the lowest GI since 1994.



Regulation Changes

A proposal was submitted to add Elkhart, Kosciusko, and Noble counties (northern tier counties) to the county list for the firearms (shotgun) portion of the fall wild turkey hunting season in 2017-18.

Crop or Nuisance Issues

Crop depredation complaints in row crops continue to diminish each year. District biologists generally hear crop complaints about turkeys when called out to investigate deer damage. Nuisance complaints are now more common than crop complaints on a year to year basis; most nuisance complaints involve "backyard" situations and wildlife feeding. General recommendations are to remove food sources, apply abatement techniques, and/or allow fall hunting. Nuisance permits for taking nuisance wild turkeys are only issued if it involves a "human health and safety issue" and special circumstances if all other techniques have failed.

Disease Issues

An avian influenza outbreak occurred in some commercial poultry houses in Indiana during 2015 that received national attention but there was no connection or known infection related to wild turkey flocks.

A paper and presentation related to the 2011-13 disease surveillance of wild turkeys related to a 2011 corona virus outbreak in commercial poultry operations was presented at the 11th National Wild Turkey Symposium in Tucson, AZ in January, 2016; J. N. Caudell, S. E. Backs, R. Rudolph, T. Hooper, and T. Bryan 2016. Surveillance of turkey corona virus and other infectious pathogens in Eastern wild turkey in Indiana.

Research

No formal research projects are currently underway. We did launched a new "web-based or on-line" brood reporting system during the summer of 2016. The objective is to broaden our coverage around the state (especially with staff reductions and office centralizations) by increasing the sample size of observations using not only our IDNR personnel, but those of various

sister natural resource agencies (e.g., USFS, NRCS) along with the general public by providing a "citizen scientists" opportunity to participate in a wildlife survey. The survey was initiated in mid-May primarily with DFW personnel so we could work out some of the bugs before the intended normal survey period of July through August was promoted publcily. The data will be compiled in September with a short report of the findings sent out to participants via their email address. We hope to build up an emailing list of annual participants and improve the scope of the survey. A small poster (8.5x11 in) was developed to be displayed in IDNR offices along with a wallet size cards with abbreviated "what to report" instructions on the backside. The instructions on the web site provide an explanation of why counting turkeys during the summer months is important and how and what to report: http://www.in.gov/dnr/fishwild/8641.htm
A "Casio" based information system is used with observers creating a personalized username allowing them to report multiple observations without reconnecting. The username setup requests an email address and also requests the observer's county of residence and zip code which will allow us to get some idea of coverage across the state and possibly identify areas where we need to encourage more observers.

What should I report?

- **Number of turkeys seen and the county that each observation was made.**
- **Each observation event should be reported separately.**
- **Sex and relative age (adult or poult) of the birds**
- **A brood sighting is one in which is one or more hens with young (poults)**
- **Adult hens without young**
- **Sightings of gobblers or gobbler groups.**

A brief summary of observations reported for mid-May through July as of 8/8/2016 indicated 320 participants reported 501 separate turkey observations, with 73% reported by public and 23% by natural resources personnel. A total of 3,382 turkeys were observed: 865 hens, 1,953 poults, 350 gobblers, & 214 unknown. Observations came from 70 of 92 counties in the state. 101 observations were made during mid-May to 6/30 with 400 in July 2016. Historically, the brood card survey was conducted during July and August, so the July data was separated out to allow a more accurate comparison to the previous year's surveys. July Only Summary (note these totals could change later as some late observations come in):

Total turkeys observed in July was 2,700; 687 hens, 1,586 poults, 270 gobblers, & 157 unknown.
68% of the hens were with poults (227 broods); the average brood size was 9 birds (2 Hens + 7 poults on average per brood). The Production Index (PI) is calculated as the total poults/total hens observed. The preliminary July 2016 Production Index = 2.3, which is less than the 2.9 reported for July 2015. Given the amount of precipitation so far this summer, a lower PI would be expected. So far the number of brood observation reports appears about twice as many as reported through the traditional card survey to DFW/LE personnel for a July survey period.

Relevant Links

Complete results of turkey population and harvest surveys found at: **http://www.in.gov/dnr/fishwild/3352.htm**
Note: Under key words only use the word "turkey" not "wild turkey".

IOWA WILD TURKEY POPULATION STATUS REPORT – 2016

40th Midwest Wild Turkey Working Group Meeting – August 22-25, 2016
General Butler State Resort Park Carrollton, Kentucky

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641-774-2958 / james.coffey@dnr.iowa.gov

POPULATION STATUS

Iowa continues to have robust turkey populations in areas with good turkey habitat. Being the transition from Eastern deciduous forest to tall grass prairie means Iowa's turkeys are not evenly distributed across the state. A large portion of Iowa's woodlands are found in the eastern and southern 1/3 of the state. These habitats range from the driftless regions of Northeast Iowa to the oak/hickory timber of the south. Much of the turkey habitat in the central and western parts of the state is relinquished to woodlots and riparian areas (Figure 1). With a noticeable exception along the western boarder in the Loess Hills region.

The wild turkey population most likely peeked in the early 2000's as indicated by the number of license holders and the harvest (Figure 2). Current estimates place Iowa's wild turkey population at approximately 150,000 birds. This is down significantly from historical projections.

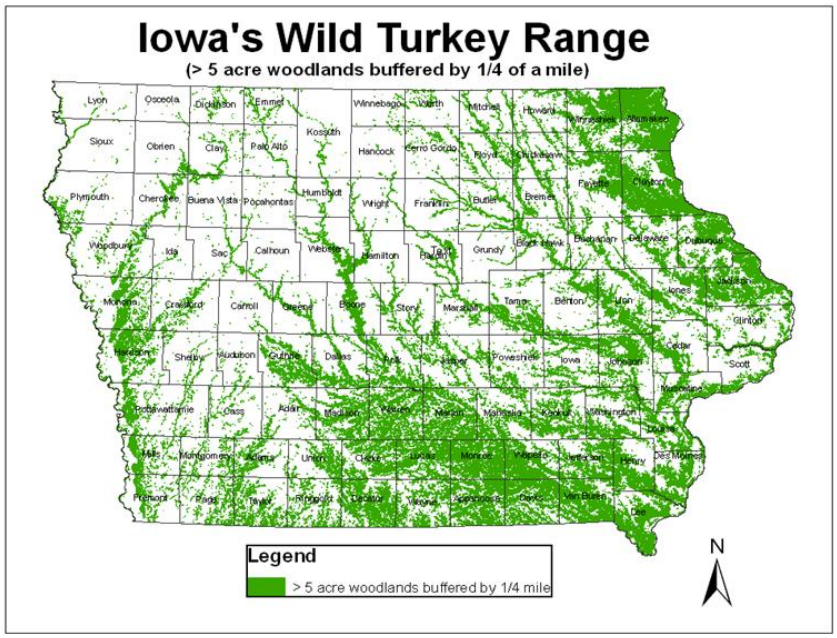

Figure 1. Iowa's wild turkey range (5 acre and greater woodlands buffered by ¼ mile).

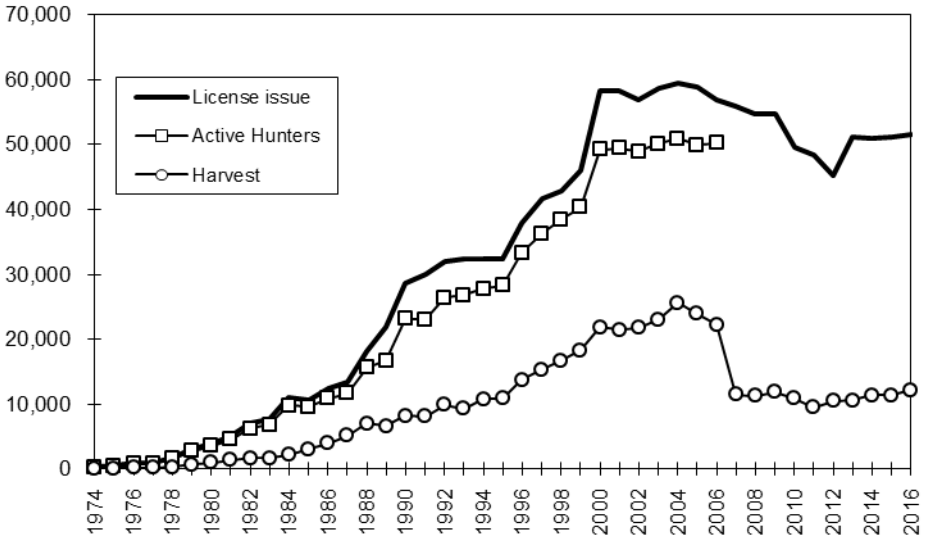

Figure 2. Iowa spring turkey hunting statewide estimates1974-2016. Active hunters unknown after 2006 due to survey changes. Harvest estimation methods changed from mail surveys to mandatory reporting in 2007.

The Iowa bow hunter survey (Figure 3) along with the July/August brood survey (Figure 4) are the two techniques that allow for the direct estimation of wild turkeys by observation. Both allow for regional population trend information to be gathered.

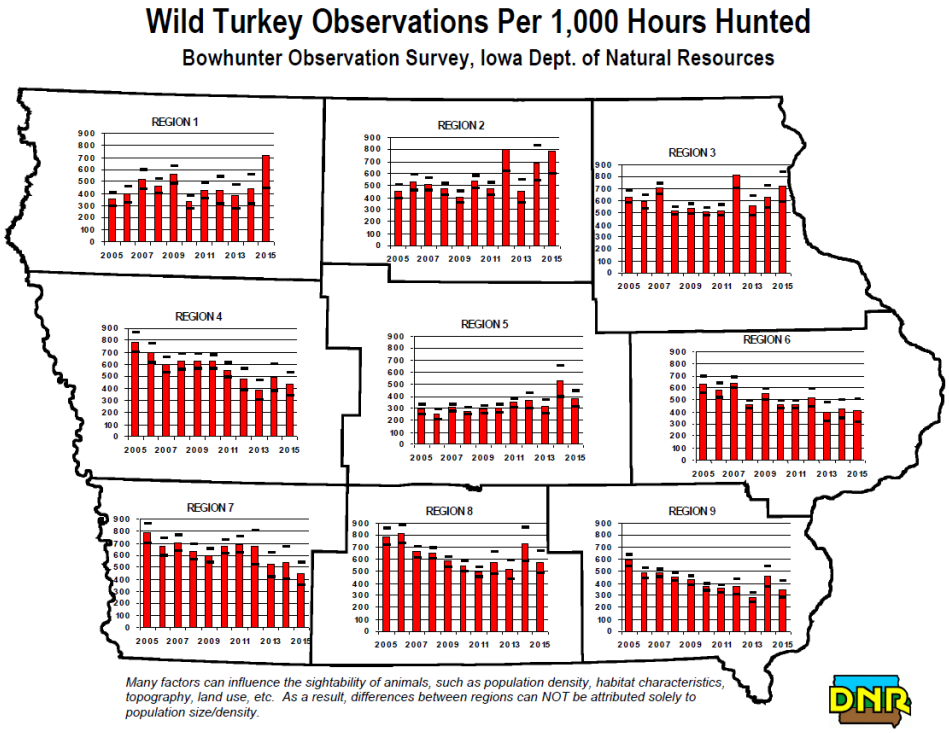

Figure 3. Annual Bowhunter Observation Survey for Wild Turkey

REPRODUCTION

The Iowa Department of Natural Resources has conducted a July/August wild turkey brood production survey since 1976. In 2014 the traditional rural mail carrier survey was replaced with a bimodal survey that uses postcards and a web based survey. Postcards are mailed to department personnel as well as selected turkey hunters in each of the 9 agricultural regions. Observers then record their sightings by month and day and return the postcard at the end of the survey. Each person has a unique identifier so they can choose to enter their data via the web instead of by traditional mail. Other citizen scientists are encouraged through press release and known email addresses to also survey wild turkeys and report via the web as a guest observer. This information is then compiled into a statewide (Figure 4) and regional (Figure 5) information.

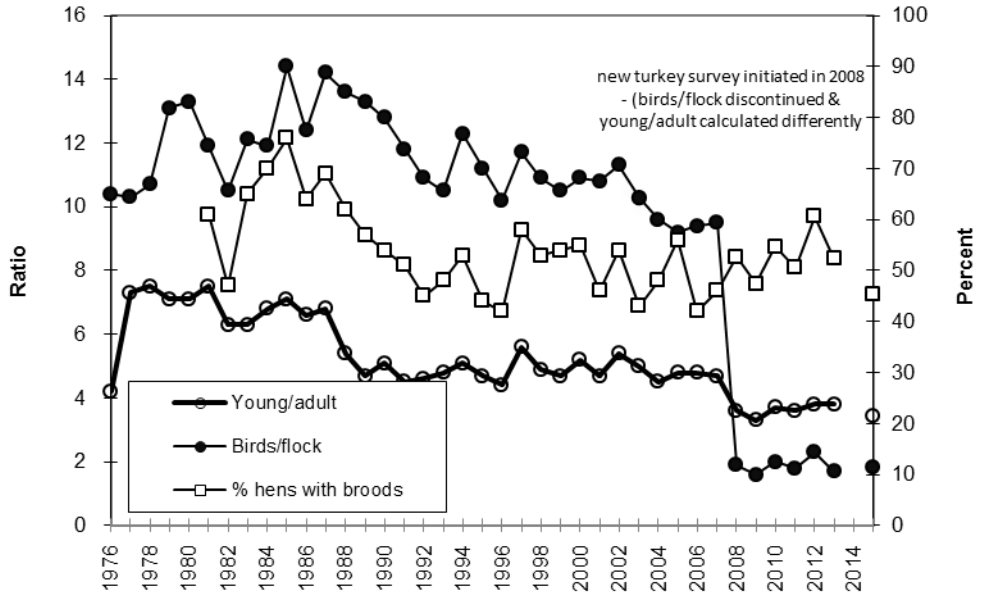

Figure 4. Iowa Turkey Brood Survey Statewide Results 1976-2015.

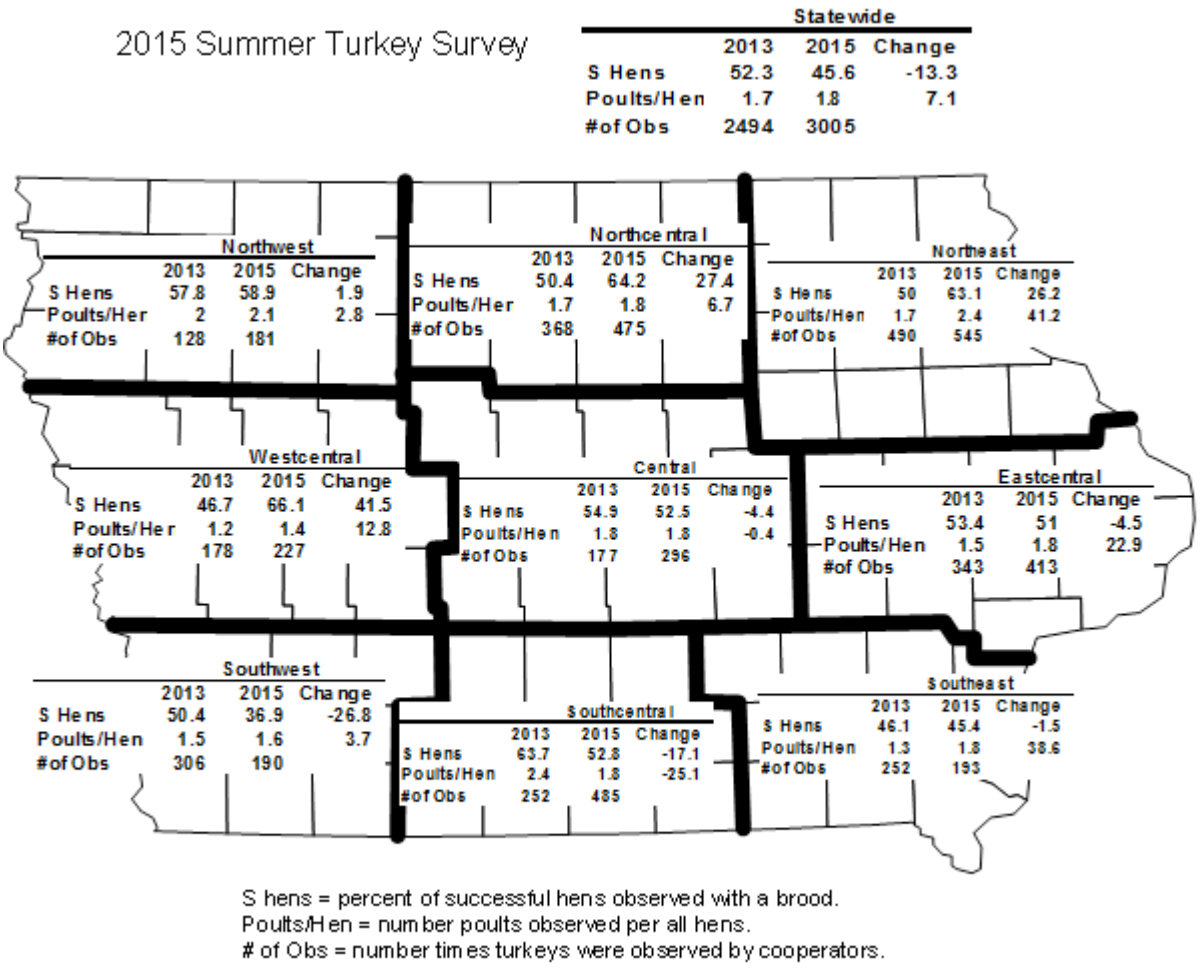

Figure 5. Regional Wild Turkey Production Data.

An overall downward trend of the number of hens with poults (-13%) but an increase in the number of poults per hen (+7.1%) was seen during the 2015 survey. This data however is compared to 2013 data since no information was collected in 2014. Based upon the bowhunter survey information from 2014 there was good reproduction across most of the state. With much of the state's habitat located along riparian corridors, populations located in these areas can be quite susceptible to spring flooding. Greater acreage of CRP exists in the southern portion of the state which provides additional early spring nesting cover.

HARVEST

2015 Fall Turkey Season

Fall turkey hunter success rates remained similar in 2015 from 2014 at 8.8 %, but still well below the 2005 and prior estimates. This significant change is most likely due to the change in harvest estimation technique. Mandatory reporting replaced a post card survey in 2006. All fall licenses issued (gun/bow and bow only) increased in 2015 to 8,537 from 8,507 in 2014. Bow-only season started October 1 and ran until January 10th 2016 with December 5th-20nd excluded for the shotgun deer season. Gun/bow season was 54 days from October 12th - December 4th. Forty-six percent of the fall licenses were issued free to landowners, which was the same percentage as in 2014. Estimated numbers of active hunters were undeterminable since there was no post card survey after the season. Hunter success rates varied from 12% in zones 7 to 23% in Zone 8. Archery only licensed hunters reported a harvest of 117 turkeys in 2015 which was an increased from the 2014 archery-only license harvest. The 7% success rate for 2015 archery only licenses was higher than the previous year's success rates for archery only hunters. Nonresidents have not been permitted to hunt fall turkeys in Iowa since 1990. Residents must pick a zone and a season if gun hunting, which can be found in the current hunting regulations booklet (Link 2). Dogs are legal to use for turkey hunting during the fall season.

2016 Spring Turkey Season

Iowa's 43rd modern spring hunting season recorded an estimated 12,173 turkeys harvested, with 51,472 licenses sold. This was the 28th year the entire state was open to spring turkey hunting. The 44-day season (9 April through 22 May, 2016) was partitioned into 5 separate seasons: a 9-day youth-only season, and 4 regular seasons (4,5,7 and 19-days). The 5 season format, with unlimited license quota for all the periods, resulted in 42,295 resident shotgun licenses issued, which was a decrease of 33 from 2015. An additional 7,170 archery-only licenses were issued in 2016. Archery-only licenses harvested 1,230 turkeys, resulting in a 17.2% success rate. Twenty-three percent of the resident gun hunters were successful in harvesting a gobbler in 2016. Turkeys were harvested in 98 of Iowa's 99 counties.

This was the 27th spring that nonresidents were allowed to hunt turkeys in Iowa. Quotas filled in zone 4 (seasons 1,2,3,4), zone 5 (seasons 2,3,4), zone 6 (None filled), and zone 8 (seasons 1,2,3,4) in 2016, leaving 327 licenses available. Non-resident hunters harvested 886 turkeys. Nonresidents reported a higher success rate for spring gobblers than did residents (40% versus 23% respectively). Nonresidents are partitioned across the state to spread out perceived hunting pressure (Link 1).

In spring of 2016, known jakes (spurs < ½") harvested were 15% of the total harvest (21% the previous year). Turkeys harvested with spurs ½" – ¾" were 25.5% (22% in 2015) of the total harvest. The majority (60%) of turkeys harvested in 2016 had spurs greater than ¾ of an inch in length.

HUNTING INCIDENTS

There was one turkey hunting related incident during the 2016 spring season. It was investigated as a "mistaken for game" and resulted in a fatality. The parties involved were hunting together at the time. Iowa continues to have very little incidence of accidents during either the spring or fall seasons. Most are self-inflicted due to poor gun handling.

REGULATION/LEGISLATION CHANGES

No major changes occurred during the 2015-2016 turkey seasons. The most recent major change was allowing an unfilled youth tag to remain valid until filled during any other season. Legislation was passed during the 2016 legislative session to allow an apprentice hunting license. The rules have been written and it will go into effect during the fall of 2016. This license will allow anyone without a hunter safety certificate to hunt with an apprentice license while being mentored by a legally licensed hunter. This is part of the departments R3 campaign.

RESEARCH

Iowa is not currently conducting any active field research.

EMERGING OR EVOLVING ISSUES

The Iowa DNR will be evaluating the impact of the early youth hunting season dates. With the current legislation allowing the use of an unfilled tag we may reduce the youth season from 9 days back to the previous 3 day structure.

Hunters often state they have no place to hunt this year the Iowa DNR private lands biologist have enrolled over 24,000 acres of private lands that are available as walk in hunting areas. This program is being evaluated for usage and cost efficiencies. Known as IHAP this program is gaining in popularity (Link 3)**.**

RELEVANT LINKS

Link 1 http://www.iowadnr.gov/Hunting/Nonresident-Hunting#13018104-nonresident-turkey
Link 2 http://www.iowadnr.gov/Hunting/Turkey-Hunting
Link 3 http://programs.iowadnr.gov/maps/huntingatlas/default.html

MESCELLANEOUS

125 Turkeys were successfully transferred to Texas last winter. We will support The Texas effort again this year. All transferred turkeys have been part of our depredation program.

2015-16 Kansas Wild Turkey Program Report

Kent Fricke, Small Game Coordinator

Kansas Department of Wildlife, Parks and Tourism

Kansas Department of Wildlife, Parks and Tourism

I. Current Harvest

Spring Turkey Harvest Comparison: 2015 v 2016

Weapon / Sex	2015	2016	% Difference
Crossbow	1,152	837	-27
Archery	4,722	3,515	-26
Firearm	30,383	25,858	-15
Estimated Total Harvest	36,511	30,298	-17
Adult Males	30,683	26,548	-13
Juvenile Males	5,624	3,628	-35
Bearded Females	204	123	-40

Spring Turkey Hunter Success Rates, among active hunters (≥ 1 bird harvested)

Year	Overall Hunters	Overall Hunter Success (%)	Resident Hunters	Resident Success (%)	Non-Resident Hunters	Non-Resident Success (%)
2012	39,386	60.2	26,535	53.5	12,733	70.5
2013	44,803	57.1	30,422	51.8	14,253	66.1
2014	43,050	54.5	28,686	49.3	14,245	62.2
2015	46,225	54.8	30,938	46.3	15,391	61.6
2016	44,940	47.3	29,014	43.0	15,926	53.0

Spring Turkey Hunter Success Rates of Active Hunters

# of Turkey Killed	Successful Hunters	% of Successful Hunters
1	20,889	46.5
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Estimated Total Harvest	2,862	2,093	-27
Adult Males	1,194	836	-30
Juvenile Males	590	387	-34
Adult Females	839	612	-27
Juvenile Females	223	143	-36

Fall Turkey Hunter Success Rates: 2015/2016

# of Turkey Killed*	Successful Hunters	% of Successful Hunters
1	1,940	19.8
2	142	8.6
3	9	6.7
4	0	0

* Game tags (3) were only available in the northcentral hunting unit (Unit 2) for the fall 2015/2016 season.

II. License and Season Information

Kansas License and Sales Information (Fall 2015 and Spring 2016)

		Fall 2015		Spring 2016	
Residency	Permit Type	Cost ($)*	Number Sold	Cost ($)*	Number Sold
Resident	General Permit	22.50	5,337	27.50	15,287
	Game Tag	12.50	1,774	37.50	14,227
	Combo**	--	--	17.50	3,636
	Youth Permit	7.50	777	7.50	3,660
	Youth Game Tag	7.50	--	7.50	--
	Youth Combo	--	--	12.50	1,161
	Landowner / Tenant Permit	12.50	1,569	15.00	3,745
	Landowner / Tenant Combo	12.50	--	20.00	873
Non-Resident	General Permit	32.50	1,940	62.50	11,588
	Game Tag	22.50	552	32.50	12,153
	Combo**	--	--	87.50	2,884
	Youth Permit	12.50	114	12.50	873
	Youth Game Tag	12.50	--	12.50	--
	Youth Combo	--	--	22.50	--
	Tenant Permit	--	71	32.50	195
	Tenant Combo	--	--	45.00	60

* Hunters must also buy an annual small game license (resident = $, non-resident = $, and non-resident youth = $).
** Combos include initial permit and one game tag (2 permits, total). Combos are available for purchase only through March 31.

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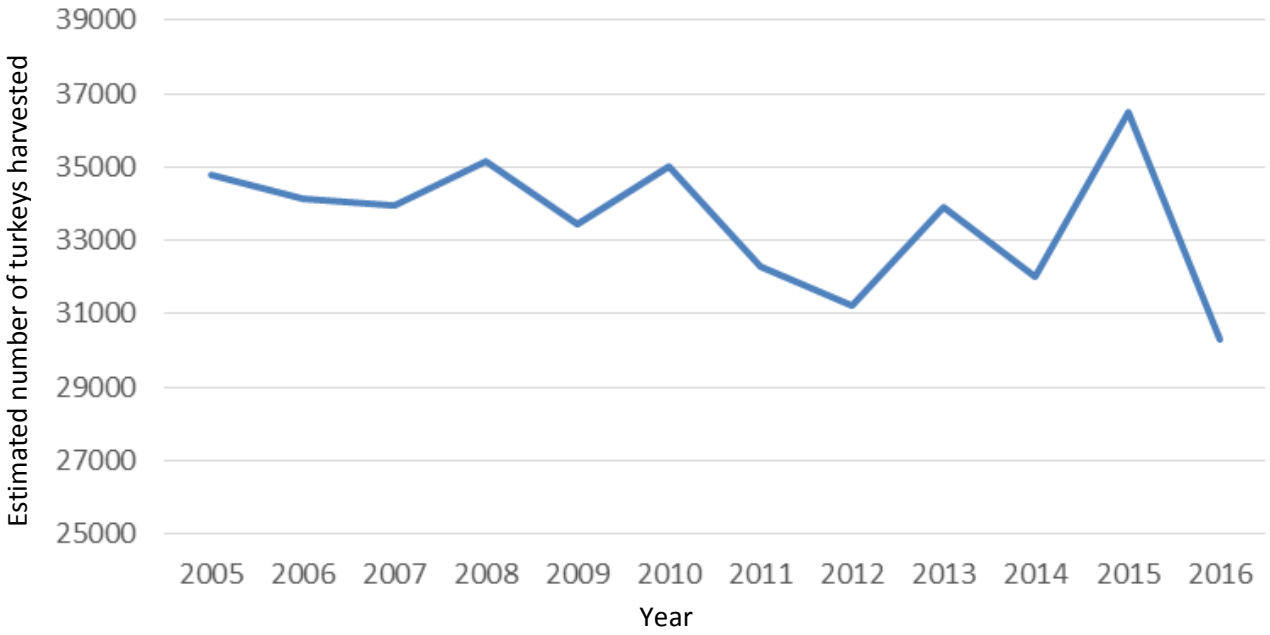

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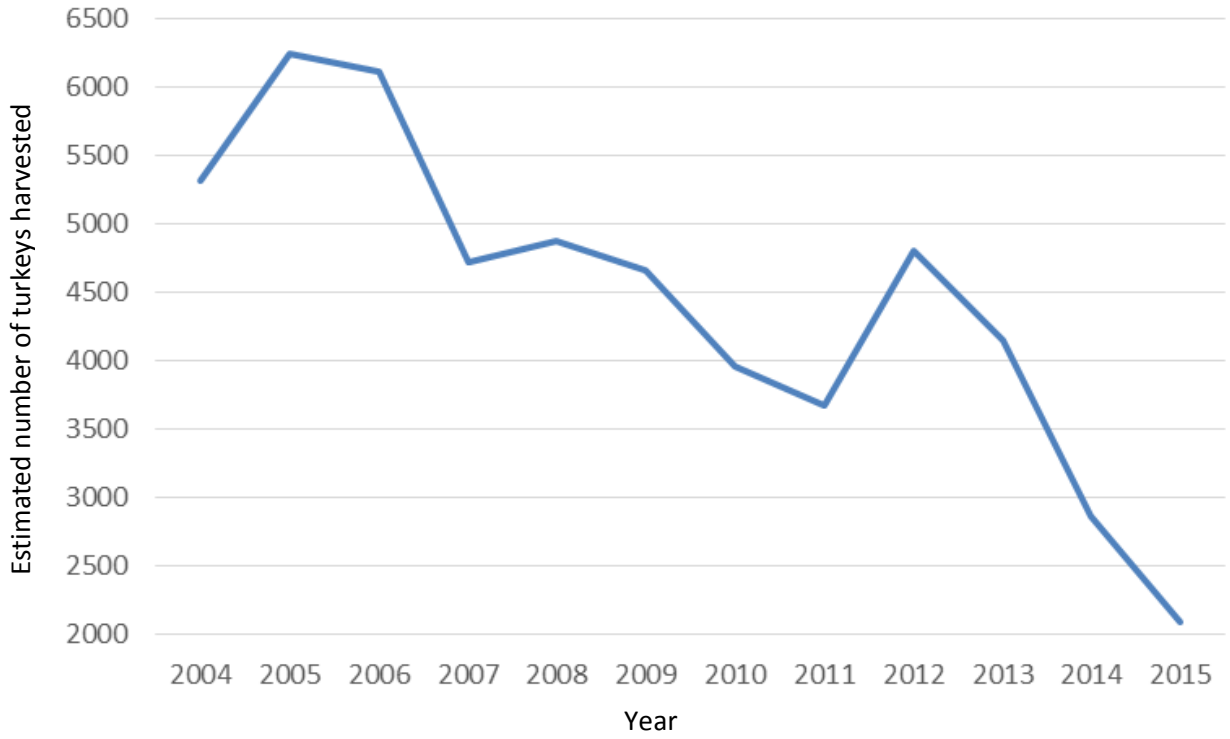

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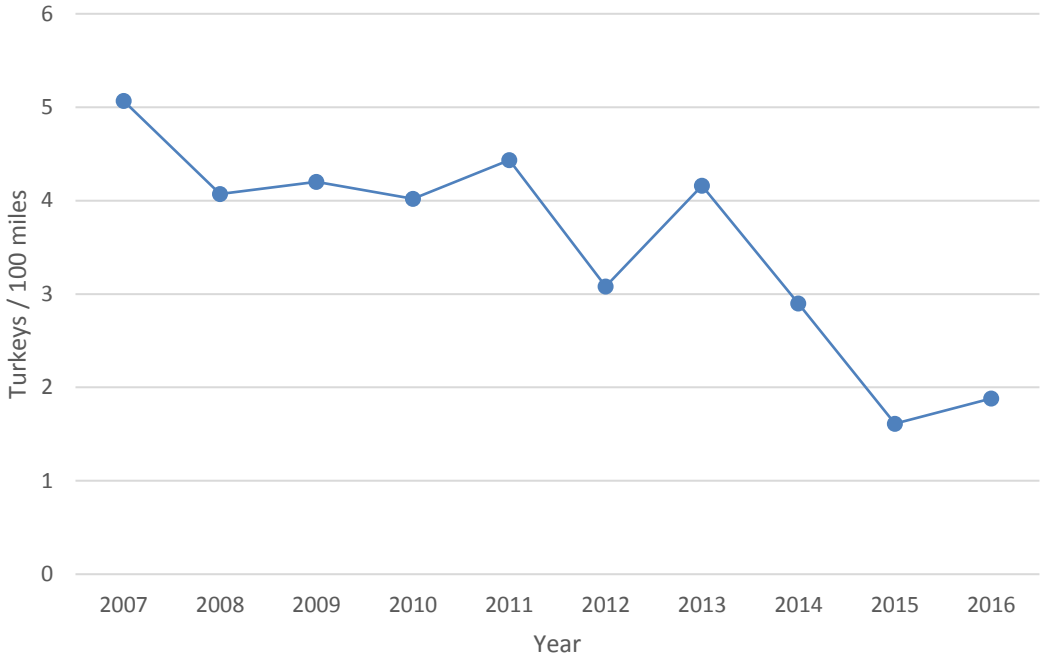

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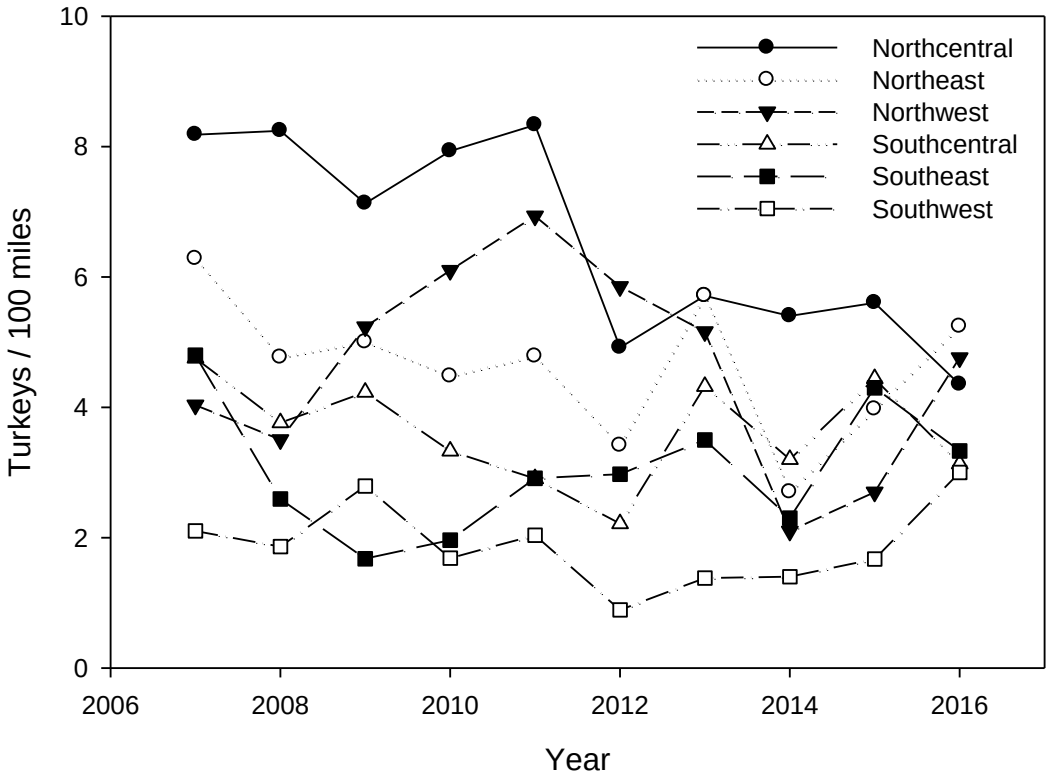

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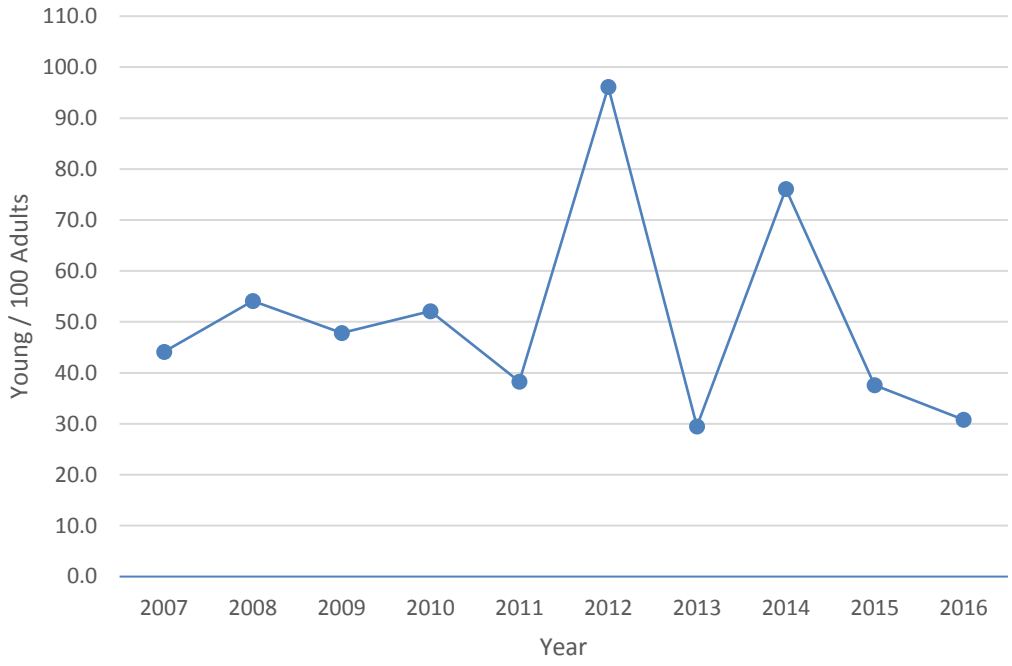

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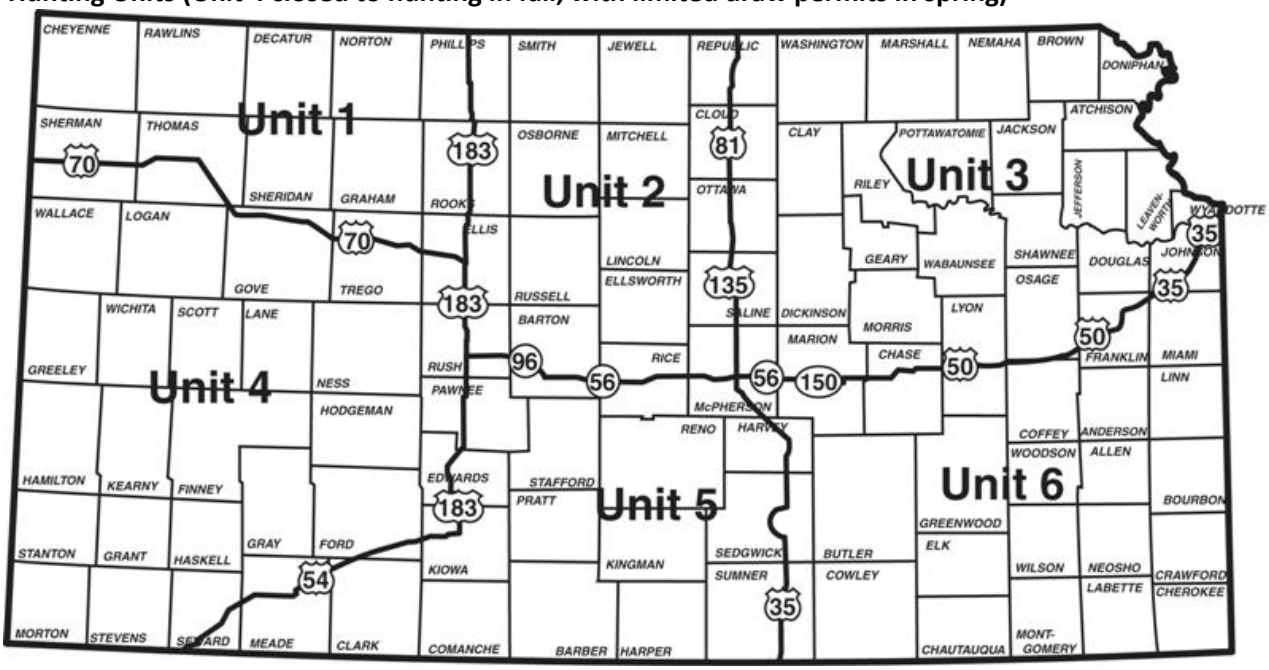

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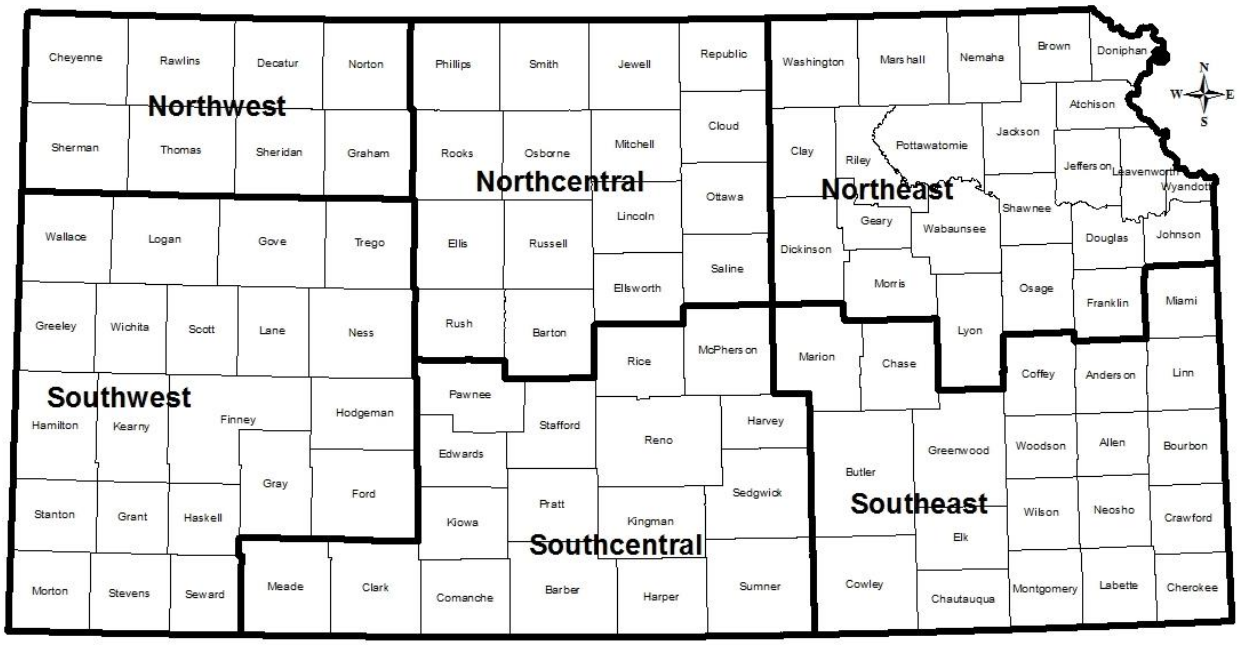

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X. Research

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XI. Hot Topics

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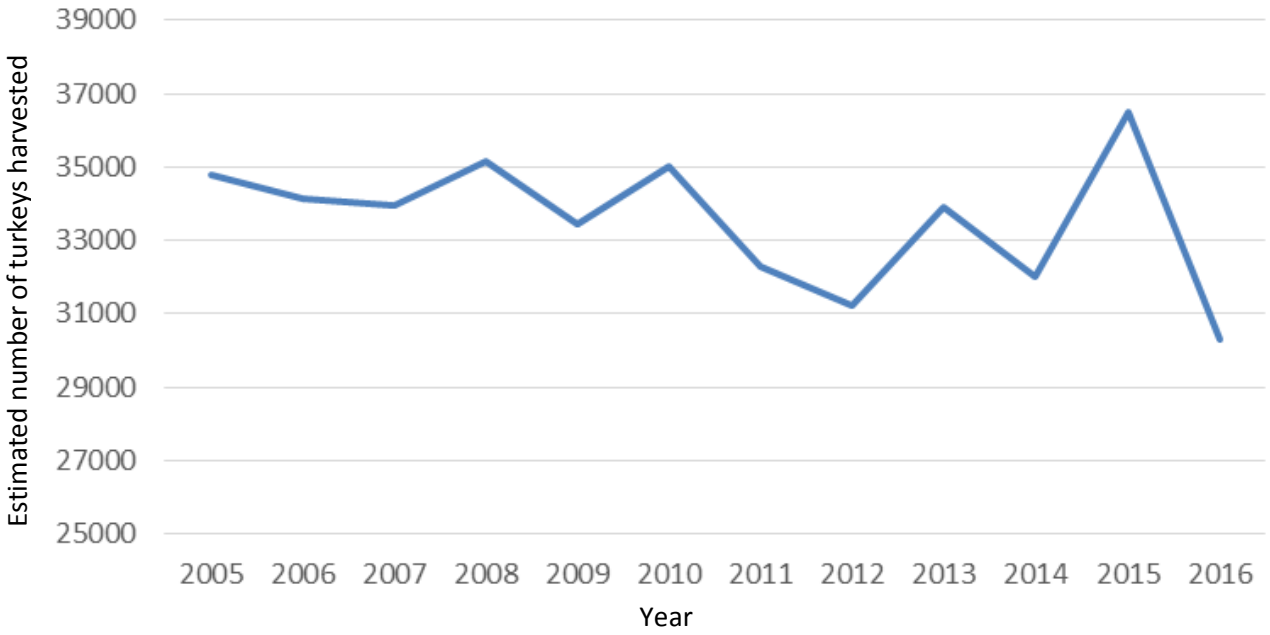

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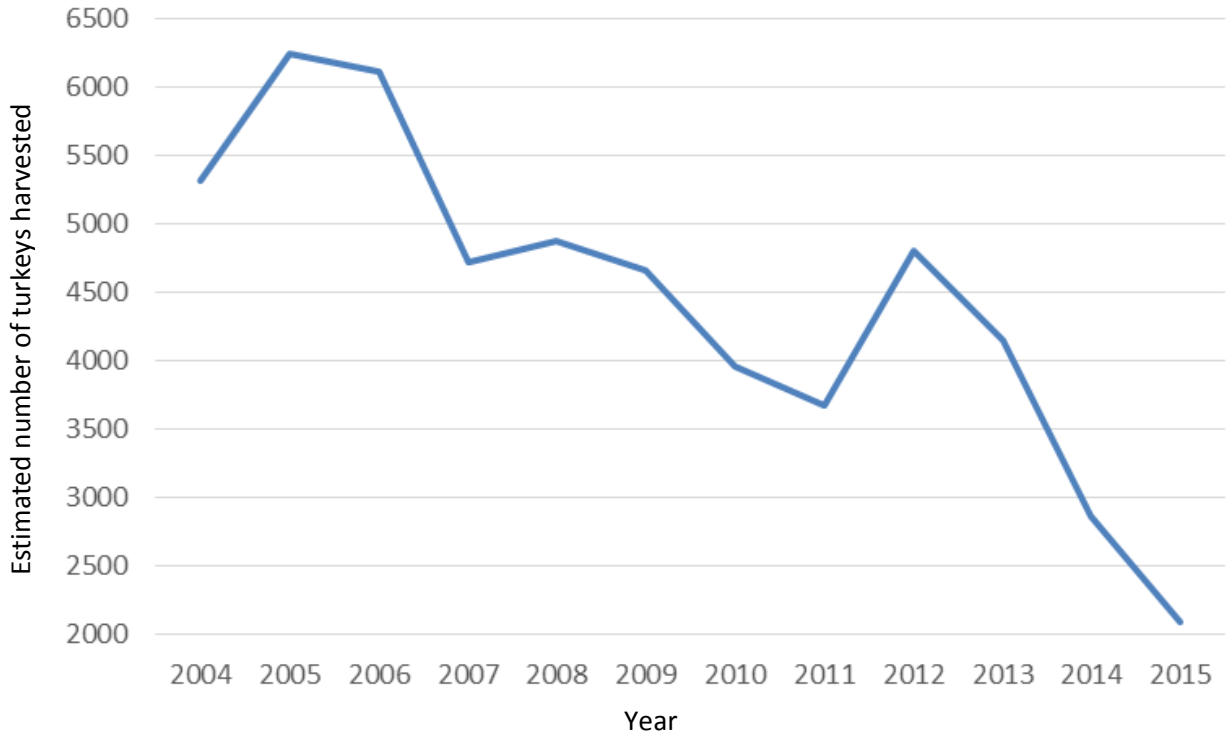

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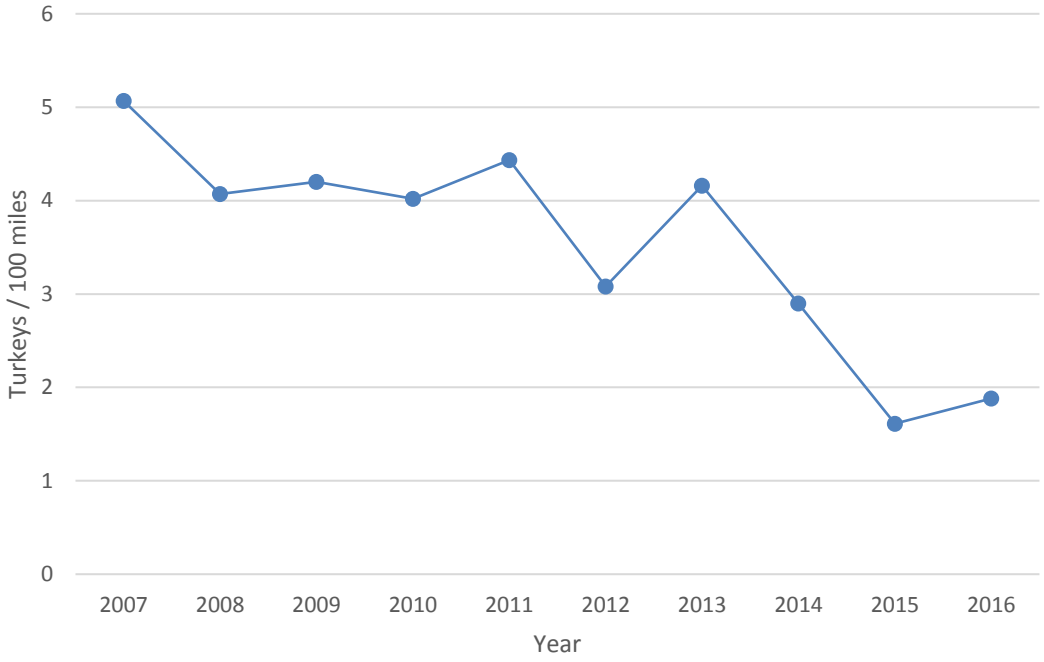

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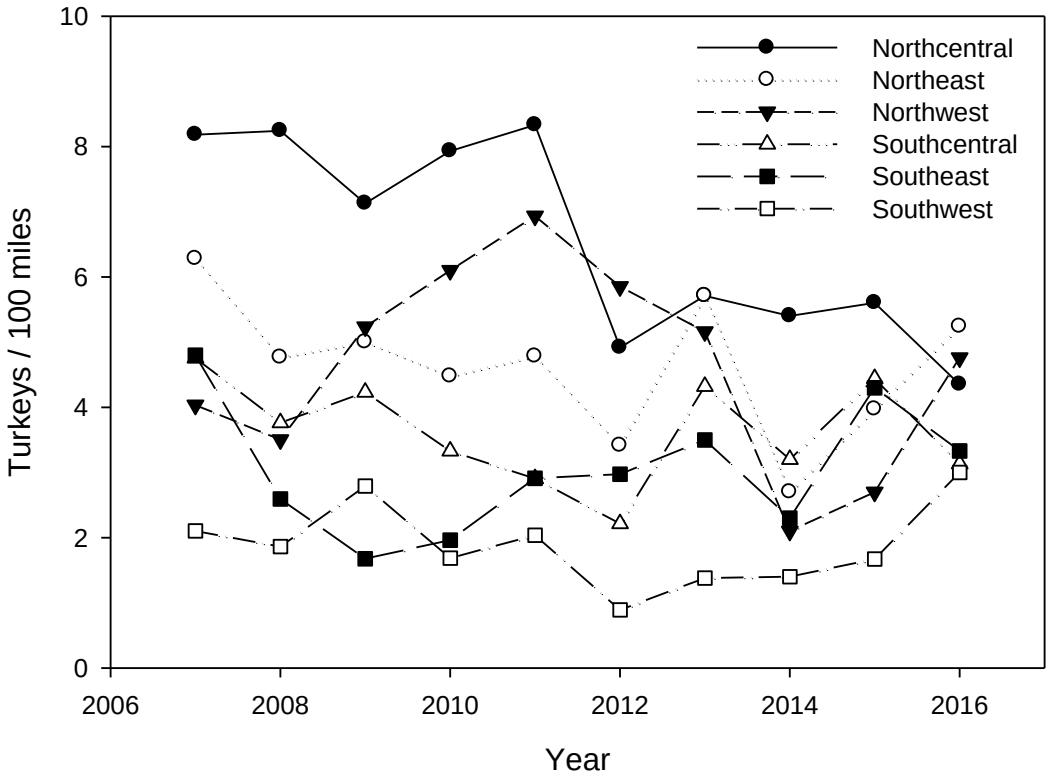

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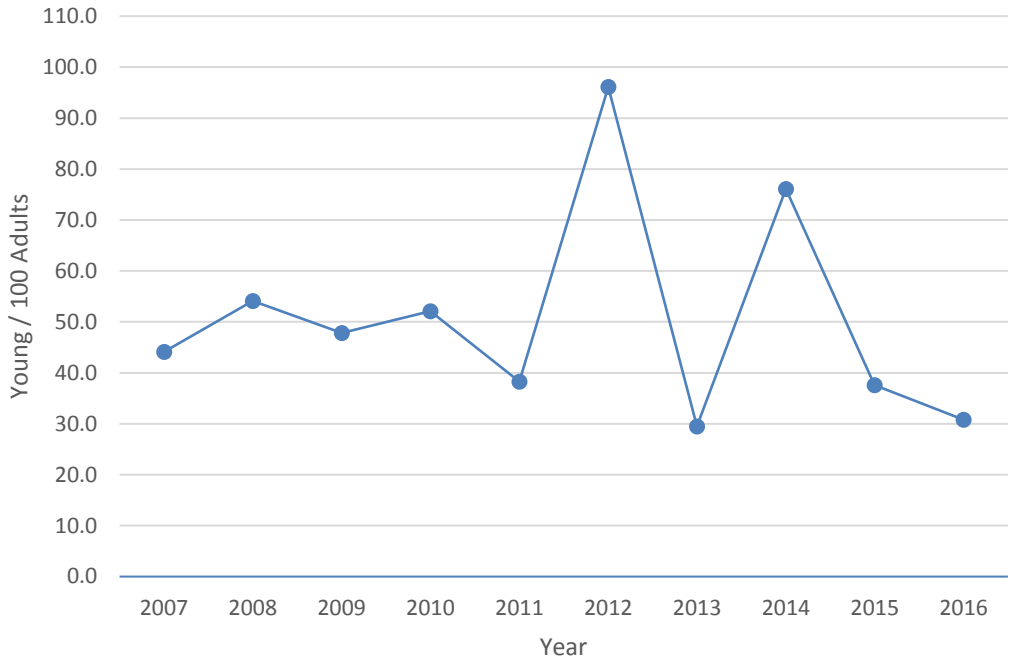

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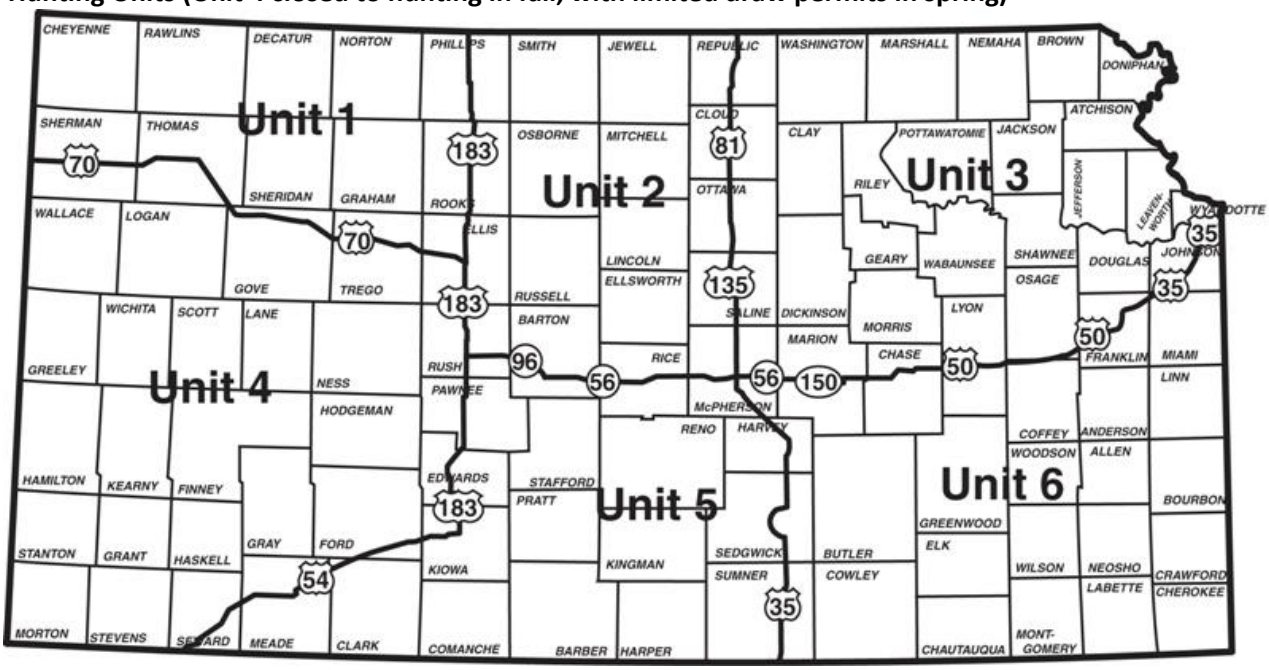

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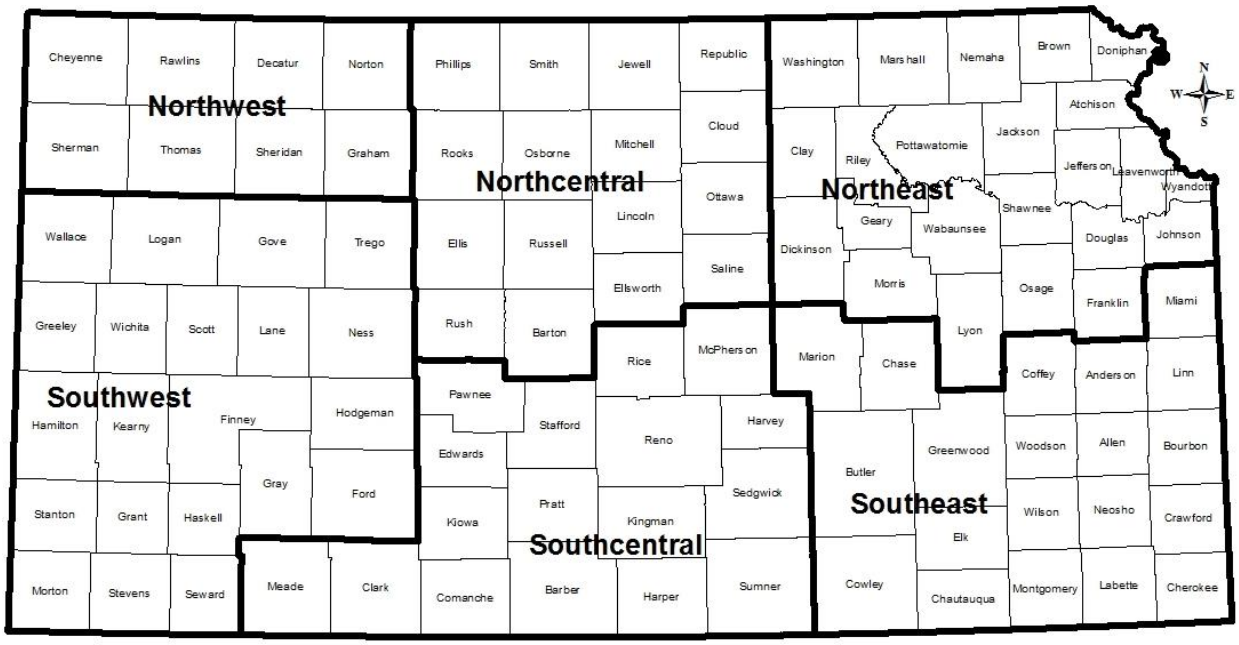

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KENTUCKY WILD TURKEY POPULATION STATUS REPORT – 2016

Midwest Deer and Turkey Study Group Meeting – 22-25 August 2016
General Butler State Resort Park – Carrollton, KY

Zak Danks – Ruffed Grouse & Wild Turkey Program Coordinator
Kentucky Department of Fish and Wildlife Resources
1 Sportsman's Lane
Frankfort, KY 40601
502-564-7109 ext. 4544 / zak.danks@ky.gov

POPULATION STATUS

Population numbers and management efforts for wild turkeys in Kentucky have undergone drastic changes over the last 60 years. In 1954 it was estimated that only 850 birds existed statewide, and the great majority of those occurred only in far western Kentucky. Between 1978 and 1997, however, intense restoration efforts resulted in the release of 6,760 birds on 430 sites throughout the state. Today, Kentucky's wild turkey population is estimated at approximately 240,000 birds, with turkeys present in all 120 counties of the Commonwealth.

REPRODUCTION

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has been monitoring turkey reproduction since 1984 by conducting annual brood surveys from July through August. KDFWR personnel and volunteers record survey data during routine travels. Observations include number of hens and poults per brood, number of hens without broods, date and number of adult gobblers. A categorical description of poult size (¼, ½, Grown) also is recorded.

The statewide brood survey for 2015 concluded with 374 observations and broods being seen on 683 occasions; this was up 15.0% from 594 in 2014. Overall, 1,168 sightings of hens were recorded, indicating the proportion of hens with at least one poult was 58.5%, which was down 4.9% from the 2014 estimate of 61.5%. The average brood size of 3.9 poults in 2015 was slightly larger than the 3.5 poults recorded in 2014. The average number of poults per all hens in 2015 was 2.3 (Figure 1), which exceeds both the 5-year (1.9) and 10-year (2.2) averages and equals the 15-year average.

Regionally, the eastern portion of the state appeared to exhibit the most reproductive success in 2015 with 3.0 poults per all hens (Figures 2 and 3). Estimates for the western and central regions of the state indicate approximately 1.6 and 2.0 poults per all hens, respectively.

Brood production has been relatively low since 2003, and across years, statistical analyses reveal no significant trends in brood size, proportion of hens with poults, or poults per hens. This may be a product of survey participation and response rates, which has been highly variable. Consequently, statistical power associated with brood survey analyses is low- which appears to be due to unequal survey efforts across years and regions. Survey response rates in the last three

years have averaged about 20%. To validate appearance of downward trend in production, KDFWR will increase participation by survey respondents and will examine the feasibility of creating an electronic reporting system for staff.

HARVEST

Hunters in Kentucky have the opportunity for spring and fall harvest of turkeys. In 2016, the statewide spring season ran for 23 days from April 16 through May 8; the youth-only hunt occurred on the weekend of April 2-3. A spring turkey permit is required of residents and nonresidents in addition to a standard hunting license. Legal shotgun, archery and crossbow are permitted throughout the statewide season in spring; shooting hours are one-half hour before sunrise to one-half hour after sunset. Season bag limits for the spring season are 2 male turkeys or those with visible beards; the daily bag limit is one bird.

The 2016 fall archery season for turkeys will occur September 3, 2016 to January 16, 2017. In 2016, a fall shotgun season will occur on October 22–28 and December 3–11. A fall crossbow season for turkeys will run from October 1–16 and November 12 to December 31. A fall turkey permit in addition to a standard hunting license is required of those wishing to take birds in the fall. The season fall bag limit is 4 turkeys, only 2 of which may be taken during the shotgun season, regardless of weapon. While the 4 bird limit in the fall is either sex, only 1 male bird may have a beard length of 3 inches or greater.

All harvest data for wild turkeys are collected using a Telecheck Harvest Reporting System via a toll free phone number.

2016 Spring Turkey Season

Kentucky's 2016 spring turkey season resulted in the harvest of 31,047 birds based on Telecheck reports for the 2-day youth-only season and the 23-day statewide season; that was 0.5% greater than spring 2015 when 30,890 were checked (Table 1 and Figure 3).

Overall, spring harvest trends have been stable since a peak harvest of 36,097 birds in 2010. (The 2010 record harvest was likely related to a periodic cicada hatch in 2008 that led to the highest poult production over the preceding decade [Figure 1].) Average spring harvest varies markedly over the 6-year periods before and after 2010 (Figure 3): harvest decreased by > 5% over these 2 time periods in 15 counties, increased by ≥ 5% in 89 counties, and changed ≤ 5% in the remaining 16 counties (Figure 4).

Harvest totals exceeded 200 birds in 74 of 120 counties and ranged from 646 to 71. Harvest density (harvest/mi^2) ranged from 1.9-0.2 and averaged 0.8. Juvenile males (≤2 years of age) made up 17% of the 2016 spring harvest.

The 2016 youth season was marked by low temperatures and high wind in the afternoons, but the 1,856 birds harvested (5.9% of total harvest) represented a 17.7% increase from the 1,577 harvested in 2015. Opening weekend of the statewide season had near perfect hunting weather

and accounted for 29.6% of harvested birds (9,205; Table 1), which was 1.8% greater than in spring 2014. The third weekend of the season saw a widespread rain event for most of the state.

2015 Fall Turkey Season

The 2015–2016 fall turkey season in Kentucky resulted in a total of 4,306 turkeys being telechecked, which is up 63.3% from the 2,637 birds in the 2014–2015 fall season (Figure 5). Males (1,580) and females (2,726) accounted for 36.7% and 63.6% of the harvest, respectively. Juvenile gobblers (409) constituted 25.9% of male birds taken. Harvest by shotgun accounted for the majority of birds taken in the fall (63%); however, archery harvest accounted for 28%, representing a 73% increase over 2014 (Figure 6).

EMERGING OR EVOLVING ISSUES

The harvest trend appears stable over the last 10 years across the KDFWR wildlife division's 5 administrative regions (Figure 7). However, during and following the 2016 spring turkey season, the KDFWR received several calls from concerned hunters who had seen a marked decrease in birds in the areas they hunt; these reports have been periodic and spotty across the state. Harvest by Commission District reveals some differences from harvest based on wildlife regions, with 2 of 9 Districts showing a declining spring harvest trends between the 2 5-year periods 2007-2011 and 2012-2016 (Figs. 8, 9). Commission districts are grouped much differently than wildlife regions and are much smaller in some cases.

Table 1. Spring harvest numbers for wild turkeys in Kentucky, 2015–2016.

	Year		
Period	2015	2016	% change
Youth-only	1,577	1,856	+17.7%
Statewide opening weekend	9,044	9,205	+1.8%
Days 3–end of season	20,269	19,986	-1.4%
Total	30,890	31,047	+0.5%

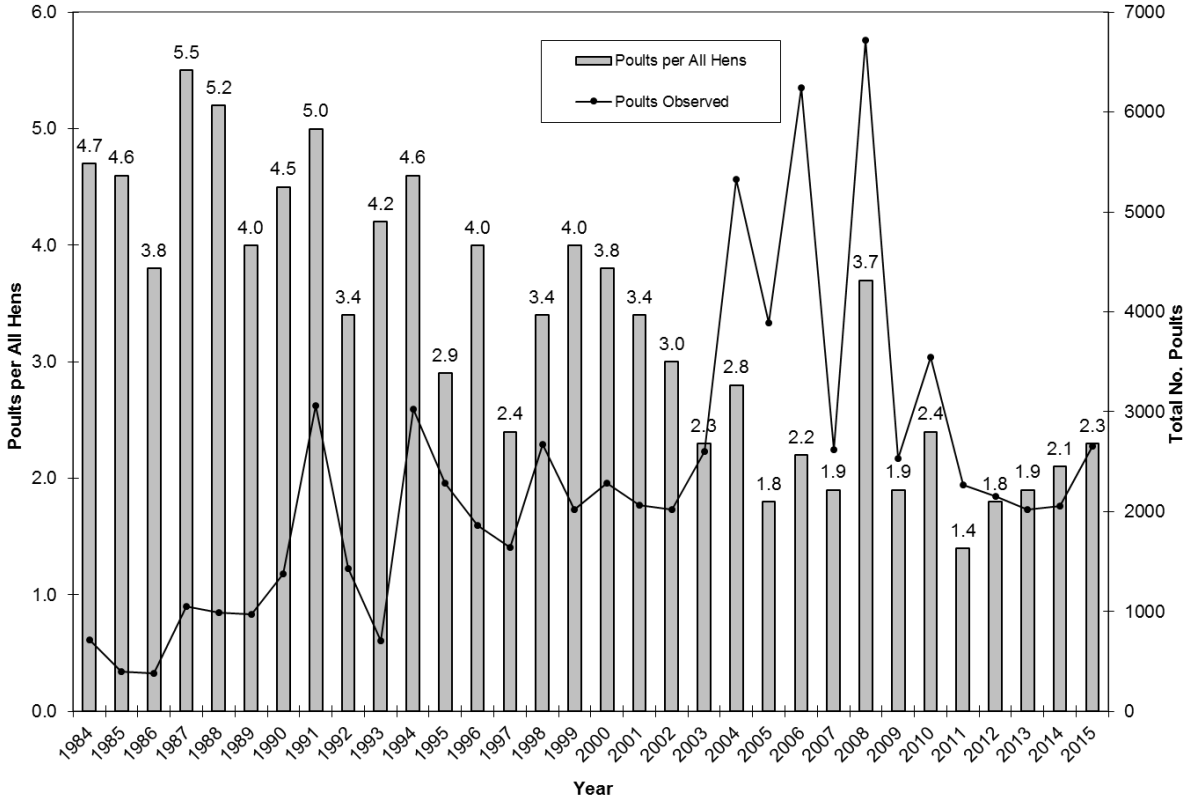


Figure 1. Annual variation in poult production (poults per all hens) recorded by summer brood surveys in Kentucky, 1984–2015.

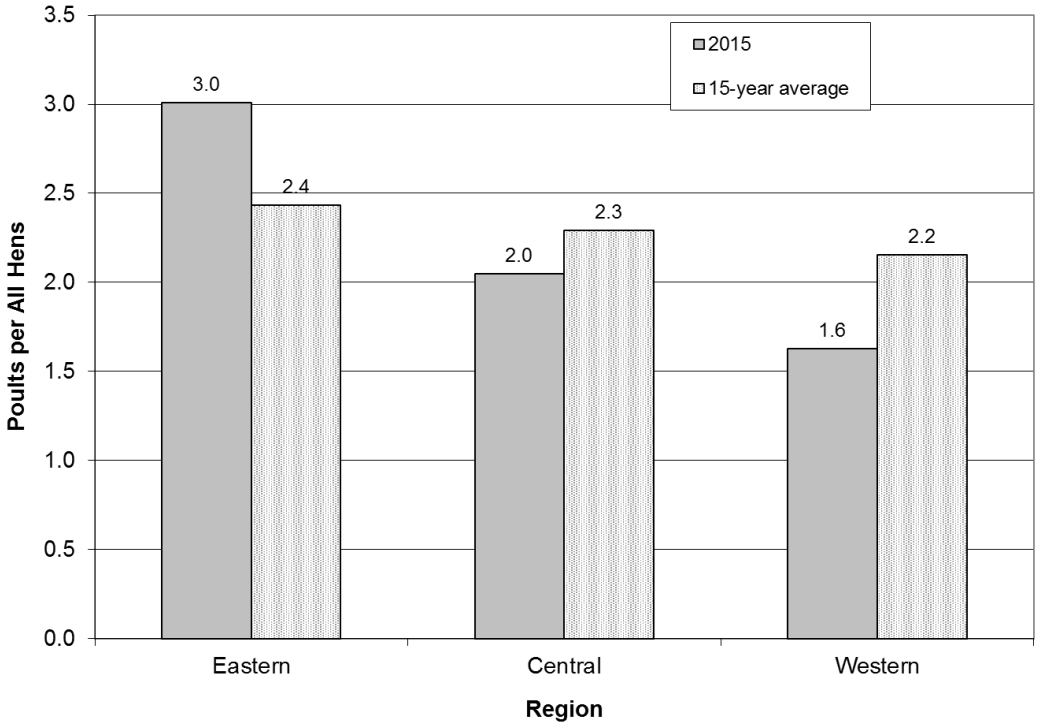


Figure 2. Regional variation in the poult production (poults per all hens) across weather regions in Kentucky, 2015.

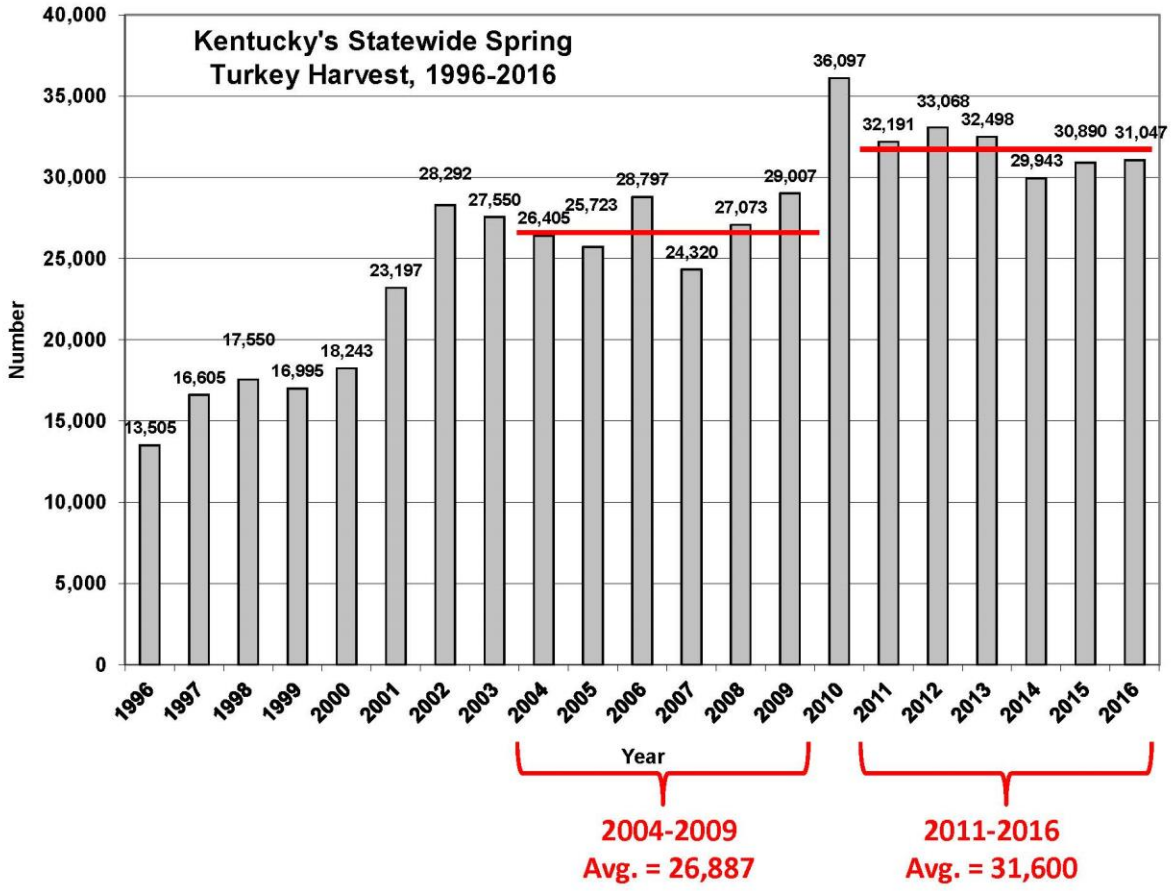


Figure 3. Annual spring harvest returns for wild turkeys in Kentucky, 1996–2016. 1996 was the first statewide season. Average harvest has remained stable over the 6-year periods before and after the peak harvest in 2008.

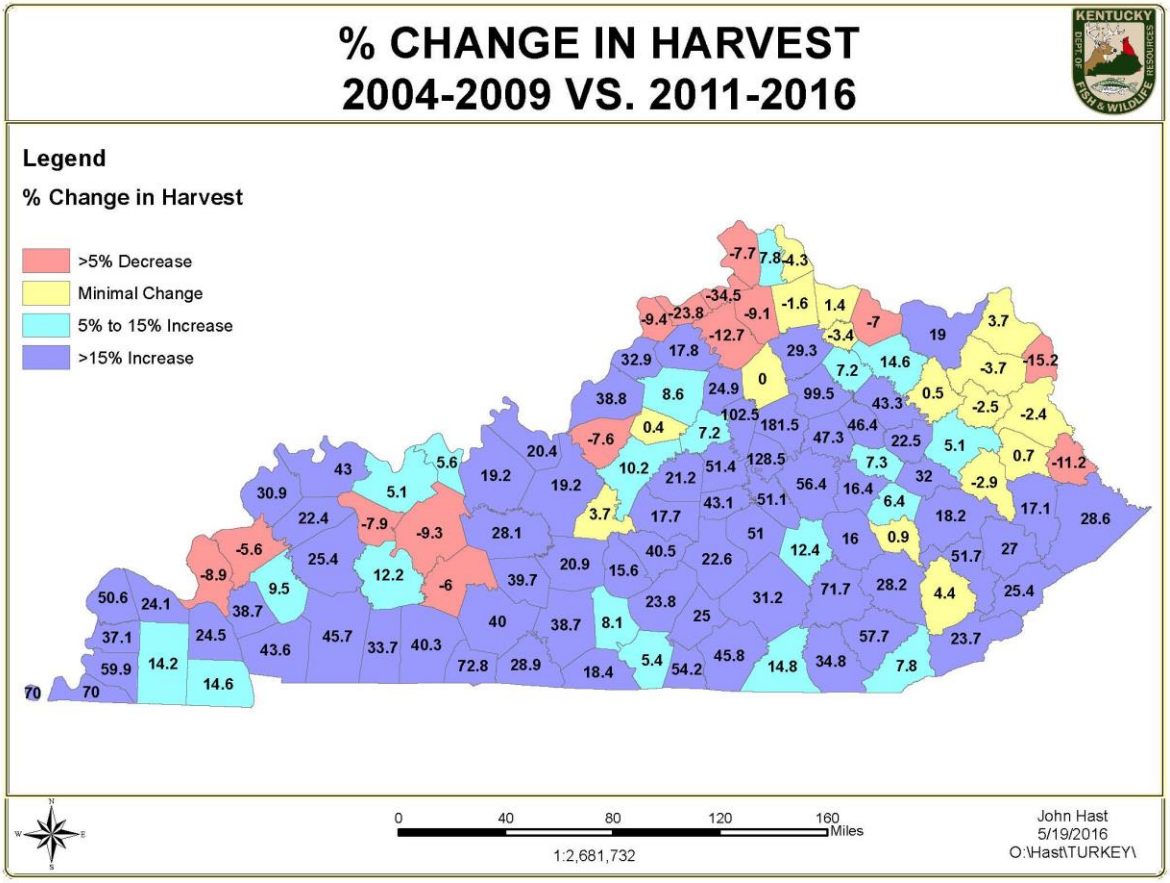


Figure 4. Percentage change in Kentucky's spring wild turkey harvest between 2 6-year periods before (2004-2009) and after (2011-2016) the peak 2010 harvest.

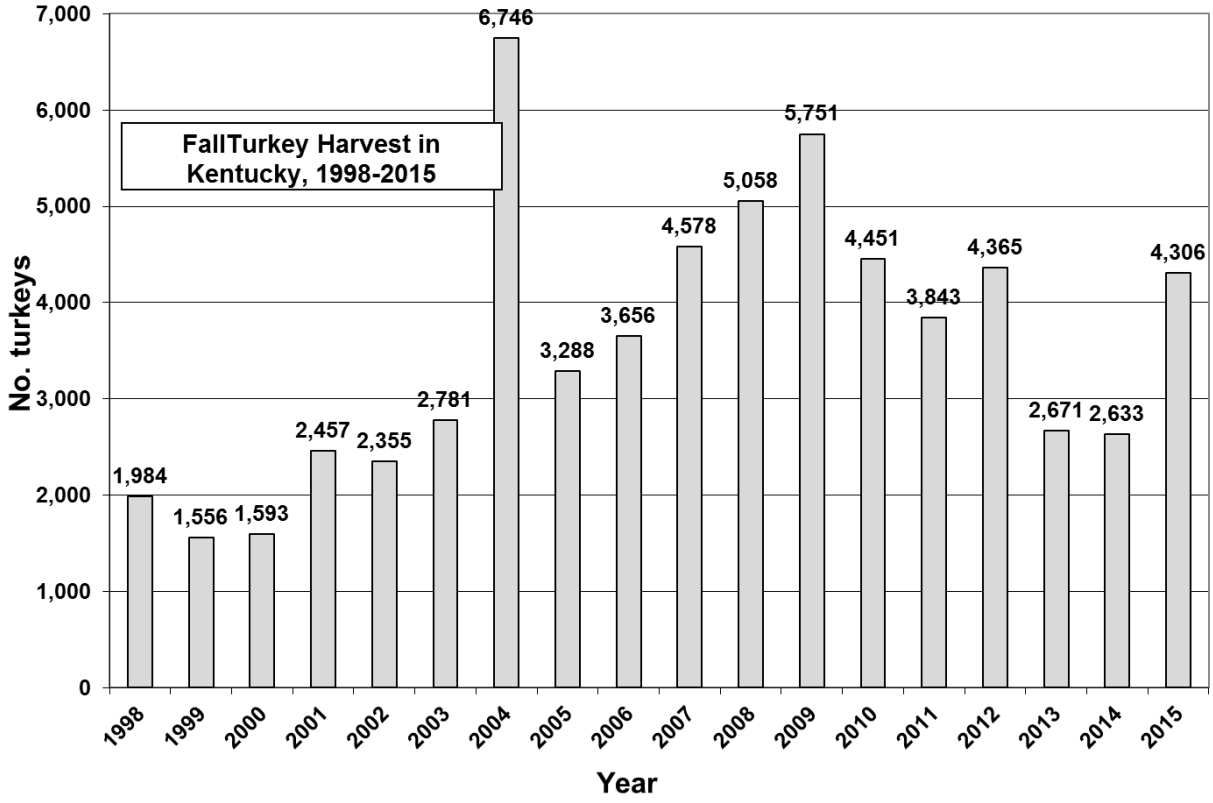


Figure 5. Annual fall harvest returns for wild turkeys in Kentucky, 1998–2015.

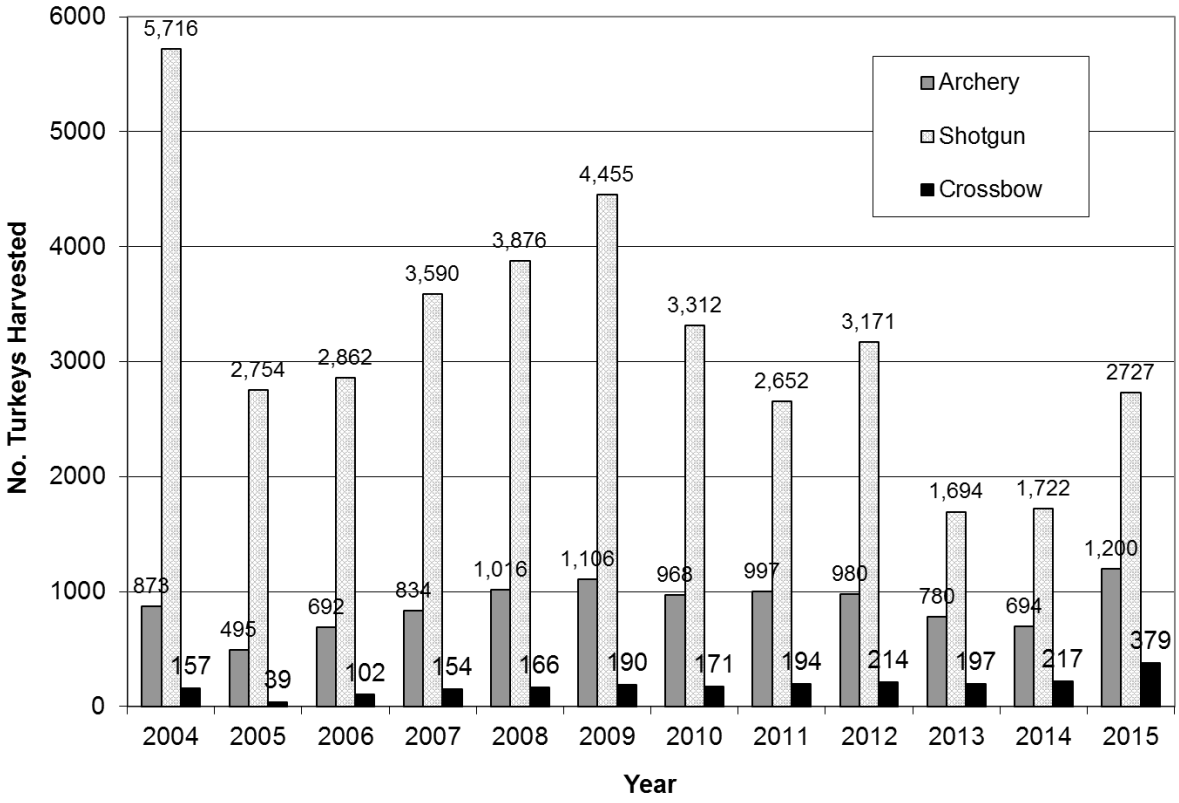


Figure 6. Annual fall harvest returns by weapon type for wild turkeys in Kentucky, 2002–2015.

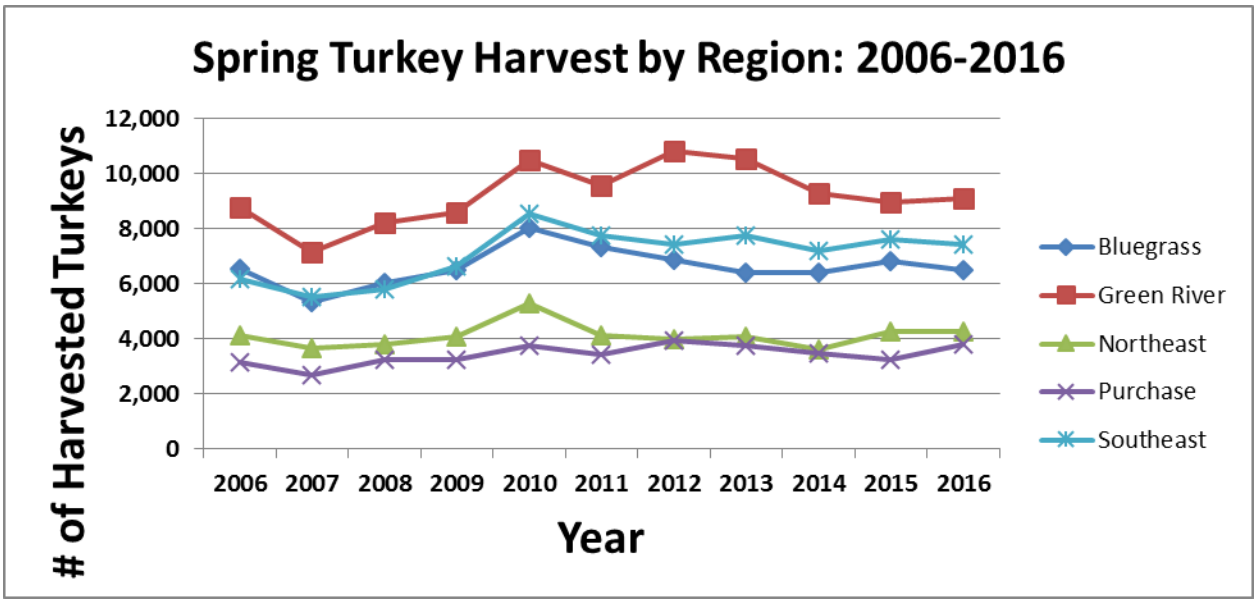


Figure 7. 10-year spring turkey harvest trends by KDFWR Wildlife Division administrative region, 2006-2016.

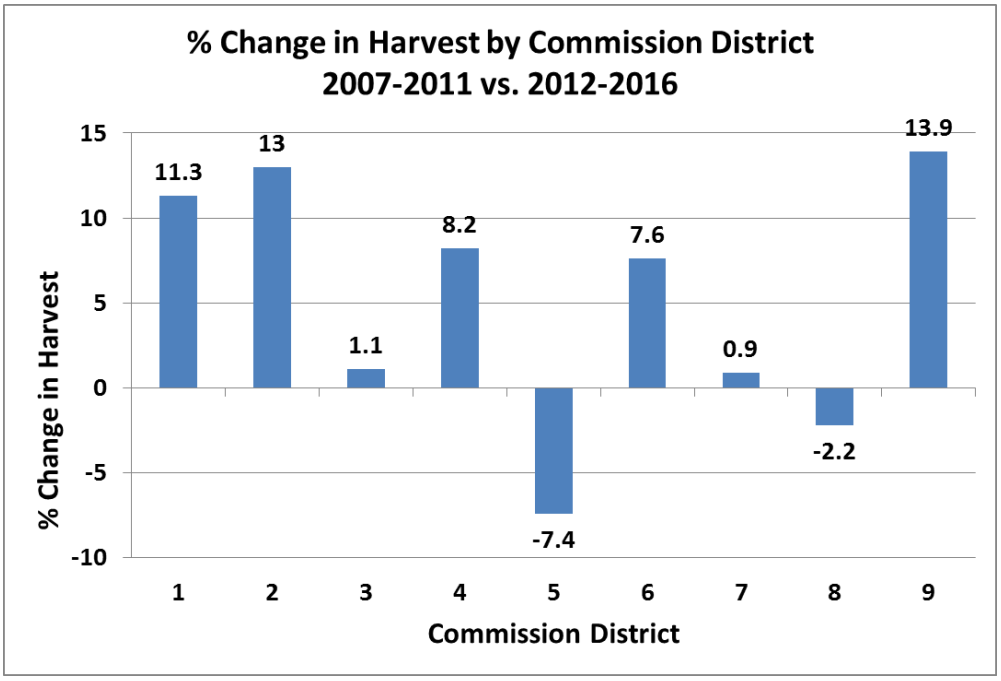


Figure 8. Percentage change in spring turkey harvest over the past 2 5-year periods among KDFWR's 9 Commission Districts.

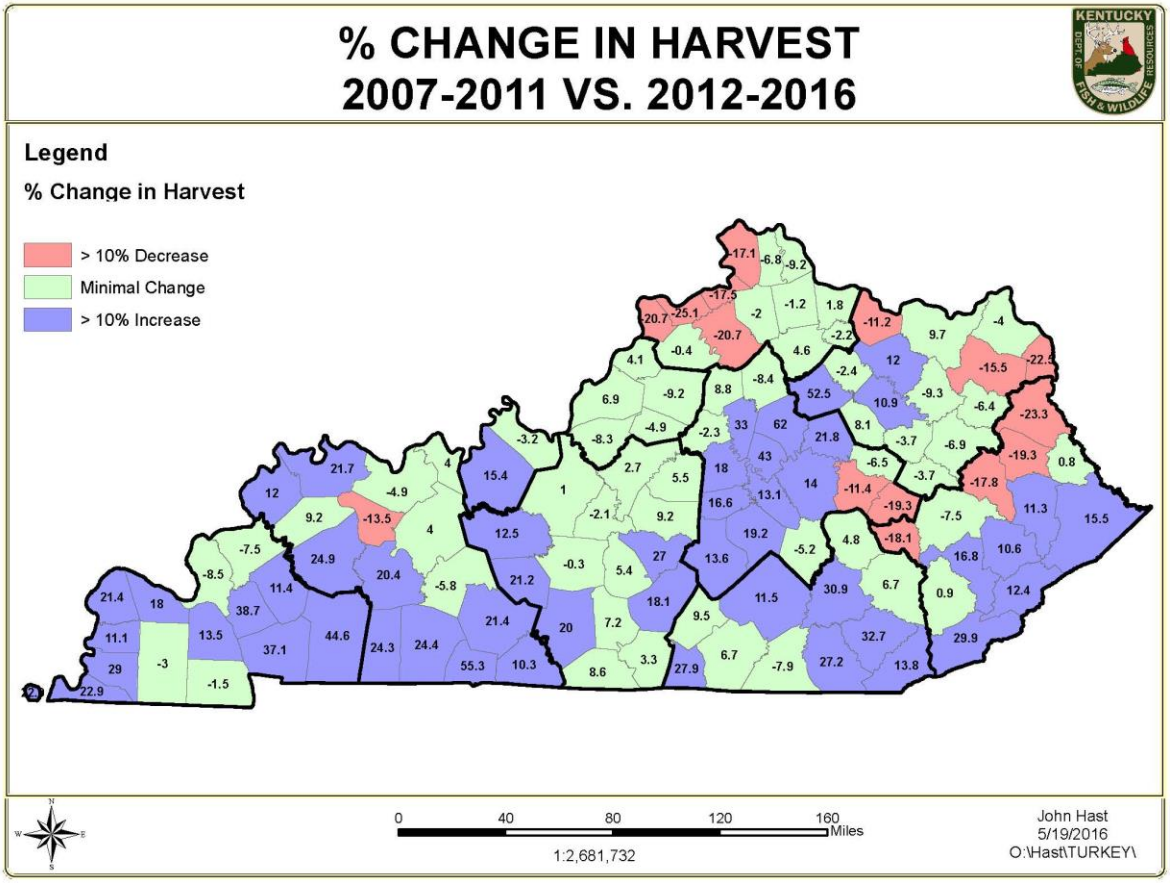


Figure 9. Map of percentage change in spring turkey harvest over the past 2 5-year periods by county, but showing KDFWR's 9 Commission Districts (black outlines). Only two Districts show declining harvest trends: District 5 (farthest north) and District 8 (northeast) (Figure 8).

2015 Missouri Wild Turkey Program Report

Jason L. Isabelle

Harvest, License, and Season Information

2015 Spring Turkey Season

During the 2015 youth spring turkey season, which occurred April 11-12, hunters harvested 4,449 turkeys. This harvest total represented a 3% increase from the 2014 youth season and was 9% greater than the previous five-year average. The 2015 youth season harvest was the highest since the season was initiated in 2001. Hunters harvested 43,993 turkeys during the 21-day regular spring turkey season, which occurred April 20–May 10. Juvenile male turkeys represented 24% of the regular season harvest (Figure 1), which was 20% greater than the previous five-year average.

The total 2015 spring harvest, including both the youth and regular seasons, was 48,442 (Figure 2). This harvest total represented a 2% increase from the 2014 season and was 7% greater than the previous five-year average. Counties with the highest total spring harvest in 2015 were Franklin, Texas, and St. Clair, where 1,014, 921, and 850 turkeys were harvested, respectively (Figure 3).

Total permit sales for the 2015 spring season (111,198; excluding no-cost landowner permits) were slightly greater than in 2014 (110,636). Spring turkey permit sales during 2015 remain 14% below the permit sales record set in 2003 (Figure 2). Spring turkey permit sales in 2015 included 103,435 (93%) resident permits and 7,763 (7%) non-resident permits. An additional 43,016 no-cost permits were distributed to resident landowners. The total number of Missouri spring turkey hunters in 2015 was 149,235. 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.

Although spring turkey harvest increased for the fourth consecutive year in 2015, the 2015 harvest remains 20% below the record harvest of over 60,000 birds set in 2004 (Figure 2). Spring turkey hunter success has stabilized since 2007 after declining during the early to mid-2000s (Figure 4). The success rate for permit-buyers during the 2015 spring season was 78 turkeys harvested per 1,000 hunting trips, which was 10% greater than the previous five-year average.

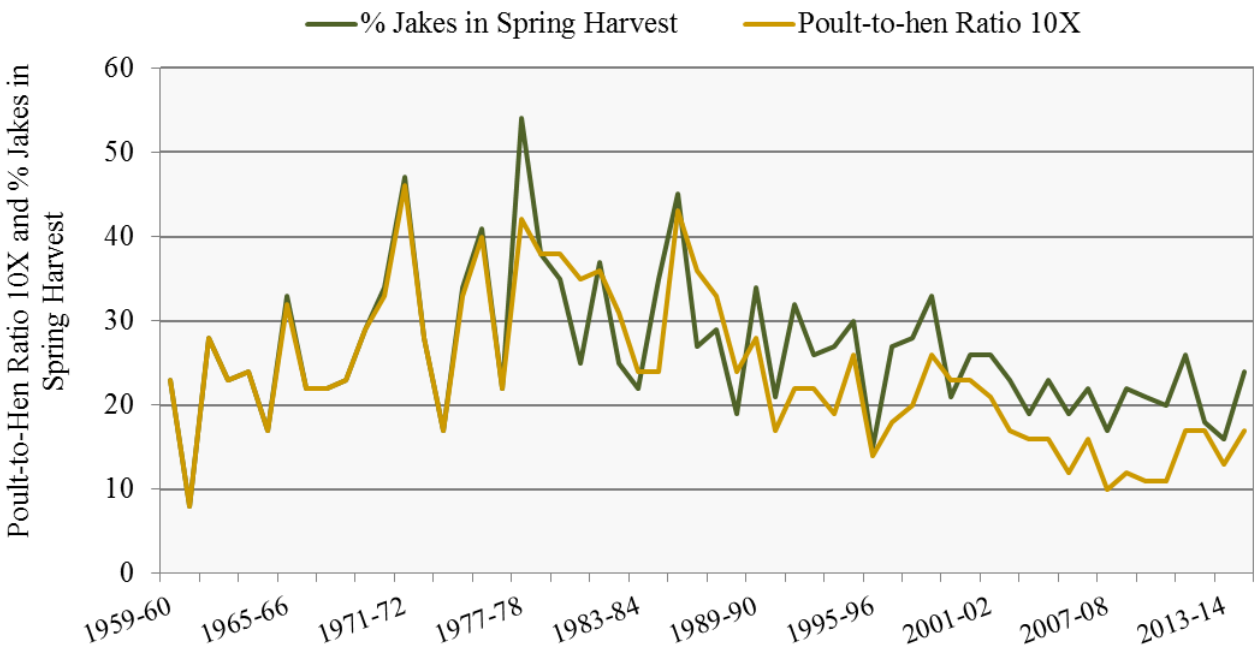


Figure 1. Missouri's statewide poult-to-hen ratio multiplied by 10, compared with the percentage of jakes in the following year's regular season spring harvest, 1959-2015.

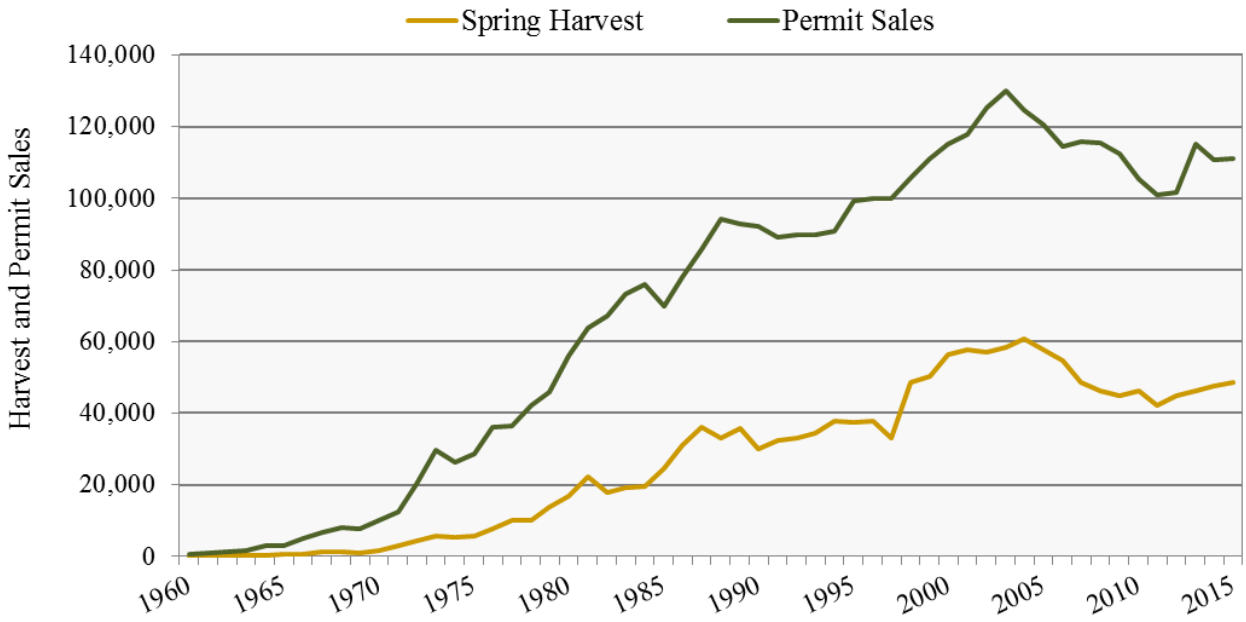


Figure 2. Number of wild turkeys harvested during the spring season (youth and regular season) in Missouri, and the number of turkey hunting permits sold for the spring season, 1960-2015. Permit sales do not include no-cost landowner permits.

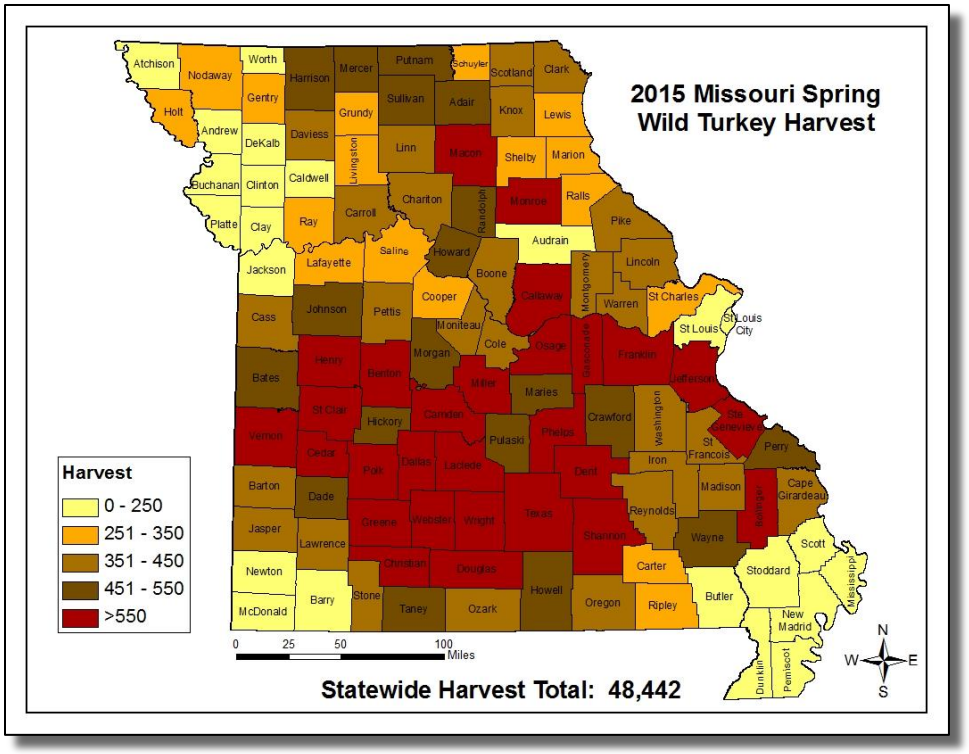


Figure 3. Total (youth and regular season) spring wild turkey harvest in Missouri, 2015.

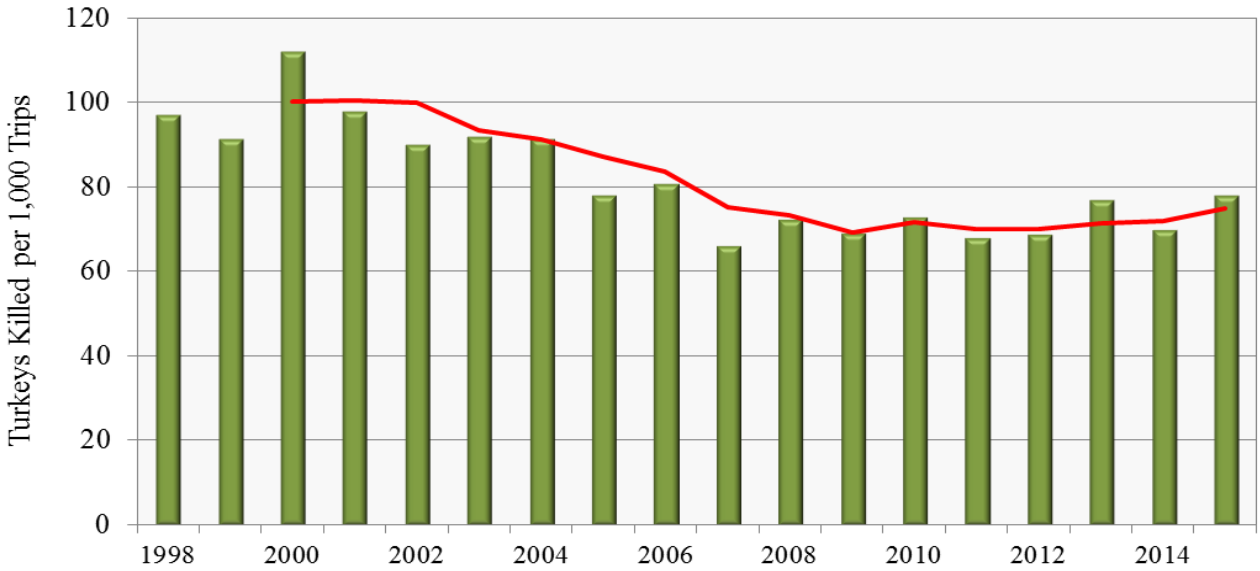


Figure 4. Statewide spring turkey hunter success in Missouri. Data are the number of turkeys harvested per 1,000 hunting trips, 1998-2015. Trendline displays moving three-year average.

2015 Fall Turkey Season

The 2015 fall firearms turkey harvest total of 6,160 represented an 8% increase in harvest from the 2014 season and was 7% below the previous five-year average (Figure 5). The majority of harvest occurred in southern Missouri (Figure 6). The top three harvest counties were Dent, Greene, and Franklin where 210, 159, and 148 turkeys were harvested, respectively.

Fall firearms turkey permit sales declined by 6% in 2015. Of the 13,303 permits sold, 13,084 (98%) were purchased by Missouri residents and 219 (2%) by non-residents; an additional 58,392 no-cost permits were distributed to resident landowners. Fall firearms turkey hunting in Missouri has generally been declining in popularity since the late 1980s when over 50,000 permits were sold and over 28,000 turkeys were harvested during the 14-day season (Figure 5).

Although the novelty of the fall firearms turkey season may have worn off for some of Missouri's hunters, increasing popularity of the archery deer and turkey season is likely to be partially responsible for the declining interest in fall firearms turkey hunting. Declining turkey numbers during the mid-to-late 2000s are likely to have reduced hunter participation in the season as well.

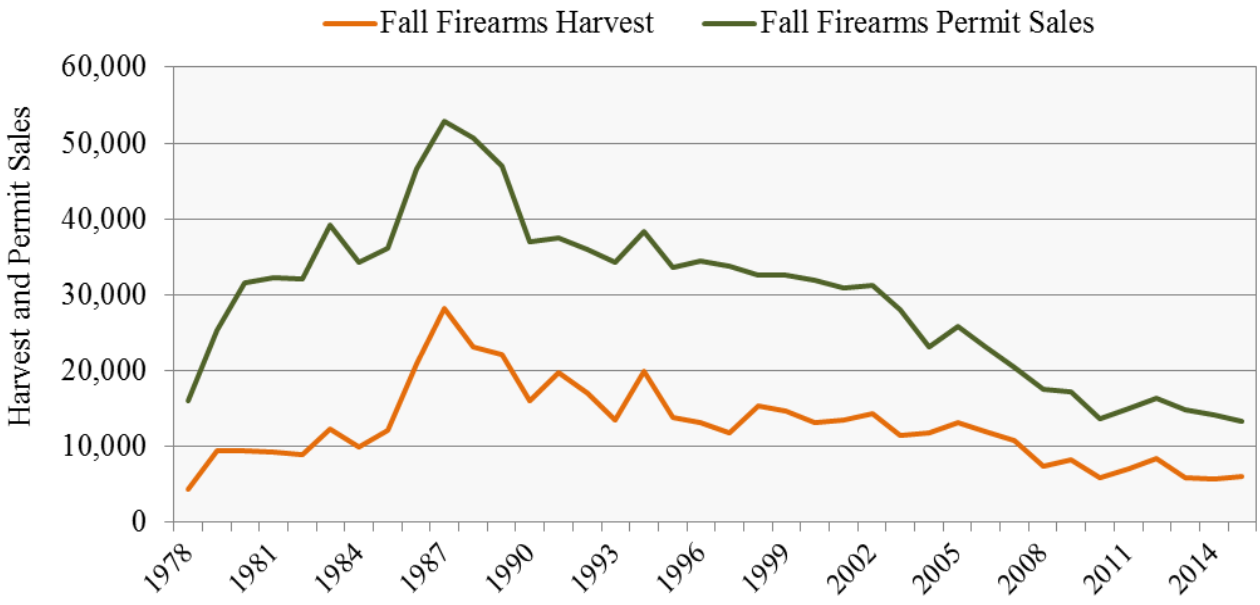


Figure 5. Number of wild turkeys harvested during the fall firearms turkey season in Missouri, and the number of fall firearms permits sold, 1978-2015. Permit sales do not include no-cost landowner permits.

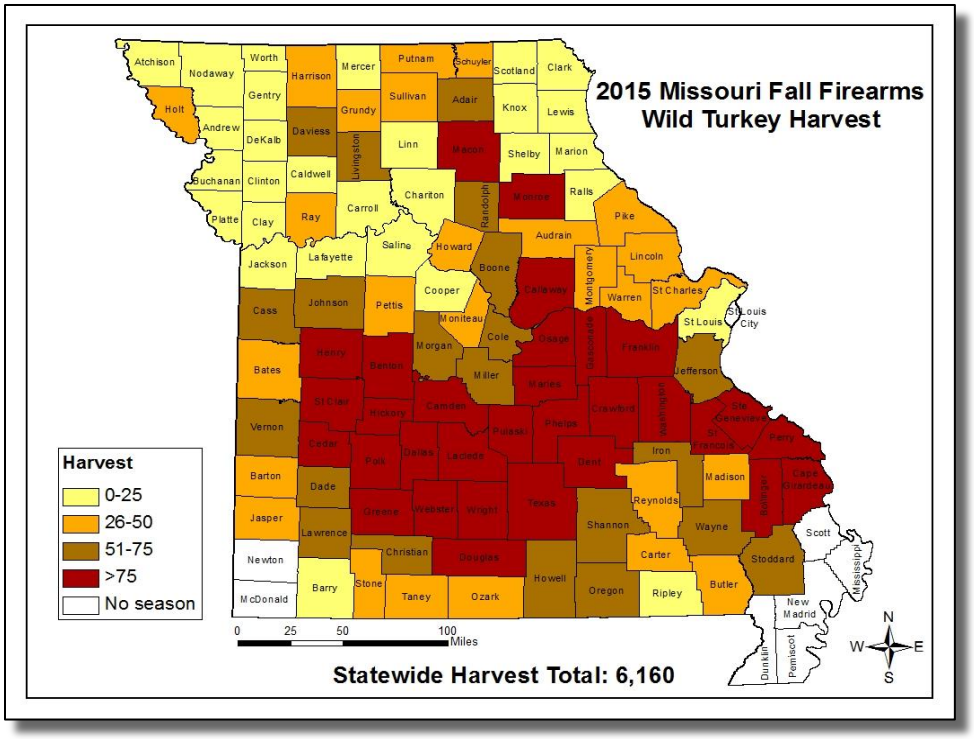


Figure 6. Missouri fall firearms wild turkey harvest, 2015.

Hunters harvested 3,042 turkeys during the 2015 fall archery deer and turkey season (Figures 7, 8). The 2015 archery turkey harvest total represented an 18% increase from the 2014 season, and was 13% greater than the previous five-year average. Unlike the fall firearms turkey harvest, which has shown a declining trend since the late 1980s (Figure 5), the fall archery harvest increased until the mid-2000s. Since 2005, archery turkey harvests have fluctuated substantially on an annual basis, while showing a general trend towards stabilization (Figure 8).

Although archery permit sales were relatively stable from the mid-1990s to the mid-2000s, permit sales have since shown an increasing trend (Figure 9). In 2015, 115,642 permits were sold; the third highest since the season's inception. Of the archery permits sold in 2015, 105,761 (91%) were purchased by Missouri residents and 9,881 (9%) by non-residents. An additional 85,327 no-cost landowner permits were distributed.

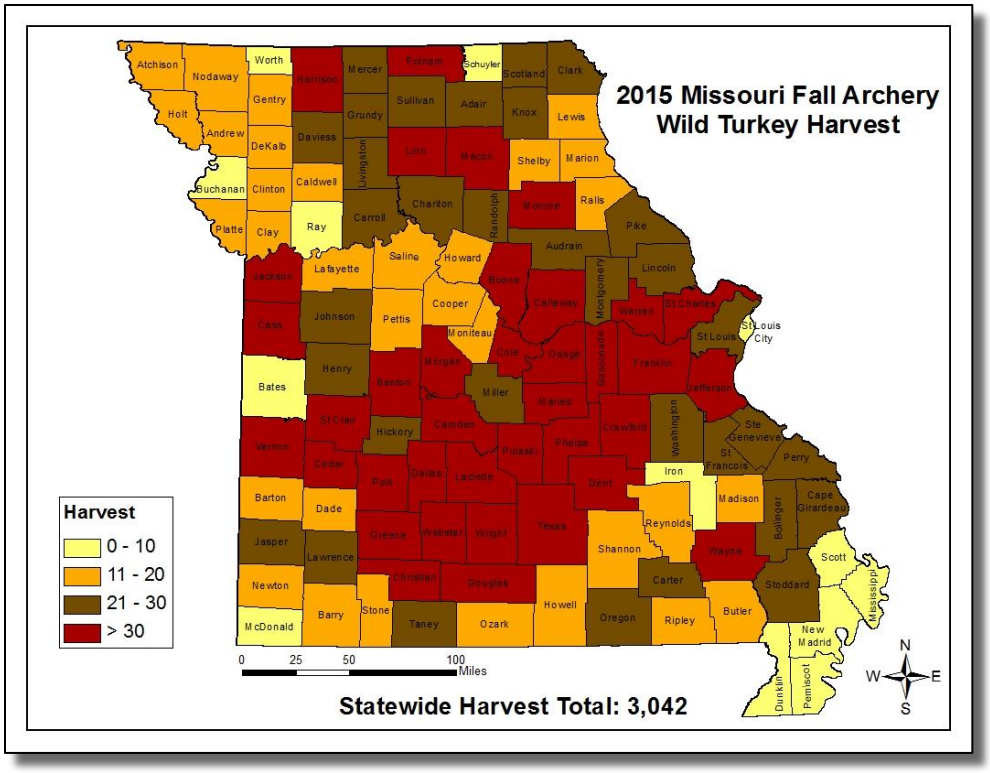


Figure 7. Missouri fall archery wild turkey harvest during the 2015 season.

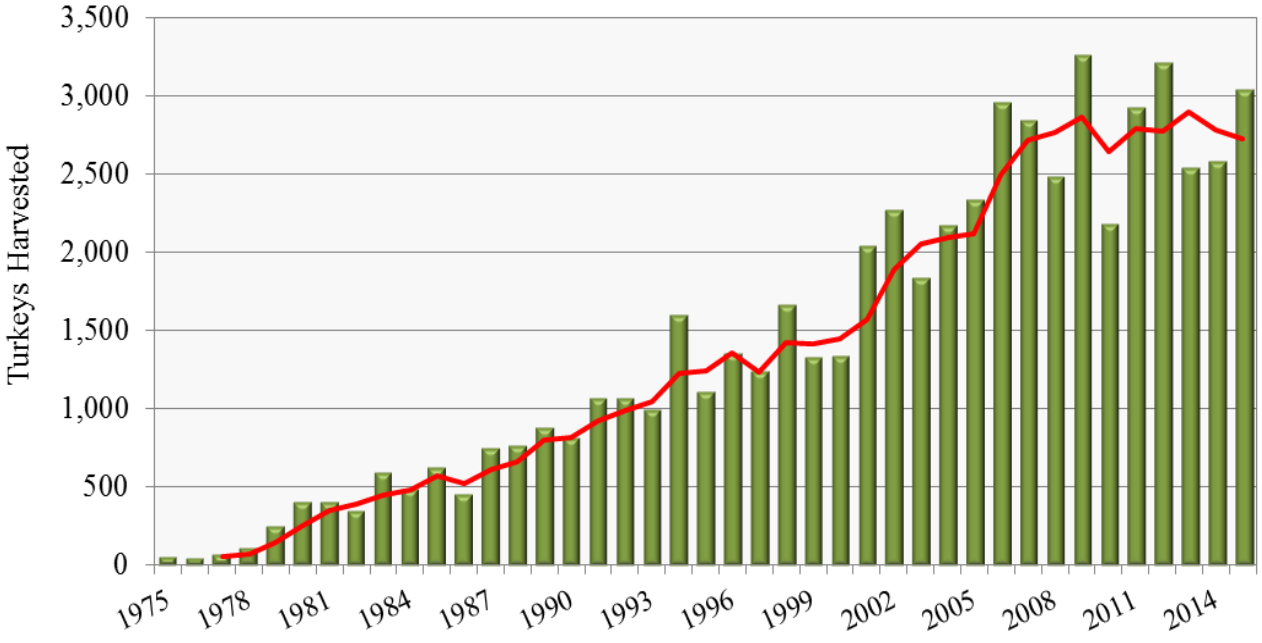


Figure 8. Missouri fall archery wild turkey harvest, 1975-2015. Trendline displays three-year moving average.

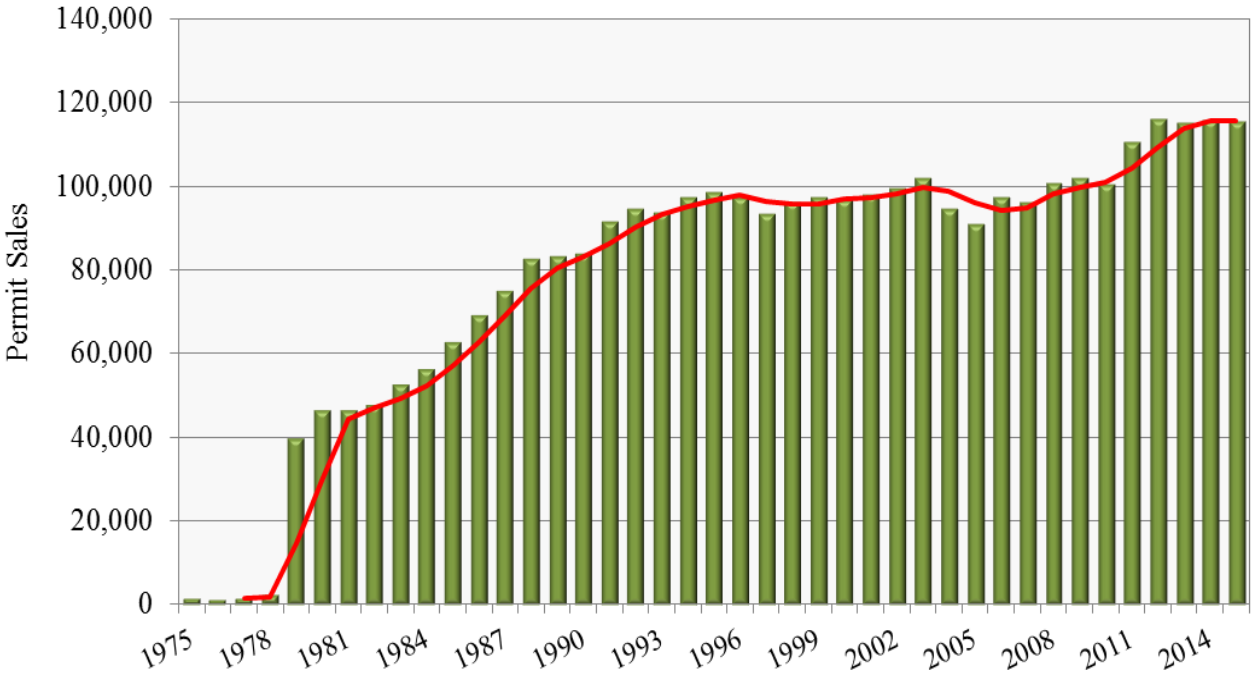


Figure 9. Missouri archery deer and turkey permit sales, 1975-2015. Permit sales do not include no-cost landowner permits. Prior to 1979, hunters purchased archery deer and turkey permits separately. Trendline displays three-year moving average.

Population Trends

After reaching peak abundance in the early 2000s, Missouri's wild turkey population declined by approximately 25% at the statewide scale during the mid-to-late 2000s. From 2000-2010, the poult-to-hen ratio (PHR) from the Missouri Department of Conservation's (MDC) brood survey exhibited a 7% annual declining trend (Figure 10). Although the PHR since 2010 has remained well-below most historical values (Figure 10), the mean PHR during the last five years (1.6) is 33% greater than the index value from 2005-2010. Greater production has resulted in an increasing five-year trend in turkey numbers (2% annual growth) at the statewide scale based on spring harvest as an index to abundance. Turkey numbers in most counties have been stable or increasing during the last five years with most areas of growth occurring in portions of north-central, west-central, and southwest Missouri, as well as in portions of the northern Ozarks (Figure 11). Based on the five-year spring harvest trend, turkey numbers are declining in 13 counties, most of which are located in portions of northwestern and southeastern Missouri (Figure 11).

Although turkey numbers are stable or increasing in most Missouri counties, spring harvest data at the statewide scale indicate current numbers are approximately 20% less than the population peak that occurred in the early 2000s. In northern Missouri (Northwest and Northeast turkey productivity regions (Figure 12)), regional turkey numbers reached a peak in the early-to-mid 2000s before declining by 40-50% following several years of poor production. Although

numbers in the Northeast region have been increasing during the last five years (5% annual growth), turkey abundance in the region remains 35-40% less than the population peak. The five-year trend in the Northwest region indicates a stable population. Regional turkey abundance remains approximately 40-45% below the peak numbers that occurred during the mid-2000s. Turkey abundance in the West Prairie region has been stable the last five years, as it has in the Lindley Breaks and Union Breaks regions along the Missouri and Mississippi Rivers (Figure 12). Turkey abundance in these regions ranges between 15-30% below the population peak that occurred in the early-to-mid 2000s. The five-year turkey abundance trend is also stable in the Mississippi Lowlands region of southeastern Missouri (Figure 12). Unlike other regions, turkey numbers in the Mississippi Lowlands increased during the 2000s, likely influenced by regional turkey translocations that occurred during the winter of 2006-2007.

During the early 2000s, turkey numbers in the Ozarks of southern Missouri experienced the same peak in abundance as northern populations, however, the population decline that followed was not of the same magnitude, with regional numbers declining by approximately 25-30%. Regional PHRs have indicated increased production since 2010 and turkey abundance during the last five years has been increasing in the Ozarks East, Ozarks West, and Ozark Border regions (Figure 12), where annual growth rates have been 3%, 3%, and 5%, respectively.

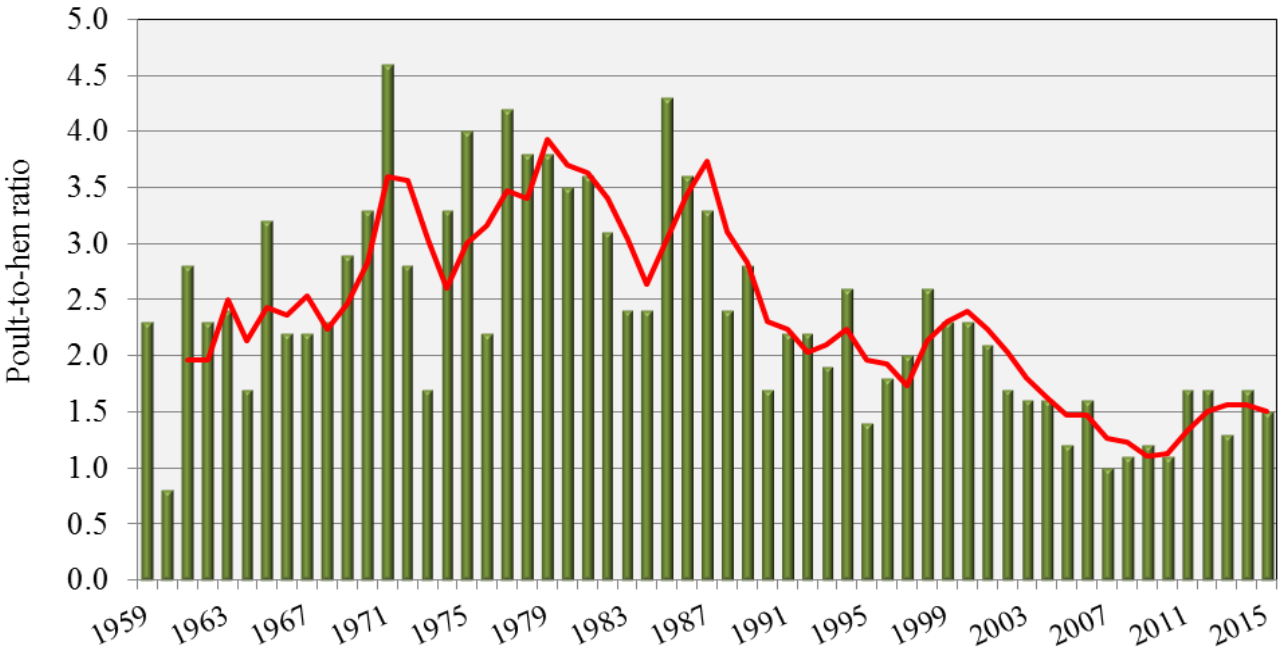


Figure 10. Statewide poult-to-hen ratios derived from the Missouri Department of Conservation's wild turkey brood survey conducted in June, July, and August, 1959-2015. Trendline displays three-year moving average. Observations of more than two hens per brood are not included in poult-to-hen ratio calculations.

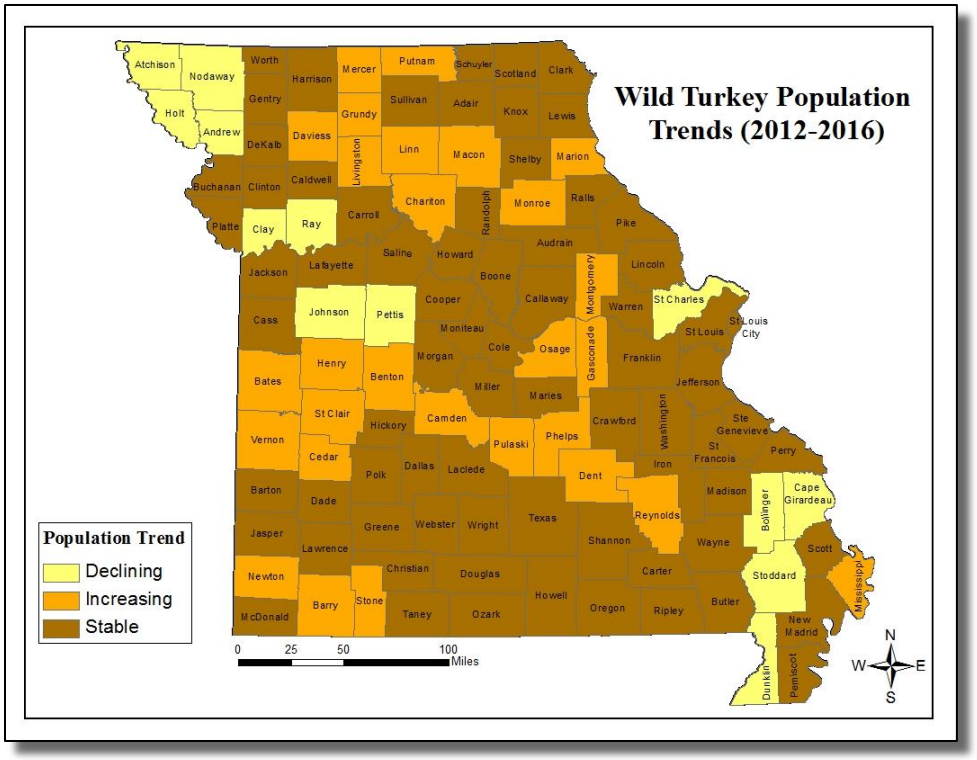


Figure 11. Five year (2012-2016) county-level wild turkey population trends in Missouri based on spring harvest as an index to population abundance.

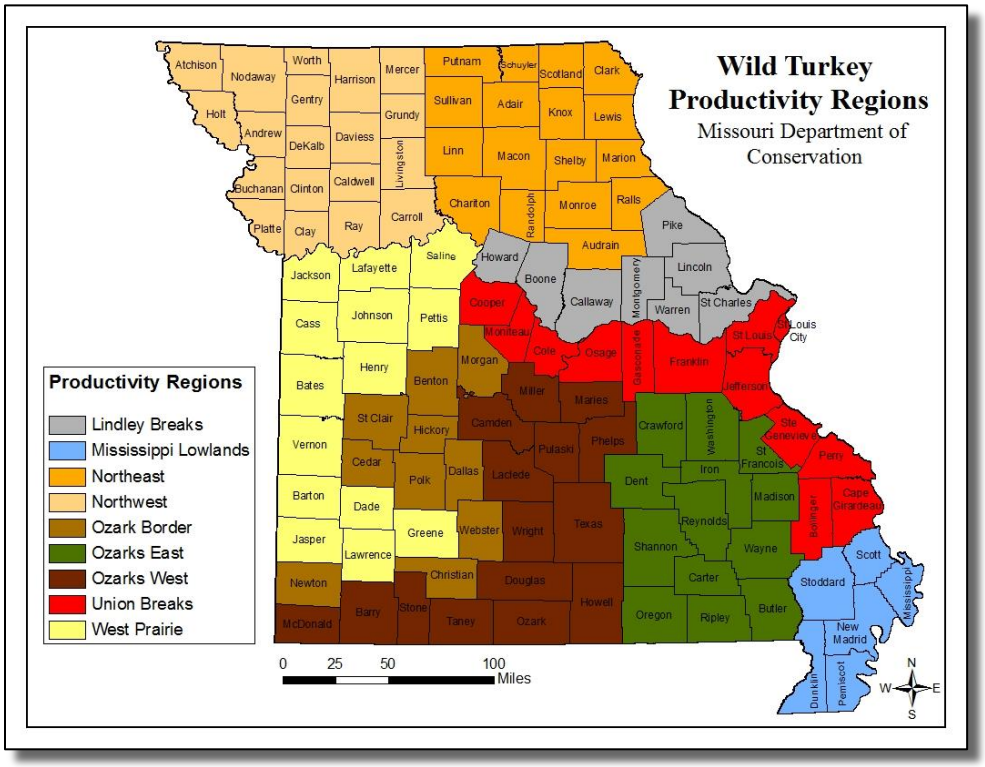


Figure 12. Turkey productivity regions in Missouri. Regions consist of counties grouped by similar land cover composition.

Regulation/legislation changes

Other than changes to some conservation area and managed turkey hunts, no turkey hunting regulation changes occurred in 2015.

Reproduction

The MDC has been conducting a 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. Turkey observations are recorded at the county-level and analyzed by turkey productivity region (Figure 12), which are counties grouped by similar land cover composition. Observations of more than two hens per brood are not included in PHR calculations.

In 2015, MDC staff and citizen volunteers recorded observations of 77,595 turkeys during the three-month survey, including 5,202 broods. At the statewide scale, 43% of hens were observed with a brood (Table 1). The percentage of hens observed with a brood ranged from 36% in the Northeast and West Prairie regions to 53% in the Mississippi Lowlands region. Statewide, the average brood size was 3.9 poults (Table 1). Average regional brood size ranged from 3.7 poults in the Mississippi Lowlands to 4.9 poults in the Northwest. The 2015 statewide PHR of 1.5 was 12% less than the 2014 ratio, identical to the five-year average, 7% greater than the 10-year average, and 12% less than the 20-year average (Table 2). Among turkey productivity regions, PHRs ranged from 1.1 in the West Prairie region to 1.9 in the Ozarks East region (Table 2).

Table 1. Wild turkey brood survey data by turkey productivity region (Figure 12). Data were obtained from Missouri's wild turkey brood survey conducted in June, July, and August, 2015.

Productivity Region	% Hens w/ Brood	Average Brood Size	Poult-to-Hen Ratio[a]	Gobbler-to-Hen Ratio
Lindley Breaks	47%	3.8	1.5	0.54
Mississippi Lowlands	53%	3.7	1.6	0.45
Northeast	36%	4.0	1.2	0.76
Northwest	43%	4.9	1.8	0.73
Ozark Border	37%	3.8	1.2	0.88
Ozarks East	50%	4.2	1.9	0.38
Ozarks West	43%	4.2	1.6	0.67
Union Breaks	47%	4.0	1.5	0.61
West Prairie	36%	4.0	1.1	0.91
Statewide[b]	**43%**	**3.9**	**1.5**	**0.68**

[a]Observations of more than two hens per brood are not included in poult-to-hen ratio calculations.
[b]Statewide totals include observations where region was not recorded on the survey card.

Table 2. Index (poult-to-hen ratio[a]) of Missouri wild turkey production listed by turkey productivity region (Figure 12). Data were obtained during the 2015 turkey brood survey and are compared to previous years. For each interval value, the percent change indicates how the 2015 index compares to the previous year or the average for periodic intervals.

Productivity Region	2015 Index[a]	1-year (2014) Change	5-year (2010–2014) Change	10-year (2005–2014) Change	20-year (1995–2014) Change
Lindley Breaks	1.5	-17%	-6%	+7%	-17%
Mississippi Lowlands	1.6	+7%	-6%	-6%	-24%
Northeast	1.2	-40%	-25%	-8%	-25%
Northwest	1.8	-5%	+29%	+38%	Same as Avg.
Ozark Border	1.2	-33%	-14%	-8%	-25%
Ozarks East	1.9	+6%	Same as Avg.	+12%	Same as Avg.
Ozarks West	1.6	+23%	+14%	+23%	Same as Avg.
Union Breaks	1.5	-12%	+7%	+7%	-6%
West Prairie	1.1	-21%	-15%	Same as Avg.	-31%
Statewide[b]	**1.5**	**-12%**	**Same as Avg.**	**+7%**	**-12%**

[a]Observations of more than two hens per brood are not included in poult-to-hen ratio calculations.
[b]Statewide totals include observations where region was not recorded on the survey card.

Research

Regional Turkey Population Monitoring for a Coordinated Harvest Management Strategy

In 2013, the MDC began a seven-year research project in partnership with the University of Missouri, University of Washington, and the National Wild Turkey Federation. The project involves five years of field-work capturing, marking, and radio-tracking turkeys in four northern Missouri counties. Data will be used to develop statistical population reconstruction (SPR) models, which the MDC's Wild Turkey Management Program will use to estimate turkey abundance, survival rates, harvest rates, recruitment, and population growth rate.

Research objectives include:

1. Developing a regional turkey SPR model, which in addition to estimates of natural survival and harvest rates, will provide abundance and population growth rate.

2. Developing a user-friendly SPR modeling software program for future analysis of age-at-harvest and auxiliary data for turkeys and other harvested species in Missouri.

3. Estimating sex and age-class-specific seasonal and annual survival rates and cause-specific mortality rates, for turkeys in northern Missouri.

4. Estimating age-class-specific harvest rates for male turkeys in northern Missouri during the spring hunting season.

5. Estimating sex and age-specific harvest rates for turkeys in northern Missouri during the fall hunting season.

6. Estimating reproductive parameters for female turkeys in northern Missouri.

Relevant Links

- 2015 Missouri Wild Turkey Brood Survey Results (https://huntfish.mdc.mo.gov/sites/default/files/downloads/2015Turkey_Brood_Survey_1.pdf)

Nebraska Wild Turkey Program Report

By: Dr. Jeffrey J. Lusk

I. Current Harvest

Fall 2015 Season.-- Permit sales (*n* = 9,744) were 4.2% lower than for the fall 2014 turkey season (*n* = 10.175, Figure 1). Of permits sold for the fall 2015 season, 19.5% were $5 youth permits (*n* = 1,896) and 80.5% were regular or landowner permits (*n*= 7,848). Estimated total fall 2015 harvest was 6,336 turkeys (Table 1), with youth harvesting 1,462 turkeys and regular/landowner permit holders harvesting 4,874 turkeys. Overall, harvest was 9.5% lower for the fall 2015 compared to fall 2014. Overall success rates for regular/landowner permit holders was 62.1%, and 77.1% for youth permit holders, giving an overall success rate of 64.6% (Figure 2).

TABLE 1. Fall turkey season harvest and success, 2008-2015.

		Year							
Type		2008	2009*	2010	2011	2012	2013	2014	2015
Shotgun	Permits	9,855	12,738	12,241	11,482	12,449	10,836	10,175	9,744
	Harvest	8,236	10,853	10,356	8,405	8,362	6,748	7,003	6,336
	% Success	84	85.2	84.6	73.2	68.4	63.6	67.7	64.6
Archery	Permits	1,480							
	Harvest	539							
	% Success	36							

* After 2009, permits were valid for both archery and shotgun seasons with appropriate weapons, so results are reported in aggregate.

Spring 2016.-- Permit sales for the spring 2016 season (*n* = 33,831) were 0.90% lower than spring 2015 sales (*n* = 34,140; Figure 3). Of permits sold, 4,932 (14.6%) were $5.00 youth permits and 28,899 were statewide regular permits. Youth $5.00 permits sales (*n* = 4,932) were 8.9% lower than in 2015 (*n* = 5,416), and statewide regular permit sales (*n* = 28,899) were 0.6% higher than in 2015 (*n* = 28,724). Of all unique permit buyers (*n* = 26,552), 78.7% bought only one permit, 15.2% bought two permits, and 6.1% bought three permits. Estimated total turkey harvest for the spring 2016 season was 22,136 turkeys. Of these, 1,993 were harvested on $5.00 youth permits and 20,143 were harvested on regular statewide permits (Table 2). Overall, harvest was 11.0% higher during the spring 2016 season compared to spring 2015. Success during the spring 2016 season was 65.7%, with youth success lower at 40.4% and regular permit holders' success higher at 69.7% (Figure 4).

TABLE 2. Spring turkey season harvest and success, 2010-2016.

		Year						
Type	Statistic	2010	2011	2012	2013	2014	2015	2016
Shotgun/	Permits	30,693	30,344	29,541	30,760	28,854	28,724	28,899
Regular	Harvest	21,270	20,237	18,884	19,040	16,707	17,378	20,143
	Success	69.3%	66.7%	65.9%	61.9%	57.9%	60.5%	69.7%
Youth	Permits	6,210	6,385	5,979	6,144	5,576	5,416	4,932
	Harvest	2,912	3,065	2,535	2,402	2,253	2,616	1,993
	Success	46.9%	48.0%	42.4%	39.1%	40.4%	48.3%	40.4%

II. License and Season Information

SEASON DATES	
SPRING	
Youth Archery	March 25 – May 31, 2016
Archery	March 25 – May 31, 2016
Youth Shotgun	April 9 – May 31, 2016
Shotgun	April 16 – May 31, 2016
FALL	
Archery and Shotgun	Sept. 15 – Jan. 31, 2017
Youth Archery and Shotgun	Sept. 15 – Jan. 31, 2017

Spring – Hunters must use archery equipment March 25 – April 15 and may use either archery equipment or a shotgun April 16 – May 31. Youth hunters must use archery equipment March 25 – April 8 and may use either archery equipment or a shotgun April 9 – May 31.

Fall – Hunters may use either archery equipment or a shotgun.

PERMIT LIMITS

Turkey permits are unlimited in quantity, but there are limits to how many permits a person may have in a calendar year. A hunt (small game) permit is not required to hunt turkeys. Turkey permits are not refundable and not transferable. It is unlawful to lend a permit to another person:

- Spring permits – three per person
- Fall permits – two per person
- Landowner permits – one permit in the spring and one in the fall

PERMIT TYPES AND PRICES

Spring turkey – Valid statewide during the spring turkey season for one male or bearded female turkey per permit. For age 16 years and older.
Resident $25 *
Nonresident $97 *
Habitat Stamp $20 (required for residents and nonresidents) ** See page 6

Spring youth turkey – Valid statewide during the spring turkey season for one male or bearded female turkey per permit. For age 15 years and younger. No minimum age.
Resident $7 *
Nonresident $7 *
Habitat Stamp $20 (required for nonresidents)

Spring landowner turkey – Valid during the spring turkey season for one male or bearded female turkey per permit. For age 16 years and older.
Resident $13.50 *
Nonresident $49.50 *
Habitat Stamp $20 (required for residents and nonresidents) ** See page 6
* includes $2 issuing fee

Fall turkey – Valid statewide during the fall turkey season for two turkeys of either sex per permit. For age 16 years and older.
Resident $25 *
Nonresident $97 *
Habitat Stamp $20 (required for residents and nonresidents) **

Fall youth turkey – Valid statewide during the fall turkey season for two turkeys of either sex per permit. For age 15 years and younger. No minimum age.
Resident $7 *
Nonresident $7 *
Habitat Stamp $20 (required for nonresidents)
Fall landowner turkey – Valid during the fall turkey season for two turkeys of either sex per permit. For age 16 years and older.
Resident $13.50 *
Nonresident $49.50 *
Habitat Stamp $20 (required for residents and nonresidents) **
* includes $2 issuing fee
**** HABITAT STAMP EXCEPTIONS**
• Residents who hold a veteran or senior permit do not need to purchase a habitat stamp to hunt turkeys. They must carry their veteran permit or a senior permit while hunting.
• Persons hunting on their own land with a landowner permit do not need a habitat stamp.

WHO MAY OBTAIN A LANDOWNER TURKEY PERMIT?
Residents:
• Any resident who owns or leases 80 acres or more of farm or ranch land for agricultural purposes may obtain one landowner permit per season.
• One landower permit is allowed for each 80 acres of farm or ranch.
• Spouse and children are eligible, but only one permit may be issued per person.
• Eligible family members may hunt together on the same farm or ranch property.
• Siblings sharing ownership of the qualifying land also are eligible.
• Permit is restricted to the land owned or leased by them and listed on the permit.
• A resident is any individual who has lived in Nebraska continuously for 30 days and intends to become a resident of this state. A new resident should be prepared to provide documentation of residency (driver's license, voter registration card, etc.) to an officer when in possession of a resident permit.
Nonresidents:
• Any nonresident who owns 320 acres or more of farm or ranch land for agricultural purposes may receive a limited spring or fall permit.
• Only one permit may be issued per 320 acres.
• Eligible family members may hunt together on the same farm or ranch property.
• Spouse and children of the landowner also are eligible.
• Permit is restricted to the land owned by them and listed on the permit.

III. Historical Harvest

FIGURE 1. Fall turkey season harvest estimates, 1962-2015.

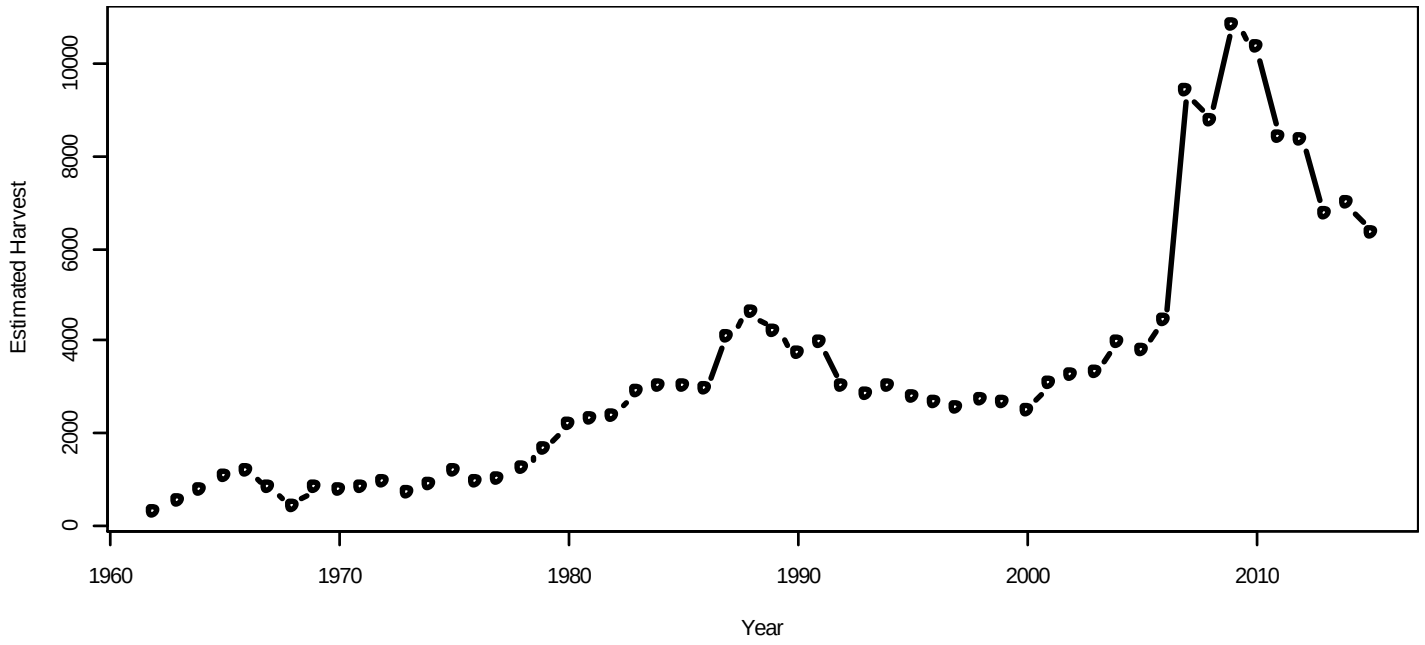


FIGURE 2. Fall turkey hunter success rate, 1962-2015. Horizontal line represents the success rate goal established in the Focus on the Future strategic plan. Note that in 2007 permits included a bonus tag, allowing the harvest of a second turkey.

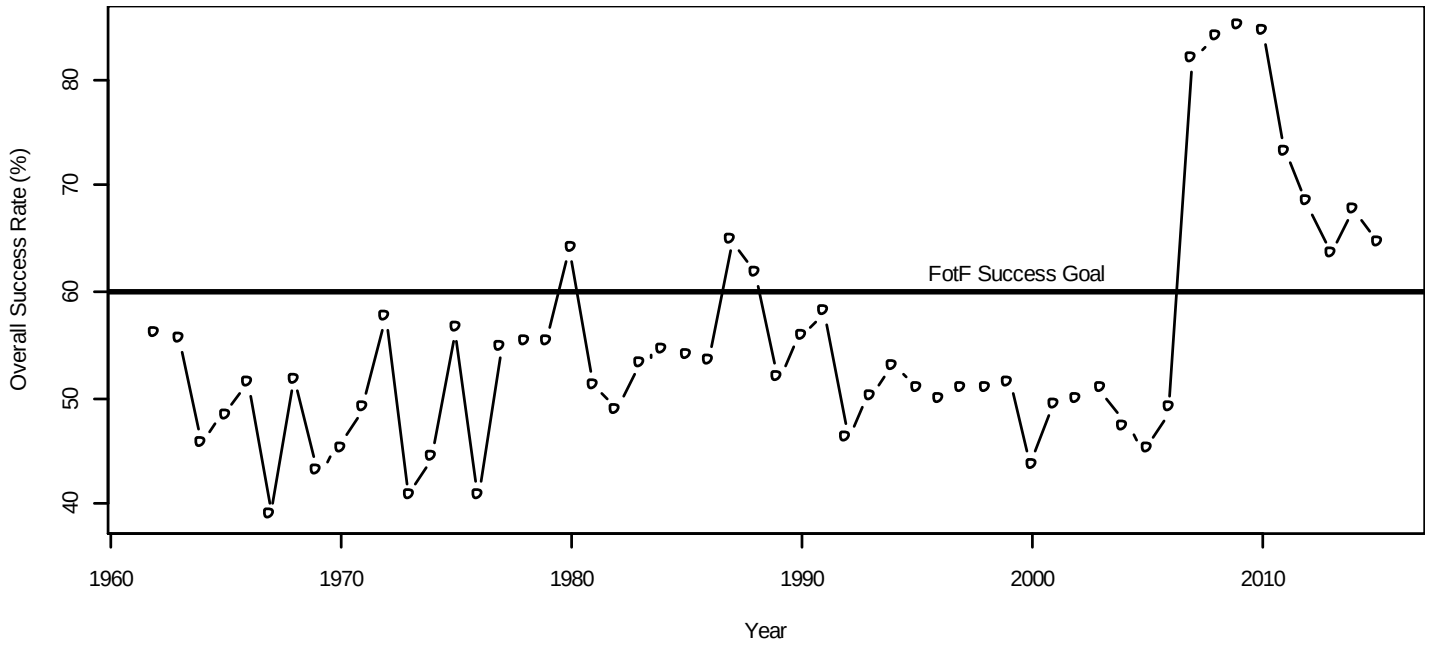


FIGURE 3. Spring turkey harvest, 1964-2016.

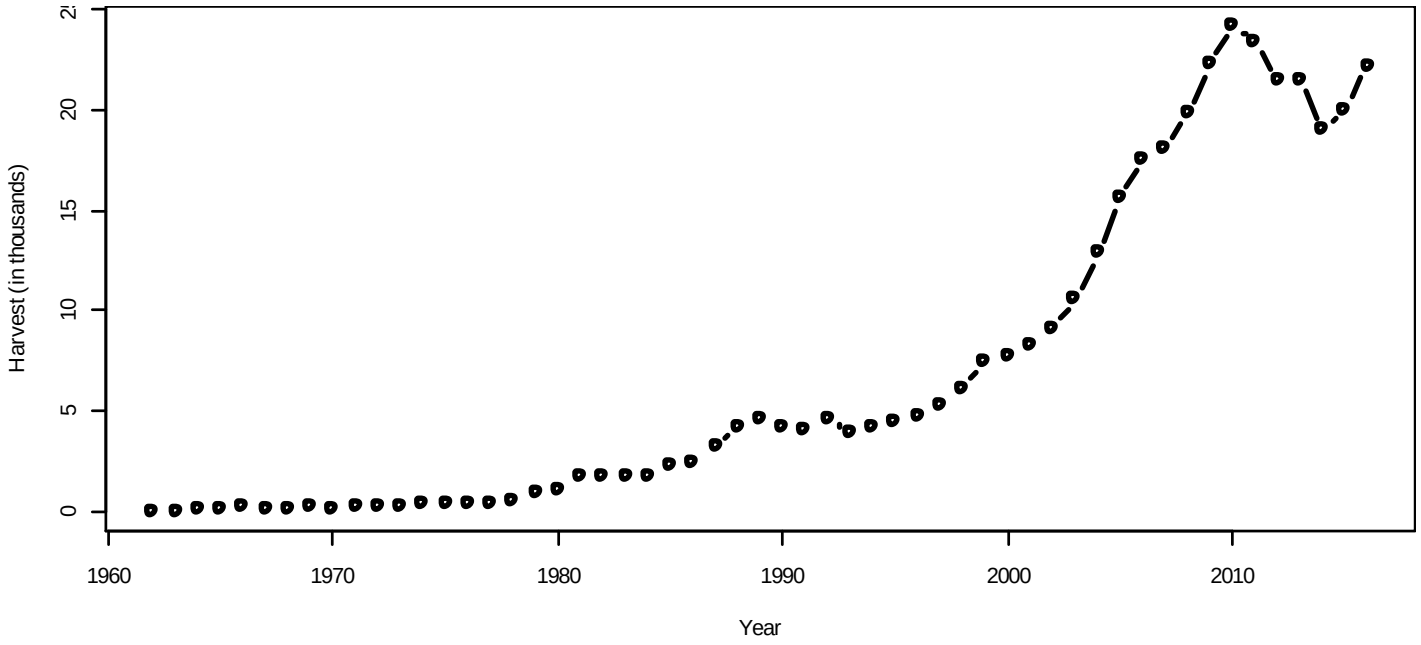
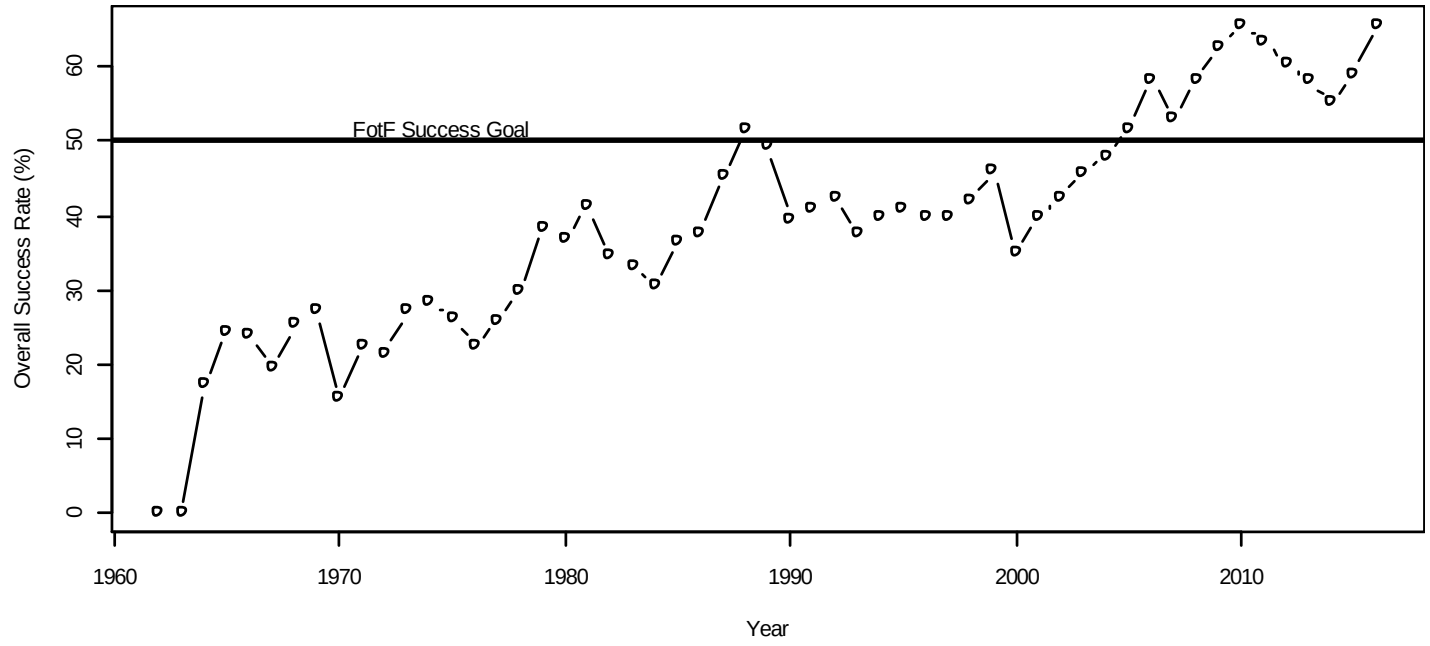


FIGURE 4. Spring turkey hunter success rate, 1964-2016. The horizontal line represents the success-rate goal established in the Focus on the Future plan (50% success).



IV. Population Trends

TABLE 3. Wild turkey indices from the 2016 April Rural Mail Carrier Survey by pheasant management region (Figure 1). Carrier means are weighted by miles traveled per carrier.

Region	Mean Wild Turkeys per 100 miles & 90% Confidence Limits	Percent Difference from: 2015	Mean 2011-2015	Mean 2006-2015
Central	4.23 (2.98-5.48)	-34	-48	-46
Northeast	2.88 (1.53-4.23)	5	2	3
Panhandle	1.68 (0.66-4.64)	9	-13	-3
Sandhills	5.99 (3.49-8.48)	-31	-44	-45
Southeast	1.65 (1.30-2.01)	-48	-51	-52
Southwest	10.8 (4.23-16.4)	-14	-15	-8
Statewide	3.74 (2.88-4.60)	-30	-34	-31

FIGURE 5. Regional and statewide time series (2000-2016) of wild turkey population indices from the April Rural Mail Carrier Survey by pheasant management region (Figure 7).

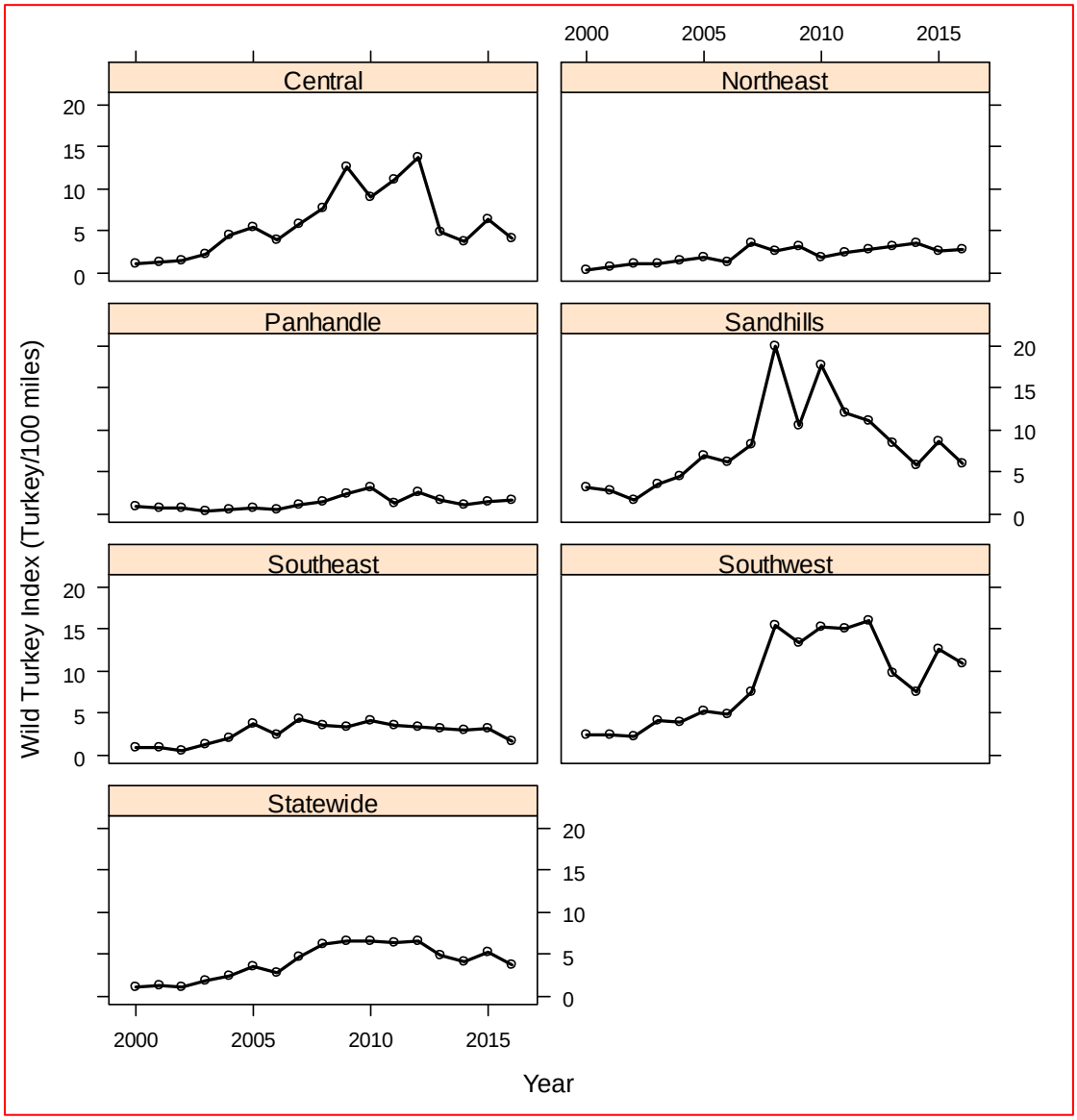
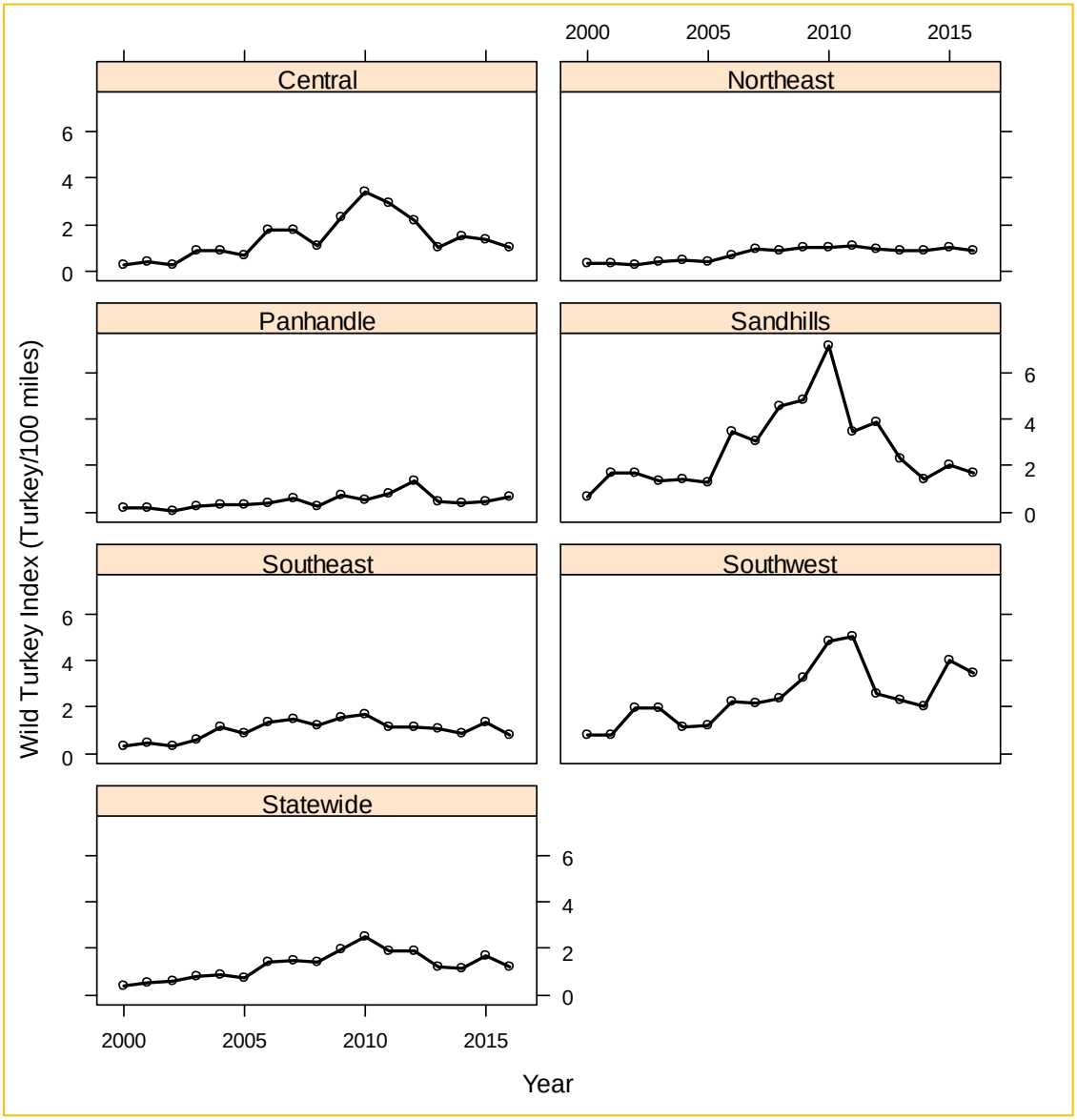


TABLE 4. Wild turkey indices by pheasant management region from the 2016 July Rural Mail Carrier Survey. Carrier means are weighted by miles traveled per carrier.

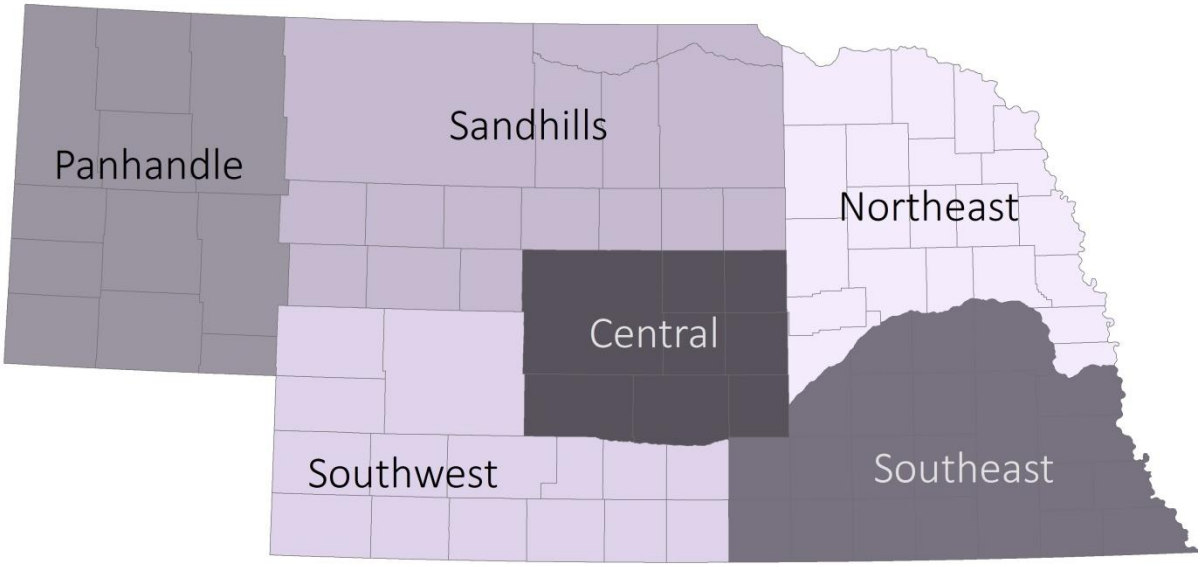
Region	Mean turkeys per 100 miles & 90% Confidence Limits	Percent Difference from: 2015	Mean 2011-2015	Mean 2006-2015
Central	1.00 (0.68-1.33)	-24	-44	-48
Northeast	0.86 (0.65-1.06)	-14	-11	-9
Panhandle	0.69 (0.47-1.32)	48	-1	15
Sandhills	1.68 (0.98-2.38)	-17	-36	-53
Southeast	0.80 (0.51-1.09)	-42	-29	-38
Southwest	3.45 (1.97-4.93)	-64	-54	-53
Statewide	1.19 (0.97-1.41)	-30	-24	-28

FIGURE 6. Regional and statewide time series (2000-2016) of wild turkey abundance indices from the July Rural Mail Carrier Survey.



V. Management Units:
Nebraska turkey permits are valid statewide, so there are no harvest management units. Population assessments are regionalized by pheasant management unit boundaries for consistency with other upland species.

FIGURE 7. Pheasant management regions.



VI. Regulation/legislation Changes

HUNTING TURKEYS AND BAITING
A wildlife regulation amended for 2016 states that a baited area may not be established from 10 days before the opening of any big game or turkey season and throughout those entire seasons for the purposes of taking big game or turkey. An area within 200 yards of bait is considered baited and to hunt within that area is prohibited. To be legal, both the hunter and the animal must be outside a baited area.

> *Title 163-Chapter 4 §001.01B9 It shall be unlawful to establish, utilize, or maintain a baited area for ten (10) days prior to the opening of any big game (sheep, elk, mountain lion, deer, or pronghorn) or turkey season and throughout those entire seasons for the purpose of taking big game or turkey. A baited area is defined as an area within 200 yards of any location where bait (grains, fruits, vegetables, nuts, hay, minerals [including salt], or any food materials, commercial products containing food materials, or by-products of such materials) is placed or maintained for the purposes of hunting and that may serve as an attractant to big game or turkey. It shall be unlawful for a person within a baited area to hunt big game or turkey, or for a person to hunt or take big game or turkey that are within a baited area; these restrictions shall only apply to property included in the same ownership, control or lease of such location where bait is placed. An area shall be considered to be baited for ten (10) days following the removal of all bait. The Commission may, by special authorization, allow take otherwise prohibited by this regulation. The use of scents alone, normal environmental conditions, accepted farming and ranching practices, forest management, wildlife food plantings, orchard management, or similar land management activities do not constitute baiting.*

VII. Urban/Special Hunts
None.

VIII. Management Assistance/Crop Damage
Crop depredation permits are provided to landowners who demonstrate significant crop damage from wild turkey and who have attempted to ameliorate this damage by allowing hunting on their property.

IX. Disease Issues / Updates
None currently monitored.

X. Research

Genetic Structure and Function of Nebraska Wildlife. Federal Aid in Wildlife Restoration Project W-126-R, Job 1: Wild Turkey.

After historic reductions in the size of the North American wild turkey population, populations have recovered dramatically, owing in large part to reintroductions by many private and government groups. As a result, interest in wild turkeys has increased immensely, as now it is feasible to successfully hunt turkeys across most of the country. In many states, bag limits and seasons have increased, and states that once required lotteries for a tag now issue them over the counter. Public interest in turkeys is at a high level and growing.

One of the basic biological questions concerning wild turkeys is their appearance, which varies geographically. Many species exhibit geographic variation in their external appearance such that the morphological characteristics of individuals often constitute a bar-code for their geographic areas of origin. In the case of many vertebrates including wild turkey, these geographic variants have received a taxonomic name at the subspecies level. Although some subspecies are subtly distinct at best (Zink 2004), some, such as the subspecies of the wild turkey, are well marked, indicating a relatively long period of geographic and genetic isolation from other groups of turkeys.

It is possible to determine the heritage of an individual turkey using genetic assays. Mock et al. (2002; see also Speller et al. 2010) surveyed genetic variation in wild turkeys across the ancestral range, using three different molecular genetic markers (mitochondrial DNA [mtDNA], microsatellites, and amplified fragment length polymorphisms [AFLP]). Their mtDNA analysis showed that Gould's was genetically distinct and Merriam's mostly distinct, but the Rio Grande, Eastern and Osceola were intermingled (Figure 3). Their microsatellite analysis (Figure 4), however, demonstrated genetic differentiation among the four subspecies. Unfortunately, the support indices on the tree indicate that there were genetically intermediate individuals, which were masked by pooling individuals into population-level groups. Their AFLP analysis (not shown) found similar support. Thus, although mtDNA is useful, genetic surveys should concentrate on nuclear genes to establish diagnostic differences between the "cores" of each group and reveal evidence of genetic intermediates.

The objective of this project is to collect tissue from wild turkey across Nebraska, and representative pure-strain samples ($n > 9$) each from Rio Grande, Eastern, and Merriam's subspecies collected outside Nebraska, to determine relative subspecies composition of the statewide population, and to ascertain the functional significance of any genetic diversity in terms of survival or reproduction.

XI. Hot Topics
None currently.

XII. Relevant Links
Turkey Guide: http://outdoornebraska.gov/guides/
Turkey Species Page: http://outdoornebraska.gov/wildturkey/

NORTH DAKOTA WILD TURKEY POPULATION STATUS REPORT – 2016

40th Southeast Wild Turkey Working Group Meeting – August 22-25, 2016
General Butler State Resort Park – Carrollton, KY

RJ Gross – Upland Game Biologist
North Dakota Game and Fish Department
100 N Bismarck Expressway
Bismarck, ND, 58504
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POPULATION STATUS

The Department uses several population techniques to obtain trends on our wild turkey population. We have a landowner survey that is sent to most landowners who have turkeys wintering on their land. Our district biologists and game wardens annually record observations of wild turkey hens, broods and poults on standardized pheasant brood routes during July and August. We also have our field staff collect incidental turkey brood data from June 1 to September 1.

Our 2015-2016 winter landowner survey of turkeys was inconclusive due to limited data. We experienced a mild winter with very little precipitation. This allowed turkeys to stay away from their traditional farmyard wintering areas. However, many landowners in the western and eastern part of the state are still reporting low turkey numbers and very few poults. Turkey production has been rather poor the last four of five years, especially in western one-third of the state primarily due to cool, wet springs, causing poor nesting success and poor young survival.

REPRODUCTION

Final results of the 2016 statewide brood survey are not available yet. The 2015 survey is showed total number of adult turkeys observed (8.7%) and average brood size (1.6%) to be up from 2014. The number of poults per adult hen was down 32% and number of broods was down 2.7% from 2014. Age ratio is standing at 1.04 poults per adult (Table 1).

HARVEST

2016 Spring Turkey Season

The state uses twenty-two hunting units during the spring season. These units include all of North Dakota's 53 counties. During the spring of 2016, the entire state was open for wild turkey hunting except for unit 21 in the southwestern part of the state. This area has been closed for the past ten spring hunting seasons because of low turkey numbers in this unit.

Licenses are issued by weighted lottery after the number of gratis licenses is deducted from the total available. Only residents are eligible to apply for spring licenses, although one spring license is provided to the NWTF for auction. The 2016 Spring Wild Turkey Proclamation provided the Outdoor Adventure Foundation with two turkey licenses, valid in any open unit, for the 2016 spring season. In accordance with N.D.C.C. 20.1-04-07(1) (c)), these two licenses shall be issued to a qualifying youth who has cancer or a life-threatening illness.

First time spring turkey hunters age 15 or younger can receive one spring license valid for the regular hunting season for a specific unit. As in the fall season, we provide only a one time period for hunting wild turkeys in the spring. You choose your weapon from shotguns, muzzle loading rifles, handguns and bow/arrows.

This spring, the season opened April 9 and closed May 15 (36 days). Only one bearded or male wild could be harvested. A total of 5,912 applications (down 8 percent from 2015) were received for the 5,815 permits that were available. Of the 5,895 permits actually issued, 314 went to landowners, 187 to youth, and 5,394 to regular turkey hunters.

Data from the spring hunter harvest questionnaire showed that 4,850 of the license holders (82%) hunted. Hunters harvested 2,309 wild gobblers (up 16 percent from 2015) for a hunter success of 47.6 percent (Table 2, Figures 1 & 2).

2015 Fall Turkey Season

The state is divided into twenty-two hunting units and these areas include all 53 counties of North Dakota's (Figure 3). During the fall of 2014, twenty of 22 counties were open for wild turkey hunting. Unit 53 in the northwestern part of the state and unit 21 in the southwest were closed. These two units have been closed for the past nine fall hunting seasons because of low turkey numbers.

Licenses are issued by weighted lottery after gratis licenses are deducted from the total available. Only North Dakota residents are eligible to apply in the first lottery. If licenses remain after the first lottery, then nonresidents can apply.

North Dakota has no specific youth hunting season for wild turkeys in the fall. We also do not have a specific bow season for turkeys. We provide a one time period for hunting wild turkeys in the fall, and you can choose your weapon from shotguns, muzzle loading rifles, handguns and bow/arrows. During the fall of 2015, the season was held from October 08, 2016 through January 8, 2017. There were 3,655 permits available and 3,629 were issued (229 gratis and 3,400 general permits). This was a decrease of 150 permits available (-4 percent) over 2014.

From the wild turkey questionnaire, it was determined that 2,524 license holders (69.5 percent) hunted during the fall. Hunters harvested 1,114 wild turkeys for a success of 44.1 percent (Table 3, Figures 4 & 5). A summary of the fall hunting statistics for ND since 1958 can be found in Table 3. Figure 4 is a graph of fall harvest statistics from 1980 – 2015. Data regarding sex and age of the harvest was determined by a voluntary sample of wing tips and breast feathers sent in

by hunters. Based upon a sample of 228 harvested birds, 45.1 percent of the 2015 fall harvest were females; 51.7 percent males, and 32 percent were juveniles; 64 percent adults.

MISCELLANEOUS

Figure 1. Spring harvest statistics for wild turkeys in North Dakota, 1980 - 2016.

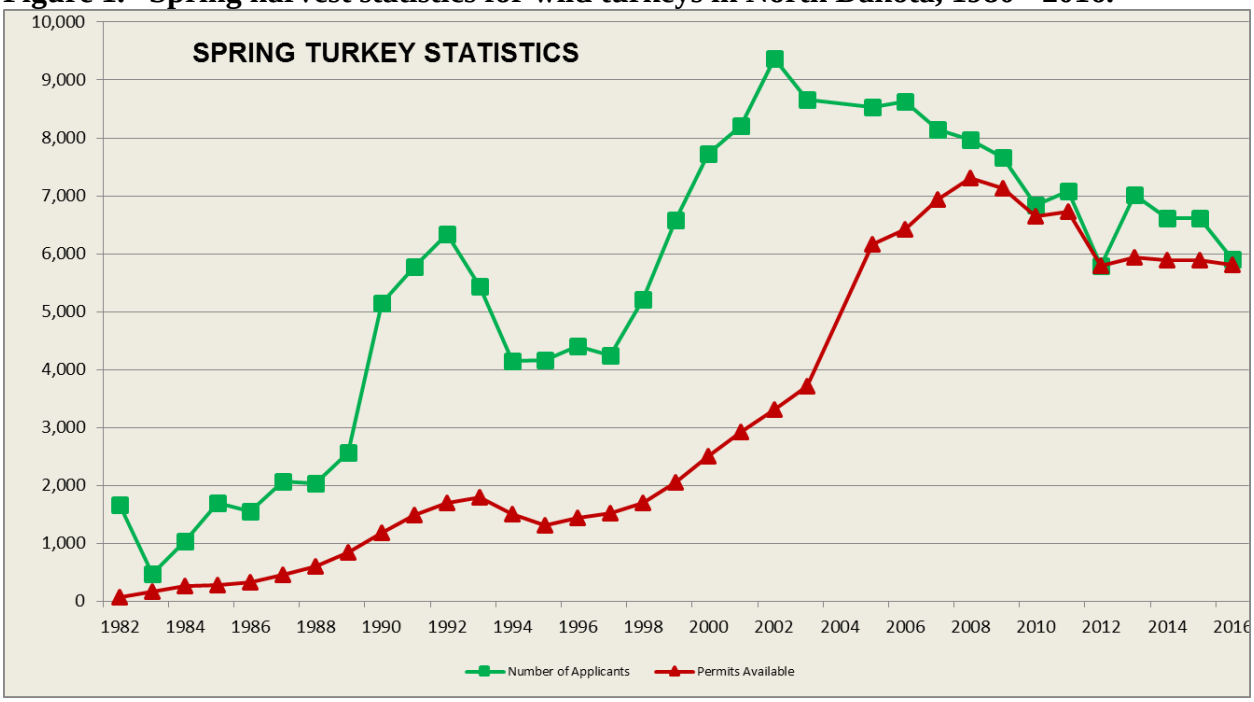


Figure 2. Spring wild turkey harvest of number of hunters and bag.

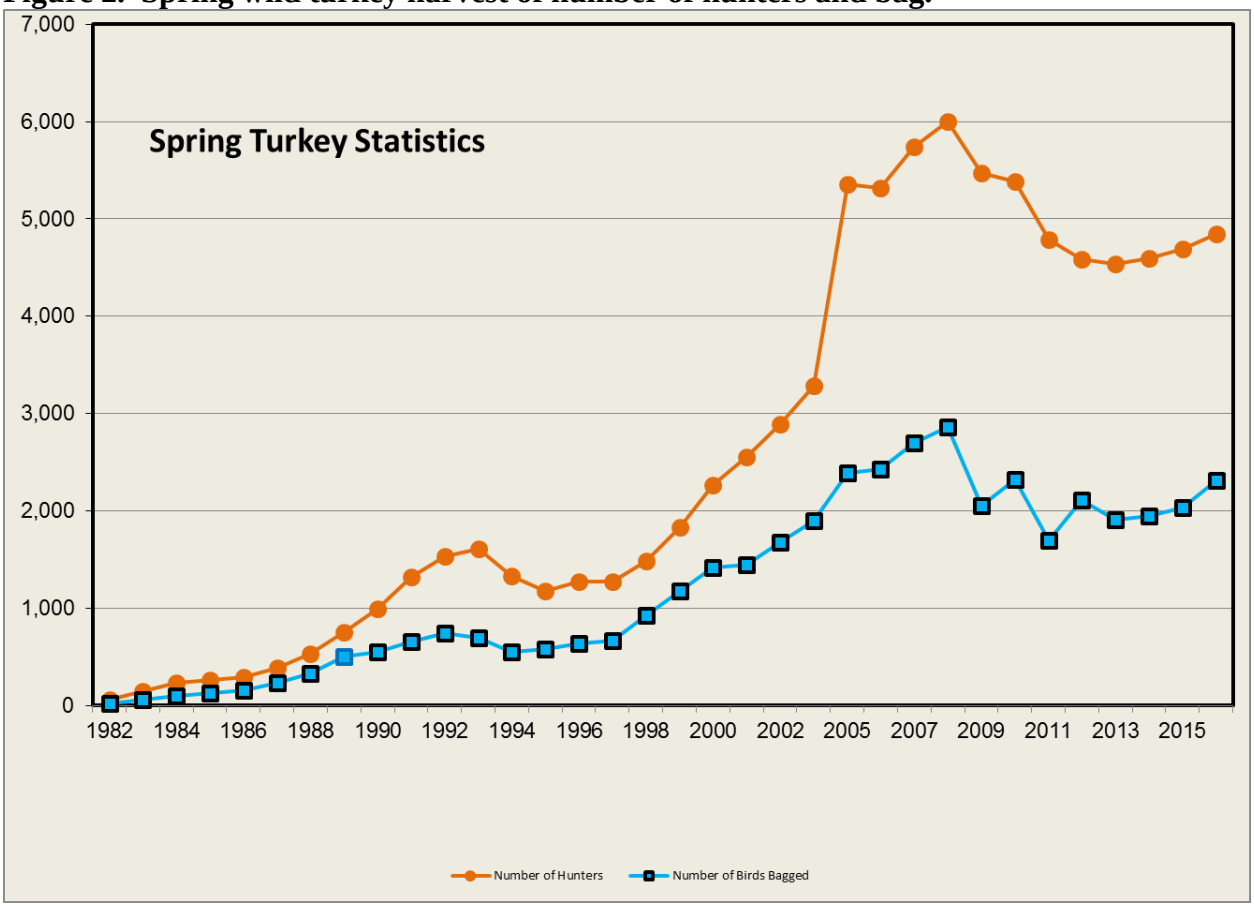


Figure 3. North Dakota Game and Fish Department Turkey Hunting Units

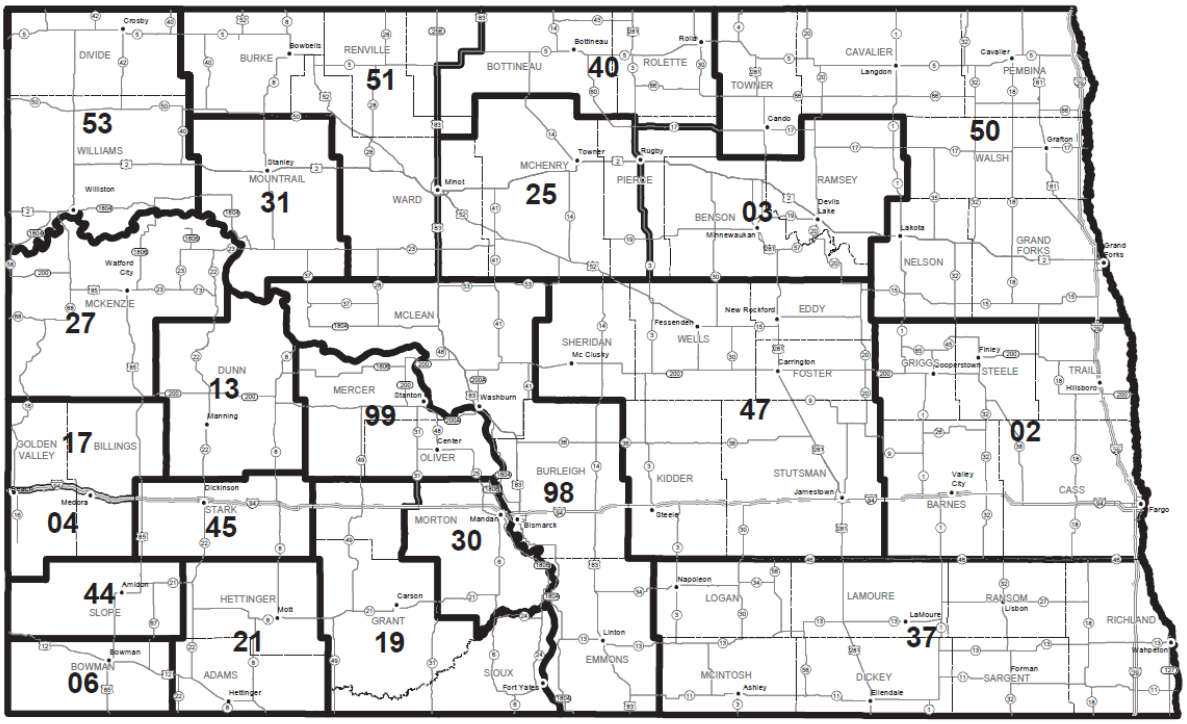


Table 1. Brood data for wild turkeys in North Dakota, 2009 - 2015.*

PARAMETER	YEAR							% Change
	2009	2010	2011	2012	2013	2014	2015	2014 - 2015
Number of routes driven	267	266	374	379	376	386	236	-38.9%
Number of miles driven	5,313	5,249	9,012	9,043	9,416	9,781	5930	-39.4%
Number of hours driven	396.5	407.2	617.0	615	638	638	405	-36.5%
Number of adult birds observed	82	99	124	251	164	208	226	8.7%
Number of juvenile birds observed	114	126	68	192	162	238	235	-1.3%
Number of broods observed	15	17	13	27	24	37	36	-2.7%
Number of birds observed per 100 miles driven	3.7	4.3	2.1	5.0	3.6	4.6	7.8	69.6%
Number of broods observed per 100 miles driven	0.3	0.3	0.1	0.3	0.3	0.4	0.6	50.0%
Number of juveniles per adult hen	3.1	3.2	1.2	1.2	1.9	2.5	1.7	-32.0%
Number of birds observed per hour driven	0.49	0.55	0.31	0.72	0.51	0.70	1.14	62.9%
Number of broods observed per hour driven	0.04	0.04	0.02	0.04	0.04	0.06	0.09	50.0%
Age ratio (juvenile/adult)	1.39	1.27	0.55	0.76	0.99	1.14	1.04	-8.8%
Average Brood Size	7.60	7.41	5.23	7.11	6.75	6.43	6.53	1.6%

*
Preliminary Numbers

TABLE 2. North Dakota Spring Wild Turkey Hunting Seasons, 1976 - 2016.

Year	Number of Applicants	Number of Permits Available	Number of Permits Issued	Number of Hunters	Number of Birds Bagged	Percent Success
1976			30	22	9	40.9%
No Spring Wild Turkey Hunting Seasons 1977 through 1981						
1982	1,660	72	70	57	18	31.6%
1983	470	160	160	146	61	41.8%
1984	1,033	270	258	231	94	40.7%
1985	1,691	285	283	257	130	50.6%
1986	1,548	325	325	290	155	53.4%
1987	2,065	455	455	387	232	59.9%
1988	2,032	600	600	527	331	62.8%
1989	2,561	845	843	753	502	66.7%
1990	5,151	1,175	1,188	998	547	54.8%
1991	5,783	1,485	1,490	1,319	658	49.9%
1992	6,345	1,705	1,717	1,533	746	48.7%
1993	5,442	1,795	1,807	1,605	696	43.4%
1994	4,153	1,500	1,500	1,328	555	41.8%
1995	4,157	1,315	1,322	1,174	581	49.5%
1996	4,399	1,435	1,445	1,277	641	50.2%
1997	4,245	1,520	1,528	1,272	669	52.6%
1998	5,208	1,695	1,695	1,484	924	62.3%
1999	6,583	2,055	2,060	1,835	1,173	63.9%
2000	7,720	2,505	2,534	2,266	1,421	62.7%
2001	8,207	2,925	2,925	2,556	1,449	56.7%
2002	9,370	3,310	3,310	2,888	1,679	58.1%
2003	8,662	3,710	3,709	3,282	1,896	57.8%
2005	8,537	6,165	6,213	5,359	2,391	44.6%
2006	8,629	6,425	6,405	5,318	2,430	45.7%
2007	8,138	6,935	6,961	5,743	2,696	46.9%
2008	7,966	7,300	6,506	5,997	2,859	47.7%
2009	7,655	7,136	7,138	5,476	2,051	37.5%
2010	6,832	6,641	6,645	5,388	2,323	43.1%
2011	7,077	6,720	6,672	4,783	1,698	35.5%
2012	5,784	5,795	5,872	4,586	2,115	46.1%
2013	7,015	5,930	6,053	4,534	1,905	42.0%
2014	6,613	5,881	6,003	4,598	1,947	42.3%
2015	6,613	5,886	6,003	4,694	2,029	43.2%
2016	***5,912***	***5,815***	***5,895***	***4,850***	***2,309***	***47.6%***
Total Avg.	**5,449**	**3,170**	**3,164**	**2,612**	**1,233**	**47.2%**

Table 3. Fall harvest statistics for wild turkeys in North Dakota, 1958 - 2015.

Year	Number of applicants	Number of permits available	Number of permits issued *	Number of hunters	Number of birds bagged	Percent success	Average days hunted
1958			376	376	88	23.4	
1959	No Season		--	--	--	--	
1960	No Season		--	--	--	--	
1961			309	246	174	70.7	
1962			426	392	241	61.5	
1963			306	298	171	57.4	
1964			404	386	198	51.3	
1965			350	290	109	37.6	
1966	No Season		--	--	--	--	
1967			200	183	103	56.3	
1968			200	178	97	54.5	
1969			197	186	117	62.9	
1970			197	180	131	72.8	
1971			201	185	134	72.4	
1972			227	205	129	62.9	
1973			203	195	151	77.4	
1974			307	285	213	74.7	
1975			359	308	186	60.4	
1976			500	466	653	140.1	
1977			650	513	411	80.1	
1978			844	737	540	73.3	
1979	2,834	975	961	881	583	66.2	
1980	2,611	1,155	1,135	1,029	736	71.5	
1981	4,969	1,530	1,514	1,310	976	74.5	
1982	3,258	1,530	1,501	1,361	975	71.6	
1983	3,057	1,660	1,678	1,488	1,181	79.4	
1984	3,143	1,710	1,707	1,521	1,197	78.7	
1985	3,902	1,960	1,946	1,631	1,269	77.8	
1986	3,800	2,235	2,126	1,861	1,324	71.1	
1987	3,393	2,455	2,417	2,177	1,668	76.6	
1988	6,918	5,930	5,938	5,098	3,607	70.8	
1989	5,890	5,810	5,760	4,818	3,233	67.1	
1990	6,921	4,765	4,735	3,845	2,556	66.5	
1991	7,305	4,580	4,593	3,683	2,236	60.7	
1992	6,402	3,585	3,605	2,938	1,830	62.3	
1993	6,030	3,585	3,546	2,735	1,331	48.7	
1994	4,330	3,585	3,154	2,578	1,484	57.6	
1995	3,862	3,195	3,212	2,608	1,619	62.1	
1996	4,348	3,230	3,241	2,595	1,946	75.0	
1997	4,717	3,250	3,273	2,695	1,835	68.1	
1998	5,218	3,855	3,860	3,141	2,114	67.3	
1999	4,977	4,620	4,620	3,941	2,750	69.8	
2000	7,665	6,000	6,000	4,690	3,029	64.6	2.9
2001	8,119	6,510	6,622	5,224	3,083	59.0	2.9
2002	8,399	6,610	6,752	5,234	3,157	60.3	3.1
2003	8,048	9,095	8,896	6,886	4,410	64.0	2.8
2004	10,070	10,980	11,224	8,064	3,773	46.8	3.4
2005 [1]	9,334	9,230	9,331	6,722	3,191	47.5	3.3
2006	8,319	7,925	8,066	5,982	3,194	53.4	3.1
2007	8,138	8,025	6,961	5,743	2,696	46.9	3.0
2008	8,767	8,700	8,215	5,539	2,632	47.5	3.2
2009	7,126	6,805	6,804	4,274	1,851	43.3	3.1
2010	5,930	5,755	5,901	3,702	1,551	41.9	3.1
2011	4,692	4,630	4,708	3,145	1,259	40.0	3.5
2012	4,516	4,145	4,190	2,652	1,212	45.7	3.2
2013	4,401	4,020	4,066	2,583	1,012	39.2	3.7
2014	4,401	4,020	4,066	2,786	1,108	39.8	3.8
2015	**3,972**	**3,655**	**3,629**	**2,524**	**1,114**	**44.1**	**3.7**
TOTAL	209,782	171,305	176,209	135,293	78,568		
AVG:	5,670	4,630	3,204	2,460	1,429	58.1%	

* Includes lottery permits (10,504) plus gratis permits (720) in 2004.

[1] First year nonresidents were allowed to apply for fall turkey AFTER the first drawing for residents.

Figure 4. Fall harvest statistics for turkeys in North Dakota, 1980 - 2015.

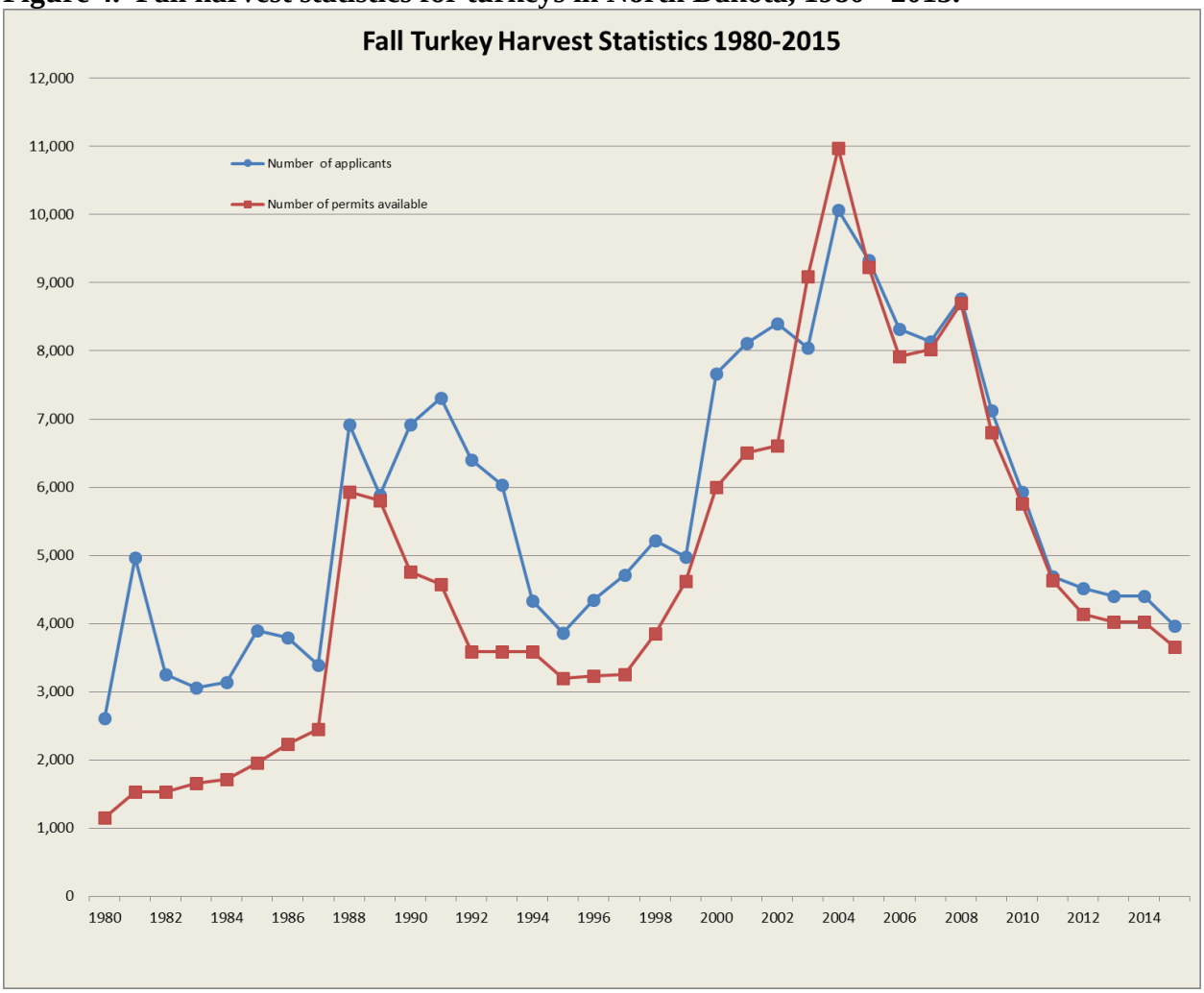
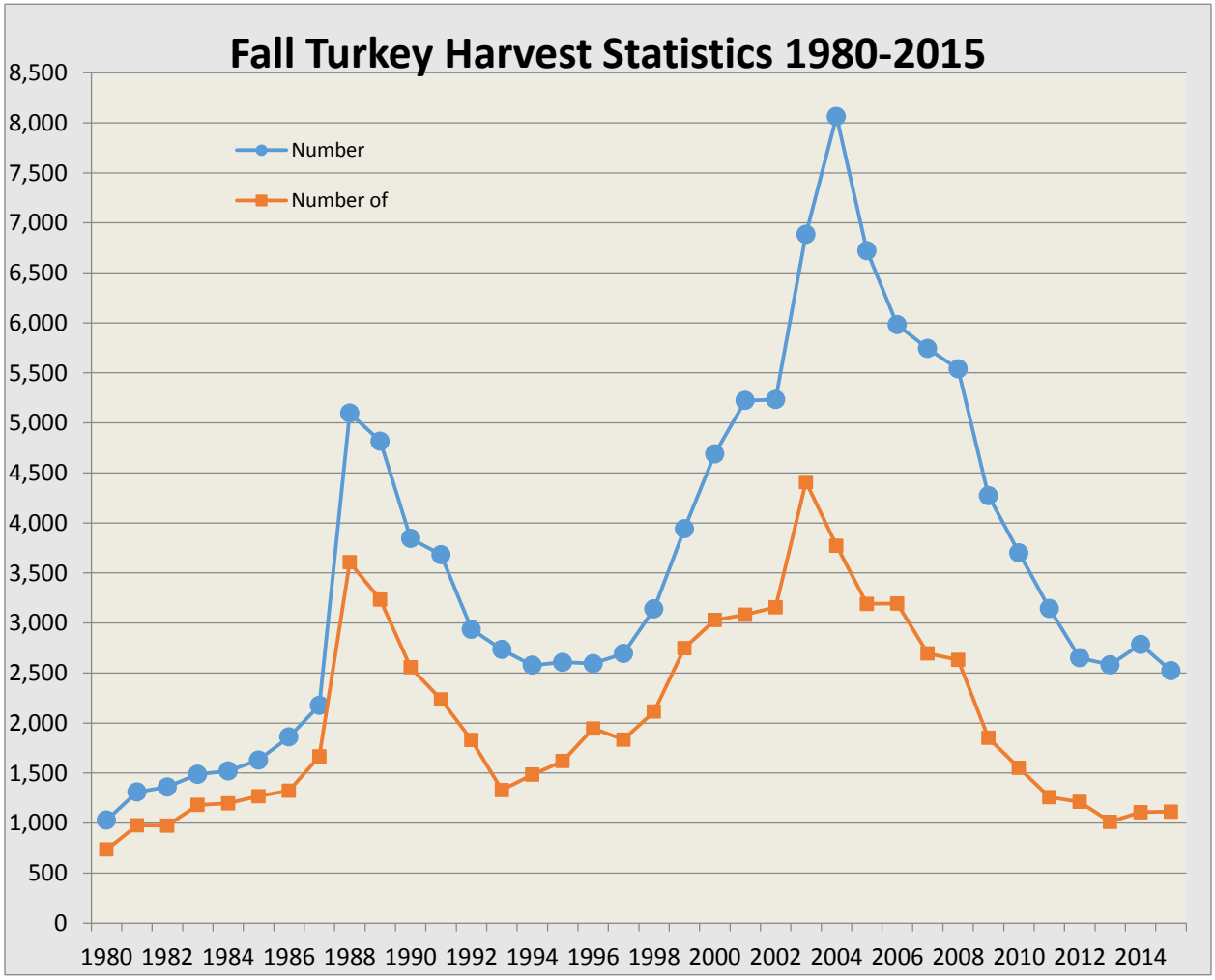


Figure 5. Fall harvest statistics for turkeys in North Dakota, 1980 - 2015.



2016 OHIO WILD TURKEY PROGRAM REPORT

Mark Wiley

I. Current Harvest

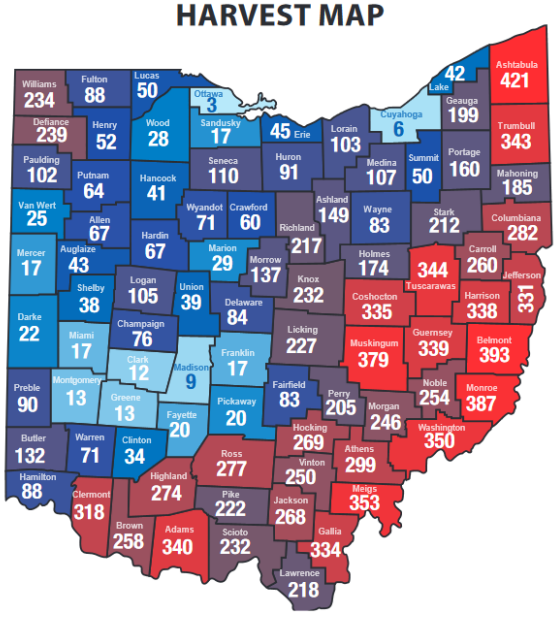
2016 Spring Season Summary

Hunters checked a total of 17,805 wild turkeys in Ohio during the combined spring hunting seasons in 2016, which is 0.9% greater than the 2015 spring harvest of 17,652. Youth hunters checked 1,564 during the two-day youth season (April 16-17, 2016). Adult males, juvenile males, and bearded hens accounted for 75.4%, 23.5%, and 1.1% of the total spring harvest, respectively. Turkeys taken by shotgun, longbow (compound, recurve, etc.), and crossbow accounted for 97.6%, 1.7%, and 0.7% of the total spring harvest, respectively.

2015 Fall Season Summary

Hunters checked a total of 1,537 wild turkeys in Ohio during the fall season in 2015, which is a 24.1% increase from the 2014 fall harvest of 1,239. Males (606) and females (931) accounted for 39.4% and 60.6% of the total fall harvest, respectively. Juvenile males (181) accounted for 29.9% of the total male harvest. Turkeys taken by shotgun, longbow (compound, recurve, etc.), and crossbow accounted for 62.8%, 15.5%, and 21.7% of the total fall harvest, respectively.

2016 SPRING WILD TURKEY HARVEST MAP



II. License and Season Information

Hunting LICENSES	Resident Annual License	$19
	Youth Annual License: Resident and Nonresident	$10
	Nonresident Annual License	$125
	Resident Reduced-Cost Senior License	$10
	Resident Free Senior License: Ohio residents born on or before Dec. 31, 1937	Free
	Nonresident (Tourist) 3-day License: Not valid for deer, turkey, or furbearers	$40

SPRING TURKEY PERMIT	COST
Adult Permit: Resident & Nonresident	$24
Youth Permit: Resident & Nonresident	$12
Reduced-Cost Senior Permit: Resident Only	$12
Free Senior Permit: Resident Only	FREE

FALL TURKEY PERMIT	COST
Adult Permit: Resident & Nonresident	$24
Youth Permit: Resident & Nonresident	$12
Reduced-Cost Senior Permit: Resident Only	$12
Free Senior Permit: Resident Only	FREE

Ohio's spring wild turkey season is open statewide for 4 weeks starting on the Monday closest to April 21st. The statewide youth spring wild turkey season is open during the Saturday and Sunday prior to the regular spring season. A spring turkey permit is required of residents and nonresidents in addition to a valid Ohio hunting license. The season bag limit is two bearded turkeys. Only one bearded turkey may be taken per day. Hunting hours are 30 minutes before sunrise to noon during the first two weeks of the regular season and 30 minutes before sunrise to sunset during the last two weeks of the regular season. A total of 66,436 spring permits were issued in 2016.

Ohio Spring Turkey Permit Sales 2011-2016

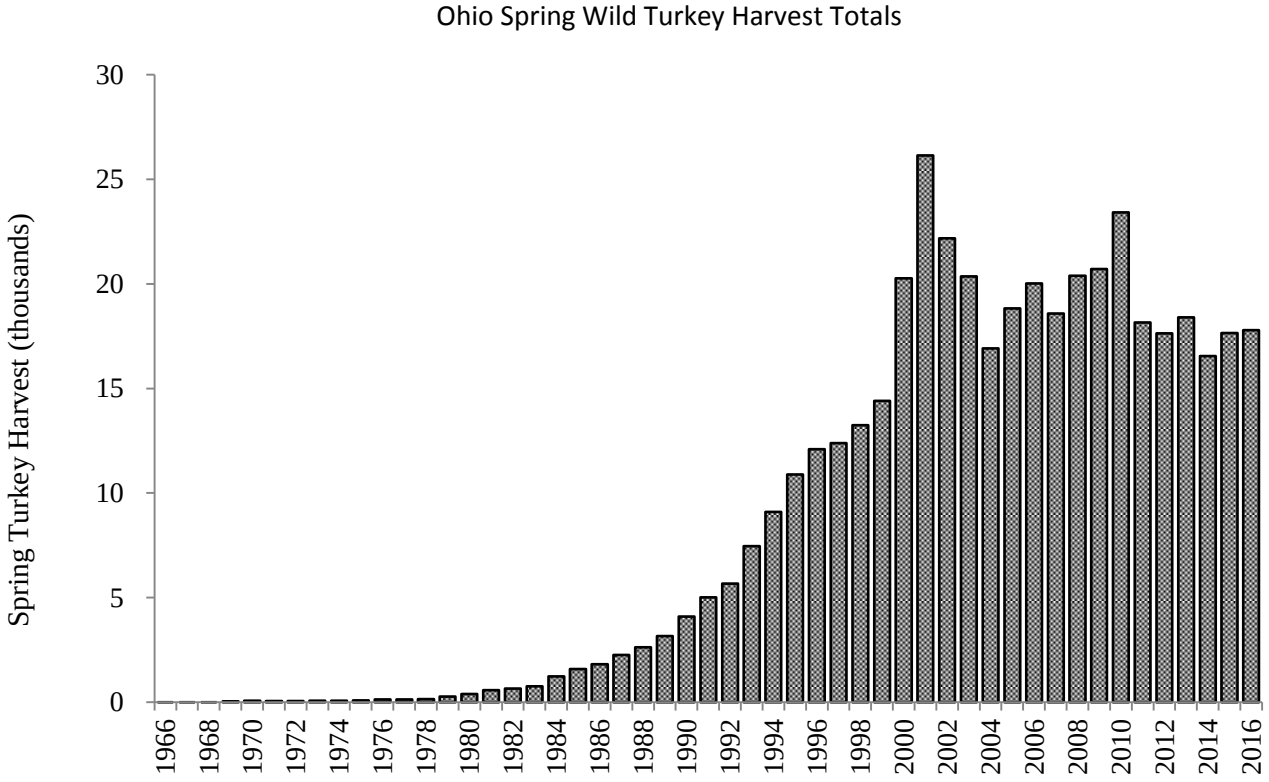
Year	Spring Turkey	Nonres. Spring	Youth Spring	Reduced Cost Spring	Free Spring	Total Spring
2011	45,301	3,389	10,545	3,601	13,829	76,665
2012	42,009	3,151	9,933	3,743	11,455	70,291
2013	44,947	3,293	10,914	4,265	10,495	73,914
2014	42,501	3,542	10,030	4,424	8,463	68,960
2015	41,395	3,628	9,245	4,680	6,935	65,883
2016	41,876	3,975	9,304	5,139	6,142	66,436

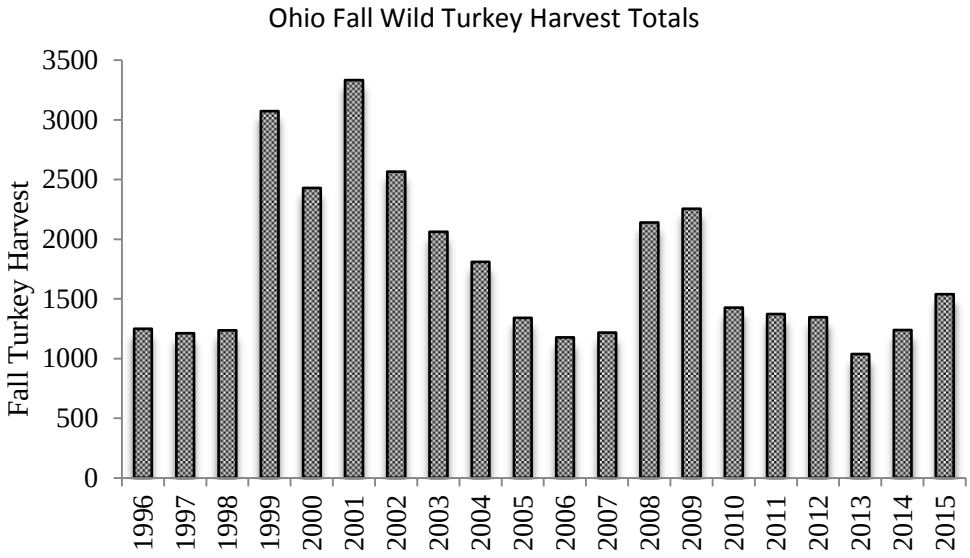
Ohio's fall turkey season is open in select counties for approximately seven weeks in October and November. A fall turkey permit is required of residents and nonresidents in additional to a valid Ohio hunting license. The season bag limit is one turkey of either sex. Hunting hours are 30 minutes before sunrise to sunset. It is legal to use dogs to assist in taking turkeys during the fall season only. A total of 11,689 fall permits were issued in 2015.

Ohio Fall Turkey Permit Sales 2011-2015

Year	Fall Turkey	Nonres. Fall	Youth Fall	Reduced Cost Fall	Free Fall	Total Fall
2011	5,321	943	904	855	11,153	19,176
2012	5,190	936	881	885	9,277	17,169
2013	5,155	995	850	1,005	4,832	12,837
2014	4,914	848	767	1,062	4,310	11,901
2015	5,196	1,004	812	1,115	3,562	11,689

III. Historical Harvest

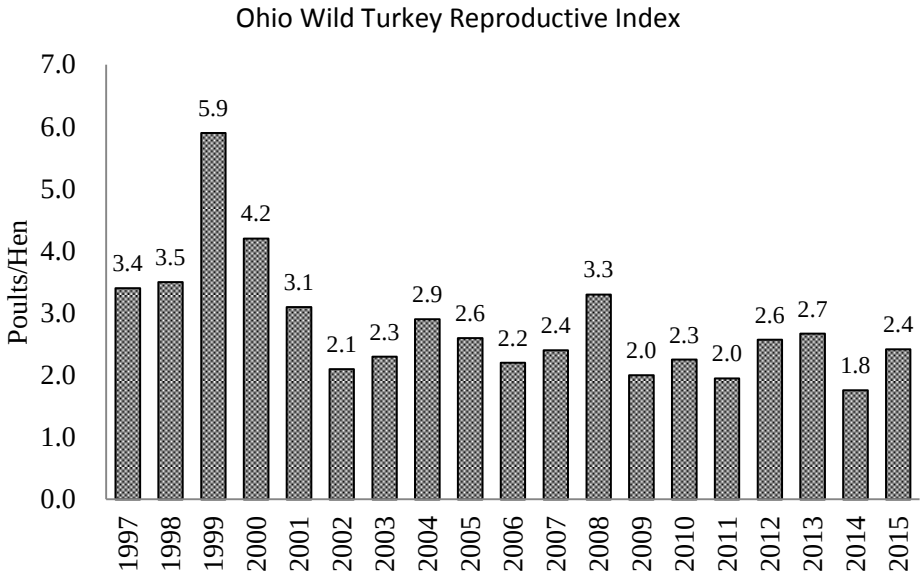




IV. Population Trends

Wild turkeys were extirpated from Ohio in 1904 and remained absent from the state for nearly half a century. The Ohio Department of Natural Resources (ODNR) successfully reintroduced wild turkeys to the state in the late-1950's. Until the late-2000's, ODNR utilized in-state translocation to expedite turkey range expansion. Ohio's current wild turkey population is estimated at 180,000 birds, with turkeys present in all 88 counties.

The ODNR conducts an annual turkey brood survey to estimate population growth. The brood survey relies on the public reports of all wild turkeys seen during June, July and August. Observations are submitted on the Turkey Brood Survey webpage at wildohio.gov. More than 7,900 total turkeys were reported during the 2015 survey, with an average of 2.4 poults per adult hen. The 2015 average is slightly higher than the than the 5-year average of 2.3 poults/hen and equivalent to the 10-year average.

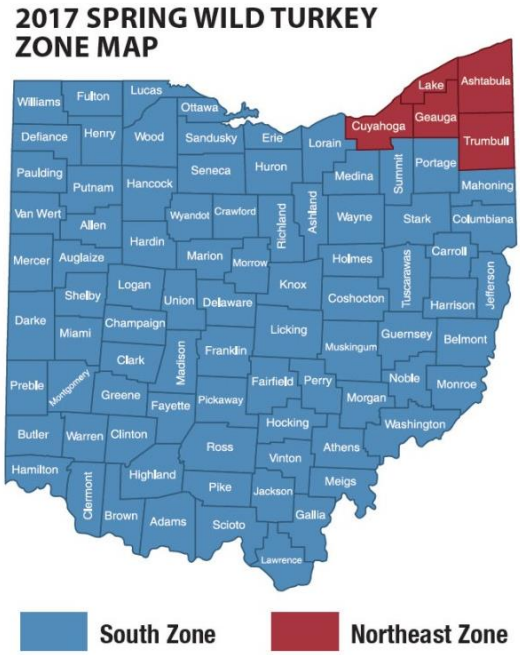


V. Management Units:

N/A

VI. Regulation/legislation Changes

Five northeast Ohio counties make up a new spring wild turkey hunting zone. The statewide bag limit remains the same, but season dates are different in those five counties. The Northeast Zone is Ashtabula, Cuyahoga, Geauga, Lake, and Trumbull counties. The South Zone is the remainder of the state. Northeast Zone turkey hunting hours from May 1 to May 14, 2017 are 30 minutes before sunrise to noon. Northeast Zone turkey hunting hours from May 15 to May 28, 2017 are 30 minutes before sunrise to sunset. South Zone turkey hunting hours from April 24 - May 7, 2017 are 30 minutes before sunrise to noon. South Zone turkey hunting hours from May 8 to May 21, 2017 are 30 minutes before sunrise to sunset.



VII. Urban/Special Hunts

Special youth turkey hunts are held during the regular spring season at Lake La Su An, Killbuck Marsh, and Mosquito Creek Wildlife Areas, as well as Paint Creek State Park. Drawings for these controlled hunting permits occur in March.

VIII. Management Assistance/Crop Damage

N/A

IX. Disease Issues / Updates

N/A

X. Research

WUPR19 – Wild turkey nest initiation in northeast Ohio

Wild turkey nesting activity was perceived to occur later within Ohio's snow belt region than in the rest of the state. During February-March 2015, 20 wild turkey hens were captured in this region and monitored through the breeding season using GPS transmitters. Nest initiation and incubation were recorded for 15 hens. Median nest initiation in the snow belt region of Northeast Ohio was two weeks later than documented during a previous study in southeast Ohio. Based on nest initiation and incubation dates observed in this study, a spring hunting season start date of the Monday closest to May 1 for the snow belt region of Northeast Ohio would possibly protect more hens from accidental/illegal kill than the current season structure.

XI. Hot Topics

N/A

XII. Relevant Links

ODNR-Div. of Wildlife Webpage -	http://wildlife.ohiodnr.gov/
ODNR- Div. of Wildlife Hunting Regulations -	http://wildlife.ohiodnr.gov/huntingandtrappingregulations
Ohio Turkey Brood Survey -	https://apps.ohiodnr.gov/wildlife/turkeysurvey/