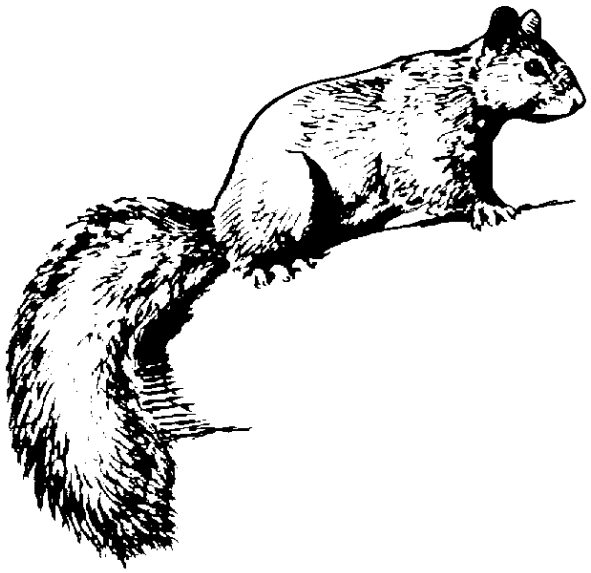
TRENDS IN IOWA WILDLIFE POPULATIONS AND HARVEST

2019-2020



Iowa Department of Natural Resources
Kayla Lyon, Director
September 2020

TRENDS IN IOWA WILDLIFE POPULATIONS AND HARVEST 2019-2020

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CONSERVATION & RECREATION DIVISION
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WHITE-TAILED DEER

Historical Perspective

White-tailed deer (*Odocoileus virginianus*; hereafter deer) were reported to be abundant when European settlers arrived in Iowa in the early 1800's. Although the clearing and cultivating of land for agriculture may have initially improved the suitability of the landscape for deer, uncontrolled exploitation for food and hides rapidly reduced deer numbers. By 1880, deer were rarely sighted in much of the state and in 1898 the deer season was legally closed. By this time, deer had been virtually eliminated from all parts of the state.

Re-establishment of deer into the state can be traced back to escapes and releases from captive herds and translocation and natural immigration from deer herds in surrounding states. A conservative estimate of the population in 1936 placed statewide numbers between 500 and 700 animals. This small herd grew steadily. By 1950, deer were reported in most counties and the statewide estimate topped 10,000 animals. Concentrations in some areas were beginning to cause conflicts with Iowa including increased agricultural damage and collisions with vehicles. In response to these problems, the first modern deer season was held in December of 1953, and 4,000 deer were harvested. The statewide harvest steadily increased, and in 1996 topped 100,000 for the first time in history.

Although deer are frequently associated with forested areas, they are very adaptable and will utilize many different types of habitat as long as the area provides adequate cover. Examples of these types of areas include brushy draws and fence lines, marshes, and grassy areas like those provided by the federal Conservation Reserve Program (CRP). Standing corn also provides ideal habitat for part of the year since it provides cover and food during portions of the growth cycle. Urban environments can also prove to be good habitat for deer, especially if there are green belts, parks or other natural spaces nearby.

Deer utilize almost all plants for food at one time or another during the year. Deer feeding habits can best be described as being widely selective as deer will sample many plants while feeding, but often utilize a single, palatable source of food for the majority of their diet seasonally. Preferred foods change throughout the year in response to changing metabolic demands and forage availability.

Deer thrive in Iowa mostly due to abundant, reliable food sources and a relatively mild winter climate where snow depths rarely exceed 12" for a prolonged length of time. Droughts are also rare and do not impact the availability of food like they do in some areas of the United States. Together, these factors allow deer to come through the "winter bottleneck" in excellent condition. The excellent nutrition also enables deer to have high reproductive rates. Some one year old does can give birth to single fawn, and many will give birth to multiple fawns each subsequent year. Deer in the wild can maintain these high reproductive rates past 10 years of age. Research in Iowa has found that greater than 95% of adult does become pregnant each year on average, and that most of these does are pregnant with twins with approximately 8% on average being pregnant with triplets.

Another reason that deer do so well in Iowa is that they are very mobile. Although many deer never move far from the area where they were born, a significant number (10-20% on average) leave and travel to new areas before establishing a core area. These core areas may change seasonally with deer shifting between wintering areas and fawning areas. These movements allow deer to fill voids left open due to deaths and changing habitat. Thus, deer easily pioneer into new areas when habitat is suitable. The highest rates of movement occur during 2 periods of the year. The first is in the spring when does move to their fawning areas. Many of the previous year’s fawns find areas of their own at this time. The second period is in the fall during the breeding season. The breeding season or rut begins in mid-October and runs through mid-January, although the peak of activity occurs in mid-November.

Careful management of deer populations by man has also played an important role in allowing deer numbers to return to the levels enjoyed today. Management consists primarily of regulating the doe harvest since hunting provides the major source of mortality for deer in Iowa today. Without active management, Iowa's deer herd could grow at a rate of 20% to 40% each year. At this rate, deer numbers would double in as few as 3 years. With Iowa's long growing season and agricultural crops providing abundant food, densities could exceed 100 or more deer per square mile in year-round deer habitat before natural regulatory mechanisms would begin to affect deer health and slow the rate of population

growth. Deer numbers this high would cause severe conflicts with Iowa citizens as well as alter the natural vegetative community on the landscape. Maintaining a deer population in balance with the differing and often competing wants and needs of the people in the state is a difficult task and hunting is the only viable management option to achieve this goal.

2019-2020 Hunting Season Results

Iowa deer hunters harvested a total of 99,999 deer during the 2019-2020 season (Table 1.1), which is approximately 8% lower than in 2018-2019 season (Table 1.2). Deer license sales decreased by 3% from the 2018-2019 to 2019-2020 hunting season, which is the greatest change in license sales (positive or negative) since 2014.

A sustained harvest of 100,000-120,000 deer is consistent with the population goal established by the Iowa Deer Study Advisory Committee and is indicative of a healthy deer population statewide. Harvest increased slowly from 2013 to 2018 ranging from 99,414 in 2013 to 107,857 in 2018 before dropping back to 99,999 in 2019 (Table 1.3). This considerable decline between the 2018-2019 and 2019-2020 seasons was likely the result of reduced deer numbers due to an outbreak of Epizootic Hemorrhagic Disease (EHD) across much of the state during the summer of 2019. However, we would also expect a decrease in harvest to correspond with a decrease in license sales. Despite the decline from 2018-2019 to 2019-2020, the statewide harvest remains very close to our harvest-based population goal.

Antlerless deer (i.e., does) represented 48% of the total harvest during the 2019-2020 season, a slight decrease compared to the 2018-2019 season (Table 1.1). Similar to the 2018-2019 season, antlered deer comprised 42% of the total harvest in 2019-2020 (shed-antlered bucks are included in this statistic). There were 898 shed-antlered bucks reported in the harvest, which is 39% higher than what was reported in the 2018-2019 season. Much of the increased harvest of shed-antlered bucks during the 2019-2020 season was during earlier seasons (e.g., archery, early muzzleloader, and shogun), which could indicate bucks were stressed last fall and therefore prematurely shedding antlers.

Figure 1.1 compares the electronic harvest reporting system (a known minimum harvest level) with the post-season postcard survey harvest estimates conducted prior to the 2006 hunting season. The figure shows what the actual harvest might have looked like using the calculated relationship between the two systems.

Since 2014, hunters have been restricted to harvesting only antlerless deer during the early muzzleloader season and first shotgun season in twenty-seven northwestern counties (Table 1.6) in attempt to allow the population to recover to goal levels in this area of Iowa. The January antlerless-only season was continued in Allamakee, Appanoose, Clayton, and Wayne counties and was reinstated in Winneshiek County for the 2019-2020 season. This season was coupled with an increase in the number of county-specific antlerless licenses available in these counties to help slow the spread of Chronic Wasting Disease (CWD). As in previous years, landowners could get 1 reduced price either-sex license and up to 4 reduced price antlerless licenses in addition to the regular tags a deer hunter could legally obtain. Sixty-four counties had additional antlerless licenses available. Thirty-five counties in northern and central Iowa had no antlerless quota. A total of 77,225 antlerless licenses were available statewide during the 2019-2020 season, an increase of 3,525 antlerless licenses available compared to 2018-2019. Resident hunters in all seasons could obtain an unlimited number of antlerless licenses before the county quota was met, but were limited to the purchase of one antlerless license prior to September 15th. Antlerless licenses were restricted to a specific county and season.

A total of 1,432 deer were reported taken during special management hunts in urban areas and in state and county parks (Table 1.7). Hunters using special antlerless depredation licenses that were allotted to landowners who were experiencing crop damage problems reported a total harvest of 2,273 deer (Table 1.1).

Clayton was again the top county for total reported harvest with 4,179 deer reported in the 2019-2020 season (Table 1.4). Grundy County had the lowest harvest with a reported 108 deer.

<u>Shotgun Season</u>

Total harvest for the first and second shotgun seasons was 3% and 16% lower, respectively, in 2019-2020 compared to 2018-2019. Although weather conditions during the shotgun seasons were mostly favorable statewide, much of the

state experienced above-average precipitation in the fall resulting in delayed crop harvest statewide. Standing corn still in fields likely resulted in greater escape cover for deer and difficulty in patterning deer by hunters. Additionally, the statewide outbreak of EHD referenced earlier likely resulted in decreased deer numbers during the entirety of the deer hunting season, thus resulting in decreased harvest for many of the seasons in 2019-2020. Overall, the total reported harvest during the entirety of the shotgun season was about 10% lower than that reported in 2018-2019 and license sales about 3% lower than in 2018-2019. (Table 1.2).

Antlered bucks comprised 41% of the total harvest during the shotgun seasons, while 59% of the reported harvest was antlerless deer. Button bucks made up 10% of the reported harvest and shed-antlered bucks accounted for about 1% (Table 1.1).

Similar to 2018-2019, the reported antlered deer kill per square mile (Figure 1.4) was highest in northeastern and southern Iowa as would be expected due to deer densities and hunting opportunities.

Archery

Archery hunters harvested 22,142 deer including the deer killed on the senior cross bow license, a 4% increase from 2018-2019.

Antlered deer comprised 58% of the total reported harvest (includes shed-antlered bucks, Table 1.1 and Table 1.9).

Muzzleloader

The reported harvest during the early muzzleloader season was 3,347, a 7% decrease from 2018-2019 (Table 1.1 and Table 1.2). License sales during the early muzzleloader season also decreased 7% compared to 2018-2019 (Table 1.1 and Table 1.2). The total reported harvest included 51% antlered bucks and 43% does.

Hunters reported harvesting 7,564 deer during the 2019-2020 late muzzleloader season (Table 1.1 and Table 1.2), a staggering 23% decrease in harvest compared to 2018-2019. Thirty-seven percent of the deer harvested during the late muzzleloader season were bucks (includes shed-antlered bucks).

Nonresidents

Nonresidents were issued 6,042 any-deer licenses for the 2019-2020 deer hunting seasons (Table 1.1). All nonresident hunters also received an antlerless-only license. Additional optional antlerless-only licenses were also available to nonresident hunters.

The reported success rate for the nonresident any-deer and antlerless-only licenses was 43% and 29%, respectively (Table 1.1). In total, nonresidents reported harvesting 2,579 antlered bucks (including shed-antlered bucks) and 2,529 antlerless deer in 2019-2020.

Special Youth/Disabled Hunter Season

The total number of youth season licenses issued (10,084) was 4% higher than in 2018-2019 (Table 1.1 and Table 1.2), continuing an upward trend in youth licenses issued. Disabled hunters were issued 401 licenses, which was essentially the same number of licenses issued in 2018-2019 (397). Youth season hunters who did not take a deer during the youth deer hunting season were able to use the deer hunting license and unused tag during any of the subsequent deer hunting seasons following all rules set forth for each specific season. Also, an either-sex deer license purchased by either a youth or disabled season hunter did not count towards the maximum number of any-deer licenses allowed to that hunter in Iowa.

The success rate for youth licenses was 35% with 3,567 deer reported. Fifty-seven percent of the deer reported were antlered bucks (including shed-antlered bucks). The success rate for disabled licenses was 34% with 135 deer reported. Forty-five percent of the deer reported were antlered bucks (Table 1.1). Reported harvest by both youth and disabled hunters was 2% lower than in 2018-2019.

Special Deer Management Zones

Special management hunts were conducted at 52 locations in 2019-2020 during which the total reported harvest was 2,021 deer (Table 1.7). These hunts are designed to meet the management needs of areas such as state and county parks and urban areas that are not suitable to be opened to general regulations. Almost all deer taken were antlerless and deer tagged did not count against a hunter's regular licenses. Most hunts were very successful in removing deer in these problem areas.

An additional 4,275 licenses and permits were issued to hunters/landowners in depredation situations which resulted in a reported harvest of 2,273 deer. This is a 1% increase in the depredation harvest from 2018-2019 (Table 1.1 and Table 1.2).

Population Trend Surveys

Four techniques are currently used to monitor trends in Iowa deer populations. These are (1) spotlight surveys conducted by Iowa DNR staff in March and April, (2) the number of deer killed on Iowa's rural highways throughout the year, coupled with annual highway use estimates, (3) the number of animal-related accidents reported to the Department of Transportation, and (4) the annual Bow Hunter Observation Survey coordinated by the Iowa DNR and conducted by volunteers during October-November. All of these surveys correlate well with the reported antlered harvest, and appear to provide reliable long-term trend indices. However, none of these surveys can be considered absolutely reliable indicators of annual changes in the population because of the high variability in the survey conditions, deer behavior, habitat conditions and weather.

The deer population is stable to slightly increasing statewide but is still within our population goal (Figure 1.5). The goal was to return deer population levels to those that existed in the mid-to-late 1990s, specifically to sustain an annual harvest of 100,000-120,000 deer. This goal has been achieved on a statewide basis and we continue to adjust antlerless harvest in specific areas to address localized population concerns.

The number of deer killed on rural highways decreased by 21% in 2019 (Table 1.10) after decreasing by 28% in 2019. The trend in road kills (KPBM) has generally declined since 2004 as the deer population was decreased by a concerted effort of hunters utilizing the antlerless licenses authorized by the DNR.

New spotlight routes were initiated in 2006 and replaced the old spotlight routes in 2012. The new routes consist of 199 transects distributed among all counties for a total survey mileage of about 4,750 miles; more than double the transect length of the old spotlight routes. The new spotlight survey transects are also set up to be more representative of the available rural habitats within a county. The average number of deer observed per 25 miles decreased by 3% in 2020 (Table 1.10).

Data collected through the annual Bow Hunter Observation Survey has replaced the aerial deer survey as a trend index. This survey represents approximately 80,000 hours of observation distributed throughout the state and is conducted voluntarily by a randomly selected group of Iowa bow hunters. The tactics typically used during this season (stand hunting) make easier for hunters to gather observational data. Deer observations per hour decreased by 10% in 2019.

The estimated harvest from 2006-2019 was utilized in the population model and the resulting "best fit" simulation indicates a stable to slightly increasing deer population statewide (Figure 1.5). The model has its best correlations with the harvest and bowhunter observation data.

The data indicate that, statewide, the deer herd declined from 2006-2013, stabilized from 2013-2017, and has been slightly increasing since 2017. All of Iowa's counties have reached or are close to the established goal. Now that the deer herd has stabilized statewide, management efforts are being focused at local scales (e.g., single or multiple counties) in response to local population concerns as a result of disease or other population changes.

Outlook for 2020

After 10 years of increased doe harvest from 2003 to 2013, the deer population declined from all-time highs in the early 2000's. The goal is a stable population at a level comparable to the mid-to-late 1990s. A population at this level should sustain an annual reported harvest of 100,000 to 120,000 deer, a goal that has been met since the 2012 hunting season.

To stabilize populations, the regulations for 2020-2021 season restrict the harvest to antlered deer during the first shotgun season in 20 northwest counties. We continue to monitor population trends in this area closely and are seeing favorable results of this temporary restriction in terms of population recovery.

Adjustments were made to the county-specific antlerless quotas in 23 counties for the 2020-2021 season, largely in response to local population changes and management needs. Specifically, quotas are being increased in 11 counties and decreased in 12 counties resulting in a net increase of 125 county-specific antlerless licenses available statewide.

Chronic Wasting Disease (CWD)

The DNR actively monitors diseases affecting deer in the state. Chronic Wasting Disease (CWD) is a neurological disease affecting primarily deer and elk. An abnormal protein, called a prion, attacks the brains of infected animals causing them to lose weight, display abnormal behavior and lose bodily functions. Signs of CWD in deer include excessive salivation, thirst and urination, loss of appetite, weight loss, listlessness and drooping ears and head. It is always fatal to the infected animal.

Iowa has tested more than 74,000 wild deer and more than 4,000 captive deer and elk as part of CWD surveillance efforts since 2002. Samples are collected from all 99 counties in Iowa; however, the majority have been taken in the counties nearest to areas where CWD has been detected in other states and in Iowa counties where CWD has been previously detected in wild deer. Samples are collected from both roadkill and hunter-harvested deer as well as sick deer that are found dead or dispatched.

In April 2014, the DNR was notified that a deer harvested south of Harpers Ferry in Yellow River State Forest during the 2013 regular gun season tested positive for CWD. This was the first known case of CWD in a wild deer in the state.

Since the fall of 2013, 90 wild deer have tested positive for CWD statewide, 44 of which were detected in 2019. Decatur, Fayette, Winneshiek, and Woodbury counties were added to the list of counties within which CWD was detected in free-ranging deer in 2019, bringing the total number of counties in which the disease was detected to 8 (Figure 1.6).

Epizootic Hemorrhagic Disease (EHD)

Epizootic Hemorrhagic Disease (EHD), is spread be a biting midge that causes high fever in infected deer and also causes the cell membranes in their heart, lungs and diaphragm to weaken and burst. In dry, drought years it can be worse as deer are more concentrated around water. The deer are attracted to the water to combat the fever and dehydration due to the hemorrhaging. Most deer die in one to four days after being infected with EHD.

In 2019, we received 1,927 reports of deer suspected of dying from EHD. Reports were received from 64 counties statewide with 40% of reports coming from Warren County (see below figure). This outbreak represents the second-largest outbreak in Iowa, the largest outbreak occurring in 2012-2013.

Figures

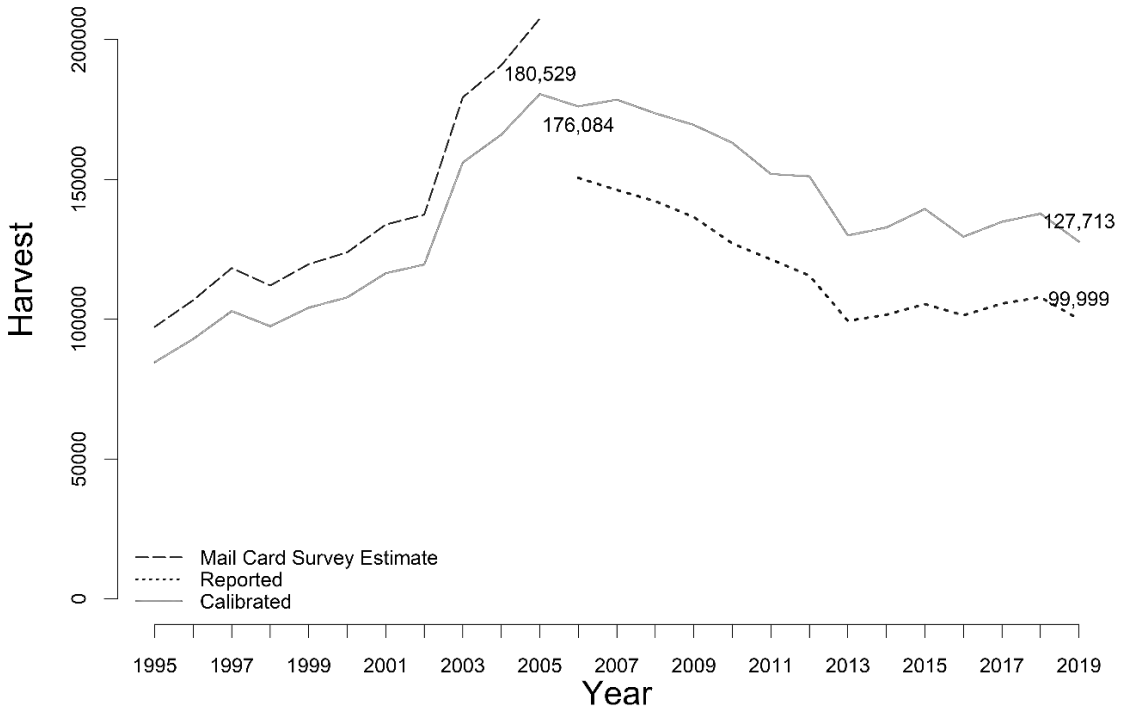


Figure 1.1 Post-season reported harvest and estimates from 1995-1996 to 2019-2020.

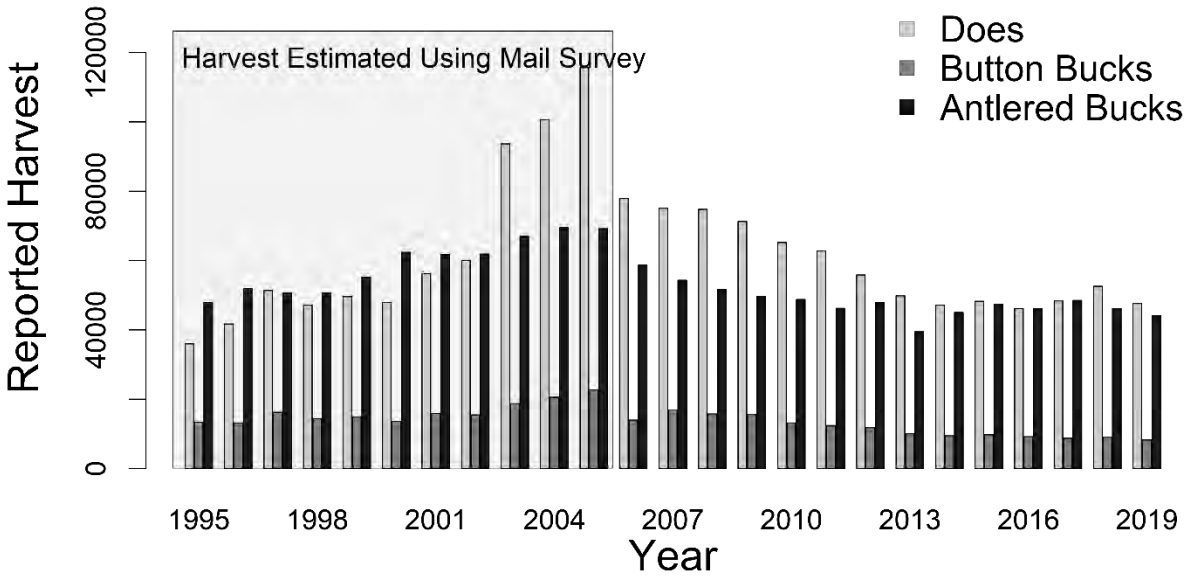


Figure 1.2 Number of does, button bucks, and antlered bucks harvested from 1995-1996 to 2019-2020. Since 2006, harvest was reported and is not directly comparable to previous estimates from mail card survey.

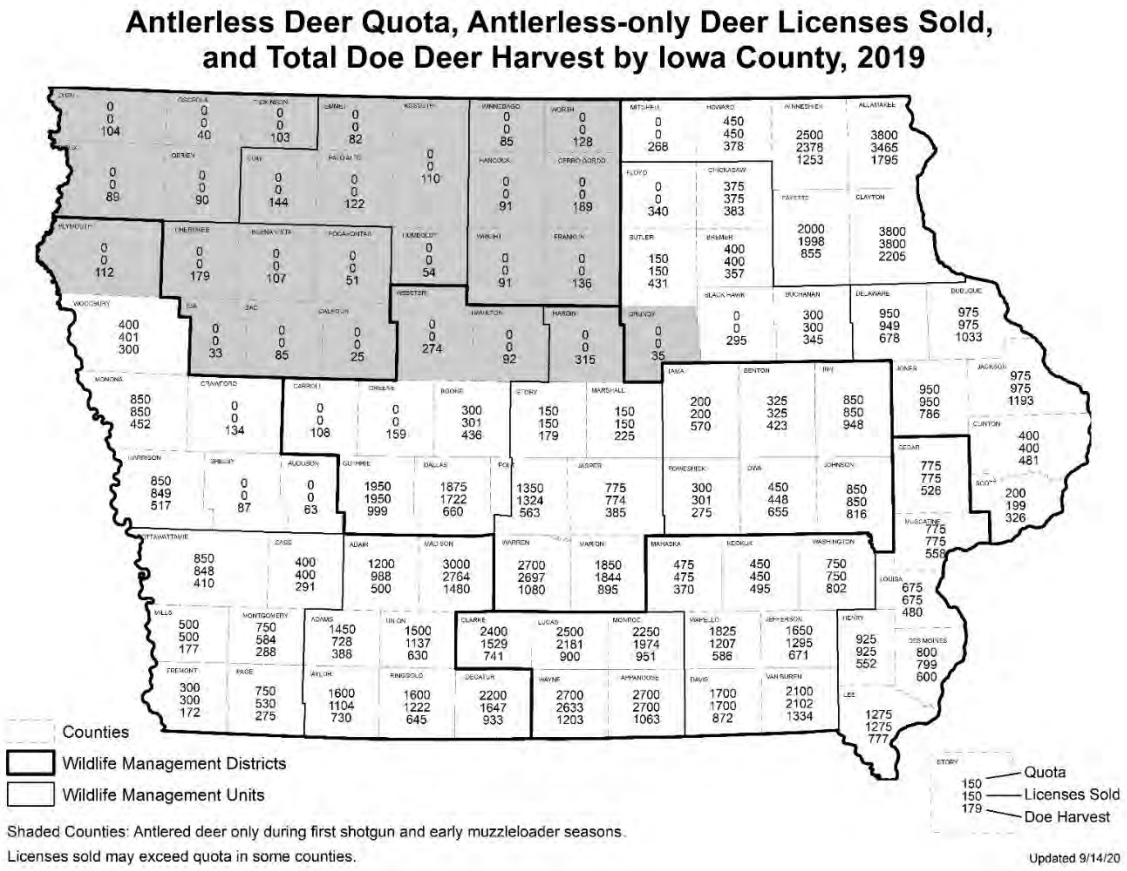


Figure 1.3 Resident antlerless-only deer quota, resident antlerless-only deer licenses sold, and total doe harvest in each county 2019-2020. Doe harvest may exceed licenses sold because antlerless deer could be harvested using either-sex, depredation, or special deer management unit tags.

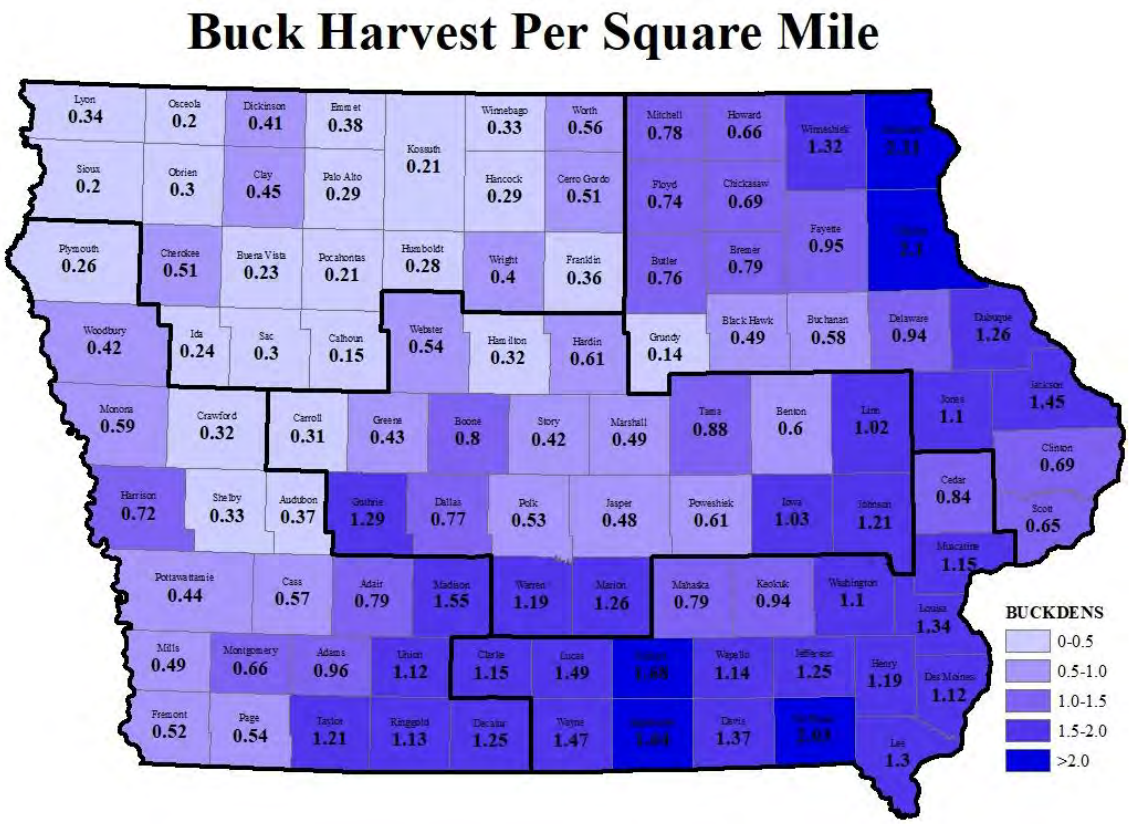
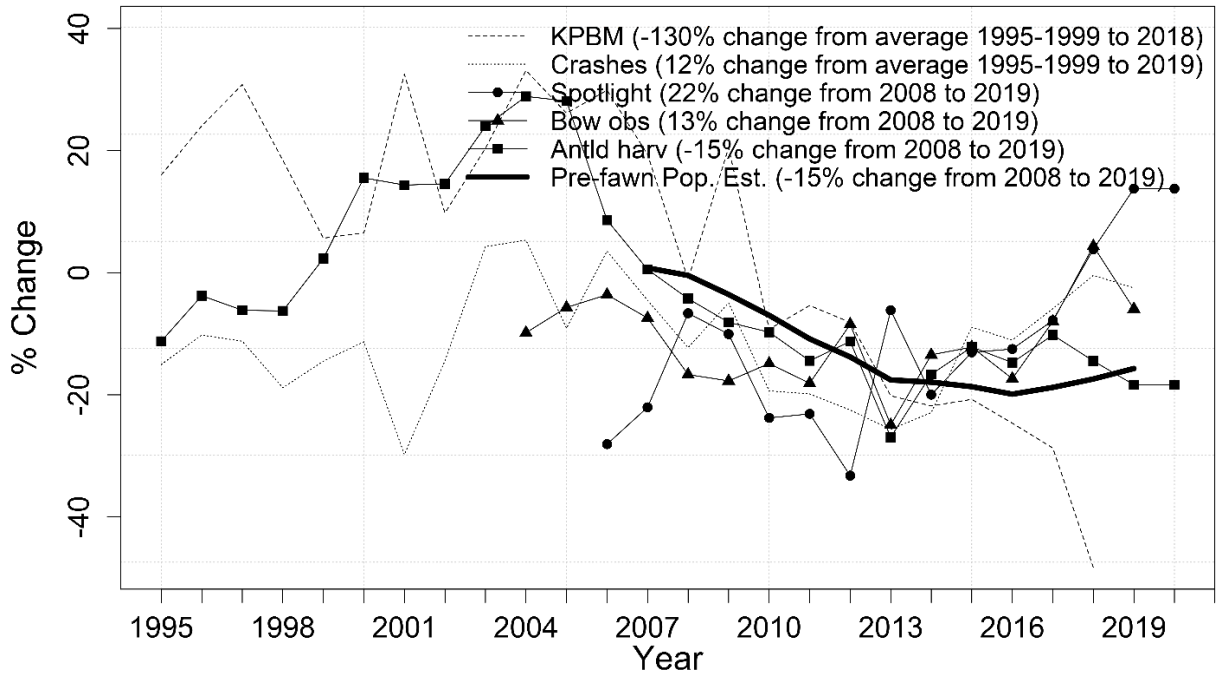


Figure 1.4 Average reported antlered deer harvest/mi^2 in each county during 2019-2020.



*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.

Figure 1.5 Deer population indices with simulation, 1995-2019.

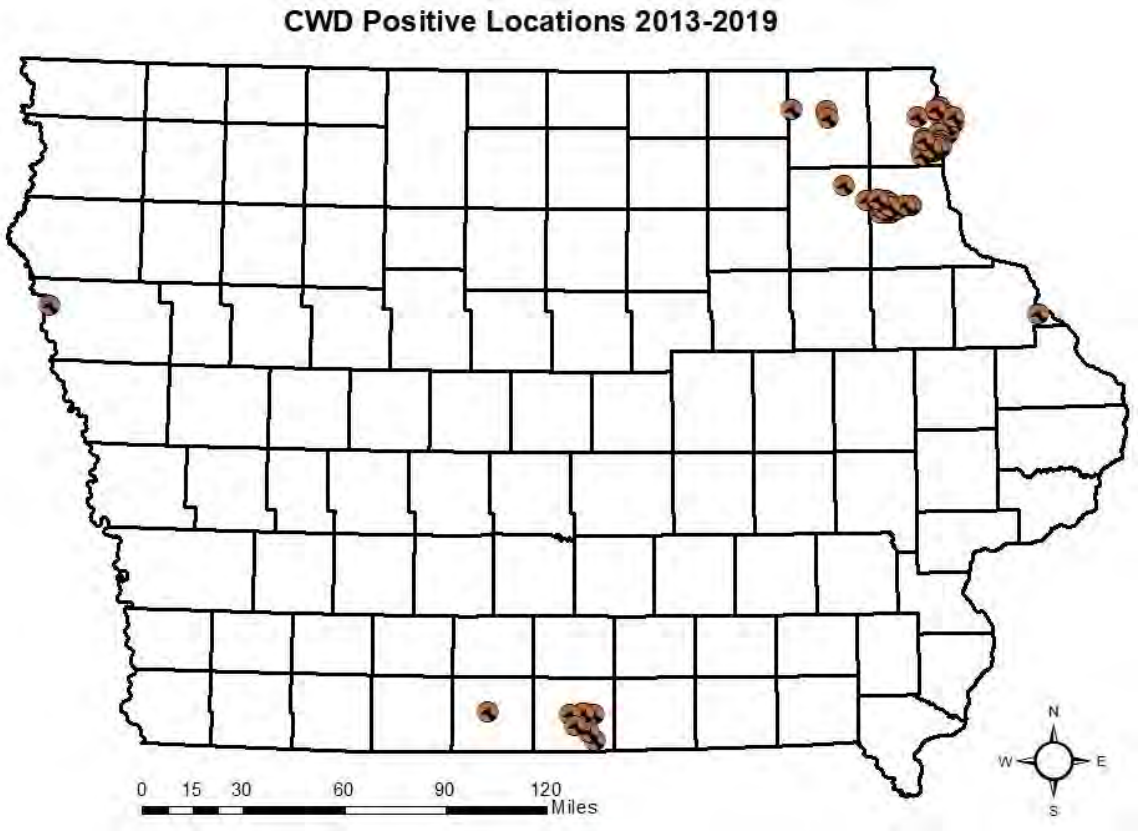


Figure 1.6 Locations of deer that tested positive for Chronic Wasting Disease (CWD) in Iowa, 2013-2019.

Tables

Table 1.1 License sales, hunters, reported harvest, and success rates by license type and season for 2019-2020.

Season	Group[1]	Type	Licenses	Hunters	Reported Harvest					Success Rate[2]	Percent Does
					Does	Antlered	Buttons	Sheds	Total		
Youth	Paid	Either-sex	9,443	9,437	1,110	1,983	220	17	3,330	35%	33%
		Antlerless	515	441	162	5	28	1	196	38%	83%
	LOT	Either-Sex	63	63	3	13	1	0	17	27%	18%
		Antlerless	63	60	20	0	4	0	24	38%	83%
		Total	**10,084**	**9,537**	**1,295**	**2,001**	**253**	**18**	**3,567**	**35%**	**36%**
Disabled	Paid	Either-sex	320	300	36	57	2	4	99	31%	36%
		Antlerless	59	39	26	0	5	0	31	53%	84%
	LOT	Either-Sex	11	11	3	0	0	0	3	27%	100%
		Antlerless	11	11	2	0	0	0	2	18%	100%
		Total	**401**	**334**	**67**	**57**	**7**	**4**	**135**	**34%**	**50%**
Early Muzzleloader	Paid	Either-sex	6,254	6,254	580	1,497	86	15	2,177	35%	27%
		Antlerless	1,555	1,144	557	5	93	0	655	42%	85%
	LOT	Either-Sex	1,097	1,097	89	166	10	7	272	25%	33%
		Antlerless	842	792	211	7	24	1	243	29%	87%
		Total	**9,748**	**7,968**	**1,437**	**1,675**	**213**	**23**	**3,347**	**34%**	**43%**
Shotgun 1	Paid	Either-sex	43,346	43,334	4,185	10,612	1,079	137	16,012	37%	26%
		Antlerless	16,140	10,102	6,318	76	1,091	26	7,513	47%	84%
Shotgun 2	Paid	Either-sex	44,908	44,900	4,514	7,147	1,098	174	12,932	29%	35%
		Antlerless	17,281	10,380	5,675	40	928	54	6,697	39%	85%
Shotgun 1 & 2	LOT	Either-Sex	22,228	22,220	1,403	3,169	315	62	4,949	22%	28%
		Antlerless	17,484	14,468	4,170	131	688	29	5,018	29%	83%
		Total	**161,387**	**51,029**	**26,265**	**21,175**	**5,199**	**482**	**53,121**	**33%**	**49%**
Late Muzzleloader	Paid	Either-sex	20,177	20,175	1,397	2,481	238	75	4,190	21%	33%
		Antlerless	10,264	6,909	2,064	11	345	50	2,470	24%	84%
	LOT	Either-Sex	2,210	2,210	112	173	14	4	303	14%	37%
		Antlerless	3,537	3,242	510	7	71	13	601	17%	85%
		Total	**36,188**	**28,332**	**4,083**	**2,672**	**668**	**142**	**7,564**	**21%**	**54%**
Archery	Paid	Either-sex	51,892	51,881	1,126	11,573	227	90	13,017	25%	9%
		Antlerless	22,763	15,497	5,593	72	737	8	6,410	28%	87%
	LOT	Either-Sex	5,084	5,083	191	1,112	29	14	1,346	26%	14%

Season	Group[1]	Type	Licenses	Hunters	Reported Harvest					Success Rate[2]	Percent Does
					Does	Antlered	Buttons	Sheds	Total		
		Antlerless	5,156	4,470	1,137	28	128	2	1,295	25%	88%
		Total	**84,895**	**57,526**	**8,047**	**12,785**	**1,121**	**114**	**22,068**	**26%**	**36%**
Senior Crossbow	Paid	Antlerless	322	322	59	4	11	0	74	23%	80%
Special Hunts		Antlerless	3,045	1,301	1,281	4	141	6	1,432	47%	89%
Depredation		Antlerless	4,275	1,670	2,060	12	187	14	2,273	53%	91%
Nonresidents[3]	Paid	Either-sex	6,042	6,039	122	2,426	16	15	2,579	43%	5%
		Antlerless	8,816	8,816	1,996	280	242	10	2,529	29%	79%
Total			**330,185**	**160,519**	**47,697**	**43,195**	**8,209**	**898**	**99,999**	**30%**	**48%**

[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.

Table 1.2 Comparison of license sales and reported harvest by season for the previous 2 years.

Season	2018-2019		2019-2020		% Change	
	Licenses	Harvest	Licenses	Harvest	Licenses	Harvest
Youth	9,693	3,650	10,084	3,567	4%	-2%
Disabled	397	138	401	135	1%	-2%
Archery	87,559	21,344	85,217	22,142	-3%	4%
Early Muzzleloader	10,514	3,594	9,748	3,347	-7%	-7%
Shotgun 1 (Paid)[1]	60,087	24,142	59,486	23,525	-1%	-3%
Shotgun 2 (Paid)[2]	64,508	23,259	62,189	19,629	-4%	-16%
Shotgun LOT[3]	42,302	11,837	39,712	9,967	-6%	-16%
Late Muzzleloader	39,972	9,885	36,188	7,564	-9%	-23%
Special Hunts	2,827	1,405	3,045	1,432	8%	2%
Depredation	3,875	2,242	4,275	2,273	10%	1%
January Antlerless	3,059	797	4,244	1,198	39%	50%
Nonresidents[4]	15,002	5,476	14,858	5,108	-1%	-7%
Total	**340,252**	**107,857**	**330,185**	**99,999**	**-3%**	**-7%**

[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.

Table 1.3 Historical data on deer harvest by license type (1953 to present).

Year	Regular Gun			Muzzleloader			Archery	Grand Total*
	Paid	Landowner	Total	Early	Late	Total		
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

Year	Regular Gun			Muzzleloader			Archery	Grand Total*
	Paid	Landowner	Total	Early	Late	Total		
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
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

Year	Regular Gun			Muzzleloader			Archery	Grand Total*
	Paid	Landowner	Total	Early	Late	Total		
2014	44,910	10,701	55,611	3,700	8,793	12,493	21,128	101,595
2015	45,214	11,041	56,255	4,042	9,604	13,646	22,489	105,401
2016	43,205	10,358	53,563	3,450	9,560	13,010	22,389	101,397
2017	46,559	11,161	57,720	3,423	9,629	13,052	22,665	105,578
2018	47,401	11,837	59,238	3,594	9,885	13,479	21,271	107,857
2019	43,154	9,967	53,121	3,347	7,564	10,911	22,142	99,999

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

Table 1.4 Total reported deer kill by county during the 2019-2020 deer season.

County	Antlered Bucks	Does	Button Bucks	Shed-antlered Bucks	Total	Percent of kill		Antld. Kill/ Sq. Mile
						Does	Antlered Bucks	
Adair	451	500	73	5	1029	49	44	0.79
Adams	411	388	67	6	872	44	47	0.96
Allamakee	1406	1795	243	44	3488	51	40	2.21
Appanoose	856	1063	198	30	2147	50	40	1.64
Audubon	166	63	12	3	244	26	68	0.37
Benton	430	423	58	2	913	46	47	0.6
Black Hawk	277	295	38	3	613	48	45	0.49
Boone	456	436	86	10	988	44	46	0.8
Bremer	348	357	62	6	773	46	45	0.79
Buchanan	327	345	71	8	751	46	44	0.58
Buena Vista	134	107	17	4	262	41	51	0.23
Butler	444	431	66	6	947	46	47	0.76
Calhoun	88	25	11	2	126	20	70	0.15
Carroll	176	108	26	4	314	34	56	0.31
Cass	316	291	34	5	646	45	49	0.57
Cedar	489	526	103	9	1127	47	43	0.84
Cerro Gordo	295	189	20	8	512	37	58	0.51
Cherokee	292	179	26	2	499	36	59	0.51
Chickasaw	347	383	77	5	812	47	43	0.69
Clarke	495	741	162	9	1407	53	35	1.15
Clay	256	144	24	5	429	34	60	0.45
Clayton	1639	2205	288	47	4179	53	39	2.1
Clinton	479	481	116	14	1090	44	44	0.69
Crawford	232	134	17	3	386	35	60	0.32
Dallas	458	660	156	9	1283	51	36	0.77
Davis	698	872	182	27	1779	49	39	1.37
Decatur	662	933	100	11	1706	55	39	1.25
Delaware	535	678	115	5	1333	51	40	0.94
Des Moines	457	600	124	9	1190	50	38	1.12
Dickinson	156	103	25	9	293	35	53	0.41
Dubuque	773	1033	156	15	1977	52	39	1.26

County	Antlered Bucks	Does	Button Bucks	Shed-antlered Bucks	Total	Percent of kill		Antld. Kill/ Sq. Mile
						Does	Antlered Bucks	
Emmet	150	82	11	3	246	33	61	0.38
Fayette	689	855	145	14	1703	50	40	0.95
Floyd	370	340	81	8	799	43	46	0.74
Franklin	213	136	21	0	370	37	58	0.36
Fremont	272	172	22	4	470	37	58	0.52
Greene	242	159	33	7	441	36	55	0.43
Grundy	68	35	5	0	108	32	63	0.14
Guthrie	767	999	170	15	1951	51	39	1.29
Hamilton	186	92	13	5	296	31	63	0.32
Hancock	164	91	14	3	272	33	60	0.29
Hardin	352	315	41	7	715	44	49	0.61
Harrison	499	517	75	6	1097	47	45	0.72
Henry	525	552	106	8	1191	46	44	1.19
Howard	313	378	64	4	759	50	41	0.66
Humboldt	122	54	9	1	186	29	66	0.28
Ida	104	33	11	2	150	22	69	0.24
Iowa	600	655	113	11	1379	47	44	1.03
Jackson	934	1193	208	20	2355	51	40	1.45
Jasper	353	385	73	8	819	47	43	0.48
Jefferson	545	671	139	7	1362	49	40	1.25
Johnson	750	816	133	8	1707	48	44	1.21
Jones	643	786	160	14	1603	49	40	1.1
Keokuk	545	495	93	12	1145	43	48	0.94
Kossuth	206	110	21	6	343	32	60	0.21
Lee	687	777	152	13	1629	48	42	1.3
Linn	731	948	142	23	1844	51	40	1.02
Louisa	540	480	98	10	1128	43	48	1.34
Lucas	647	900	165	10	1722	52	38	1.49
Lyon	202	104	22	4	332	31	61	0.34
Madison	876	1480	223	19	2598	57	34	1.55
Mahaska	453	370	91	4	918	40	49	0.79
Marion	715	895	191	15	1816	49	39	1.26
Marshall	281	225	44	2	552	41	51	0.49
Mills	217	177	36	3	433	41	50	0.49
Mitchell	362	268	53	10	693	39	52	0.78
Monona	414	452	42	8	916	49	45	0.59
Monroe	731	951	165	14	1861	51	39	1.68
Montgomery	278	288	32	3	601	48	46	0.66
Muscatine	508	558	131	10	1207	46	42	1.15
Obrien	171	90	12	4	277	32	62	0.3
Osceola	78	40	16	4	138	29	57	0.2
Page	289	275	34	6	604	46	48	0.54

County	Antlered Bucks	Does	Button Bucks	Shed-antlered Bucks	Total	Percent of kill		Antld. Kill/ Sq. Mile
						Does	Antlered Bucks	
Palo Alto	162	122	16	5	305	40	53	0.29
Plymouth	224	112	17	3	356	31	63	0.26
Pocahontas	123	51	3	0	177	29	69	0.21
Polk	317	563	107	5	992	57	32	0.53
Pottawattamie	425	410	59	6	900	46	47	0.44
Poweshiek	361	275	66	2	704	39	51	0.61
Ringgold	609	645	87	9	1350	48	45	1.13
Sac	172	85	9	4	270	31	64	0.3
Scott	296	326	54	5	681	48	43	0.65
Shelby	195	87	20	3	305	29	64	0.33
Sioux	152	89	20	2	263	34	58	0.2
Story	239	179	30	5	453	40	53	0.42
Tama	630	570	102	9	1311	43	48	0.88
Taylor	640	730	92	12	1474	50	43	1.21
Union	476	630	112	6	1224	51	39	1.12
Van Buren	991	1334	243	19	2587	52	38	2.03
Wapello	500	586	86	16	1188	49	42	1.14
Warren	680	1080	252	14	2026	53	34	1.19
Washington	625	802	146	10	1583	51	39	1.1
Wayne	784	1203	188	44	2219	54	35	1.47
Webster	389	274	45	8	716	38	54	0.54
Winnebago	134	85	20	6	245	35	55	0.33
Winneshiek	909	1253	168	30	2360	53	39	1.32
Woodbury	367	300	57	4	728	41	50	0.42
Worth	226	128	30	6	390	33	58	0.56
Wright	228	91	17	5	341	27	67	0.4
Total	**43,195**	**47,697**	**8,209**	**898**	**99,999**	**48%**	**44%**	**78%**

Table 1.5 Historical data on deer license issued by license type (1953-present). Grand total includes special management unit hunts, nonresidents, and youth season licenses.

Year	Regular Gun			Muzzleloader			Archery	Grand Total
	Paid	Landowner	Total	Early	Late	Total		
1953	3,772	a	3,772				10	3,782
1954	3,778	3,368	7,146				92	7,238
1955	5,586	a	5,586				414	6,000
1956	5,440	a	5,440				1,284	6,724
1957	5,997	a	5,997				1,227	7,224
1958	6,000	a	6,000				1,380	7,380
1959	5,999	a	5,999				1,627	7,626
1960	7,000	a	7,000				1,772	8,772
1961	8,000	a	8,000				2,190	10,190
1962	10,001	a	10,001				2,404	12,405

Year	Regular Gun			Muzzleloader			Archery	Grand Total
	Paid	Landowner	Total	Early	Late	Total		
1963	12,001	a	12,001				2,858	14,859
1964	15,993	a	15,993				3,687	19,680
1965	17,491	a	17,491				4,342	21,833
1966	20,811	a	20,811				4,576	25,387
1967	20,812	21,121	41,933				4,413	46,346
1968	20,485	24,796	45,281				5,136	50,417
1969	18,000	23,476	41,476				5,465	46,941
1970	18,000	21,697	39,697				5,930	45,627
1971	18,000	10,522	28,522				6,789	35,311
1972	19,000	11,205	30,205				6,916	37,121
1973	27,530	9,686	37,216				10,506	47,722
1974	33,772	16,329	50,101				12,040	62,141
1975	56,003	17,821	73,824				12,296	86,120
1976	60,196	17,818	78,014				12,522	90,536
1977	58,715	16,289	75,004				12,994	87,998
1978	51,934	15,699	67,633				12,809	80,442
1979	55,718	10,504	66,222				13,378	79,600
1980	64,462	12,858	77,320				15,398	92,718
1981	69,530	14,068	83,598				17,258	100,856
1982	74,331	15,431	89,762				18,824	108,586
1983	75,918	15,067	90,985				19,945	110,930
1984	79,697	16,777	96,474		1,644	1,644	21,648	119,766
1985	82,218	20,674	102,892		1,522	1,522	22,830	127,244
1986	84,858	25,432	110,290	2,246	1,973	4,219	26,521	141,030
1987	91,804	26,780	118,584	3,091	2,710	5,801	28,910	153,295
1988	101,338	28,002	129,340	3,565	3,618	7,183	30,020	166,543
1989	107,171	33,798	140,969	5,995	12,201	18,196	34,745	194,611
1990	106,781	27,106	133,887	6,602	15,949	22,551	35,217	192,551
1991	100,587	30,834	131,421	7,064	11,458	18,522	33,359	184,041
1992	100,461	30,084	130,545	8,280	10,978	19,315	34,165	186,436
1993	96,577	21,887	118,464	7,306	8,926	16,232	30,938	168,017
1994	102,773	22,809	125,582	8,113	9,737	17,850	34,222	180,525
1995	101,053	18,157	119,210	7,193	8,059	15,463	34,434	177,441
1996	106,746	28,080	134,826	8,806	11,820	20,626	36,351	202,834
1997	109,169	24,423	133,592	8,979	15,049	24,028	37,106	211,118
1998	114,358	25,960	140,318	9,504	12,721	22,225	39,506	223,419
1999	113,695	31,196	144,891	10,246	13,260	23,506	43,687	233,690
2000	113,728	32,116	145,844	10,279	15,242	25,521	44,658	229,800
2001	128,041	38,820	166,861	10,037	18,751	28,788	52,002	265,939
2002	118,973	42,989	161,962	9,807	19,479	29,286	51,534	265,185
2003	136,810	52,148	188,958	11,907	23,905	35,812	60,320	322,096
2004	147,797	53,682	201,479	13,125	29,237	42,362	67,393	353,172
2005	143,856	58,248	202,104	13,693	30,717	44,410	73,518	391,864

Year	Regular Gun			Muzzleloader			Archery	Grand Total
	Paid	Landowner	Total	Early	Late	Total		
2006	149,650	40,831	190,481	12,664	32,492	45,156	76,358	377,525
2007	147,424	41,460	188,884	12,558	34,832	47,390	79,991	389,163
2008	150,642	42,186	192,828	12,498	36,611	49,109	84,615	406,169
2009	149,646	41,197	190,843	13,083	37,614	50,697	89,646	405,547
2010	145,107	41,519	186,626	12,433	36,577	49,010	87,734	394,298
2011	143,995	41,973	185,968	12,433	38,192	50,625	88,526	392,930
2012	139,890	42,547	182,437	12,335	38,531	50,866	90,352	378,454
2013	132,608	40,197	172,805	11,832	34,831	46,663	89,286	359,958
2014	128,839	42,436	171,275	11,763	36,822	48,585	86,235	338,984
2015	124,774	41,624	166,398	11,803	38,517	50,320	89,652	339,366
2016	122,906	41,135	164,042	11,574	39,477	51,051	89,745	337,670
2017	125,842	42,017	167,859	11,285	40,272	51,557	89,129	339,651
2018	124,595	42,302	166,897	10,514	39,972	50,486	87,560	340,252
2019	121,675	39,712	161,387	9,748	36,188	45,936	85,217	330,185

a-license not required

Table 1.6 The dates, hours and zones for shotgun, archery, muzzleloader seasons (1953-present).

Year	Zones	Shotgun Dates	Hours	Archery Dates	Hours	Muzzleloader Dates	Hours
1953	45 Counties	Dec 10-14	9am-4pm	Dec 10-14[a]	9am-4pm		
1954	51 ½ Counties	Dec 10-12	9am-4pm	Dec 10-12[b]	9am-4pm		
1955	Statewide	Dec 3-5	9am-4pm	Oct 29-Nov 20[c]	6:30am-4pm		
1956	Statewide	Dec 8-9	8am-4pm	Oct 13-Nov 12	6:30am-5pm		
1957	Statewide	Dec 7-8	8am-4pm	Oct 26-Nov 25	6:30am-5pm		
1958	Statewide	Dec 13-14	8am-4pm	Nov 1- Nov 30	6:30am-5:30pm		
1959	Statewide	Dec 12-13	8am-4pm	Oct 31-Nov 30	6:30am-5:30pm		
1960	Statewide	Dec 17-19	8am-4pm	Oct 15-Nov 27	6:30am-5:30pm		
1961	Statewide	Dec 16-18	8am-4pm	Oct 14-Nov 30	6:30am-5:30pm		
1962	Statewide	Dec 15-17	8am-4pm	Oct 13-Dec 1	6:30am-5:30pm		
1963	Long	Dec 14-16	8am-4pm	Oct 12-Dec 1	½ hr before		
1963	Short	Dec 14-15	8am-4pm		sunrise to		
1964	Long	Dec 12-15	8am-4pm	Oct 17-Dec 6	½ hr after		
1964	Short	Dec 12-13	8am-4pm		sunset		
1965	Long	Dec 11-14	8am-4pm	Oct 16-Dec 5	“		
1965	Short	Dec 11-12	8am-4pm				
1966	Long	Nov 19-22	8am-4pm	Oct 15-Nov 13 &	“		
1966	Short	Nov 19-20	8am-4pm	Nov 26-Dec 16	“		
1967	1-3	Dec 2-4	8am-4:30pm	Sep 30-Nov 30	“		
1967	4-6	Dec 2-3	8am-4:30pm				
1968	1-2	Dec 7-9	8am-4:30pm	Sep 28-Nov 28	“		
1968	3-4	Dec 7-8	8am-4:30pm				
1969	1,2,4	Dec 6-8	8am-4:30pm	Sep 27- Nov 27	“		
1969	3,5	Dec 6-7	8am-4:30pm				

Year	Zones	Shotgun Dates	Hours	Archery Dates	Hours	Muzzleloader Dates	Hours
1970	1,2,4	Dec 5-7	8am-4:30pm	Sep 26-Nov 26	"		
1970	3,5	Dec 5-6	8am-4:30pm				
1971	1-5	Dec 4-5	8am-4:30pm	Oct 16-Nov 28 &	"		
1972	1,2,4	Dec 2-3	8am-4:30pm	Oct 6-Nov 26	½ hr before		
1972	3,5[d]	Dec 2-5	8am-4:30pm		sunrise to		
1973	1-5[e]	Dec 1-5	Sunrise to	Oct 13-Nov 25 &	½ hr after		
1973	1-5[e]		Sunset	Dec 8-16	sunset		
1974	1-5	Dec 7-11	"	Oct 12-Dec 1	"		
1975	1-5	Nov 22-25	"	Oct 11-Nov 21 &	"		
1975	1-5	Dec 6-12	"	Nov 26-Dec 5			
1976	1-10	Nov 27-30	"	Oct 2-Nov 26	"		
1976	1-10	Dec 4-10	"				
1977	1-10	Dec 3-6	"	Oct 8-Dec 2	"		
1977	1-10	Dec 10-16	"				
1978	1-10	Dec 2-5	"	Oct 7-Dec 1	"		
1978	1-10	Dec 9-15	"				
1979	1-10	Dec 1-4	"	Oct 6-Nov 30	"		
1979	1-10	Dec 8-14	"				
1980	1-10	Dec 6-9	"	Oct 11-Dec 5	"		
1980	1-10	Dec 13-19	"				
1981	1-10	Dec 5-8	"	Oct 10-Dec 4	"		
1981	1-10	Dec 12-18	"				
1982	1-10	Dec 4-7	"	Oct 9-Dec 3	"		
1982	1-10	Dec 11-17	"				
1983	1-10	Dec 3-6	"	Oct 8-Dec 2	"		
1983	1-10	Dec 10-16	"				
1984	1-10	Dec 1-4	"	Oct 6-Nov 30	"	Dec 15-21	Sunrise to
1984	1-10	Dec 8-14	"				Sunset
1985	1-10	Dec 7-11	"	Oct 12-Dec 6	"	Dec 21-27	"
1985	1-10	Dec 14-20	"				
1986	1-10	Dec 6-10	"	Oct 11-Dec 5	"	Oct 11-17	1/2 hr before
1986	1-10	Dec 13-19	"			Dec 20-Jan 4	1/2 hr after
1987	1-10[e]	Dec 5-9	Sunrise to	Oct 1-Dec 4 &	½ hr before	Oct 10-18	1/2 hr before
1987	1-10	Dec 12-20	Sunset	Dec 21-Jan 10	sunrise to	Dec 21-Jan 10	sunrise to
1988	1-10	Dec 3-7	"	Oct 1-Dec 2 &	½ hr after	Oct 15-23	1/2 hr after
1988	1-10	Dec 10-18	"	Dec 19-Jan 10	sunset	Dec 19-Jan 10	sunset
1989	1-10	Dec 2-6	"	Oct 1-Dec 1 &	"	Oct 14-Oct 22	"
1989	1-10	Dec 9-17	"	Dec 18-Jan 10		Dec 18-Jan 10	"
1990	1-10[e]	Dec 1-5	"	Oct 1-Nov 30 &	"	Oct 13- Oct 21	1/2 hr before
1990	1-10	Dec 8-16	"	Dec 17-Jan 10		Dec 17-Jan 10	1/2 hr after
1991	1-10	Dec 7-11	"	Oct 1-Dec 6 &	"	Oct 12- Oct 20	1/2 hr before
1991	1-10	Dec 14-22	"	Dec 23-Jan 10		Dec 23-Jan 10	sunrise to
1992	1-10	Dec 5-9	"	Oct 1-Dec 4 &	"	Oct 10-Oct 18	1/2 hr after

Year	Zones	Shotgun Dates	Hours	Archery Dates	Hours	Muzzleloader Dates	Hours
1992	1-10	Dec 12-20	“	Dec 21-Jan 10		Dec 21-Jan 10	sunset
1993	2	Dec 4-8	“	Oct 1-Dec 3 &	“	Oct 9-Oct 17	"
1993	2	Dec 11-19	“	Dec 20-Jan 10		Dec 20-Jan 10	"
1994	Statewide	Dec 3-7	“	Oct 1-Dec 2&	“	Oct 15-Oct 23	"
1994	Statewide	Dec 10-18	“	Dec 19-Jan 10		Dec 19-Jan 10	"
1995	Statewide[f]	Dec 2-6	“	Oct 1-Dec 1 &	“	Oct 14-Oct 22	½ hr before
1995	Statewide	Dec 9-17	“	Dec 18-Jan 10		Dec 18-Jan 10	½ hr after
1996	Statewide[g]	Dec 7-11	“	Oct 1-Dec 6 &	“	Oct 12-Oct 20	½ hr before
1996	Statewide	Dec 14-22	“	Dec 23-Jan 10		Dec 23-Jan 10	sunrise to
1997	Statewide[h]	Dec 6-10	“	Oct 1-Dec 5 &	“	Oct 11-Oct 18	½ hr after
1997	Statewide	Dec 13-21	“	Dec 22-Jan 10		Dec 22-Jan 10	sunset
1998	Statewide[h]	Dec 5-9	“	Oct 1-Dec 4 &	“	Oct 17-Oct 25	“
1998	Statewide	Dec 12-20	“	Dec 21-Jan 10		Dec 21-Jan 10	“
1999	Statewide[h]	Dec 4-8	“	Oct 1-Dec 3 &	“	Oct 16-Oct 24	“
1999	Statewide	Dec 11-19	“	Dec 20-Jan 10		Dec 20-Jan 10	“
2000	Statewide[i]	Dec 2-6	“	Oct 1-Dec 1 &	“	Oct 14-Oct 22	“
2000	Statewide	Dec 9-17	“	Dec 18-Jan 10		Dec 18-Jan 10	“
2001	Statewide[h]	Dec 1-5	“	Oct 1-Nov 30 &	“	Oct 13- Oct 21	“
2001	Statewide	Dec 8-16	“	Dec 17-Jan 10		Dec 17-Jan 10	“
2002	Statewide[h]	Dec 7-11	½ hr before	Oct 1-Dec 6 &	“	Oct 12- Oct 20	“
2002	Statewide	Dec 14-22	sunrise to	Dec 23-Jan 10		Dec 23-Jan 10	“
2003	Statewide[h]	Dec 6-10	½ hr after	Oct 1-Dec 5 &	“	Oct 11- Oct 19	“
2003	Statewide	Dec 13-21	sunset	Dec 22-Jan 10		Dec 22-Jan 10	“
2004	Statewide[h]	Dec 4-8	“	Oct 1-Dec 3 &	“	Oct 16- Oct 24	“
2004	Statewide	Dec 11-19	“	Dec 20-Jan 10		Dec 20-Jan 10	“
2005	Statewide[h]	Dec 3-7	“	Oct 1-Dec 2 &	“	Oct 15- Oct 23	“
2005	Statewide	Dec 10-18	“	Dec 19-Jan 10		Dec 19-Jan 10	“
2006	Statewide[h]	Dec 2-6	“	Oct 1-Dec 1 &	“	Oct 14- Oct 22	“
2006	Statewide	Dec 9-17	“	Dec 18-Jan 10		Dec 18-Jan 10	“
2007	Statewide[h]	Dec 1-5	“	Oct 1-Nov 30 &	“	Oct 13- Oct 21	“
2007	Statewide	Dec 8-16	“	Dec 17-Jan 10		Dec 17-Jan 10	“
2008	Statewide[h]	Dec 6-10	“	Oct 1-Dec 5 &	“	Oct 11- Oct 19	“
2008	Statewide	Dec 13-21	“	Dec 22-Jan 10		Dec 22-Jan 10	“
2009	Statewide[h]	Dec 5-9	“	Oct 1-Dec 4 &	"	Oct 17- Oct 25	“
2009	Statewide	Dec 12-20	“	Dec 21-Jan 10		Dec 21-Jan 10	“
2010	Statewide[h]	Dec 4-8	“	Oct 1-Dec 3 &	"	Oct 16-Oct 24	“
2010	Statewide	Dec 11-19	“	Dec 20-Jan 10		Dec 20-Jan 10	“
2011	Statewide[h]	Dec 3-7	“	Oct 1-Dec 2 &	"	Oct 15-Oct 23	“
2011	Statewide	Dec 10-18	“	Dec 19-Jan 10		Dec 19-Jan 10	“
2012	Statewide[h]	Dec 1-5	“	Oct 1-Nov 30 &	"	Oct 13- Oct 21	“
2012	Statewide	Dec 8-16	“	Dec 17-Jan 10		Dec 17-Jan 10	“
2013	Statewide[h]	Dec 7-11	“	Oct 1-Dec 6 &	"	Oct 12- Oct 20	“
2013	Statewide	Dec 14-22	“	Dec 23-Jan 10		Dec 23-Jan 10	“

Year	Zones	Shotgun Dates	Hours	Archery Dates	Hours	Muzzleloader Dates	Hours
2014	Statewide[i]	Dec 6-10	“	Oct 1-Dec 5 &	"	Oct 11- Oct 19	“
2014	Statewide	Dec 13-21	“	Dec 22-Jan 10		Dec 22-Jan 10	“
2015	Statewide[i]	Dec 5-9	“	Oct 1-Dec 4 &	"	Oct 17- Oct 25	“
2015	Statewide	Dec 12-20	“	Dec 21-Jan 10		Dec 21-Jan 10	“
2016	Statewide[i]	Dec 3-7	“	Oct 1-Dec2 &	“	Oct 15-Oct 23	“
2016	Statewide	Dec 10-18	“	Dec 19-Jan 10	“	Dec 19-Jan 10	“
2017	Statewide[i]	Dec 2-6	“	Oct 1-Dec 1 &	“	Oct 14-Oct 22	“
2017	Statewide	Dec 9-17	“	Dec 18-Jan 10	“	Dec 18-Jan 10	“
2018	Statewide[i]	Dec 1-5	“	Oct 1-Nov 30 &	“	Oct 13-Oct 21	“
2018	Statewide	Dec 8-16	“	Dec 17-Jan 10	“	Dec 17-Jan 10	“
2019	Statewide[i]	Dec 7-11	“	Oct 1-Dec 6 &	“	Oct 12-Oct 20	“
2019	Statewide	Dec 14-22	“	Dec 23-Jan 10	“	Dec 23-Jan 10	“

[a]Open for same counties as shotgun
[b]Same counties as shotgun plus 5 1/2 counties from Dec 1-12 bow-only
[c]Open statewide in all following years
[d]Modified bucks-only, license quota
[e]Unlimited bucks-only statewide in all following years
[f]34 counties were any-sex during 1st season and 74 were bucks only during first 7 days of the 2nd season
[g]35 counties were any-sex during 1st season and 26 were bucks only during the first 5 days of the 2nd season
[h]all counties were any-sex during both seasons
[j]27 counties were buck-only during 1st shotgun and early muzzleloader

Table 1.7 Results from controlled hunts in special management deer zone 2019-2020.

Area	Type	Licenses Available	Licenses Sold	Reported Harvest
AMANA COLONIES ZONE	Archery & Firearm	250	158	73
AMES (CITY)	Archery	50	50	23
AMES (PERIMETER)	Archery & Firearm	50	43	12
BELLEVUE STATE PARK	Archery	50	29	13
BETTENDORF & RIVERDALE	Archery	125	64	28
BOBWHITE STATE PARK	Archery	100	18	9
CEDAR RAPIDS (CITY)	Archery	400	219	112
CEDAR RAPIDS (PERIMETER)	Archery & Firearm	500	280	95
CLINTON (CITY)	Archery	75	34	13
CORALVILLE (CITY)	Archery	200	133	47
CORALVILLE (PERIMETER)	Archery & Firearm	500	500	140
CORYDON CWD PERIMETER	Archery & Firearm	350	31	12
COUNCIL BLUFFS (CITY)	Archery	300	82	36
DAVENPORT (CITY)	Archery	250	212	87
DE SOTO NWR	Muzzleloader Oct. 22-23	100	14	1
DE SOTO NWR	Muzzleloader Dec. 17-18	100	7	2
DENISON (CITY)	Archery	50	12	7
DUBUQUE (CITY)	Archery	200	181	104
DUBUQUE (PERIMETER)	Archery & Firearm	350	141	51
ELDORA (CITY)	Archery	50	8	4
ELK ROCK STATE PARK	Muzzleloader	25	25	17
ELKADER CWD PERIMETER	Archery & Firearm	350	20	6

Area	Type	Licenses Available	Licenses Sold	Reported Harvest
GREEN VALLEY STATE PARK	Muzzleloader	30	25	11
HARPERS FERRY CWD PERIMETER	Archery & Firearm	350	26	6
HONEY CREEK STATE PARK	Archery	50	33	2
HONEY CREEK STATE PARK	Muzzleloader	100	18	4
IAAP	Archery & Firearm	1,200	419	195
IOWA FALLS (CITY)	Archery	50	47	32
IOWA FALLS (PERIMETER)	Archery & Firearm	30	5	1
JEFFERSON COUNTY PARK	Archery	25	18	10
JONES COUNTY CENTRAL PARK	Archery	50	14	3
KENT PARK (ARCHERY)	Archery	100	47	22
KEOKUK (CITY)	Archery	50	15	8
KNOXVILLE (CITY)	Archery	25	2	1
LAKE AHQUABI STATE PARK	Archery	30	10	6
LAKE DARLING STATE PARK	Archery	100	67	41
LAKE IOWA COUNTY PARK	Archery	50	26	13
LAKE IOWA COUNTY PARK	Muzzleloader	75	20	5
LAKE MACBRIDE STATE PARK	Archery	75	54	30
LAKE MILLS (CITY)	Archery	50	5	2
LAKE OF THREE FIRES STATE PARK	Archery	40	35	20
LAKE WAPELLO STATE PARK	Archery	100	16	3
LEDGES STATE PARK	Archery	40	17	5
MAQUOKETA CAVES STATE PARK	Archery	40	32	9
MARSHALLTOWN (CITY)	Archery	60	33	15
MARSHALLTOWN (PERIMETER)	Archery & Firearm	40	21	1
MASON CITY (CITY)	Archery	150	150	48
MOUNT PLEASANT (CITY)	Archery	50	1	0
MUSCATINE (CITY)	Archery	150	101	55
OSKALOOSA (CITY)	Archery	100	34	12
OTTUMWA (CITY)	Archery	150	127	74
PIKES PEAK STATE PARK/MCGREGOR	Archery	100	45	22
PINE LAKE STATE PARK	Archery	30	19	8
POLK-DALLAS ARCHERY ONLY	Archery	1,000	544	285
POLK-DALLAS RURAL ZONE	Archery & Firearm	75	20	3
REICHELT AREA	Muzzleloader	40	29	8
RIVERSIDE PK CARROLL CCB	Archery	40	0	0
SCOTT COUNTY PARK	Archery	50	21	14
SMITH WILDLIFE AREA	Firearm Dec. 3-7	3	2	1
SMITH WILDLIFE AREA	Firearm Dec. 10-18	3	3	1
SMITH WILDLIFE AREA	Firearm Dec. 19-Jan 10.	3	1	1
SQUAW CREEK PARK	Archery	100	75	32
STONE STATE PARK	Archery	50	45	13
WATERLOO & CEDAR FALLS	Archery	290	227	107
Totals		**9,569**	**4,710**	**2,021**

Table 1.8 A summary of archery season dates, hours, success rates and other information (1953-present).

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
1953	Dec 10-14	9am-4pm		10		Open for same counties as shotgun. 40 lb draw limit. $15 fee. Limit 1/day
1954	Dec 1-9					Open in portions of 6 counties
1954	Dec 10-12	9am-4pm		11		Open for same counties as shotgun plus 5 1/2 others.
1955	Oct 29-Nov 20	6:30am-4pm		14		Open statewide 1955-present. Limit 1/season. $10 fee.
1956	Oct 13-Nov 12	6:30am-5pm		10		Separate archery license.
1957	Oct 26-Nov 25	6:30am-5pm		11		
1958	Nov 1- Nov 30	6:30am-5:30pm		12		
1959	Oct 31-Nov 30	6:30am-5:30pm		16		
1960	Oct 15-Nov 27	6:30am-5:30pm		16		
1961	Oct 14-Nov 30	6:30am-5:30pm		17		
1962	Oct 13-Dec 1	6:30am-5:30pm		17		
1963	Oct 12-Dec 1	½ hr before sunrise to		19		
1964	Oct 17-Dec 6	½ hr after sunset		19		30 lb minimum limit on draw weight.
1964	Oct 17-Dec 6	“				
1965	Oct 16-Dec 5	“		17		
1966	Oct 15-Nov 13&	“		13		No draw limit.
	Nov 26-Dec 16	“				
1967	Sep 30-Nov 30	“		19		
1968	Sep 28-Nov 28	“		17		
1969	Sep 27- Nov 27	“		16		
1970	Sep 26-Nov 26	“		18	14	
1971	Oct 16-Nov 28&	“		19	13	
	Dec 6-12	“				
1972	Oct 6-Nov 26	“	66	20	13	
1973	Oct 13-Nov 25&	“	59	18	11	
	Dec 8-16	“				
1974	Oct 12-Dec 1	“				Licenses issued by county recorder.
1975	Oct 11-Nov 21&	“				
	Nov 26-Dec 5	“				
1976	Oct 2-Nov 26	“	60	20	14	

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
1977	Oct 8-Dec 2	"	64	20	16	
1978	Oct 7-Dec 1	"	62	25	15	$15 fee.
1979	Oct 6-Nov 30	"	63	26	16	
1980	Oct 11-Dec 5	"				
1981	Oct 10-Dec 4	"	68	26	17	
1982	Oct 9-Dec 3	"	67	26	16	
1983	Oct 8-Dec 2	"	69	28	16	
1984	Oct 6-Nov 30	"	69	27	16	
1985	Oct 12-Dec 6	½ hr before	68	26	15	$20 fee.
1986	Oct 11-Dec 5	sunrise to	72	38	17	Limit 1/Bow and 1/Gun
1987	Oct 1-Dec 4 &	½ hr after	68	35		Added late season.
	Dec 21-Jan 10	sunset				
1988	Oct 1-Dec 2 &	"	71	35	16	
	Dec 19-Jan 10	"				
1989	Oct 1-Dec 1 &	"	73	36	20	Bonus 2nd tag for antlerless deer statewide
	Dec 18-Jan 10	"				
1990	Oct 1-Nov 30 &	"	65	32	19	Bonus tag for antlerless early or any sex late, statewide
	Dec 17-Jan 10	"				
1991	Oct 1-Dec 6 &	"	73	28	17	Bonus tag for antlerless deer available only in zones 3a,4a,5a and 6. $25 fee.
	Dec 23-Jan 10	"				
1992	Oct 1-Dec 4 &	"	69	28	15	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
	Dec 21 -Jan 10	"				
1993	Oct 1-Dec 3 &	"	73	32	17	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
	Dec 20-Jan 10	"				
1994	Oct 1-Dec 2&	"	77	37	16	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
	Dec 19-Jan 10	"				
1995	Oct 1-Dec 1&	"	76	39	17	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
	Dec 18-Jan 10	"				
1996	Oct 1-Dec 6&	"	78	37	16	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
	Dec 23-Jan 10	"				
1997	Oct 1-Dec 5&	"	71	42	17	Bonus tag for antlerless deer available only in bonus antlerless zone. Could get firearm license also.
	Dec 22-Jan 10	"				

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
1998	Oct 1-Dec 4&	“	76	34	15	Bonus tag for antlerless deer available only in bonus antlerless zone. Could get firearm license also.
	Dec 21-Jan 10	“				
1999	Oct 1-Dec 3&	“	79	37	16	Bonus tag for antlerless deer available only in bonus antlerless zone. Could get firearm license also.
	Dec 20-Jan 10	“				
2000	Oct 1-Dec 1&	“	80	44	17	Bonus tag for antlerless deer available only in bonus antlerless zone. Could get firearm license also.
	Dec 18-Jan 10	“				
2001	Oct 1-Nov 30&	“	75	37	17	Bonus tag for antlerless deer available in every county.
	Dec 17-Jan 10	“				
2002	Oct 1-Dec 6 &	“	66	39	17	Bonus tag for antlerless deer available in every county.
	Dec 23-Jan 10	“				
2003	Oct 1-Dec 5 &	“	54	44	18	Bonus tag for antlerless deer available in every county.
	Dec 22-Jan 10	“				
2004	Oct 1-Dec 3 &	“	54	46	18	Bonus tag for antlerless deer available in every county.
	Dec 20-Jan 10	“				
2005	Oct 1-Dec 2 &	“	54	53	17	Bonus tag for antlerless deer available in every county.
	Dec 19-Jan 10	“				
2006	Oct 1-Dec 1 &	“	57	29[a]	NA	Tags for antlerless deer available in 79 counties.
	Dec 18-Jan 10	“				
2007	Oct 1-Nov 30 &	“	59	28	NA	Tags for antlerless deer available in 77 counties.
	Dec 17-Jan 10	“				
2008	Oct 1-Dec 5 &	“	58	26	NA	Tags for antlerless deer available in 77 counties.
	Dec 22-Jan 10	“				
2009	Oct 1-Dec 4 &	“	58	26	NA	Tags for antlerless deer available in 77 counties.
	Dec 21-Jan 10	“				
2010	Oct 1-Dec 3 &	“	60	24	NA	Tags for antlerless deer available in 72 counties.
	Dec 20-Jan 10	“				
2011	Oct 1-Dec 2 &	“	60	25	NA	Tags for antlerless deer available in 72 counties.
	Dec 19-Jan 10	“				
2012	Oct 1-Nov 30 &	“	61	25	NA	Tags for antlerless deer available in 72 counties.
	Dec 17-Jan 10	“				
2013	Oct 1-Dec 6 &	“	60	23	NA	Tags for antlerless deer available in 72 counties.
	Dec 23-Jan 10	“				

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
2014	Oct 1-Dec 5 &	“	63	24	NA	Tags for antlerless deer available in 65 counties.
	Dec 22-Jan 10	“				
2015	Oct 1-Dec 4 &	“	64	25	NA	Tags for antlerless deer available in 65 counties.
	Dec 21-Jan 10	“				
2016	Oct 1-Dec 2 &	“	65	25	NA	Tags for antlerless deer available in 65 counties
	Dec 19-Jan 10	“				
2017	Oct 1-Dec 1 &	“	64	26	NA	Tags for antlerless deer available in 63 counties
	Dec 18-Jan 10	“				
2018	Oct 1-Nov 30 &	“	60	24	NA	Tags for antlerless deer available in 64 counties
	Dec 17-Jan 10	“				
2019	Oct 1-Dec 6 &	“	58	26	NA	Tags for antlerless deer available in 64 counties
	Dec 23-Jan 10	“				

[a]Success rates from 2005 and prior are not comparable to subsequent years.

Table 1.9 Summary of muzzleloader season dates, hours, success rates and other information (1984-present).

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
1984	Dec 15-21	Sunrise to Sunset	45	22	6	1500 A-S Quota. $15 fee.
1985	Dec 21-27	“	44	34	4	2000 A-S Quota. $20 fee.
1986	Oct 11-17	1/2 hr before	100	17	4	2500 B-O Quota.
	Dec 20-Jan 4	sunrise to	43	40	6	Unlimited A-S Quota.
1987	Oct 10-18	1/2 hr after	55	52	8	3000 A-S Quota
	Dec 21-Jan 10	sunset	46	42	6	Unlimited A-S Quota.
1988	Oct 15-23	“	55	55	4	3500 A-S Quota
	Dec 19-Jan 10	“	41	39	6	Unlimited A-S Quota.
1989	Oct 14-22	“	55	49	5	5000 A-S Quota
	Dec 18-Jan 10	“	28	39	9	Unlimited A-S Quota. Could hunt during shotgun & late muzzleloader seasons.
1990	Oct 13-21	“	53	46	5	5000 A-S Quota. Could hunt shotgun & late muzzleloader season.
	Dec 17 -Jan 10	“	50	45	8	
1991	Oct 12-20	“	54	47	5	5000 A-S Quota. Could hunt shotgun & late muzzleloader season, but all 2nd tags valid for antlerless only in zones 3a,4a,5a&6.
	Dec 23 -Jan 10	“	40	33	8	

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
1992	Oct 10-18	“	60	45	4	7500 Any sex license quota. All second licenses antlerless, Zones 4a,5a&6.
	Dec 21-Jan 10	“	40	36	8	
1993	Oct 9-17	“	71	34	5	7500 license quota, 65 counties buck-only. Antlerless in 14 counties, 35 counties buck-only.
	Dec 20-Jan 10	“	46	39	8	
1994	Oct 15-23	“	78	36	5	7500 license quota, 67 counties buck-only. Antlerless in 14 counties, 35 counties buck-only.
	Dec 19-Jan 10	“	52	39	8	
1995	Oct 14-22	“	73	43	5	7500 license quota, 69 counties buck-only. No antlerless tags, 29 counties modified buck-only.
	Dec 18-Jan 10	“	55	46	8	
1996	Oct 12-20	“	75	39	5	7500 license quota, 64 counties buck-only. Antlerless in 15 1/2 counties, 26 modified buck-only.
	Dec 23-Jan 10	“	49	46	7	
1997	Oct 11-19	“	55	62	4	7500 license quota, no counties buck only. Antlerless in 19 1/2 counties, no counties buck-only.
	Dec 22-Jan 10	“	44	52	7	
1998	Oct 17-25	“	64	52	5	7500 license quota, no counties buck only. Antlerless in 20 counties, no counties buck-only.
	Dec 21-Jan 10	“	54	50	7	
1999	Oct 16-24	“	60	57	4	7500 license quota, no counties buck only. Antlerless in 21 counties, no counties buck-only.
	Dec 20-Jan 10	“	52	46	7	
2000	Oct 14-22	“	60	53	4	7500 license quota, 16 counties modified buck only. Antlerless in 21 counties, no counties buck-only
	Dec 18-Jan 10	“	50	47	7	
2001	Oct 13-21	“	54	53	4	7500 license quota, no counties buck only. Antlerless in all counties, no counties buck-only
	Dec 17-Jan 10	“	52	44	8	
2002	Oct 12- Oct 20	“	65	56	4	7500 license quota, no counties buck only. Antlerless in all counties, no counties buck-only
	Dec 23-Jan 10	“	41	46	6	
2003	Oct 11- Oct 19	“	54	55	4	7500 license quota, no counties buck only. Antlerless in all counties, no counties buck-only
	Dec 22-Jan 10	“	37	51	6	
2004	Oct 16- Oct 24	“	55	58	5	7500 license quota, no counties buck only. Antlerless in all counties, no counties buck-only.
	Dec 20-Jan 10	“	37	48	6	
2005	Oct 15- Oct 23	“	53	58	4	7500 license quota, no counties buck only. Antlerless in all counties, no counties buck-only
	Dec 19-Jan 10	“	32	54	6	
2006	Oct 14-22	“	55	43[a]	NA	7500 license quota, no counties buck only. Antlerless in 79 counties, no counties buck-only
	Dec 18-Jan 10	“	41	27	NA	
2007	Oct 13-21	“	55	35	NA	7500 license quota, no counties buck only. Antlerless in 77 counties, no counties buck-only
	Dec 17-Jan 10	“	44	30	NA	

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
2008	Oct 11-19	“	53	35	NA	7500 license quota, no counties buck only. Antlerless in
	Dec 22-Jan 10	“	43	28	NA	77 counties, no counties buck-only
2009	Oct 17-25	“	55	34	NA	7500 license quota, no counties buck only. Antlerless in
	Dec 21-Jan 10	“	45	26	NA	77 counties, no counties buck-only
2010	Oct 16-24	“	57	32	NA	7500 license quota, no counties buck only. Antlerless in
	Dec 20-Jan 10	“	46	25	NA	72 counties, no counties buck-only
2011	Oct 15-23	“	53	36	NA	7500 license quota, no counties buck only. Antlerless in
	Dec 19-Jan 10	“	45	22	NA	72 counties, no counties buck-only
2012	Oct 13-21	“	55	32	NA	7500 license quota, no counties buck only. Antlerless in
	Dec 17-Jan 10	“	48	27	NA	72 counties, no counties buck-only
2013	Oct 12- Oct 20	“	52	34	NA	7500 license quota, no counties buck only. Antlerless in
	Dec 23-Jan 10	“	47	20	NA	72 counties, no counties buck-only
2014	Oct 11- Oct 19	“	58	31	NA	7500 license quota, 27 counties buck only. Antlerless in
	Dec 22-Jan 10	“	48	24	NA	65 counties, no counties buck-only
2015	Oct 17- Oct 25	“	62	34	NA	7500 license quota, 27 counties buck only. Antlerless in
	Dec 21-Jan 10	“	58	25	NA	65 counties, no counties buck-only
2016	Oct 15-Oct 23	“	59	30	NA	7500 license quota, 27 counties buck only. Antlerless in
	Dec 19-Jan 10	“	48	24	NA	65 counties, no counties buck-only
2017	Oct 14-Oct 22	“	59	31	NA	7500 license quota, 27 counties buck only. Antlerless in
	Dec 18-Jan 10	“	49	26	NA	63 counties, no counties buck-only
2018	Oct 13-Oct 21	“	57	34	NA	7500 license quota, 27 counties buck only. Antlerless in
	Dec 17-Jan 10	“	45	25	NA	64 counties, no counties buck-only
2019	Oct 12-Oct 20	“	51	34	NA	7500 license quota, 27 counties buck only. Antlerless in
	Dec 23-Jan 10	“	37	21	NA	64 counties, no counties buck-only

[a] Success rates from 2005 and prior are not comparable to subsequent years.

Table 1.10 Results of deer population surveys (1976-present)

Year	Spotlight Survey		Aerial Survey		Traffic Kill	Traffic Kill Per Billion Vehicle Mi.		Bowhunter Obs (Deer per 1000 hrs)	
	Mean Count	Percent Change	Weighted Count[a]	Percent Change		Number	Percent Change	Number	Percent Change
1976			-	-	2,537	225	-1%		
1977			-	-	2,929	252	12%		
1978			-	-	2,872	241	-4%		
1979			-	-	3,005	259	7%		
1980			-	-	3,743	335	29%		
1981			-	-	4,164	365	9%		
1982			-	-	4,805	412	13%		
1983			5,903	-	5,335	448	9%		
1984			6,387	8%	6,177	500	12%		
1985			7,607	19%	5,925	495	-1%		
1986			9,790	29%	7,225	593	20%		
1987			-	-	8,440	678	14%		
1988			10,289	[b]	9,248	707	4%		
1989			9,672	-6%	8,914	655	-7%		
1990			7,070	-27%	8,799	607	-7%		
1991			9,191	30%	8,428	590	-3%		
1992			8,235	-10%	9,135	616	4%		
1993			8,680	5%	9,576	624	1%		
1994			10,483	21%	10,438	663	6%		
1995			10,877	4%	11,167	699	5%		
1996			12,051	11%	12,276	748	7%		
1997			13,902	15%	13,148	778	4%		
1998			12,651	-9%	12,427	714	-8%		
1999			14,928	18%	11,366	637	-11%		
2000			15,375	3%	11,114	642	1%		
2001			15,793	3%	14,243	799	24%		
2002			13,107	-17%	12,377	662	-17%		
2003			15,676	20%	13,720	726	10%		
2004			18,028	15%	15,361	803	11%	1,624	
2005			15,324	-15%	14,364	760	-5%	1,698	5%
2006	55		12,565	-18%	14,940	783	3%	1,736	2%
2007	59	8%	13,445	7%	13,730	720	-8%	1,667	-4%
2008	71	20%	13,427	0%	10,961	602	-16%	1,500	-10%
2009	68	-4%	13,528	1%	13,518	726	21%	1,482	-1%
2010	58	-15%	13,591	0%	10,153	547	-25%	1,533	3%
2011	58	1%	13,707	1%	10,626	570	4%	1,475	-4%
2012	51	-13%	discontinued		10,358	554	-3%	1,649	12%
2013	71	40%			9,174	481	-13%	1,352	-18%
2014	61	-14%			9,085	471	-2%	1,558	16%
2015	66	8%			9,418	478	1%	1,581	1%

Year	Spotlight Survey		Aerial Survey		Traffic Kill	Traffic Kill Per Billion Vehicle Mi.		Bowhunter Obs (Deer per 1000 hrs)	
	Mean Count	Percent Change	Weighted Count[a]	Percent Change		Number	Percent Change	Number	Percent Change
2016	66	0%			9,041	459	-4%	1,488	-6%
2017	70	4%			8,609	430	-5%	1,657	11%
2018	79	13%			6,230	312	-28%	1,879	13%
2019	86	9%			5,019	248	-21%	1,694	-10%
2020	83	-3%							

[a] adjusted for missing counts
[b] change from 1986 to 1988

WILD TURKEYS

Historical Perspective

History: Iowa's primitive oak-hickory forests covered nearly 7 million acres (2.8 million ha) during the original land survey in 1859 (Thornton and Morgan 1959). Settlers' records indicate turkeys were associated with most of this timber. Although turkeys may not have been as numerous in Iowa as in their primary range east of the Mississippi River, they were still plentiful (Peterson 1943). Unfortunately, wild turkeys were eliminated from Iowa by the early 1900's due to habitat loss and partly because of uncontrolled subsistence market hunting (Little 1980).

Habitat: Only 2.6 million acres (1.1million ha) of forest remained when the second land survey was completed in 1956, a reduction of 63% in a century, and perhaps 50% of the remaining forest was badly mismanaged through overgrazing (Thornton and Morgan 1959). In 1974, Iowa had 1.6 million acres of forestland, which made up 4.3% of the State's land area. Iowa's forests now total 2.1 million acres (850,202 ha), just 5.7% of the State and only 30% of presettlement forests (Leatherberry et al. 1990). Forest types throughout Iowa are second or third growth oak-hickory on uplands and elm-ash-cottonwood on floodplains (Ostrom 1976). Oak types constitute 55% of all forest stands, with red oak - white oak - hickory (35% of all forests) dominant in all regions. Maple/basswood stands (10%) are found on mesic sites and are climax in the northeast and central regions, but are replaced by white oak (10%) and short, scrubby bur oak (10%) in the southern and arid western regions, respectively. Aspen and other northern hardwoods (1%) are found occasionally in the Northeast. Statewide, 65% of all commercial stands are entering sawtimber and 20% are in poletimber (Leatherberry et al. 1990). Ninety-two percent of Iowa's forest land is privately owned, with nearly half of the remaining 8% in state ownership, 38% owned by other public agencies and 14% in park-refuges withdrawn from active management (Ostrom 1976, Leatherberry et al. 1990). Iowa has no national forests, parks or wildlife refuges devoted to forest land management.

Restoration: The Iowa Department of Natural Resources (DNR) began experimenting with turkey restoration in 1920 using pen-reared birds. Releases were made over the next 18 years but all releases were uniform failures. The first attempts at releasing transplanted wild turkeys were in the early 1960's. Rio Grande and Merriam's subspecies were released at several sites during the 1960's but ultimately their poor adaptation to Iowa's oak-hickory forest led to population failures for both subspecies.

The first release of Eastern wild turkeys was in 1966 in Lee County. The population response of these turkeys was phenomenal - survival of released birds, reproduction, and poult survival were all excellent. The success of the Eastern subspecies stocking led to an additional stocking that also proved successful. By 1971 it was obvious that the Eastern subspecies was the turkey to use in future restoration attempts. Since the initial 1965 release 3,578 eastern wild turkeys have been trapped and released at 259 sites at a stocking rate of approximately 3 adult gobblers and 10 hens per site. Nearly all sites are considered successful. No sites are currently considered to be unsuccessful. Most sites were opened to hunting after populations were established, usually about 5 years post-stocking. Restorations by the DNR during the last 2 decades have returned wild turkeys to about 95% of the remnant timber stands in the state. Restoration efforts ended in 2001 with the last release site occurring in Linn County.

Spring Harvest Survey

History: Spring bearded-only turkey hunting seasons began in 1974. The objective of Iowa's spring season has been to maximize hunting opportunity while maintaining a quality hunting experience. Quality hunting is defined as the chance to hunt turkeys reasonably free of interference from other hunters. The primary method used to reduce interference is to control hunter densities through license quotas and establish multiple zones and seasons. Annual licenses issued, hunters, and harvest increased gradually from 1974-87 (Figure 2.1). During 1988-99, there were dramatic increases in licenses issued and hunter numbers due to an unlimited license quota in the fourth season. The area open to spring turkey hunting in Iowa also increased dramatically from 2 small southern zones and 1 larger northeast zone in 1974 to the entire state during the 1999 spring season (Figure 2.2, a and b). In 2007 mandatory reporting of harvest was implemented and therefore the postcard harvest survey was eliminated (Table 2.2). Spring harvest success rates fluctuated around 20-30% during the first 12 years (unweighted average = 25.1 for 1974-85) but success increased each year during 1985-88 (Figure 2.4). Declines observed in spring hunter success rates during 1983 and 1984 (Figure 2.4) can be partially explained by poor brood production during the summers of 1982 (Table 2.9). Similarly, the decline in hunter

success rates between 1988 and 1993 may be explained by 6 years of poor brood production starting in 1988. The success rates from 2002-2006 averaged 46.0%. The decrease in success rates beginning in 2007 and the number of turkeys harvested is likely due the change in survey methods. Starting in the spring of 2007, mandatory harvest reporting required successful hunters to report a harvested turkey. A follow-up post card survey for spring of 2007 revealed 74% compliance rate, which equated to nearly 4,000 harvested turkeys that were not reported initially during the spring season. The major reasons for the non-reports were attributed to hunters forgetting to report (40%), difficulty in reporting process (29%), and unaware of the requirement (22%).

2020: Iowa's 47th modern spring hunting season recorded 14,689 turkeys harvested, with 58,186 licenses sold (Table 2.1 and Table 2.3). This was the 32nd year the entire state was open to spring turkey hunting. The 38-day season (10 April through 17 May, 2020) was partitioned into 5 separate seasons: a 3-day youth-only season, and 4 regular seasons (4,5,7 and 19-days). The 5-season format, with unlimited resident license quota for all the periods, resulted in 48,573 resident shotgun/bow licenses issued, which was an increase of 9,230 from the 2019 season. In additional 7,900 resident archery-only licenses were issued in 2020. Archery-only licenses harvested 1,551 turkeys, resulting in a 19.6% success rate. Overall 22% of the resident hunters were successful in harvesting a gobbler in 2020 (Table 2.4).

This was the 31st spring that nonresidents were allowed to hunt turkeys in Iowa. Season 3 and 4 of zone 8 were the only seasons to sell out for nonresident licenses. Of the 2298 tags available 1713 tags issued, 1166 were issued during the drawing period and 546 sold as excess tags. This left 585 licenses unassigned. Of the 150 muzzleloader tags available 11 were applied for and 122 were purchased as excess tags. The majority of these tags were assigned to zone 4 (105) with season 4 being the highest amount (58). Non-resident hunters harvested 610 turkeys (Table 2.1). Nonresidents reported a higher success rate for spring gobblers than did residents (35% versus 22% respectively) (Table 2.4), but were down from recent traditional levels averaging in the low 40 percent range.

In spring of 2020, known jakes (spurs < ½") harvested were 12% of the total harvest (16% the previous year). Turkeys harvested with spurs ½"-¾" were 26% (27% in 2019) of the total harvest. The majority (61%) of turkeys harvested in 2020 had spurs greater than ¾ of an inch in length.

Youth Turkey Season

Iowa's 16th youth spring turkey season has held April 10th-12th. During the 3-day season, youth 15 and younger were allowed to participate with an accompanied licensed adult (adult licensed for one of the regular seasons). In 2005, the first year of the youth season, ages were limited to ages 12-15. Starting in 2006, ages 15 and younger could participate in the youth season. Youth season license sales increased by 1,080 (5,941) from the 4,861 licenses sold in 2019 (Figure 2.8). Since the inception of ELSI (Electronic Licensing System of Iowa) in 2001, hunter age and gender has been recorded. From 2001-2006, youth spring turkey hunters (age 15 and under) increased each year. After the first youth season in 2005, youth licenses have shown an overall upward trend. (Figure 2.8). This year reversed a three-year downward trend with a 22% increase in youth season license sales. This mirrors the uptick in regular license sales. A code change in 2014 allowed for unfilled youth season tags to be valid for any other spring turkey season until filled. Thirty four percent of youth licenses reported a harvested bird in 2020.

Fall Harvest Survey

History: Fall, any-sex turkey hunting was initiated in Iowa in 1981 to provide additional hunting recreation from the wild turkey resource. Because any-sex hunts are more controversial than male-only hunts and potential exists for over-harvesting hens, carefully controlled fall hunts began in 1981 on an experimental basis. These hunts occurred in portions of southern Iowa, which had established, stable turkey populations. Fall turkey hunting has changed dramatically since the initial experimental 1981 season. The area encompassed by fall hunting zones has increased from 2 small zones in southern Iowa during 1981 to 9 zones in 2005 encompassing the entire state (Figure 2.6, a and b). Fall zone boundaries in 1990 encompassed 9.7 times more area than in 1981, with 13.9 times more by 2005. Although zone boundaries did not change during 1991-1994, only zones 3 and 6 (northeast Iowa) had shotgun licenses available (residents only). The 5 remaining fall zones experienced 6 years of poor brood production and therefore did not have any licenses available. However, in 1995, because of increased brood production in 1994, almost the entire state was opened to fall hunting. In 1999, the amount of land open to fall hunting increased slightly from 1998 with the addition of zone 8 (Figure 2.5). Results from a radio-telemetry study in southern Iowa and computer modeling of southern Iowa turkey mortality and

hatching data suggest as much as 10% of the population could be removed during fall hunting without reducing long-term turkey populations. Past seasons' harvest have not approached this theoretical value. The present management objective is to maintain fall hunting opportunities and harvest. A harvest of fall turkeys similar to the number of spring gobblers harvested is the present goal. The number of fall licenses issued, hunter numbers and harvest increased steadily from 1981-89 (Figure 2.7 and Table 2.5 through Table 2.7). As with spring seasons, fall turkey hunters have previously had exceptional statewide success rates, averaging 51% during 1981-89 (Table 2.8). However, fall success rates have had considerable annual variation, ranging from 6-60% (Figure 2.3). Fall license quotas generally surpassed applications from 1981-84 and license quotas filled in only one zone in 1985. With the expansion of 2 hunting zones in 1986 a large increase in applications occurred. This resulted in rejecting a number of permit applications. License quota was increased in 1987 and in 1988. After 2 application periods in fall 1988, 51 licenses remained. Therefore, license quota remained unchanged in 1989 although the hunting zone area increased. Because of the documented poor poult production in 1988 and 1989, license quota remained unchanged for 1990. Fall 1990 hunting zones were expanded to distribute (and hopefully reduce) hunting pressure on flocks. Continued poor statewide brood production warranted dramatic reductions in fall harvest for 1991-1994. Only the northeast corner (Zones 3 & 6) continued to have average brood production that allowed a fall shotgun season. Annual changes in hunter success, harvest and the age-sex composition of the fall harvest are at least partly explained by population events occurring in southern Iowa from 1981 to 1985. Excellent recruitment in the years of 1978 through 1980 produced very high turkey densities (100 wintering turkeys/mi2 of forest on the southern Iowa Stephens Forest study area and region-wide densities of at least 40-50/mi2. A cool wet spring in 1981 led to essentially no recruitment just prior to the first fall season. A large carryover of adults from previous successful hatches meant that hunters had high success rates in the fall of 1981, but harvested almost no juvenile turkeys. A slightly better hatch in 1982, coupled with the reduction in available adult turkeys, led to proportionally more juveniles in the bag in 1982, but the harvest and success rates were reduced. A good hatch in 1983 produced more juveniles in the bag and an increased harvest, suggesting populations were recovering from a 2-year depression. Another good hatch in 1984 resulted in even more juveniles in the bag and again an increased harvest. Fall 1985 was similar to 1984. The greatest effect was felt in southern Iowa where spring weather was least favorable in both 1981 and 1982. Indications of over-harvest on popular public hunting areas were greatest in the years when few juveniles were present to buffer adult turkey harvest. Harvest rates of adult hens (> 2 years old), the most important age class reproductively, were greatest when few juveniles were produced and decreased to tolerable levels when recruitment was good. A similar scenario developed during the 6-year (1988-93) decline in poult production. Climatic factors, i.e., 2 years of drought followed by floods in 1990, 1991, and 1993, are assumed responsible for the reduced poult production observed over that time period. Likewise, harvest and hunting success declined over the same period, presumably as a result of the decrease in poult production. Fall harvest and hunting success rate increased in 1995 following a slight increase in poult production in 1994. Harvest and hunter success increased slightly again in 1996-1999, but decreased slightly in 2000-2001. However, fall harvest levels continue to be below the levels observed in the mid-1980's. Fall active hunters have not been estimated since the implementation of harvest mandatory reporting. This survey was conducted by postcard but was discontinued in 2006 (Table 2.6).

2019: Fall turkey hunter success rates increased from 6% in 2018 to 7.2% (Table 2.8), this is still well below the 2005 and prior estimates due to the change in harvest estimation (mandatory versus postcard survey as discussed earlier). Since the DNR's main objective for wild turkeys is to maintain populations in all suitable habitats and provide high quality recreational opportunity, a conservative fall turkey hunting season was established in 1992. Shotgun license quotas were reduced from 7,600 licenses available in 1990 to only 1,530 in 1992, 1993, and 1994. An increase in poult production was observed in 1994, and the shotgun license quota was increased in 1995 to 3,450. Quotas were increased slightly again in 1996 to 3,850, to 4,550 in 1997, to 5,650 in 1998, to 6,225 in 1999. In 1999, zone 8 was created in north central Iowa and zone 6 was reduced east to Highway 63. All other zone boundaries remained the same as in 1998, and all zones had licenses available. In 2009, quotas were decreased. All zones except zone 8 & 9 decreased (zone 4 from 4,500 to 1,500, zone 5 from 700 to 650, zone 6 from 3,000 to 1,400, and zone 7 from 400 to 250). All fall licenses issued (Gun/bow and bow only) decreased in 2019 to 6,296 from 6,935 in 2018. Bow-only season started October 1 and ran until January 10th 2020 with December 6th-December 22nd being closed for the shotgun deer season. Gun/bow season was 54 days from October 14th-December 6th (Table 2.12). Forty-nine percent of the fall licenses were issued free to landowners, which was 1% higher than 2018. Estimated numbers of active hunters were undeterminable since there was no post card survey after the season (mandatory reporting eliminated the post card survey). Only 7% of hunters reported harvesting a turkey, which was a large decrease from 2005, likely compiled with the mandatory reporting and

low compliance rates (Table 2.8). Gun/Bow hunter success rates varied from 11% in zones 4 and 7 to 21% in Zone 8 (Table 2.8). Archery only licensed hunters reported a harvest of 88 turkeys in 2019 which was a 18% decrease from the 2018 season. The 6.8% success rate for 2019 archery only licenses was higher than the previous year's success rate (Table 2.8). Nonresidents have not been permitted to hunt fall turkeys in Iowa since 1990.

***Discussion**:* Fall turkey hunting techniques are sufficiently different from spring hunting so that past experience with spring hunting seems to have little impact on success in the fall. If anything, reliance on camouflage, sitting still, and calling (the basic spring hunting method) may be less successful and less utilized than walking and flushing turkeys in the small woodlot situations which comprise the bulk of Iowa turkey habitat. Even though fall shotgun success can be quite high, fall turkey hunting has not been popular. It doesn't seem to appeal to spring hunters and hunter numbers seem to be more related to zone size than anything else. Fall archery hunting has even fewer devotees. In spite of these differences between spring and fall hunting, they have one important feature in common - hunter concentrations on public hunting areas. Hunter densities are much greater on public hunting areas than on private lands. By the nature of fall hunting this has less impact on perceived interference between hunters than it does in spring hunting. Crowding leads to lower success rates on public areas and, on the largest most popular areas, there are some indications of excessive harvest over theoretically desirable levels. Any area that the DNR intends to manage for quality spring hunting may have to be zoned separately in the fall. Even in years of documented poor reproduction, hunters can still find turkeys due to Iowa's limited forest habitat and high turkey densities. Interference rates between hunters have not been documented in the fall since 1985. Interference rates have been lower during fall than in spring, which is probably due to the different techniques used for spring and fall hunting. Fall turkey hunter densities on public areas (that were surveyed) have been nearly 50 times greater than the average hunter density for private land. Turkey harvest densities on 13 of 16 public areas surveyed equaled or exceeded the theoretical maximum allowable harvest of 2 turkeys/mi2 of forest as determined from empirical population data gathered from Stephens State Forest (DNR, unpubl. data). In 1986, only 4 counties sustained > 4 hunters/mi2 of forest, combined with turkey harvests of > 2/mi2 of forest. In 1987, with the large increase in licenses issued, 12 counties had both hunter densities > 4, and turkey harvest > 2/mi2 of timber (out of 43 counties with reporting hunters). The high seasonal hunter densities were somewhat reduced by a 28-day season during 1987. No more than 34% of the hunters and 39% of the eligible hunters (those who had not yet bagged a turkey) were afield on any day. The opening 2 days and 4 weekend days were the most popular hunting days. There were no evident relationships between daily hunting pressure and daily success rates. To reduce daily hunter densities, hunter interference rates and increase fall recreation days, the 1988 fall season was extended to 49 days (October 10-November 27). However, a large increase in licenses issued in 1988 increased the number of counties exceeding allowable harvest and hunter density values to 16 (out of 53 counties with reported turkey harvest). Another record license issue in 1989 resulted in 24 counties (of 49 counties with reported turkey harvest) exceeding >4 hunters, and >2 turkeys harvested/mi2 of timber. Fewer licenses were issued in 1990 and correspondingly only 16 counties exceeded hunter and harvest rate maximums. Due to continued poor brood production, both hunter numbers and harvest was dramatically reduced during 1991-1993 and increased only slightly throughout 1994-2000, but decreased slightly in 2001. Unfortunately, the present management concern is how to maintain turkey numbers instead of the enviable situation of being concerned about hunter densities. The record number of active hunters in 2005 (since 1989) may be related to this being the first season that turkey hunters where allowed to use dogs. Likely, pheasant hunters took this opportunity to harvest turkeys opportunistically while pheasant hunting. With mandatory reporting system (initiated in 2006), active hunter numbers are undeterminable.

Brood Survey

History: Information on annual variations in turkey productivity is needed to evaluate the status of turkey populations in various regions of the state. Because few reliable wild turkey census techniques have been developed, hunter success rates, turkey harvest levels, and age ratios of harvested birds are the best available indicators of relative turkey populations between hunting zones. Lewis (1975 a, b) found significant correlations between both August poult:hen ratios, percent juveniles in the harvest, and total gobbler harvests in the subsequent spring in Missouri, suggesting that an index to productivity would be useful in establishing hunting regulations. Compared to the more formalized census procedures used for more visible wildlife species, indices to eastern wild turkey productivity are generally based on random observations of broods.

Methods: In 2019 a mixed mode sampling system combined the traditional mail survey with an internet-based survey. A list of cooperators was established from DNR personnel and turkey license holders living in selected portions of Iowa. All turkey license holders living in designated survey areas are sent a form to be returned if they are willing to participate in the survey. Each cooperator is sent a return-addressed postcard which is completed and returned based on turkey broods sighted between 1 July and 31 August. Productivity indices are constructed from these returns. Hanson (1988) compared the brood survey data with spring turkey harvest and data from a radio-telemetry study in southern Iowa. The poult:hen ratio (young/adult) was the variable that correlated best with the telemetry data. Results of additional analyses indicated that the brood survey did have some utility for forecasting turkey numbers available to the hunters in following springs. Additionally, Hanson concluded that in light of the correlations with harvest data the brood survey may also be useful for evaluating the status of turkey populations in various regions of the state. Survey statistics for 2008-2019 are summarized in Table 2.9 and Table 2.10.

The 2019 survey indicated generally consistent production across the state from the five-year average. Production saw a slight dip in the northcentral region but generally the upper third of the State continues on a strong production pace. This is contradicted by the southern two thirds of the State that continue to see declines in production. Southwest and southeast Iowa continue to be of concern as well as central Iowa. Observers submitted 4,562 observations statewide. Wild turkey brood production in 2019 was stable from 2018 per successful hen, but down with overall poults per hen statewide. Seven of nine regions showed a decline in productive hens with the east central and southwest regions showing the largest one-year change. Overall statewide production was down 25% from the previous year. (Figure 2.5).

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Figures

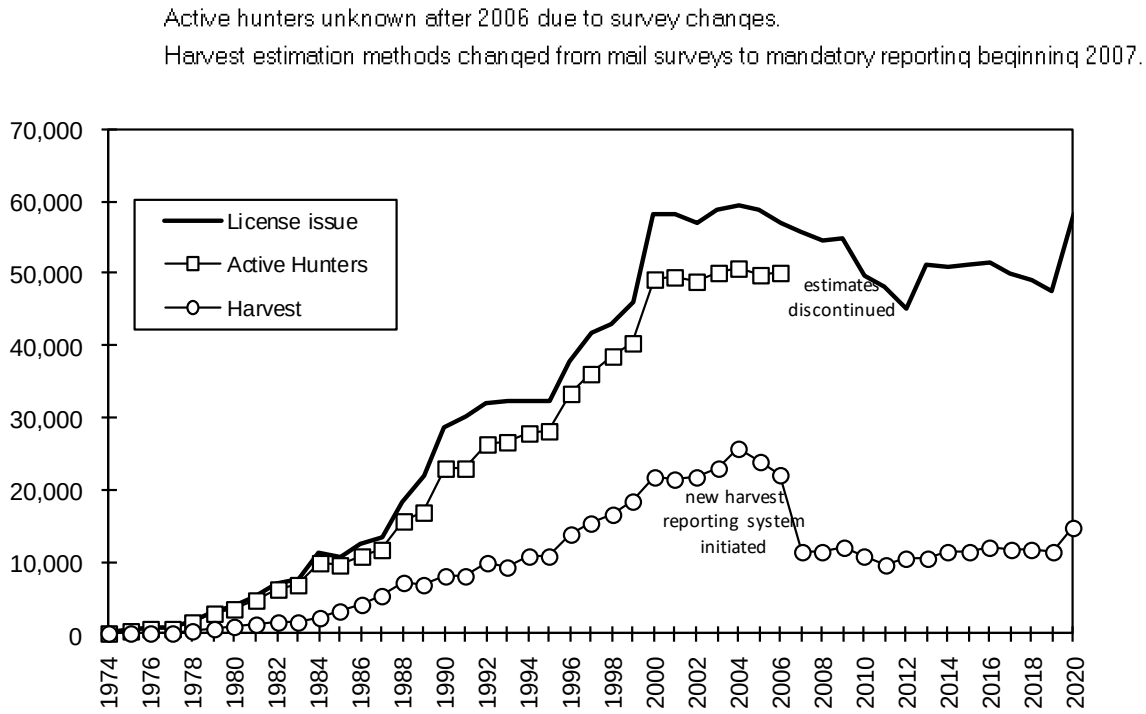


Figure 2.1 Iowa spring turkey hunting statewide estimates, 1974-2020

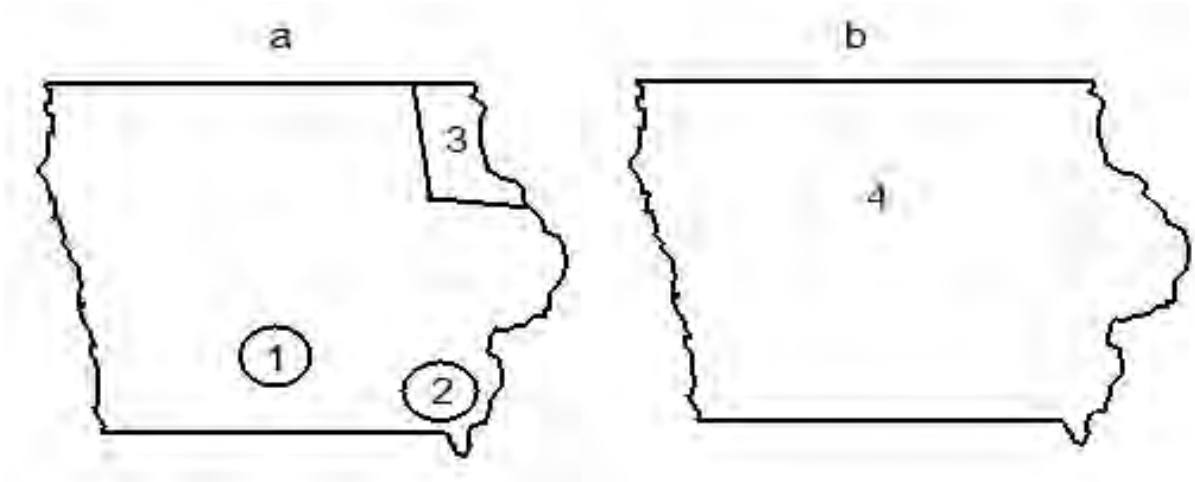


Figure 2.2 Spring resident turkey hunting zones, 1974 (a) and 2020 (b).

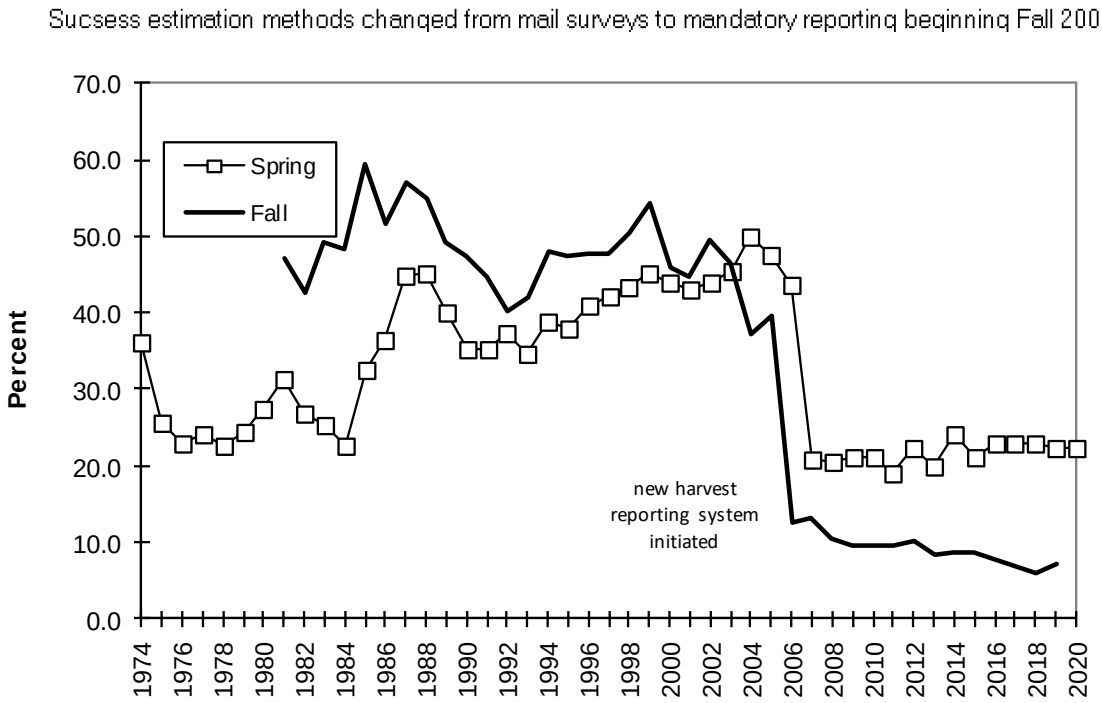


Figure 2.3 Iowa turkey harvest statewide success rates for residents, 1974-2020.

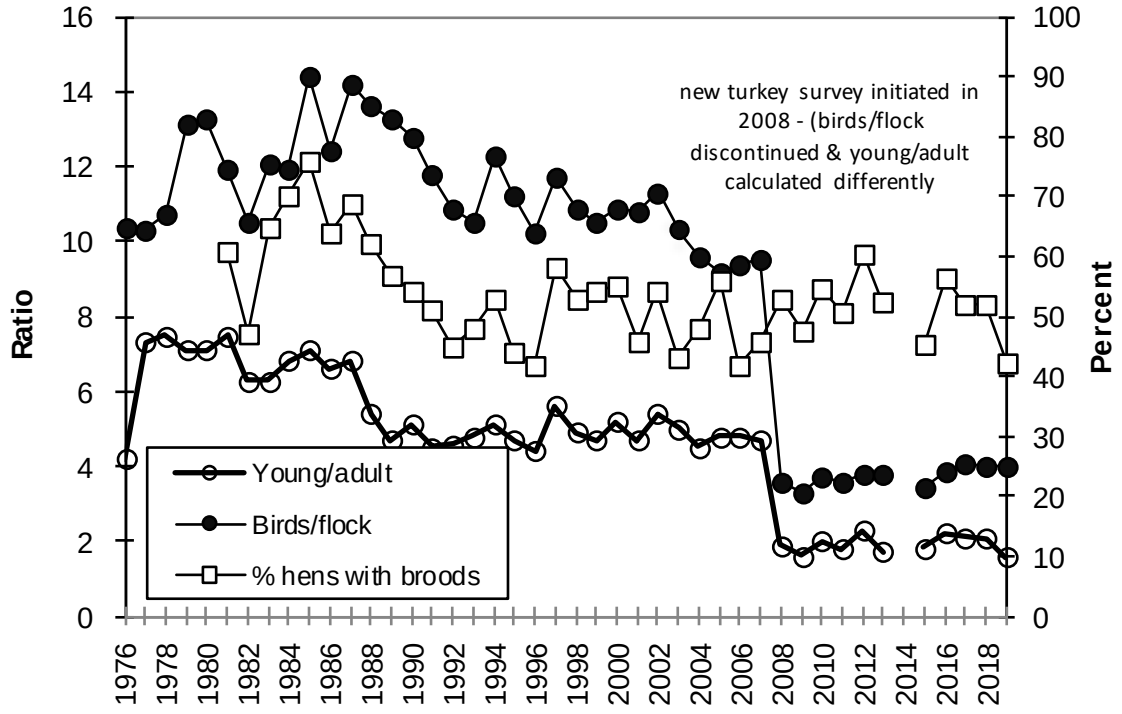


Figure 2.4 Iowa turkey brood survey statewide results, 1976-2019.

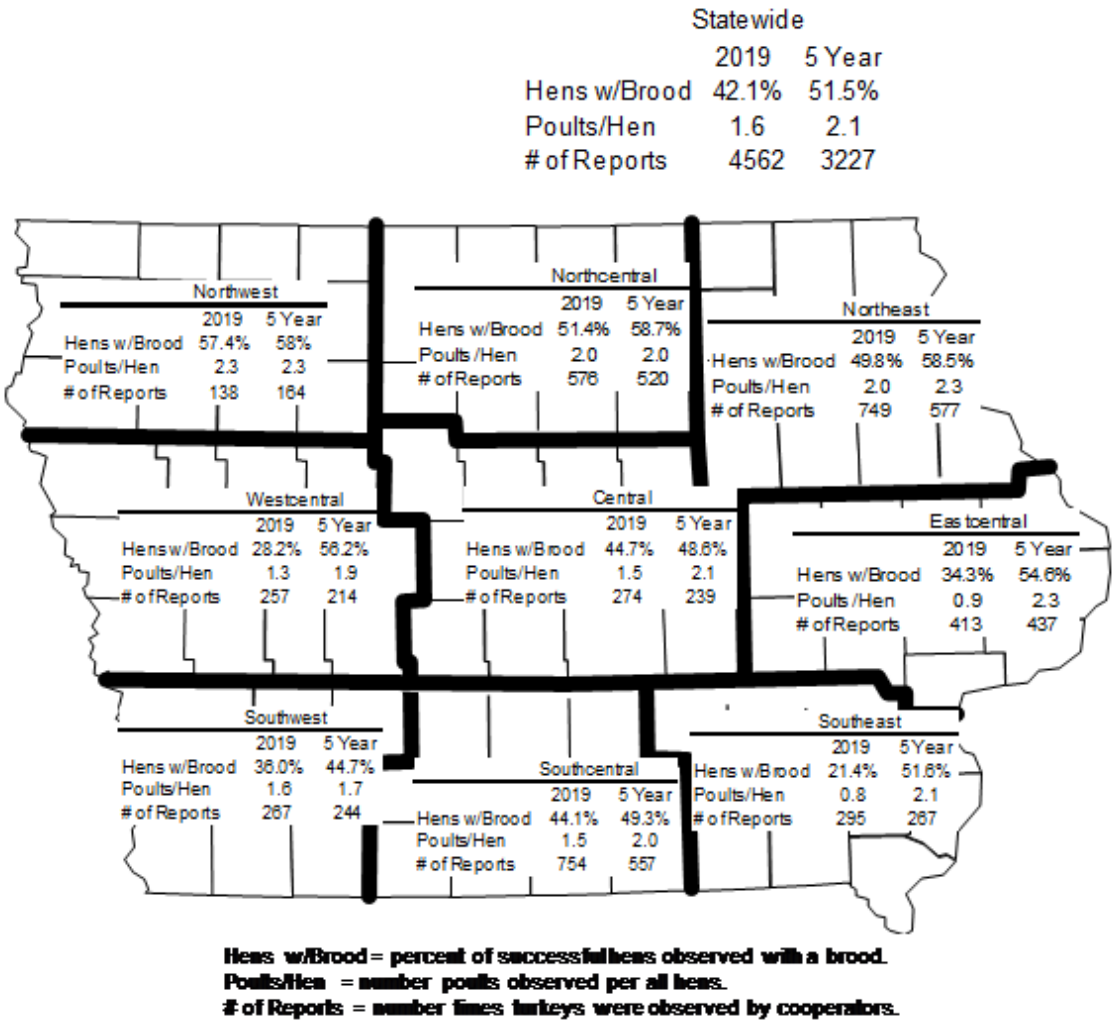


Figure 2.5 Iowa Summer Turkey Survey, 2019.

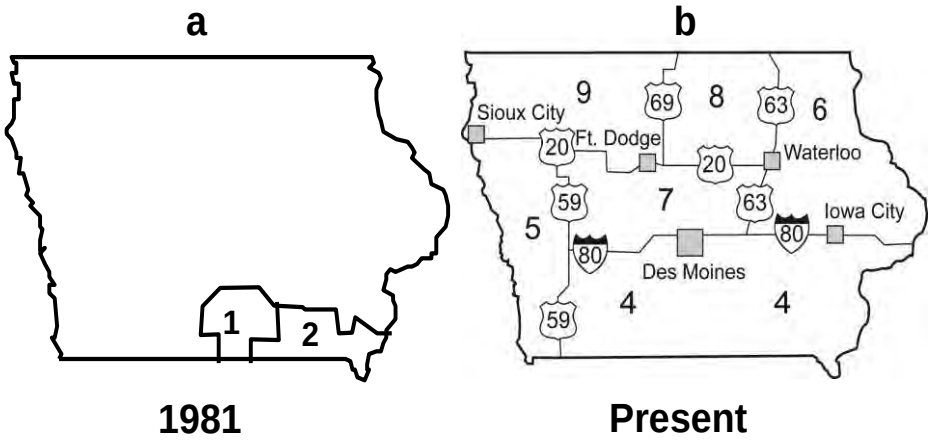


Figure 2.6 Fall turkey hunting zones, 1981 (a) and 2020 (b).

Active hunters unknown after 2005 due to survey changes.
Sucsess estimation methods changed from mail surveys to mandatory reporting beginning 2006.

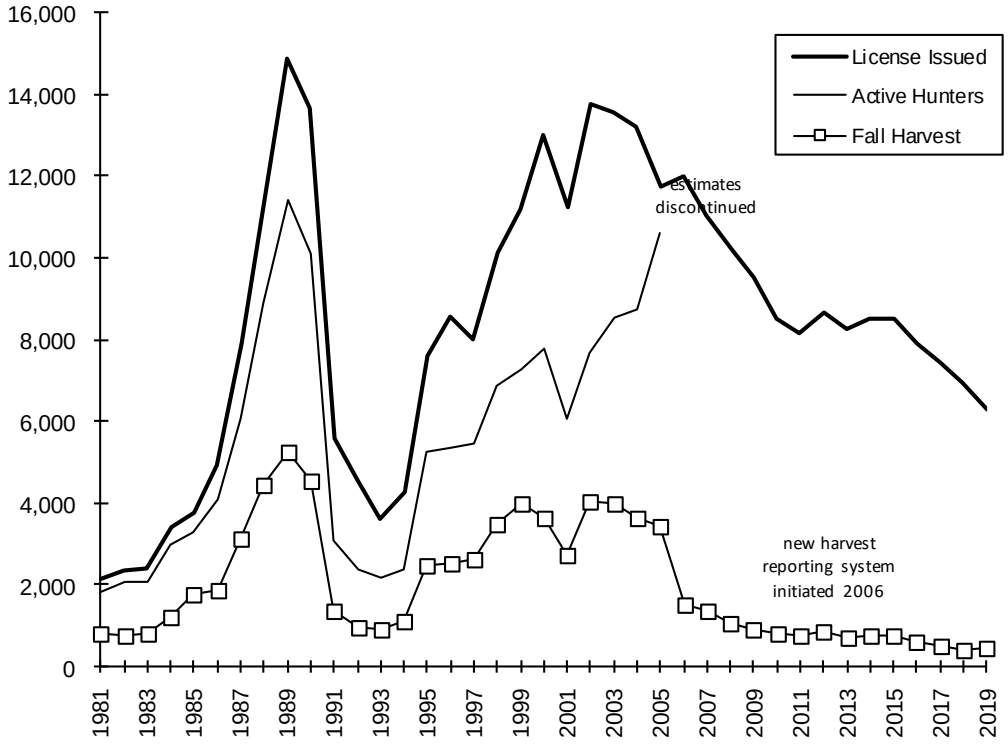


Figure 2.7 Iowa fall turkey hunting statewide estimates, 1981-2019.

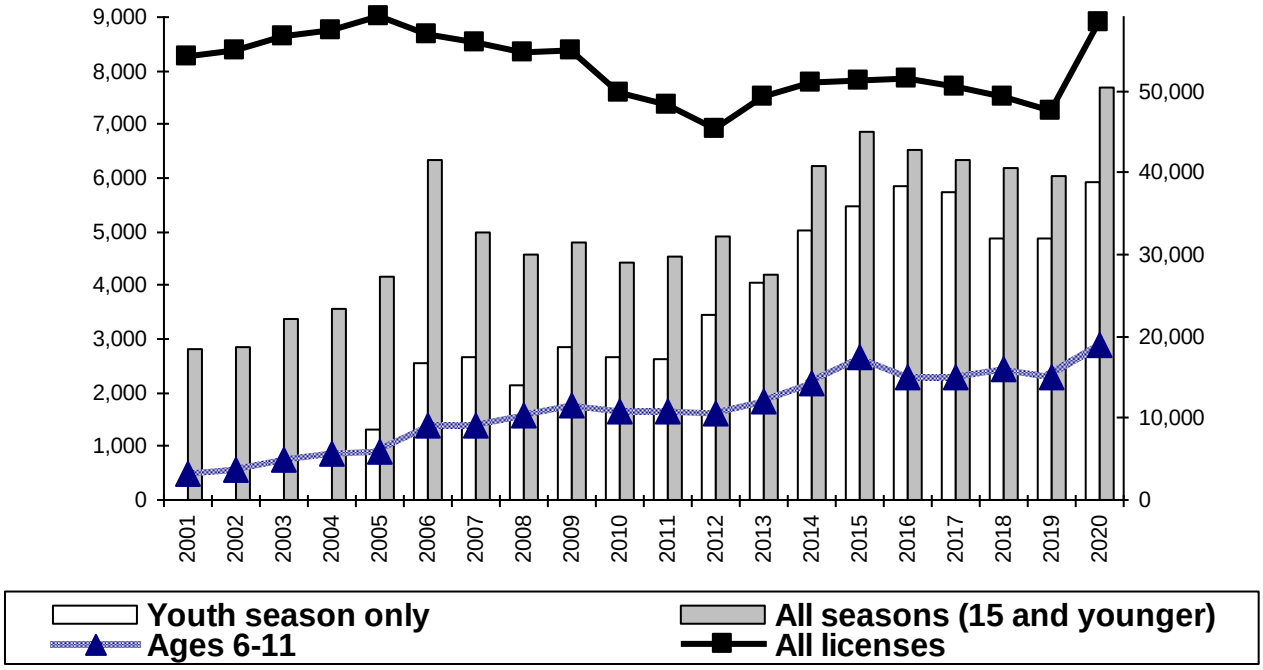


Figure 2.8 Iowa spring turkey license issue, 2001-2020.

Tables

Table 2.1 Number of estimated spring turkeys harvested by zone, 2007-Present.

In 2007, survey methods changed from a post-mailing survey to mandatory reporting, with an estimated 74% compliance rate.

Year	Gun/ Bow	Bow Only	Resident Total	Non-Resident	Total Harvest
2007	10,008	676	10,684	843	11,527
2008	9,643	788	10,431	898	11,329
2009	10,166	859	11,025	884	11,909
2010	9,156	907	10,063	826	10,889
2011	8,031	830	8,861	666	9,527
2012	8,906	802	9,708	749	10,457
2013	8,838	986	9,824	741	10,565
2014	9,587	1,060	10,647	754	11,401
2015	9,528	1,090	10,618	787	11,405
2016	10,057	1,230	11,287	886	12,173
2017	9,748	1,188	10,936	843	11,779
2018	9,672	1,146	10,818	883	11,701
2019	9,364	1,209	10,573	816	11,389
2020	10,398	1685	14,079	610	14,689

Table 2.2 Number of estimated active Iowa spring turkey hunters by zone, 1974-Present.

Starting in 2007, the post card survey was discontinued and active hunters undeterminable. Archery-only licenses not surveyed.

Year	Zone					Resident Total	Non-Resident	Total Harvest
	1	2	3	4	5			
1974	92	99		92		283		
1975	149	168		223		540		
1976	124	237		484		845		
1977	202	251		435		888		
1978	255	289		1,078		1,622		
1979	174	272		2,381		2,827		
1980	176	213	307	2,909		3,605		
1981	176	379	3,956	3,956	61	4,572		
1982	493	447	270	4,911	123	6,244		
1983	447	441	263	5,523	161	6,835		
1984	233	371	260	8,676	243	9,783		
1985	232	403	292	8,395	249	9,571		
1986	232	445	308	9,581	319	10,885		
1987	236	440	327	10,283	355	11,641		
1988	246	429	298	14,152	547	15,672		
1989	225	442	319	15,193	588	16,767		
1990	231	456	301	21,085	862	22,935	174	23,109
1991	234	477	289	20,905	868	22,773	273	23,046
1992	200	351	213	24,321	919	26,004	418	26,422
1993	124	391	197	24,648	888	26,248	542	26,790

Year	Zone					Resident Total	Non-Resident	Total Harvest
	1	2	3	4	5			
1994	157	365	217	26,561	-	27,300	527	27,827
1995	113	331	211	26,734	-	27,389	881	28,270
1996	178	331	169	31,591	-	32,269	1,057	33,326
1997	152	356	210	34,314	-	35,032	1,229	36,261
1998	174	395	226	35,759	-	36,554	1,858	38,412
1999	139	336	179	37,873	-	38,527	1,803	40,330
2000	183	287	159	46,705	-	47,334	1,841	49,175
2001	75	103	92	47,327	-	47,597	1,822	49,419
2002	70	136	93	46,685	-	47,116	1,796	48,912
2003	100	157	107	47,755	-	48,119	1,939	50,058
2004	76	172	87	48,507	-	48,842	2,004	50,846
2005	115	124	105	47,461	-	47,805	2,120	49,925
2006	113	200	142	47,599	-	48,054	2,166	50,220
2007	estimates discontinued							

Table 2.3 Number of Iowa spring turkey-hunting licenses issued by zone, 2007-Present.

Year	Gun/ Bow	Bow Only	Resident Total	Non-Resident	Total Harvest
2007	48,344	5,258	53,602	2,254	55,856
2008	46,822	5,596	52,418	2,258	54,676
2009	46,470	6,139	52,609	2,158	54,767
2010	41,406	6,143	47,549	2,002	49,551
2011	40,393	6,053	46,446	1,859	48,305
2012	37,995	5,287	43,282	1,877	45,159
2013	42,627	6,630	49,257	1,952	51,209
2014	38,259	6,421	42,637	1,908	50,966
2015	36,857	6,886	42,328	1,929	51,143
2016	42,295	7,170	42,295	2,007	51,472
2017	41,123	6,902	48,025	2,043	50,068
2018	40,466	6,701	47,167	2,047	49,214
2019	39,343	6,206	45,549	1,874	47,423
2020	48,573	7,900	56,473	1,713	58,186

Table 2.4 Estimated success rate of active Iowa spring turkey hunters by zone, 2007-Present.

Year	Gun/ Bow	Bow Only	Resident Total	Non-Resident
2007	20.7	12.9	20.7	37.4
2008	20.5	14.1	20.5	39.8
2009	21.9	14.0	21.0	41.0
2010	22.1	14.8	21.2	41.3
2011	19.9	13.7	19.1	35.8
2012	23.4	15.2	22.4	39.9

Year	Gun/ Bow	Bow Only	Resident Total	Non-Resident
2013	20.7	14.9	19.9	38.0
2014	22	16.5	24	39.5
2015	22	12.6	21	40.1
2016	23.7	17.1	23	44.1
2017	23.7	17.2	22.8	41.2
2018	23.5	18.8	22.9	43.1
2019	23.8	19.5	22.3	43.5
2020	24.3	19.6	22.2	35.6

Table 2.5 Number of licenses issued to Iowa fall turkey hunters by zone, 2007-Present.

In 1984 and 2001-Present landowners were not broken-down by zone but do appear in the total.
No non-resident licenses issued for fall turkey during 1991-Present. Zones 1-3 were eliminated in 2007.

Year	Zone									Bow	Resident Total	Non-Resident
	1	2	3	4	5	6	7	8	9			
2007	-	-	-	2,313	658	1,544	348	150	200	1,721	11,024	0
2008	-	-	-	1,924	620	1,375	348	150	200	1,746	10,243	0
2009	-	-	-	1,500	560	1,284	250	150	187	1,808	9,526	0
2010	-	-	-	1,349	456	1,112	232	150	176	1,956	8,492	0
2011	-	-	-	1,228	357	1,081	250	150	170	1,913	8,172	0
2012	-	-	-	1,273	346	1,190	250	150	196	2,310	8,664	0
2013	-	-	-	1,207	312	1,052	249	150	197	2,242	8,272	0
2014	-	-	-	1,214	292	977	250	150	185	2,343	8,507	0
2015	-	-	-	1,149	230	991	260	151	192	2,514	8,537	0
2016	-	-	-	1,018	232	862	259	150	154	2,488	7,919	0
2017	-	-	-	894	220	747	261	153	146	2,457	7,439	0
2018	-	-	-	754	194	640	255	150	131	2,427	6,935	0
2019	-	-	-	688	209	545	241	150	125	2,220	6,296	0

Table 2.6 Number of estimated active turkey hunters in Iowa fall turkey seasons by zone, 1981-Present.

In 1984 and 2001-Present landowners were not broken-down by zone but do appear in the total. No non-resident licenses issued for fall turkey during 1991-Present. Starting in fall of 2006, the post card survey was discontinued and active hunters undeterminable.

Year	Zone								Unk	Bow	Resident Total	Non-Resident
	1	2	3	4	5	6	7	8				
1981				1,710						136	1,846	
1982				1,807						290	2,097	
1983				1,650						425	2,075	
1984				1,763	185	530				473	2,981	
1985				1,906	250	699				445	3,300	
1986	89	168		1,953	251	1,025	68			543	4,097	
1987	76	137	92	2,966	264	1,702	87			738	6,062	
1988	100	203	91	3,576	418	3,173	249			1,066	8,876	
1989	83	187	82	4,679	585	4,572	374			846	11,408	139
1990	41	125	55	4,326	509	4,125	400			502	10,083	47
1991			35			3,064				?	3,099	0
1992			22			2,362				?	2,384	0
1993			12			2,157				?	2,169	0
1994			12			2,343				?	2,355	0
1995	30	11	33	1,943	245	2,740	234			?	5,236	0
1996	14	14	16	1,727	334	3,038	195			?	5,338	0
1997	21	18	11	1,572	336	3,293	218			?	5,469	0
1998	11	27	11	2,678	337	3,530	297			?	6,891	0
1999	22	29	21	2,701	347	3,605	300	161	79	?	7,265	0
2000	11	26	23	3,300	355	3,523	309	171	56	?	7,774	0
2001	19	20	10	1,835	221	1,809	157	67	234	?	6,069	0
2002	12	26	18	1,827	233	1,940	149	56	362	?	7,682	0
2003	13	9	15	2,442	352	1,808	139	58	534	?	8,559	0
2004	16	20	22	2,214	328	1,495	268	109	622	?	8,718	0
2005	19	14	13	2,166	392	1,256	260	109	116	528	?	10,593	0
2006	estimates discontinued			-	-	-	-	-	-	-	-	-	-

Table 2.7 Estimated harvest for Iowa fall turkey hunting by zone, 2007-Present.

Zones 1-3 were eliminated in 2007.

In 2006, survey methods changed from a post-mailing survey to mandatory reporting.

Year	Zone									Unk	Bow	Resident Total	Non-Resident
	1	2	3	4	5	6	7	8					
2007	-	-	-	427	131	298	45	38	34	389	105	1,362	0
2008	-	-	-	286	104	245	48	44	27	321	123	1,075	0
2009	-	-	-	202	84	224	29	33	17	323	103	912	0
2010	-	-	-	192	66	185	25	1	18	268	99	805	0
2011	-	-	-	170	50	197	31	31	24	276	112	779	0
2012	-	-	-	188	47	232	34	32	30	316	131	879	0
2013	-	-	-	164	44	141	28	34	14	278	123	703	0
2014	-	-	-	176	34	140	30	40	19	316	85	755	0
2015	-	-	-	145	41	150	31	35	24	331	117	757	0
2016	-	-	-	115	30	117	24	31	21	289	142	627	0
2017	-	-	-	111	25	66	28	25	9	260	142	524	0
2018	-	-	-	76	22	61	15	25	7	99	108	413	0
2019	-	-	-	76	14	69	26	32	15	91	131	454	0

Table 2.8 Success rate Iowa fall turkey hunters by zone, 2007-Present.

Landowners were not broken-down by zone but do appear in the total.

In 2006, survey methods changed from a post-mailing survey to mandatory reporting.

Year	Zone						Bow	Resident Mean
	4	5	6	7	8	9		
2007	18.4	19.9	19.3	12.9	25.3	17.0	6.1	13.3
2008	14.9	16.8	17.8	13.8	29.3	13.5	7.0	10.5
2009	13.5	15.0	17.4	11.6	22.0	9.1	5.7	9.6
2010	14.2	14.5	16.6	10.8	34.0	10.2	5.1	9.5
2011	13.8	14.0	18.2	12.4	20.7	14.1	5.9	9.5
2012	14.8	13.6	19.5	13.6	21.3	15.3	5.7	10.1
2013	13.58	14.1	13.4	11.2	22.7	7.1	5.5	8.5
2014	14.5	11.6	14.3	12.0	26.7	10.3	5.5	8.8
2015	12.62	17.83	15.14	11.92	23.18	12.5	6.6	8.8
2016	11.3	12.9	13.6	9.3	20.7	13.6	5.7	7.9
2017	12.4	11.4	8.8	10.7	16.3	6.2	6.1	7.0
2018	10.1	11.3	9.5	5.9	16.7	5.3	4.4	5.9
2019	11.0	6.7	12.7	10.8	21.3	12.0	5.3	7.2

Table 2.9 Iowa wild turkey brood survey results by region for birds/flock and young/adult, 2008-Present.

Y/SH=poults per successful hens, and Y/AH=poults per all hens.

Year	Northwest		North-Central		Northeast		West-Central		Central		East-Central		Southwest		South-Central		Southeast		Statewide	
	Y/SH	Y/AH	Y/SH	Y/AH	Y/SH	Y/AH	Y/SH	Y/AH	Y/SH	Y/AH	Y/SH	Y/AH	Y/SH	Y/AH	Y/SH	Y/AH	Y/SH	Y/AH	Y/SH	Y/AH
2008	4.20	2.60	2.90	1.50	3.80	1.90	3.90	1.90	4.00	1.90	3.70	1.90	3.10	1.90	3.60	2.10	3.50	1.70	3.60	1.90
2009	3.70	1.50	3.30	1.80	3.80	1.90	3.10	1.50	3.10	1.50	3.40	1.60	3.50	1.80	3.50	1.60	2.90	1.10	3.30	1.60
2010	4.10	2.10	3.80	2.80	3.80	2.40	3.20	1.60	3.70	2.30	3.70	1.90	3.60	1.70	4.10	2.00	3.10	1.40	3.70	2.00
2011	3.90	2.00	3.50	2.10	3.90	2.50	3.70	1.70	3.50	1.70	3.70	1.70	3.30	1.30	3.90	2.00	3.00	1.40	3.60	1.80
2012	3.90	1.90	4.20	3.00	4.70	3.80	2.70	1.50	3.50	2.10	4.00	2.70	3.70	2.20	3.90	2.30	3.10	1.50	3.80	2.30
2013	3.90	2.00	4.20	1.70	4.70	1.70	2.70	1.20	3.50	1.80	4.00	1.50	3.70	1.50	3.90	2.40	3.10	1.30	3.80	1.70
2014																				
2015	3.49	2.06	2.82	1.81	3.81	2.40	2.04	1.35	3.42	1.79	3.61	1.84	4.22	1.56	3.40	1.80	3.97	1.80	3.42	1.82
2016	3.97	2.14	3.60	2.33	3.86	2.37	3.20	1.64	4.57	2.10	4.40	2.72	3.84	1.80	3.79	1.87	4.32	2.43	3.89	2.20
2017	4.21	2.42	3.69	1.94	4.06	2.04	5.04	2.47	4.40	2.45	4.30	2.46	3.50	1.94	4.40	1.97	4.17	2.20	4.09	2.12
2018	4.29	2.61	3.68	1.96	3.95	2.33	3.46	2.01	5.27	2.10	4.04	1.99	4.13	1.62	4.50	2.24	3.38	1.76	4.00	2.08
2019	4.51	2.28	4.08	2.04	4.28	1.99	4.60	1.33	3.56	1.47	3.50	0.90	4.53	1.64	3.65	1.53	3.57	0.79	4.02	1.56

Table 2.10 Iowa wild turkey brood survey results by region for reports and percent hens with broods, 2008-Present.

= total reports and % hens with broods.

Year	Northwest		North-Central		Northeast		West-Central		Central		East-Central		Southwest		South-Central		Southeast		Statewide	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2008	134	62.0	303	50.2	377	48.1	238	48.3	145	48.7	358	49.9	120	60.8	353	58.3	247	47.7	2275	52.7
2009	135	41.3	403	54.1	688	50.8	329	48.8	213	46.6	648	48.3	302	51.4	470	46.8	467	39.4	3655	47.4
2010	200	51.2	433	73	643	63.5	389	50	255	63.7	636	51.4	340	47.2	344	50.3	377	46.2	3617	54.7
2011	164	52.9	514	60.1	629	63.5	255	46.9	281	49.9	512	46.6	286	40.1	379	52.1	424	45.8	3444	50.6
2012	173	46.9	439	72.6	641	79.9	334	56	281	59	495	68.4	308	58.4	372	58.8	391	48.9	3434	60.6
2013	128	57.8	368	50.4	490	50	178	46.7	177	54.9	343	53.4	306	50.4	252	63.7	252	46.1	2494	52.3
2014																				
2015	181	58.9	475	64.2	545	63.1	227	66.1	296	52.5	413	51	190	36.9	485	52.8	193	45.4	3005	45.4
2016	162	53.8	575	64.7	562	61.4	225	51.4	191	46.5	498	61.8	208	47.1	489	49.5	256	56.4	3166	56.6
2017	142	57.5	517	52.6	536	50.2	170	49.1	246	55.7	341	56.4	277	55.6	523	44.9	248	52.7	3037	51.9
2018	171	60.8	512	53.4	663	59.1	235	58.1	224	39.9	494	49.2	301	39.2	731	49.9	370	51.9	3701	52.0
2019	138	57.4	576	51.4	749	49.8	257	28.2	274	44.7	413	34.3	267	36	754	44.1	295	21.4	4562	42.1

Table 2.11 Iowa's spring turkey hunting seasons, 1974-Present.

Year	Bag Limit	Poss Limit	Season					Splits	Season Length	# Zones	# Sq Miles	Major Rule Changes
			Youth	1	2	3	4					
1974	1	1/License		4 May-10 May	11 May-19 May				16	3	5,682	$10 Fee
1975	1	1/License		26 Apr-2May	3May-9May	10 May-18May			23	3	2,749	Third season added
1976	1	1/License		24 Apr-28 Apr	29 Apr-5 May	6 May-16 May			23	4	2,884	NE Iowa closed for restocking
1977	1	1/License		21 Apr-27 Apr	28 Apr-4 May	5 May-15 May			25	4	3,200	
1978	1	1/License		20 Apr-26 Apr	27 Apr-3 May	4 May-14 May			25	6	3,683	
1979	1	1/License		19 Apr-25 Apr	26 Apr-2 May	3 May-13 May		Zones 1-5	25			
		1/License		26 Apr-2 May	3 May-9 May	10 May-20 May		Zones 6-8	25	8	9,958	$15, NE Iowa reopened
1980	1	1/License		24 Apr-30 Apr	1 May-7 May	8 May-18 May		Zones 1-5	25			Muzzleloader legal, W Iowa Open
		1/License		17 Apr-23 May	24 Apr-30 May	1 May-11 May		Zones 6-9	25		12,942	Stephens SF Special Zone
1981	1	1/License		14 Apr-20 Apr	21 Apr-28 Apr	29 Apr-10 May			27	9	21,873	Yellow River SF special zone, 2nd choice on App, 2 licenses available
1982	1	1/License		13 Apr-19 Apr	20 Apr-27 Apr	28 Apr-9 May			27	9	21,506	
1983	1	1/License		12 Apr-18 Apr	19 Apr-26 Apr	27 Apr-8 May			27	8	23,464	
1984	1	1/License		16 Apr-19 Apr	20 Apr-24 Apr	25 Apr-1 May	2 May-13 May		28	10	25,172	All 3 SF special zones, 4th season added
1985	1	1/License		15 Apr-18 Apr	19 Apr-23 Apr	24 Apr-30 Apr	1 May-12 May		28	12	27,005	$20 fee, decoys legal
1986	1	1/License		14 Apr-17 Apr	18 Apr-22 Apr	23 Apr-29 Apr	30 Apr-11 May		28	13	39,211	Combo gun/bow license, free landowner permit, archery only permit
1987	1	1/License		13 Apr-16 Apr	17 Apr-21 Apr	22 Apr-28 Apr	29 Apr-10 May		28	15	40,202	
1988	1	1/License		11 Apr-14 Apr	15 Apr-19 Apr	20 Apr-26 Apr	27 Apr-8 May		28	13	44,112	Unlimited 4th season permits, all day hunting
1989	1	1/License		10 Apr-13 Apr	14 Apr-18 Apr	19 Apr-25 Apr	26 Apr-7 May		28	11	56,043	Entire state open
1990	1	1/License		9 Apr-12 Apr	13 Apr-17 Apr	18 Apr-24 Apr	25 Apr-6 May		28	5	56,043	Nonresidents allowed
1991	1	1/License		15 Apr-18 Apr	19 Apr-23 Apr	24 Apr-30 Apr	1 May-12 May		28	5	56,043	
1992	1	1/License		13 Apr-16 Apr	17 Apr-21 Apr	22 Apr-28 Apr	29 Apr-10 May		28	5	56,043	$22 fee
1993	1	1/License		12 Apr-15 Apr	16 Apr-20 Apr	21 Apr-27 Apr	28 Apr-9 May		28	5	56,043	
1994	1	1/License		18 Apr-21 Apr	22 Apr-26 Apr	27 Apr-3 May	4 May-15 May		28	5	56,043	
1995	1	1/License		17 Apr-20 Apr	21 Apr-25 Apr	26 Apr-2 May	3 May-14 May		28	4	56,043	
1996	1	1/License		15 Apr-18 Apr	19 Apr-23 Apr	24 Apr-30 Apr	1 May-12 May		28	4	56,043	
1997	1	1/License		14 Apr-17 Apr	18 Apr-22 Apr	23 Apr-29 Apr	30 Apr-11 May		28	4	56,043	

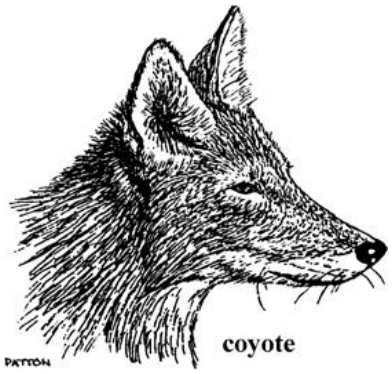
Year	Bag Limit	Poss Limit	Season					Splits	Season Length	# Zones	# Sq Miles	Major Rule Changes
			Youth	1	2	3	4					
1998	1	1/License		13 Apr-16 Apr	17 Apr-21 Apr	22 Apr-28 Apr	29 Apr-10 May		28	4	56,043	
1999	1	1/License		12 Apr-15 Apr	16 Apr-20 Apr	21 Apr-27 Apr	28 Apr-9 May		28	4	56,043	$22.50 fee, archers allowed 2 permits
2000	1	1/License		17 Apr-20 Apr	21 Apr-25 Apr	26 Apr-2 May	3 May-21 May		35	4	56,043	
2001	1	1/License		16 Apr-19 Apr	20 Apr-24 Apr	25 Apr-1 May	2 May-20 May		35	4	56,043	
2002	1	1/License		15 Apr-18 Apr	19 Apr-23 Apr	24 Apr-30 Apr	1 May-19 May		35	4	56,043	$23 fee
2003	1	1/License		14 Apr-17 Apr	18 Apr-22 Apr	23 Apr-29 Apr	30 Apr-18 May		35	4	56,043	
2004	1	1/License		12 Apr-15 Apr	16 Apr-20 Apr	21 Apr-27 Apr	28 Apr-16 May		35	4	56,043	
2005	1	1/License	8 Apr-10 Apr	11 Apr-14 Apr	15 Apr-19 Apr	20 Apr-26 Apr	27 Apr-15 May		38	4	56,043	Youth season added
2006	1	1/License	7 Apr-9 Apr	10 Apr-13 Apr	14 Apr-18 Apr	19 Apr-25 Apr	26 Apr-14 May		38	4	56,043	NW IA zone added for nonresidents
2007	1	1/License	13 Apr-15 Apr	16 Apr-19 Apr	20 Apr-24 Apr	25 Apr-1 May	2 May-20 May		38	1	56,043	Mandatory harvest reporting, 3 SF zones eliminated
2008	1	1/License	11 Apr-13 Apr	14 Apr-17 Apr	18 Apr-22 Apr	23 Apr-29 Apr	30 Apr-18 May		38	1	56,043	Season
2009	1	1/License	10 Apr-12 Apr	13 Apr-16 Apr	17 Apr-21 Apr	22 Apr-28 Apr	29 Apr-17 May		38	1	56,043	
2010	1	1/License	9 Apr-11 Apr	12 Apr-15 Apr	16 Apr-20 Apr	21 Apr-27 Apr	28 Apr-16 May		38	1	56,043	
2011	1	1/License	8 Apr-10 Apr	11 Apr-14 Apr	15 Apr-19 Apr	20 Apr-26 Apr	27 Apr-15 May		38	1	56,043	
2012	1	1/License	7 Apr-15 Apr	16 Apr-19 Apr	20 Apr-24 Apr	25 Apr-1 May	2 May-20 May		44	1	56,043	Youth season extended 6 days
2013	1	1/License	6 Apr-14 Apr	15 Apr-18 Apr	19 Apr-23 Apr	24 Apr-30 Apr	1 May-19 May		44	1	56,043	
2014	1	1/License	5 Apr-13 Apr	14 Apr-17 Apr	18 Apr-22 Apr	23 Apr-29 Apr	30 Apr-18 May		44	1	56,043	Unfilled youth tag valid until filled
2015	1	1/License	4 Apr-12 Apr	13 Apr-16 Apr	17 Apr-21 Apr	22 Apr-28 Apr	29 Apr-17 May		44	1	56,043	
2016	1	1/License	9 Apr-17 Apr	18 Apr-21 Apr	22 Apr-26 Apr	27 Apr-3 May	4 May-22 May		44	1	56,043	
2017	1	1/License	8 Apr-16 Apr	17 Apr-20 Apr	21 Apr-25 Apr	26 Apr-2 May	3 May-21 May		44	1	56,043	
2018	1	1/License	7 Apr-15 Apr	16 Apr-19 Apr	20 Apr-24 Apr	25 Apr-1 May	2 May-20 May		44	1	56,043	
2019	1	1/License	5 Apr-7 Apr	8 Apr-11 Apr	12 Apr-16 Apr	17 Apr-23 Apr	24 Apr-12 May		38	1	56,043	$28.50 fee, youth 3 days prior to first season, Hard start of 2nd Monday of April, Shot sizes 4-8.
2020	1	1/License	10 Apr-12 Apr	13 Apr-16 Apr	17 Apr-21 Apr	22 Apr-28 Apr	29 Apr-17 May		38	1	56,043	Fee $28.50

Table 2.12 Iowa's fall turkey gun hunting season, 1981-Present.

Archery only seasons same as deer seasons.

Year	Bag Limit	Poss Limit	Season	Season Length	# Zones	# Sq. Miles	Major Rule Changes
1981	1	1/License	21 Oct-1 Nov	12	2	4,032	$15 fee
1982	1	1/License	19 Oct-31 Oct	13	2	5,254	1 Gun & 1 Bow, unlimited bow permits in spring zones
1983	1	1/License	18 Oct-30 Oct	13	2	5,254	Hunter safety required if born after 1 Jan 1967
1984	1	1/License	16 Oct-28 Oct	13	3	13,685	Decoys legal; Western, Central, and NE Iowa open
1985	1	1/License	15 Oct-27 Oct	13	3	13,685	$20 fee
1986	1	1/License	14 Oct-26 Oct	13	6	21,575	Stephens & Shimek SF special zones, statewide bow season
1987	1	1/License	12 Oct-8 Nov	28	7	21,575	2 licenses possible, Yellow River SF special zone
1988	1	1/License	10 Oct-27 Nov	49	7	25,402	
1989	1	1/License	9 Oct-26 Nov	49	7	29,610	Nonresidents allowed
1990	1	1/License	15 Oct-30 Nov	47	7	39,191	
1991	1	1/License	14 Oct-30 Nov	48	2 of 7	9,060	$22 fee, licenses issued for zones 3 & 6 only (NE Iowa)
1992	1	1/License	17 Oct-29 Nov	44	2 of 7	9,060	Licenses issued for zones 3 & 6 only (NE Iowa)
1993	1	1/License	11 Oct-28 Nov	49	2 of 7	9,060	Licenses issued for zones 3 & 6 only (NE Iowa)
1994	1	1/License	10 Oct-30 Nov	52	2 of 7	9,060	Licenses issued for zones 3 & 6 only (NE Iowa)
1995	1	1/License	16 Oct-30 Nov	46	7	39,191	
1996	1	1/License	14 Oct-30 Nov	48	7	39,191	
1997	1	1/License	13 Oct-30 Nov	49	7	39,191	
1998	1	1/License	12 Oct-30 Nov	50	7	39,191	
1999	1	1/License	11 Oct-30 Nov	51	8	44,056	$22.50 fee, zone 8 added
2000	1	1/License	16 Oct-30 Nov	46	8	44,056	
2001	1	1/License	15 Oct-30 Nov	47	8	44,056	
2002	1	1/License	14 Oct-30 Nov	48	8	44,056	$23 Fee
2003	1	1/License	13 Oct-5 Dec	54	8	44,056	
2004	1	1/License	11 Oct-3 Dec	54	8	44,056	
2005	1	1/License	10 Oct-2 Dec	54	9	56,043	NW IA zone added, 3rd license available, dogs allowed
2006	1	1/License	16 Oct-1 Dec	48	9	56,043	Mandatory harvest reporting
2007	1	1/License	15 Oct-30 Nov	47	6	56,043	3 SF zones eliminated
2008	1	1/License	13 Oct-5 Dec	54	6	56,043	
2009	1	1/License	12 Oct-4 Dec	54	6	56,043	
2010	1	1/License	11 Oct-3 Dec	54	6	56,043	
2011	1	1/License	10 Oct-2 Dec	54	6	56,043	
2012	1	1/License	15 Oct-30 Nov	47	6	56,043	
2013	1	1/License	14 Oct-6 Dec	54	6	56,043	
2014	1	1/License	13 Oct-5 Dec	54	6	56,043	
2015	1	1/License	12 Oct-4 Dec	54	6	56,043	
2016	1	1/License	10 Oct-2 Dec	54	6	56,043	
2017	1	1/License	16 Oct-1 Dec	54	6	56,043	
2018	1	1/License	16 Oct-30 Nov	46	6	56,043	
2019	1	1/License	14 Oct-6 Dec	54	6	56,043	Fee $28.50

FURBEARERS



Introduction

Iowa supports a wide diversity of native furbearer species including badger (*Taxidea taxus*), beaver (*Castor canadensis*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), mink (*Mustela vison*), muskrat (*Ondatra zibethicus*), opossum (*Didelphis virginiana*), river otter (*Lutra canadensis*), raccoon (*Procyon lotor*), striped (*Mephitis mephitis*) and spotted (*Spilogale putorius*) skunk, red (*Vulpes vulpes*) and gray (*Urocyon cinereoargenteus*) fox, and weasel (*Mustela* spp.). Data regarding population trends for these species is important for effectively evaluating management efforts and the status of furbearer species, statewide. Long-term population data for many furbearer species is difficult to obtain and often lacking at a landscape-scale. However, data such as harvest, road-kill, the bowhunter survey, and spotlight survey indices have shown positive correlations with changes in population abundance for many of these species. The Iowa Department of Natural Resources (DNR) monitors population trends of Iowa furbearer species through the use of 1) annual furharvest reports, 2) the Spring Spotlight surveys, and 3) the Iowa Bowhunter Observation Survey.

Each year since 1930, the Iowa DNR has collected harvest data for furbearer species from licensed fur dealers in Iowa (Table 3.1). According to Iowa Code 109.97, every licensed fur dealer is required to report the total number of furs purchased per species from Iowa trappers and hunters by 15 May, annually. Although harvest data may only indicate a trend in population abundance, long-term harvest information provides a retrospective view of the status of various furbearer populations over time. Furthermore, in 1975, in response to debates regarding trapper versus hunter access to furbearer resources in the state, the Iowa DNR required licensed fur dealers to report the percent of raccoon, fox, and coyote pelts purchased from trappers and hunters, respectively. These data are useful in determining the impact of each harvest method on furbearer populations and the impact of weather on total harvest per species.

In 1978, the Iowa DNR began annual, statewide Spring Spotlight Surveys for raccoons, other furbearer species, and white-tailed deer (*Odocoileus virginianus*). Since 1978, the average raccoon harvest in Iowa has equaled or exceeded the average total harvest of all other furbearer species combined. In recent years, raccoon pelt values have declined significantly, but still contribute to a significant portion of the total harvest value in Iowa each year. Thus, the Spring Spotlight Survey provides additional and useful data for managing important furbearer species in the state. To view the full report for the Spring Spotlight Survey, go to: http://www.iowadnr.gov/Hunting/Population-Harvest-Trends

Population trend data for furbearer species have also been gathered annually since 2004 from the Iowa Bowhunter Observation Survey. This report can also be viewed on the Iowa DNR' website at: http://www.iowadnr.gov/Hunting/Population-Harvest-Trends

Avid archers were identified *a priori* for survey and provide statewide observation data for Iowa furbearers during which more than 100,000 observation hours occur annually. Avid archers were considered ideal for collecting observation data because most are 1) experts at stand placement and concealment from wildlife, 2) knowledgeable regarding species identification, 3) in the field many hours each year, and 4) use methods for observing white-tailed deer that lend well to observation of many furbearer species. This dataset provides a repeatable and potentially long-term survey method for supplementing annual furharvest data.

Historic Furbearer Harvest

Prior to the 20th century, beaver furs were one of the most desired pelts on the market due to their thickness, durability, and warmth. However, because of high demand, beavers were overharvested around much of the world, even to extinction in Europe. In Iowa, beavers were extirpated by the turn of the century and populations were closed to harvest, statewide.

At the turn of the century, skunk furs were in high demand, worldwide. The fur trade was thriving as a result of increased visibility of actresses wearing furs and the high social status associated with fur products. However, in the 1930s, the market for skunk furs declined in response to demand for fox furs by the European fashion industry. During the 1930s, muskrat, mink, skunk, and opossum composed the largest proportion of total furbearer harvest in Iowa. By the end of the 1930s, the total skunk harvest in Iowa began to decline whereas the red and gray fox harvests were growing.

In the 1930s and 1940s, the Iowa Conservation Commission (currently the Iowa DNR) initiated a beaver reintroduction program in Iowa. Beavers were live captured and transplanted throughout the state and by 1943, the harvest season for beaver was reopened. During the 1943-44 season, 235 beavers were harvested (Table 3.1).

By the mid to late 1940s in Iowa, muskrat, mink, red and gray fox, striped and spotted skunk, opossum, coyote, and weasel harvests all faced dramatic declines in response to World War II (WWII). Within 5 years, total harvest collapsed from an all-time high of 418,484 to an all-time low of 135,108. Twelve species composed the total harvests in the early 1940s but during the 1947-48 season, only muskrat, mink, striped and spotted skunk, red and gray fox, and raccoon were reported.

Following WWII, the fur market continued to depreciate as the production cost for labor- intensive fur products exceeded fur values and the need for fur products was replaced by the development of central heating. Society began viewing fur products as a trend characteristic of the previous generation and the demand for fox furs on the European market declined. Mink products, however, were viewed more favorably by the high class resulting in increased demand compared with previous decades.

Although demand was high, mink harvests in Iowa declined sharply in the early 1950s and remained low as a result of extended drought in the region and overall low mink prices, worldwide. Muskrat, striped and spotted skunk, red and gray fox, coyote, opossum, badger, and weasel also faced dramatic harvest crashes; composing less than 5% of the total harvest during the decade. Ultimately, raccoon and muskrat harvests became more stabilized and composed the greatest proportion of the total harvest in the 1950s.

During the 1960s, total harvest increased and was relatively stable in Iowa. Beaver populations had continued to recover with steady harvests averaging 6,800. Beginning in the early 1970s, raccoon, mink, red and gray fox, coyote, opossum, and badger all saw increased harvests. Striped skunk harvest had remained well below the 1930 average during the previous two decades but also showed a stable, yet small recovery. By the 1979-80 season, record total harvests topped 1 million (1,146,311) in Iowa for the first time in recorded history.

Although record furbearer harvests were achieved in the 1970s, spotted skunk populations struggled. Reports from the 1940s indicated that spotted skunk were common in portions of Iowa but by the 1970s, they were considered rare in the state. In 1976, the spotted skunk harvest season was closed, statewide, and the species was ultimately classified as an endangered species in Iowa. Throughout the 1970s and 1980s, the Iowa DNR received only 1 or 2 spotted skunk reports per year.

In the late 1970s and early 1980s, anti-furharvest groups formed and began protesting the development of fur products in the United States. Advertisements and celebrity endorsements were used to build public support against the fur trade. Demand for furs in North America subsequently declined although the fur market in Europe remained less affected.

Throughout the early and mid-1980s, total furharvest in Iowa remained relatively strong. However, by the late 1980s,

Iowa experienced extreme drought conditions. When combined with a weak global fur market, statewide harvests for all species crashed. Total reported harvest decreased by 450% in a 4-year period; reaching a low of 216,874 by 1990-91 (Table 3.1).

Total reported furharvest in Iowa remained low, stabilizing around 275,000 through the 1990s and early 2000s. Total harvest was primarily composed of raccoon and muskrat, as well as beaver, coyote, opossum, red fox, and mink in lower proportions.

For the past three years (2017-2019), the total fur harvest in Iowa has continued to decline. The total harvest of all furbearer species in 2017-18 was 178,935 reported furs. In 2018-19 the total fur harvest was 162,688. For 2019-20, the total fur harvest was 144,819 (Table 3.1).

Licensed Furharvesters and Fur Dealers

The average number of licensed furharvesters in Iowa fluctuates with current fur markets (Figure 3.1). Generally, as fur prices increase, the number of furharvesters in the state increases in subsequent years, and vice versa in years when fur prices are lower. In 2019-20, the number of licensed furharvesters in Iowa increased only slightly (14,536) from the previous year 14,141. But remains down from the 10-year high of 20,818 in 2013-14 (Table 3.2).

Over the past 10 years, the number of licensed fur dealers in Iowa has fluctuated from 31 to 49 and is also dependent upon the fur market trends (Figure 3.2). In 2019-20, there were 31 registered fur dealers (resident); similar to the previous year (32) in 2018-19 - consistent with the fur market trend (Figure 3.2).

Current Fur Market in Iowa

For the upcoming 2020-21 season, the overall wild fur market outlook again looks fairly weak, but may trend upward slightly from the previous year. Yet, still a stark contrast to when the market was relatively strong from 2010-2013. Demand is still primarily from Russia and China, with several other smaller countries buying fur. Continued instability both politically and economically in several countries of Europe and the Middle East have created a general decline for demand in the global fur market. High quality furs are still prized in the fashion/style industry. Demand for ranch mink, oil prices, current fur inventories, and other factors can give some indication how the wild fur markets will trend for the upcoming year. The trim trade for longer haired pelts such as coyotes continues to do okay. The market for raccoon pelts remains weak which is unfortunate because an increased effort to harvest raccoons in Iowa is needed. Prices for wild bobcat, coyote, badger and otter are expected to remain somewhat decent for 2020-21. Muskrat prices may increase slightly from poor to fair. Demand for striped skunk, opossum, gray fox, beaver, and weasel has slowly declined over recent years and may continue that trend in the following year.

In 2019-20, furbearer prices and number of pelts sold in Iowa followed current furbearer market trends. Average pelt prices increased slightly from the previous year for coyote, striped skunk and weasels, while other species declined in value. Some only fetched 50% of their value from just three years ago (Table 3.3). The total value for all species of pelts sold in Iowa also declined from the previous year of $1,512,178 in 2018 to $1,053,056 in 2019, respectively (Table 3.4). Mink, raccoon, and red fox prices were below the 5-year and long-term pelt price averages in 2019-20. While muskrat prices in 2019-20 were just above the 5-year average of $2.48 at $2.61, and slightly above the long-term average of $2.20 (Table 3.4).

2019-20 Furharvest Season in Iowa

Annual and long-term weather events, habitat, and disease significantly impact furbearer populations and harvest success in Iowa. Precipitation, water levels, and the timing of freeze-up especially affect aquatic furbearer harvests throughout the state. Species like muskrat and beaver populations can be cyclic and historically fluctuate following wet/dry periods; resulting in fluctuating annual harvests.

Terrestrial furbearer (coyotes, fox, badger, etc.) harvests are impacted by the severity of winters, level of snow cover, and the duration of extreme temperatures because it effects daily animal movement. The severity of harsh winter weather has also been shown to limit hunter and trapper effort in some years. Typically, trapping and raccoon hunting success is greater during mild winters in which snow cover is minimal. Inversely, hunter success harvesting coyote and

fox increases during years of extended snow cover. Ultimately, consideration of annual weather is important for analyzing harvest trends and developing sound management strategies for furbearers in Iowa.

The weather for furharvesters during the fall and winter of 2019-20 was similar to the previous year. In 2019, weather conditions were generally already cool heading into November, with extended cold fronts along with snow even by the first or second week of November. This kept temperatures throughout the state below normal (especially night time). Cold temperatures remained throughout the state until mid-December. By mid to late December, temperatures moderated upward to near normal. Moisture levels varied throughout Iowa, with many parts in the north half wetter than normal, while parts of southern Iowa were variable with snow even blanketing several counties by mid-November. By early to mid-November, many waterbodies in the state were frozen over already which can reduce water trapping efforts. In general, the weather was not ideal for water trapping furbearers throughout the state for much of November and early December, but ice conditions moderated some during early December to mid-January. Trapping on dry land was extremely variable due to the fluctuating temperatures and precipitation events. With low fur market prices on average and early freeze-over, effort was down slightly in 2019-20 with a lower overall harvest than the previous year (Table 3.1).

The gray fox harvest (2) in 2019-20 remained low (again), down from the 2015-16 season (44) and 2016-17 (19) season and the previous year's harvest of (7) (Table 3.3). The continued downward trend in the gray fox harvest is a concern, and obviously indicates severe declines in their population throughout the state. It should also be noted, that more gray fox are taken in for taxidermy or tanning than sold in the fur market. Those numbers are not reported to the Iowa DNR. We will continue to monitor the gray fox harvest and population. Further regional (Midwest) research is needed to help answer questions about the cause of their decline over that past 10-20 years.

The proportion of pelts purchased by Iowa fur dealers from trappers was higher than those harvested by hunters for raccoon (64% and 36%), and fox (55% and 45%), however hunters again harvested more coyotes (71%) than did trappers (29%) in 2019-20 (Table 3.5). Bobcat harvest by hunter versus trapper is recorded but is not complete because several animals are kept for taxidermy purposes. The total number of coyotes harvested in 2019-20 decreased slightly to 16,326 from the previous year (18,676) - an all-time high since records began in 1930, and still three times above the long-term average. Reasonable fur market prices and a good population were likely reasons for another excellent coyote harvest for 2019-20 (Table 3.1).

The following sections cover 2019 -20 harvest and population trends for each specific furbearer species.

Raccoon

Raccoon harvest in the 1930s was relatively low and comprised only 3% of the total harvest. By the mid to late 1940s, raccoon harvests had tripled; comprising a significant portion of the total harvest (14%) for the first time. Harvests steadily increased throughout the next two decades but remained relatively low until the early 1970s (Figure 3.3). During the 1970-71 season, raccoon harvest totaled 94,174. By 1975, raccoon harvests had boomed, experiencing a 300% increase to 292,064 (Table 3.1). Although harvests had climbed to nearly 100,000 during the previous 2 decades, populations still increased steadily. Corn was being planted on more and more acres creating an abundant food source. High harvest rates likely minimized disease outbreaks such as distemper, helping to maintain healthy populations as well. By the 1986-87 season, harvests reached a current, all-time high of 390,773. However, within 4 years, harvests crashed to 103,468 (a 378% decline) as a result of poor market prices and severe regional drought. Average harvest throughout the 1990s and mid-2000s remained around 129,000. In 2011-2012, harvests again peaked to 326,368 when the fur market trended upward (Table 3.1 and Table 3.3).

In 2019-20 the statewide harvest for raccoons was 100,857 which was a decrease in harvest from 2018 (115,132) (Table 3.1). The raccoon trapping and hunting season was open from Nov 2, 2019-Jan. 31, 2020, with no daily bag limits nor possession limit (Table 3.6). The average raccoon pelt price in Iowa was $4.96 ($1.95-$6.11), which was down from the 2018-19 average price ($7.90; Figure 3.4; Table 3.3). Trapping accounted for 64% of the total harvest, down slightly from the previous season, while hunting accounted for the remaining harvest (36%, Table 3.5).

The 2019 Iowa Bowhunter Observation Survey indicated populations trended up from the previous year throughout all

regions of Iowa, and still remain high on average (Figure 3.5). Results from the 2020 Spring Spotlight Survey indicated the overall statewide raccoon population actually decreased slightly (Figure 3.6). However, individual county by county Spring 2020 Spotlight Survey data also showed results varied in Iowa with some of the highest counts occurring in the southwest and east- central counties (Figure 3.7). The regional distribution averaged over the past five years shows a similar trend with higher distributions relative to other counties in southwest and east central Iowa (Figure 3.8). Field reports of raccoon litters this spring and summer indicate the population may again trend upward in some regions for 2020-21. Litter sizes and abundance vary drastically by region, but overall the statewide raccoon population remains high. Increased harvest efforts by furharvesters would help keep the population in check and also reduce outbreaks of distemper. In recent years, distemper outbreaks continue to occur throughout the year

Muskrat

Since the 1930s, muskrat consistently composed the greatest proportion of the total annual harvest in Iowa (Table 3.1). Average pelt prices have always remained consistently low compared with species such as raccoon, mink, and red fox (Table 3.4). However, because of the historically high muskrat population in the state and high rate of harvest over time, muskrat furs averaged 25% of the total harvest value in recorded history.

Fluctuations in the total annual furbearer harvest have primarily been due to the cyclic behavior of muskrat populations. Historic muskrat populations in Iowa fluctuated greatly following wet and dry periods. Droughts in the 1930s, 1950s, and late 1980s suppressed muskrat populations in the state. However, in subsequent wet years, populations quickly rebounded due to the prolific reproductive capacity of the species.

In 1979-80, muskrat harvest in Iowa reached a current, all-time high of 741,403 (Table 3.1). Harvests varied throughout the early and mid-1980s but by the 1987-88 season, extreme drought, poor wetland conditions, and a suppressed fur market resulted in significantly depressed populations and a 30-year-low harvest (Figure 3.9). Excessive precipitation in the early 1990s improved habitat and by the mid-1990s, populations had rebounded some. In the late 1990s, wetland conditions began to deteriorate as increasing/stable, high water levels degraded marsh vegetation and habitat. Harvests again declined to pre-1993 levels and remained low; averaging 68,500 through the 2000s. In 2010-11, the muskrat harvest reached a decade high of 98,079, yet still remained well below the long-term average. It should be noted the muskrat harvest, and population has been on a downward trend since the late 1980s. Even when the average price increased for muskrats during the 2000s, the harvest didn't track upward with it, indicating a poor population that no longer boomed with the water cycle as is once did (Figure 3.10).

In 2019-20, the muskrat harvest was 14,851 which was another decrease from the previous season (16,320 Table 3.1). In 2019-20, the average muskrat pelt price in Iowa was $2.61 ($1.00-4.89), which was similar to the previous year ($2.64; Figure 3.10; Table 3.3). From 1997-2019, the average pelt price has remained above the long-term average ($2.20), but harvest has trended downward overall (Figure 3.10, Table 3.4).

Trapping season length (2 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in previous years (Table 3.6).

Heavy rains and some flooding occurred across much of the state in the spring and fall of 2019, this may have resulted in poor food availability in wetlands across Iowa. Figure 3.10 shows that muskrat harvest used to mirror the average pelt price (fur market) until the late 1990s, after that the average pelt price went up especially by 2013, yet harvest no longer rose with the average pelt price. This indicates the population is trending downward. There is also concern whether other environmental factors are suppressing the muskrat population besides water levels. Muskrat populations seem to increase whenever favorable weather conditions do occur especially in our renovated shallow lakes in north Iowa. But at the statewide level, the population has not increased in several years as seen in the past. This concern is not unique to Iowa. Further studies of muskrats will likely be underway in the Midwest over the next few years.

Coyote

Coyote harvest in the 1930s was nearly non-existent in Iowa and totaled only 517 animals throughout that entire decade (Figure 3.11). Harvests increased in the 1940s and averaged 374 per year, but by the 1950s, had once again dropped off. Through the 1950s and 1960s, harvests averaged fewer than 75 animals per year with annual harvests as low as 10 per

year. Beginning in the 1968-69 season, coyote harvests increased noticeably and by 1976-77, reached a current, all-time high of 12,226 (Table 3.1). Since the late 1970s, harvests varied annually, and gradually decreased in the state but remained high in comparison to previous decades. Except for a dramatic decline in the late 1980s, harvests through the late 2000s averaged 6,800, well above the long-term average (4,207) (Figure 3.11). Then from 2009 to present, the harvest has increased significantly overall.

In 2018-19, the coyote harvest was the highest on record at 18,676 which was an increase from the previous season's harvest (15,185) and well above the long-term average (Table 3.1). It's also notable the coyote harvest had been high for the previous two years (2017 and 2018). The harvest for 2018-19 was nearly twice as high as the harvest in 2016-17 (9,283). For 2019-20, the harvest declined a bit to 16,326. The trapping and hunting season length (trapping: 2 Nov-31 Jan, hunting: year-round), daily bag limits (no limit), and possession limits (no limit) remained the same to previous years (Table 3.6). The average coyote pelt price in Iowa for 2019-20 was $26.68 ($8.51-35.26), which was slightly higher than the 2018-19 average price ($24.97; Table 3.3). Coyote pelts have held their value during the recent fur market decline. Trapping accounted for a lower proportion of the harvest (29%) than hunting (71%) which is similar to the previous season (Table 3.5). Ideal hunting conditions mainly occurred in January and February with significant snowfall to portions of the state. Strong pelt prices, changes in the technology of the equipment used for coyote hunting, tv shows, videos, etc. have all contributed to an overall popularity surge in coyote trapping and hunting effort.

The Iowa Bowhunter Observation Survey indicated the statewide population trends were variable for 2019 depending on the region of the state. There was an upward trend in 2019 throughout the west central, southwest regions of the state, but trended downward slightly in the other regions (Figure 3.12). Overall statewide, coyote population trends from 2012 to 2019 appear to be fairly stable in all regions and remain quite high for many regions of the state, especially the southwest. The 2020 Spring Spotlight Survey trended down slightly overall for number of coyotes seen from the previous year statewide (Figure 3.13). The 5-year average relative distribution among counties shows the highest abundance in the western half of the state and the east central region of the state, and a relatively high abundance throughout (Figure 3.14). In 2019, there were a similar number of reports to 2018 from towns and cities in Iowa that urban coyotes were living within city limits.

Red Fox

Red fox harvests through the mid-1940s averaged approximately 6,900 in Iowa. Steady declines throughout the late 1940s and 1950s resulted in an all-time low harvest of 1,147 during the 1958- 59 season. Harvest numbers rebounded in the 1960s and in the 1968-69 season, reached a current, all-time high of 27,661. Harvests fluctuated sharply throughout the next two decades but remained high, averaging 19,000 through the mid-1980s. In the late 1980s, red fox harvests began a steady decline and since the 2004-05 season, remained below the long-term average of 10,631 (Table 3.1, Figure 3.13).

In addition to depressed fur markets in the 1980s, recent red fox population declines in Iowa have been attributed to three occurrences. Since the early 1980s, mange has remained persistent in red fox populations and suppressed population recovery in the state. Secondly, habitat loss especially grasslands hurt fox populations. Furthermore, high coyote populations have resulted in encroachment on areas historically considered red fox habitat, increased competition for food and den sites, and increased predation by coyotes.

In 2019-20, the red fox harvest was 1,487, which was up slightly from the previous season (1,357), near the 5-year average, and 15% of the long-term average (Table 3.1). Trapping and hunting season length (2 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained the same to previous years (Table 3.6). In 2019-20, the average red fox pelt price in Iowa was $8.14 ($1.50-12.50), which was down slightly from the 2018-19 price ($9.39; Table 3.3). The average pelt price has remained higher than the harvest since 2005 which also indicates the fox population statewide is still relatively low but stable (Figure 3.15). Trapping accounted for 55% of the total harvest (red and gray fox), which was down from the previous season (Table 3.5). Hunting accounted for 45% of the total harvest (red and gray fox).

The 2019 Iowa Bowhunter Observation Survey indicated that population trends throughout most of the regions of the state were stable to down slightly compared to previous years, especially the central region. Red fox observations

trended up in the east central region (Figure 3.17). The 2020 Spring Spotlight Survey showed a decrease overall from the previous year (Figure 3.18). That survey also shows the 5- year average of highest distribution of red fox relative to other counties occurs in the central and eastern half of Iowa, and remains lower in western Iowa (Figure 3.19). Field reports during the spring and summer of 2020 indicate an increase in red fox litters in some regions of the state, but remain quite variable locally. In recent years, there is an increasing number of red fox litters being reported in urban areas throughout central Iowa.

Gray Fox

Gray fox harvests in Iowa have followed similar trends to those of red fox, although historically, populations have always existed at significantly lower numbers. During the 1930s and 1940s, harvests averaged around 1,300. Gray fox harvests dropped below 1,000 in the late 1940s and remained low until the early 1970s. Harvests steadily increased and during the 1979-80 season, reached a current, all-time high of 3,093. Whereas red fox harvests remained high throughout the 1980s, gray fox harvests have since dramatically declined (Figure 3.20). Since 1996-97, gray fox harvests have remained below their long-term average of 791.

In 2019-20, the reported gray fox harvest was again at an all-time low of just 2 in Iowa (Table 3.1). In 2017-18, the gray fox harvest was only 4, well below the recent and long-term averages (Table 3.1). Trapping and hunting season length (2 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained the same as previous years (Table 3.6). The average gray fox pelt price in Iowa was $10.00 ($10.00-10.00), which was the same to the 2018-19 average price ($10.00; Table 3.3). Trapping accounted for 55% of the total harvest (red and gray fox), which was lower than the previous season (Table 3.5). Hunting accounted for 45% of the total harvest (red and gray fox).

The 2019 Iowa Bowhunter Observation Survey indicated a low number of observations statewide across most regions of the state. Populations trended upward slightly from the previous year in the east central and south central regions of Iowa and stable to downward especially in north east Iowa (Figure 3.21). Recent efforts to conduct research on the cause(s) of the gray fox population decline has been initiated in the Midwest. It is a concern.

Beaver

By the early 20th century, beaver were extirpated from Iowa. Harvest seasons remained closed throughout the 1930s and early 1940s while a statewide translocation and reintroduction program occurred. In 1943, the beaver harvest season was reopened and 235 were harvested. Beaver harvests averaged 450 through the late 1940s and by the early 1950s, began a steady upward trend. Harvests reached a current, all-time high of 18,459 during the 1988-89 season (Table 3.1). Harvests declined in the early 1990s although quickly stabilized, averaging 10,800 through the early 2000s. Harvests progressively declined in the 2000s and dropped below the long-term average (7,085) during the 2004-05 and 2006-07 through 2010-11 seasons (Figure 3.22).

In 2012-13, the beaver harvest reached a 19-year high of 15,457; a number similar to the harvests recorded during the 1990s (Table 3.1). The harvest in 2019-20 increased to 5,505 from 3,893 in 2018-19. Trapping season length (2 Nov-15 April), daily bag (no limit), and possession (no limit) limits have remained the same since the season was extended from April 1st to April 15th in the spring of 2012 (Table 3.6). The 2019-20 average beaver pelt price in Iowa was $6.37 ($3.50-10.00), which was similar as the 2018-19 average pelt price ($6.83; Table 3.3). Field reports, observations, and nuisance complaints actually indicate the beaver population is trending upward despite the low harvest in 2019-20. The low harvest is very likely due to a low amount of trapping effort not a lack of beavers. Trapping beavers and handling their pelts for market is a lot of work. Because their pelt value is so low, many trappers are choosing to pursue other species of furbearers instead. However, the beaver castor market remains strong.

Mink

The proportion of mink in the total Iowa fur harvest has remained relatively constant since the 1930s. Mink harvests reached a current, all-time high of 60,397 during the 1946-47 season as a result of a sudden increase in value from the previous season ($6.75 to $28.16 per pelt). During World War II, European demand for furs collapsed and within 2 seasons, Iowa mink harvests dramatically fell to 16,571. Mink harvests stabilized in the early 1950s and averaged around 16,000 through the next 4 decades. Since the mid-1990s, mink harvests have remained below the long-term average. Harvests in the early and mid-2000s showed a steady decline although in 2010-11, topped the 5- and 10-year averages

at 11,262 (Figure 3.23). Mink harvest does still continue to mirror the average pelt value in Iowa meaning the amount of harvest trends upward or downward with pelt values (Figure 3.24)

The 2019-20 mink harvest was 2,026 which is a decrease from 4,021 in the previous season (Table 3.1). The 2019-20 harvest was also below the 5-year and 10-year averages, and well below long- term average (19,001) (Table 3.1). Again, fur prices, rather than the population level, has reduced the trapper effort for mink. Disease threats to wild mink are another factor that may impact the mink population negatively, but the extent of that impact is unknown at this time. The trapping season length (2 Nov-31 Jan), daily bag (no limit), and possession (no limit) limits remained the same as in previous years (Table 3.6). The average mink pelt price in Iowa was $3.36 ($1.00-5.00) in 2019-20, which was lower than the 2018-19 price ($5.17; Table 3.3).

Opossum

During the 1933-34 harvest season, the opossum harvest reached a current, all-time high of 83,625 (Figure 3.25). In the preceding and following years, harvests more typically averaged around 30,000. In the late 1940s, harvests significantly declined, reaching an all-time low of 953 in 1958-59. Opossum harvests remained below 10,000 until the early 1970s, when harvests again reached numbers comparable to those seen in the mid-1940s. In the late 1980s, harvests decreased again and have remained below the long-term average (14,549) from the 1990s to present.

The 2019-20 opossum harvest was 532, which decreased from the previous season (914) below the 5-year, 10-year and long-term averages (Table 3.1). Trapping season length (2 Nov-31 Jan), daily bag (no limit), and possession limits (no limit) remained the same as previous years (Table 3.6). The average opossum pelt price in Iowa was $0.80 ($0.50-5.21), which was slightly lower than the 2018-19 price ($1.02; Table 3.3).

The 2019 Iowa Bowhunter Observation Survey indicated the population trended upward in northwest, and the southwest regions of Iowa and downward in all other regions of the state (Figure 3.26). The 2020 Spring Spotlight Survey showed overall statewide observations trended upward slightly from the previous spring's survey (Figure 3.27). The five-year average distribution of opossum is highest in southwest Iowa and lower in northern regions of the state (Figure 3.28).

Badger

Although an all-time low badger harvest occurred in 1932-33 (17), stable harvests averaging 450 per year were recorded from the mid-1930s until the mid-1940s. Harvests declined in subsequent years and averaged below 100 throughout the 1950s. By the late 1960s, badger harvests reached levels comparable to those recorded in the early 1940s. In the 1970s, harvest rates boomed in Iowa, reaching an all-time high of 3,274 during the 1979-80 season. Harvests remained high throughout the 1980s but ultimately crashed to below 500 by the early 1990s. Harvests fluctuated around the long-term average (670) throughout the 1990s and 2000s. The long-term trend in the badger harvest is slightly increasing but fluctuates up and down annually (Figure 3.29, Table 3.1).

In 2019-20, the badger harvest was 559 which was nearly identical to the previous year (547, Table 3.1), slightly above the 5-year harvest average (425) and slightly below the long-term average (671) for Iowa. Trapping season length (2 Nov-31 Jan), daily bag (no limit), and possession limits (no limit) remained the same as previous years (Table 3.6). For 2019-20, the average badger pelt price in Iowa was $11.66 ($3.50-22.50), which was slightly lower than the 2018-19 price ($12.22; Table 3.3).

The 2019 Iowa Bowhunter Observation Survey indicated that populations were variable by region with fewer observations overall than other furbearer species on average. An upward trend was observed in the northwest, southeast, and east central regions of Iowa and were down in the southwest region from the previous year. Overall though, this survey shows the statewide population trend for badgers in Iowa is mainly stable (Figure 3.30). Populations in western Iowa have typically remained a little higher than the remainder of the state in most years. This is especially evident looking at the five-year average distribution of relative abundance among counties (Figure 3.31). This is likely due to the open terrain, less precipitation, and lighter soils which badgers prefer.

Spotted Skunk

Spotted skunk (also called civet cat) was proportionally one of the top 4 most harvested furbearer species throughout the 1930s in Iowa. In 1933-34, an all-time record 88,532 were harvested (Table 3.1). In 1946-47, the spotted skunk harvest crashed, although similar trends were recorded for most furbearer species in the state at that time (Figure 3.32). Harvests stabilized around 1,700 in the 1950s and remained low throughout the decade. Many furbearer species began to show improvements in harvest numbers by the mid-1960s, but spotted skunk populations began a further decline. In 1976, the spotted skunk harvest season was closed and the species was classified as an endangered species in Iowa. During the 1970s and 1980s, 1-2 spotted skunk sightings were reported to the Iowa DNR per year. Since 1992, the only reported sighting in the state was a road kill individual in Ringgold County in southwest Iowa. We do get an occasional report of one in southern Iowa, but have not been able to verify any of them to this point. In 2014; two to three spotted skunks were reported/documented in the Camp Dodge area on 7/20/14. This was the first documented case of spotted skunks in Iowa in the past 20 years. In 2016, a roadkill spotted skunk was confirmed in Sac County. This animal was retained and kept for genetic study. For 2019, no new documented spotted skunk reports occurred. Spotted skunk numbers are nearly non-existent in Iowa. This is likely due to habitat changes and changes in farming practices. Time will tell if more ever show up in Iowa, but the outlook for that to occur is probably unlikely.

Striped Skunk

Striped skunk was proportionally the second most harvested furbearer species during the 1930s in Iowa. In 1936-37, an all-time record harvest of 153,497 was reported, although over the subsequent decade, harvest numbers for striped skunk steadily declined. By the early 1950s, harvests dropped below 10,000 and have generally averaged below 1,000 since 2008-09 (Figure 3.33).

In 2019-20, the striped skunk harvest was 738, which was up from the previous season (557), which is above the 5-year average (533) but below the 20-year average (721, Table 3.1). Trapping season length (2 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to previous years (Table 3.6). The average striped skunk pelt price in 2019-20 for Iowa was $3.26 ($0.80-6.27), which was up only slightly from the 2018-19 price ($2.81; Table 3.3).

The 2019 Iowa Bowhunter Observation Survey indicated the population trended upward in central, western, and southern regions from the previous year and trended downward in the north east region (Figure 3.34). This survey shows an overall upward trend in the striped skunk population after a downward trend for the past 10 years (2008-2018) in all regions of Iowa. Populations have typically been highest in western and south-central portions of the state and relatively lower in central and eastern portions since the mid-2000s when this survey started. The 2020 Spring Spotlight Survey showed total striped skunk observations for the entire state decreased slightly from the previous spring 2019 (Figure 3.35). The 5-year average of relative distribution compared among counties is highest in the southwest and eastern regions of Iowa (Figure 3.36).

Although both surveys (bowhunter and spotlight) indicate that decent numbers exist throughout Iowa, low market prices for skunk furs have likely kept the effort to harvest relatively low in comparison to other species (e.g., badger) which remain at low population numbers yet produce relatively higher harvests due to good fur prices. The overall downward population trend indicated by the spring spotlight survey will continue to be monitored.

Weasel

Weasel harvests during the 1930s and 1940s were characterized by dramatic fluctuations (Figure 3.37). In 1936-37, just 4 years following a decade low harvest of 256, the weasel harvest reached a current, all-time high of 7,190. Harvests averaged 4,400 in the early and mid-1940s but by the mid-1950s, had dropped below 500 per year. Weasel harvests steadily decreased during the next 3 decades and in 1976, the harvest season was closed in Iowa. In 1987, the weasel harvest season was once again reopened, although the first reported harvested weasels did not occur until 2009-10. Harvests in 2009-10 and 2010-11 were 56 and 7, respectively, characteristic of the low harvest numbers reported throughout the 1960s and 1970s. Few trappers target weasels.

In 2019-20, the reported weasel harvest was 5 animals (Table 3.1). Although in should be noted that most trappers that target weasels keep most of their weasel pelts for tanning and don't sell them as pelts in the regular fur market. Trapping season length (2 Nov-31 Jan), daily bag (no limit), and possession (no limit) limits remained similar to previous

years (Table 3.6). The average weasel pelt price in 2019-20 for Iowa was $2.00 ($2.00-2.00), which was slightly higher than the 2018-19 price ($1.00; Table 3.3).

Low harvest numbers may indicate that statewide populations have not recovered that much since the 1970s. However, it is also likely that trappers have not yet targeted the species to any great extent since the harvest season was reopened in 1987 due to the low value of weasel pelts. Weasels are extremely hard to survey for population size estimates, right now, little is known about their population size and distribution throughout the state.

River Otter

Except for small remnant populations along the Upper Mississippi River, the river otter was extirpated from Iowa by the early 20th century. In 1985, the Iowa DNR and partners initiated a reintroduction program in which 16 otters were released at Red Rock Reservoir in Marion County. Due to state regulations, the Iowa DNR was not able to directly purchase otters from Louisiana. A compromise was reached between Iowa, Kentucky, and Louisiana in which Kentucky purchased the otters from Louisiana ($400/otter) and Iowa traded wild turkeys to Kentucky (2 turkeys/otter) in exchange for the otters.

Between 1985 and 2003, a total of 345 otters were released throughout the state. By 2006, otter populations had expanded statewide. The Iowa DNR created the first regulated otter trapping season in 2006. The harvest quota was set at 400 animals (limit of 2 per licensed furharvester) and a 72-hour reporting grace period was established until the quota was met (Table 3.8). The 2006 harvest exceeded the quota by 66 otters so in 2007, the reporting grace period was shortened to 24 hours. The shortened grace period proved effective as the 2007 harvest exceeded the quota by only 16 animals. Harvest quotas were increased to 500 for the 2008, 2009, and 2010 seasons with harvests totaling 495, 519, and 515 per year, respectively. The otter harvest quota was increased in subsequent years as the population increased. The otter harvest quota was lifted for the first time during the 2013-14 trapping season. The general furharvest season timing and length was used for this otter trapping season; however, the bag limit was reduced from 3 otters down to 2 otters per trapper. The 2013-14 otter harvest was 1,165.

Otter harvest for 2019-20 season was 771 animals. County by county harvest is documented through CITES tag harvest reports which shows the highest otter harvests again occurred in eastern Iowa (Figure 3.38).

The average otter pelt price in 2019-20 was $15.42 ($11.00-25.00), which was lower than the 2018-19 average price ($19.04; Table 3.3).

Since the trapping season was established in 2006, the sex ratio of harvested otters has remained relatively even (Figure 3.39). Foothold traps, conibear traps, and snares were the most common harvest method in the state (Figure 3.40; Table 3.9). The number of furharvesters intentionally targeting otters (41%) is slowly increasing, but incidental captures appear to be the most common cause for capture in Iowa at this time (53%) (Figure 3.41 and Figure 3.42).

The Iowa Bowhunter Observation Survey is somewhat useful for otters, but not as much (correlated) as it is for other upland furbearer species that are more readily viewed by bowhunters. It is still a useful survey to gauge regional population trends. The 2019 bowhunter survey indicated the population trended upward across northern regions, but were down in the southeast and southcentral regions (Figure 3.43).

Otter populations appear to be quite variable from region to region throughout Iowa, but generally doing very well. Habitat quality is probably the most limiting factor. With the pelt value still fair to poor during the 2019 -20 season, the harvest was down from previous years - still below the 1,000 mark. This is likely due to lower trapper effort and early ice conditions in November, not a decline in the population. We will continue to gauge population trends however. At this time, the trapping regulations in place for the otter harvest are reasonable for managing the population for balance. However, if data indicates the otter population is trending steadily downward or upward; then more restrictive or liberal harvest will be implemented. For otter, trapping is an especially effective population management tool because otter do not have many natural predators in Iowa but can be successfully trapped. The otter population must be managed to also fit social acceptance especially with pond owners and fishermen.

Bobcat

Three felid species including bobcat, Canada lynx, and mountain lion were native to Iowa, although historically, bobcats were most common. By the 1930s, only small remnant populations of bobcat remained scattered throughout the state, particularly in northeast Iowa. Between the 1940s and 1980s, bobcat sightings were exceedingly rare and the species was likely nearly extirpated for extended periods of time.

Since the early 1990s, bobcat sightings, road kills, and incidental captures by trappers had progressively increased in Iowa. By the early 2000s, confirmed bobcat sightings were recorded in 44 counties, primarily in southern Iowa and along the Mississippi and Missouri River. Populations were naturally expanding in Iowa, which was similarly being documented in Missouri, Nebraska, and Kansas. In 2003, the Iowa DNR concluded that populations had steadily increased and stabilized; therefore, bobcats were delisted as a threatened species in the state. Over the next 2 years, bobcat sightings continued to increase. By 2005, confirmed sightings had been recorded in 78 counties.

In 2007, the Iowa DNR created the first regulated bobcat harvest season in the state. The harvest quota was set at 150 animals (limit of 1 per licensed furharvester) and a 24-hour reporting grace period was established until the quota was met (Table 3.10). Bobcat harvest was limited to the bottom two tiers of counties in Iowa (21 counties). The 2007 harvest included 149 bobcats plus an additional 5 road kill individuals.

Harvest quotas were increased to 200 bobcats during the 2008 and 2009 seasons with harvests totaling 232 and 231, respectively. Woodbury, Monona, Harrison, and Pottawattamie counties along the Missouri river were added to the open zone. In 2010, harvest quotas were further increased to 250 and a total of 263 bobcats were reported. The 2010 open zone was expanded to include the bottom 3 tiers of counties in Iowa plus Guthrie County in south-central Iowa. In 2011, the harvest quota was set at 350 (limit of 1 per licensed furharvester) and the open harvest zone remained similar to the 2010 zone (Figure 3.44). In 2012, the harvest quota was set at 450. The bobcat harvest in 2012 was 528 (Table 3.10). The bobcat harvest quota was lifted for the first time in the 2013-14 fur season and the general trapping season length and timing were used; as it was for otters also. Bobcats can be trapped or hunted. The 2013-14 harvest for bobcats was 978 (Table 3.10).

Since then, the fur market declined and the bobcat harvest has decreased to 706 and 535 in 2014-15 and 2015-16, respectively. For the 2017-18 season, the bobcat harvest was 819. The bobcat harvest decreased to 687 in 2018-19. The bag limit was increased to 3 bobcat/furharvester in the southern three tiers of counties for 2019-20. The bobcat harvest for the 2019-20 season increased to 1160. The average bobcat pelt price in Iowa for 2019-20 was $29.37 ($10.00-52.00), which was lower than the 2018-19 price ($58.60) which makes bobcats the most valuable species for the fur market (average pelt value) of all Iowa furbearer species (Table 3.3). Harvest was highest in the southcentral to south east regions of Iowa (Figure 3.45). In 2019-20, bobcat harvest occurred more evenly throughout the season. More so than previous years when bobcat harvest was mainly in November and decreased in December and January. The most harvest occurred on weekends and holidays (Figure 3.46). There were 67 bobcats harvested by gun deer hunters in 2019, which is increasing. Archers harvested 72 bobcats in 2018 (Table 3.11).

Since the bobcat harvest season was established in 2007, the sex ratio of harvested bobcats has remained relatively even, with a slightly higher proportion of females harvested (49%), than males (45%), and 6% unknown (Figure 3.47). Snares, conibear traps, and foothold traps were the most common trapping method and calling the most common hunting method in the state (Figure 3.48; Table 3.11). The number of bobcats intentionally harvested (43%) has been slowly increasing but remained similar to incidental harvest (44%) in 2018-19 (Figure 3.49 and Figure 3.50).

The 2019 Iowa Bowhunter Observation Survey indicated that since regulated bobcat trapping began in 2007, populations have remained fairly stable to increasing throughout the state. For 2019, bobcat observations trended upward in the northwest region, and the southeast region especially (Figure 3.51). Regional population trends show the highest number of observations occurred the southern regions of Iowa in 2019. This is fairly consistent with data documented from research, harvest, road kills, incidental trapping captures, and field reports of sightings. Bobcat population expansion rates in central and east central Iowa have finally started to increase. Bobcat population expansion into central and northern Iowa has been slow but fairly consistent. Lower numbers of bobcats in these regions of Iowa is mainly due to a lack of ideal habitat when compared with southern Iowa. The bobcat population in Iowa is still

expanding in numbers and distribution in a south to north direction generally. Bobcat populations have remained good throughout the state where ideal habitat exists especially in southern and western Iowa. Time will tell if bobcats naturally spread into northeast Iowa where additional good habitat is available. For 2019-20, bobcat harvest season changes were made. The bag limit was increased from 1 to 3 for the southern 3 tiers of counties in Iowa. The season dates and season length will remain the same as it was for the 2018-19 season (2 Nov-31 Jan).

Figures

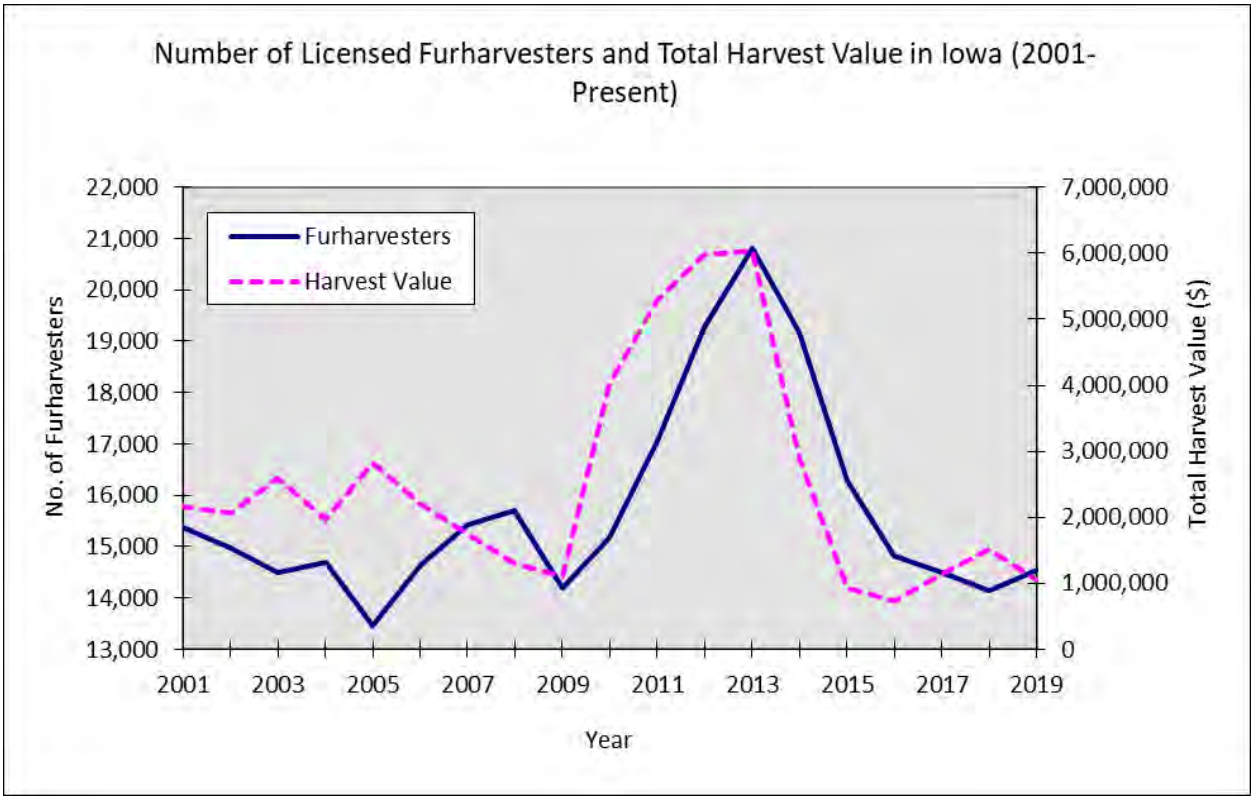


Figure 3.1 Number of licensed Iowa furharvesters and total harvest value in Iowa (2001-present).

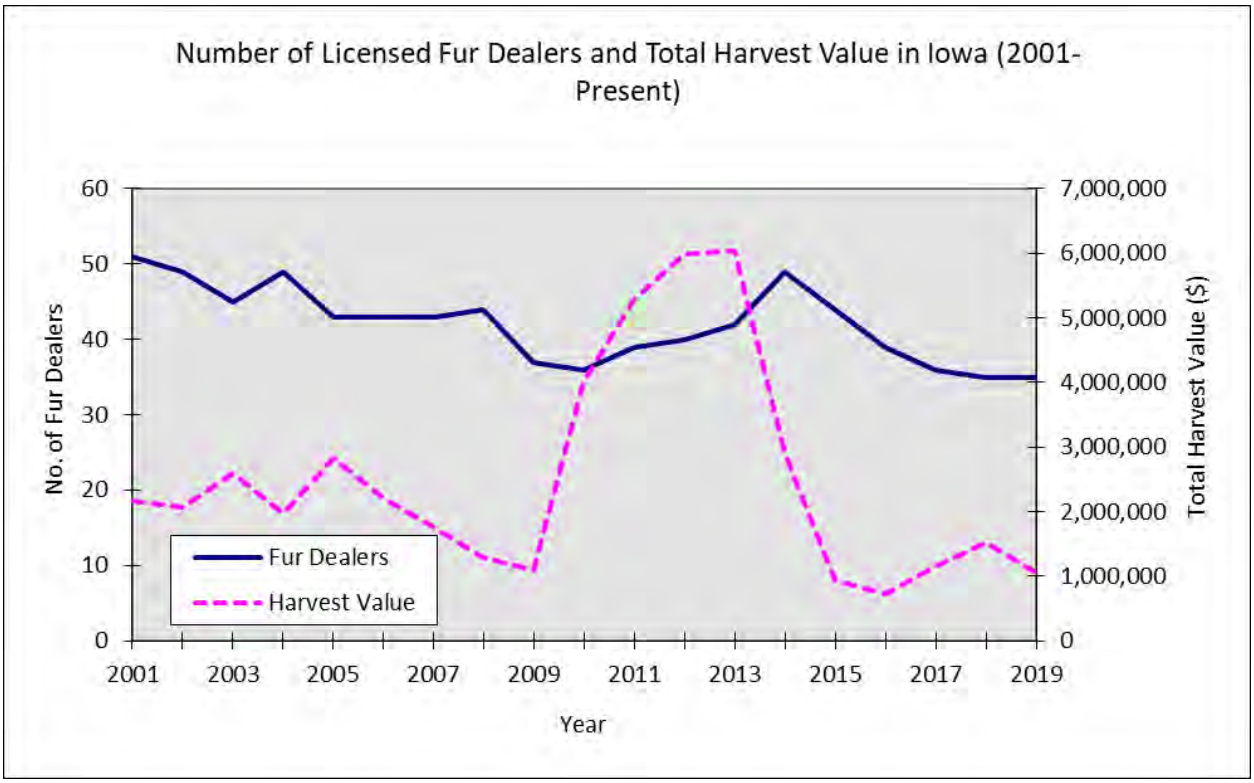


Figure 3.2 Number of licensed Iowa fur dealers and total harvest value in Iowa (2001-present).

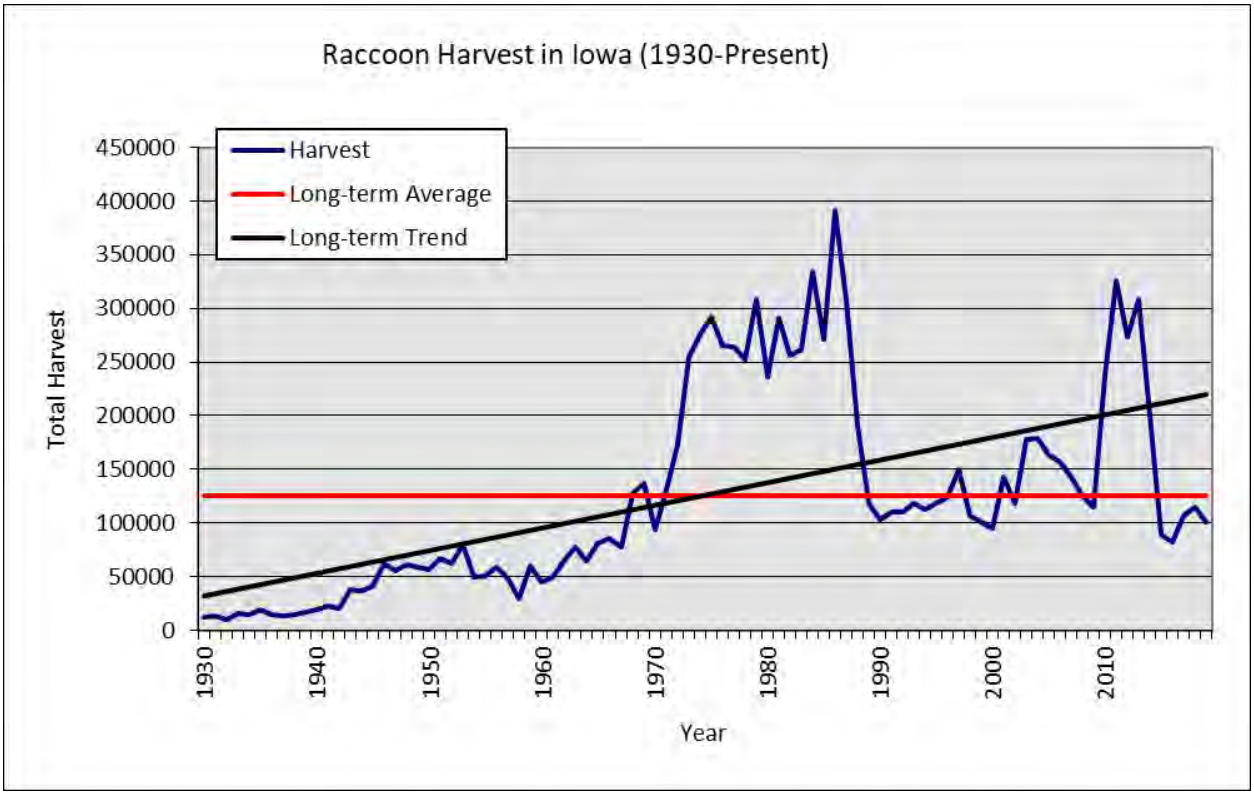


Figure 3.3 Annual raccoon harvests reported by licensed fur dealers in Iowa (1930-present).

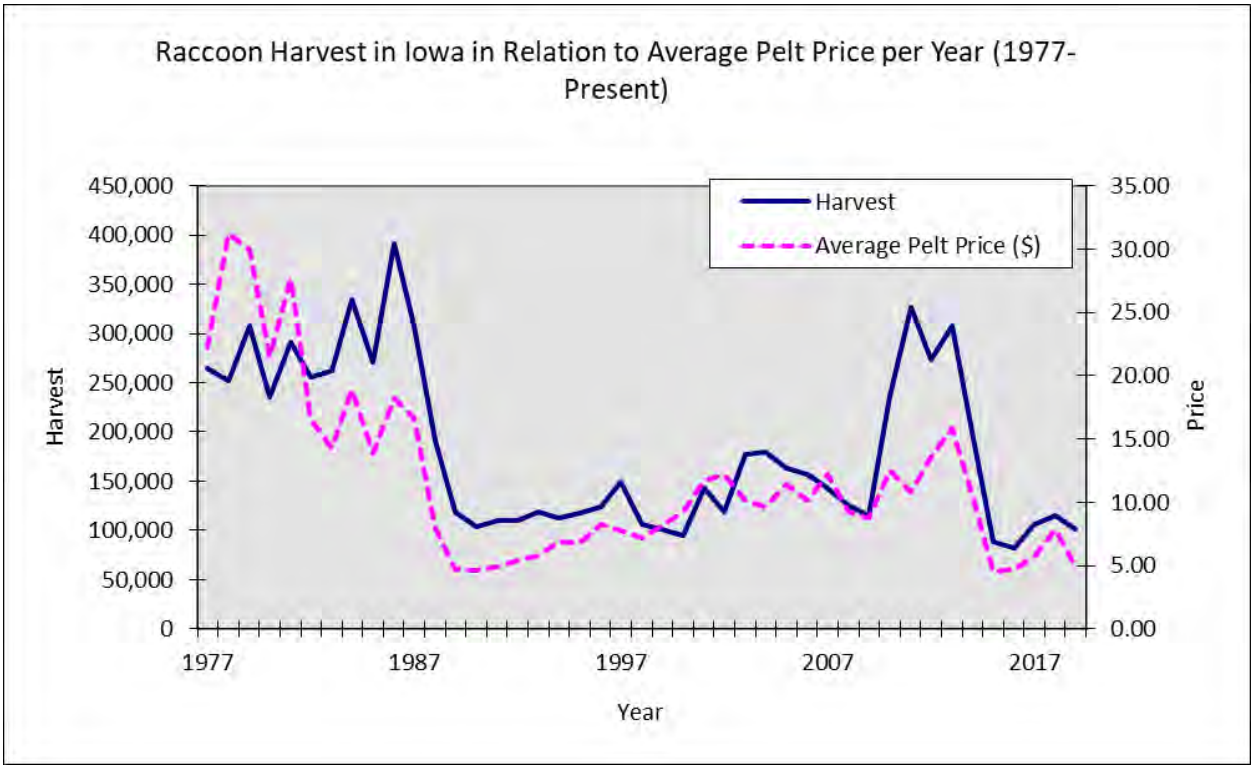


Figure 3.4 Raccoon harvest in Iowa and average pelt price paid by fur dealers (1977-present).

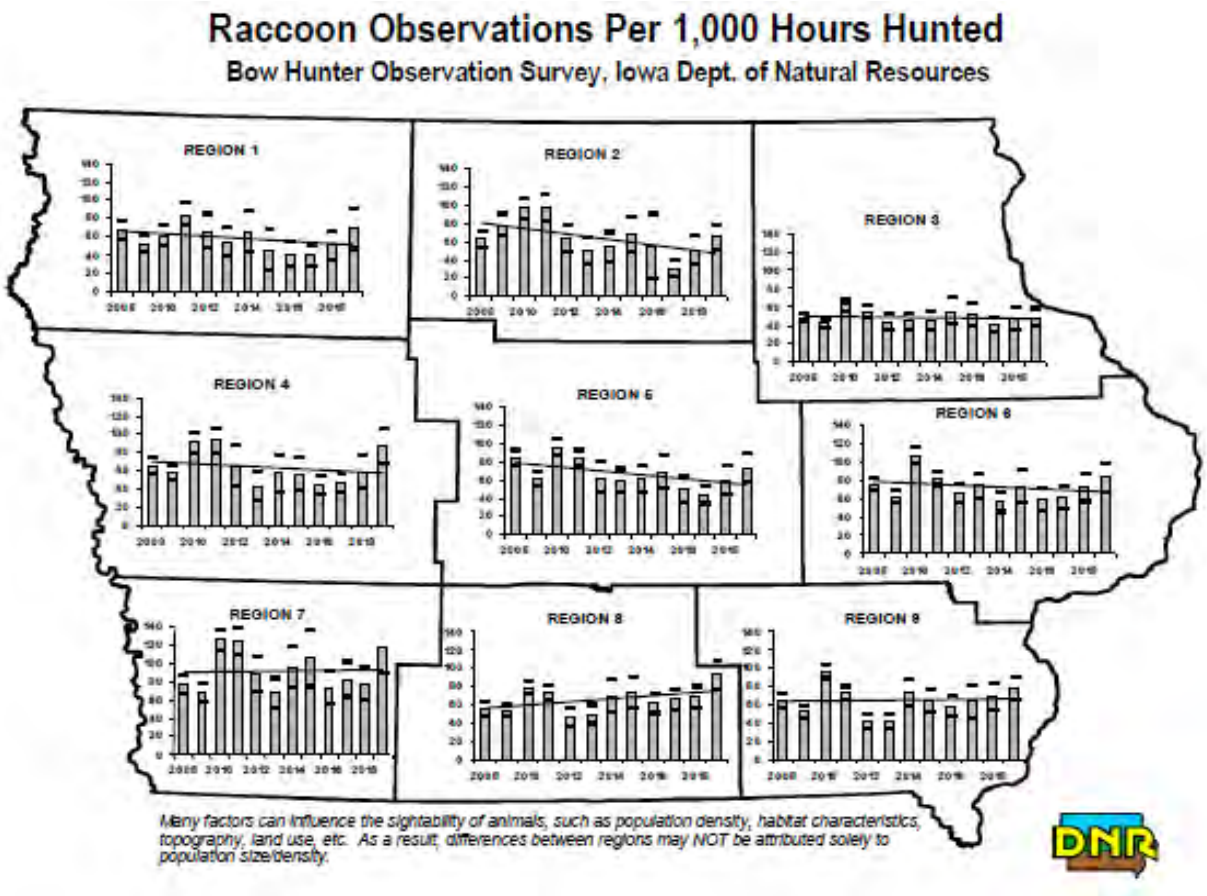


Figure 3.5 Results of raccoon Bowhunter Observation Survey in Iowa (2008-present).

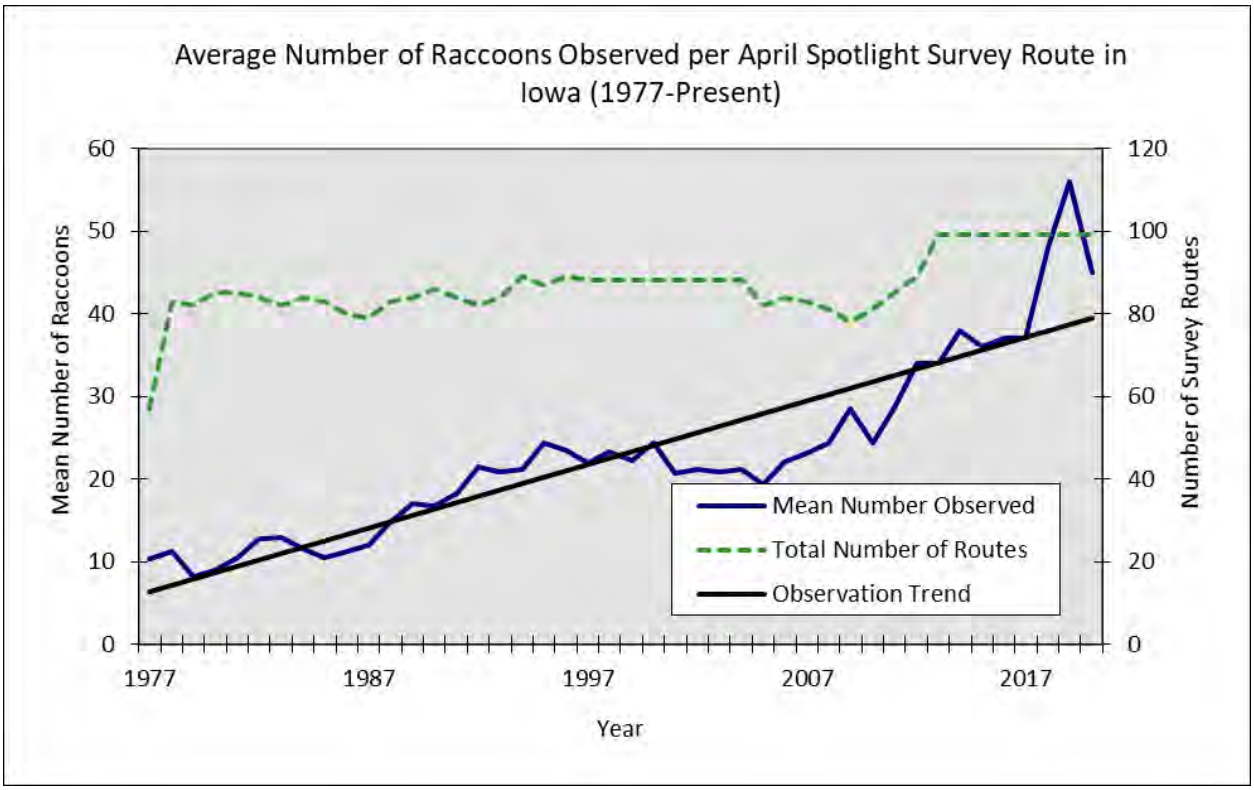


Figure 3.6 Results of April raccoon spotlight surveys in Iowa (1977-present).

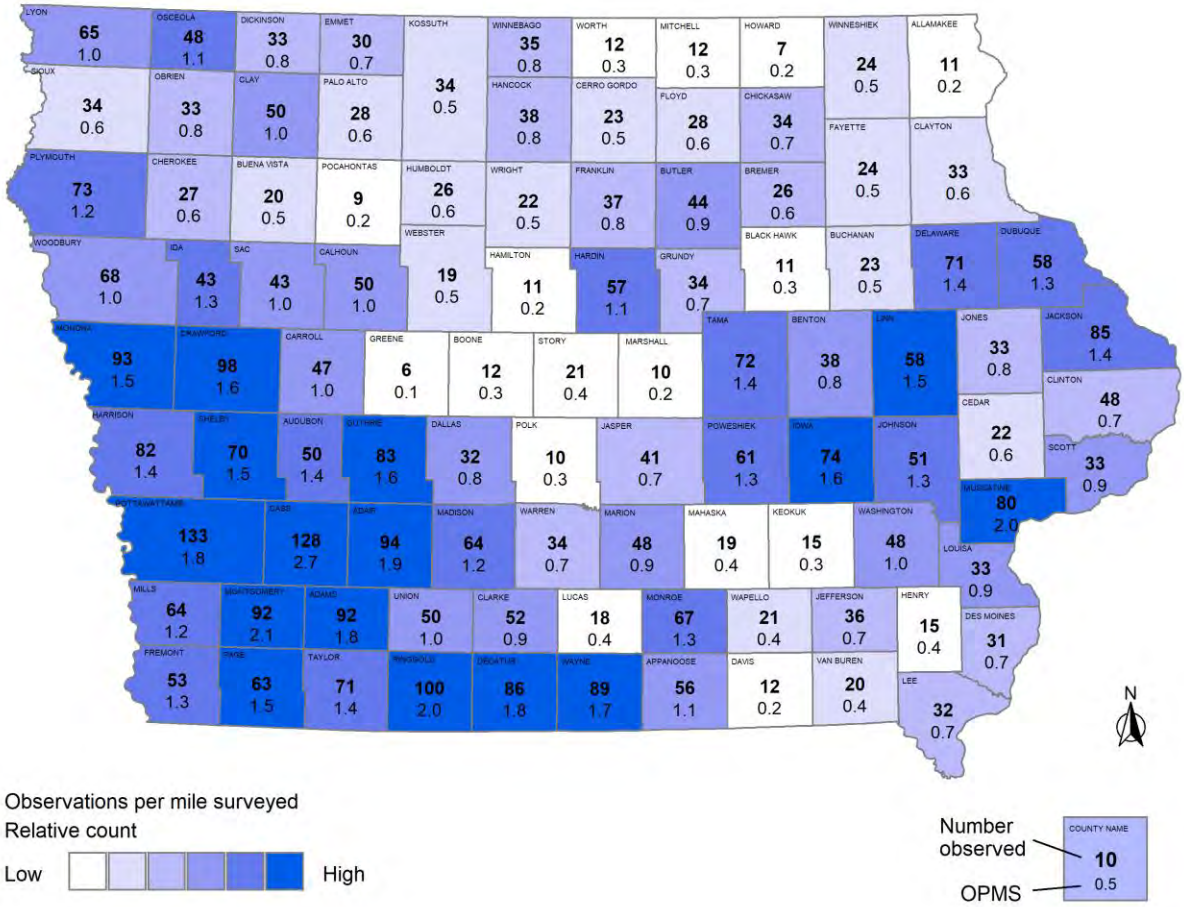


Figure 3.7 Total number of raccoon observations per county in 2020. Color shading indicates the number of observations per mile surveyed (OPMS).

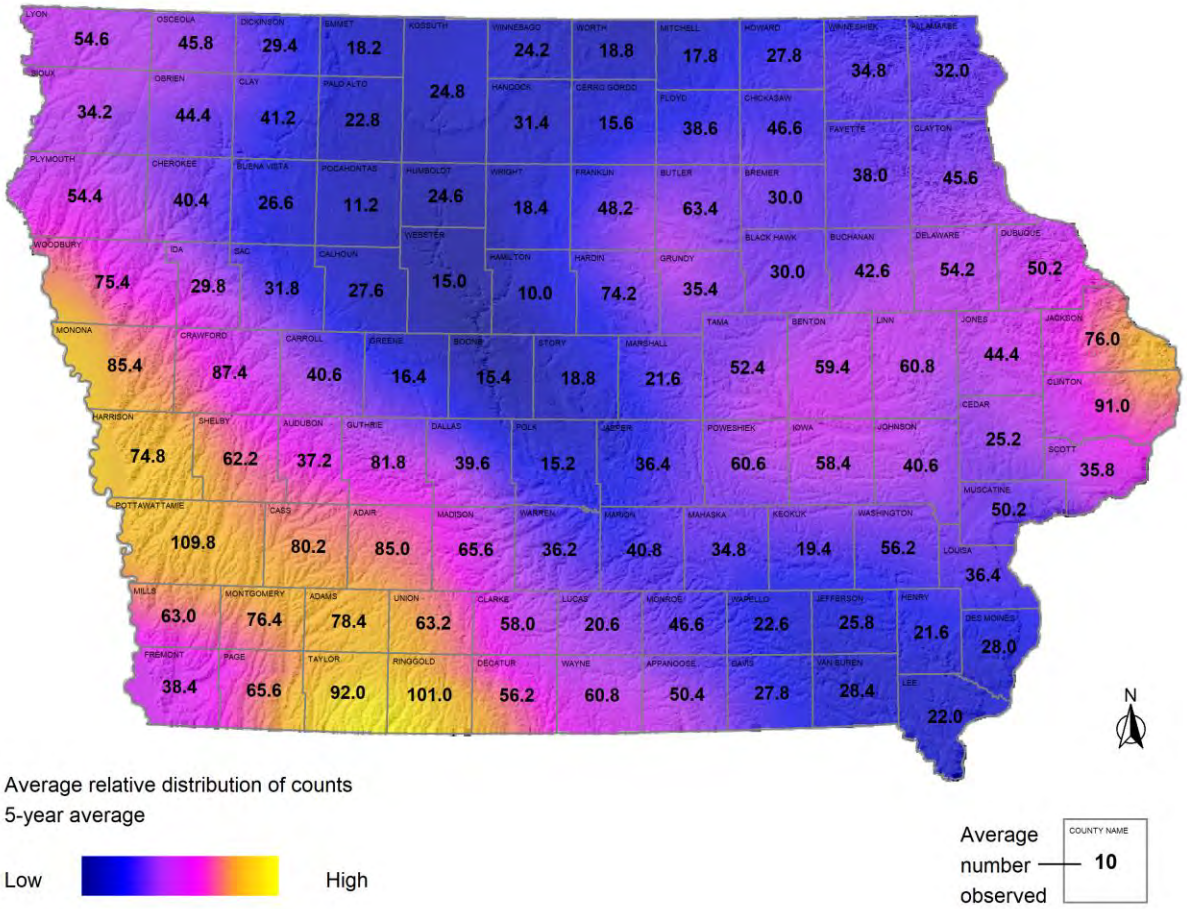


Figure 3.8 Relative distribution of average Spring Spotlight Survey raccoon observations for the last 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

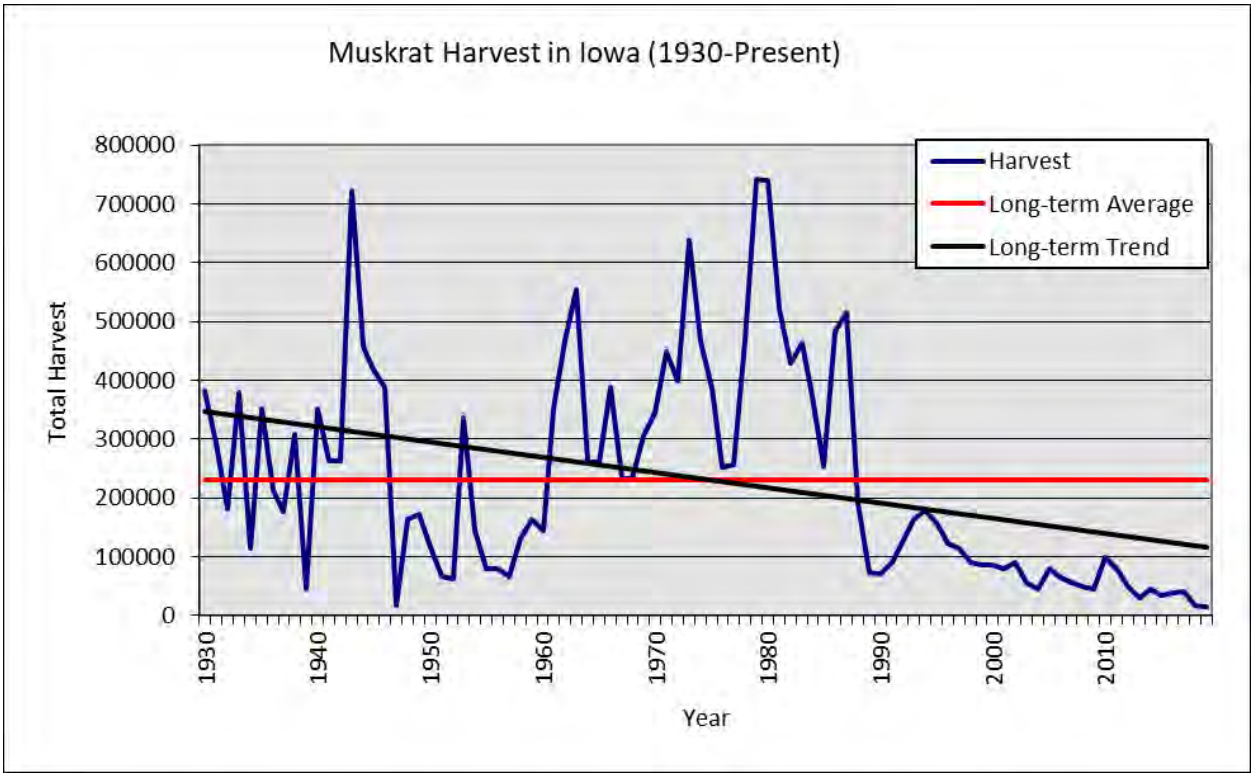


Figure 3.9 Annual muskrat harvests reported by licensed fur dealers in Iowa (1930-present).

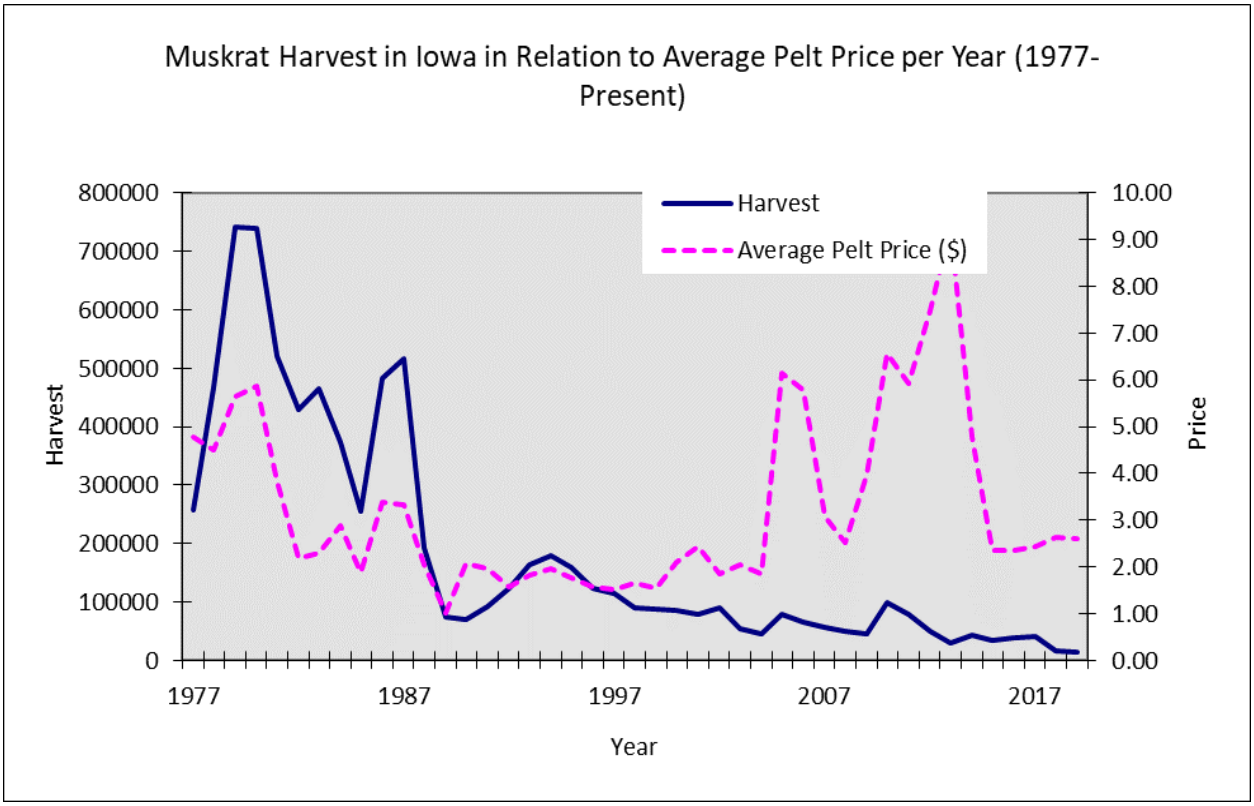


Figure 3.10 Muskrat harvest in Iowa and average pelt price paid by fur dealers (1977-present).

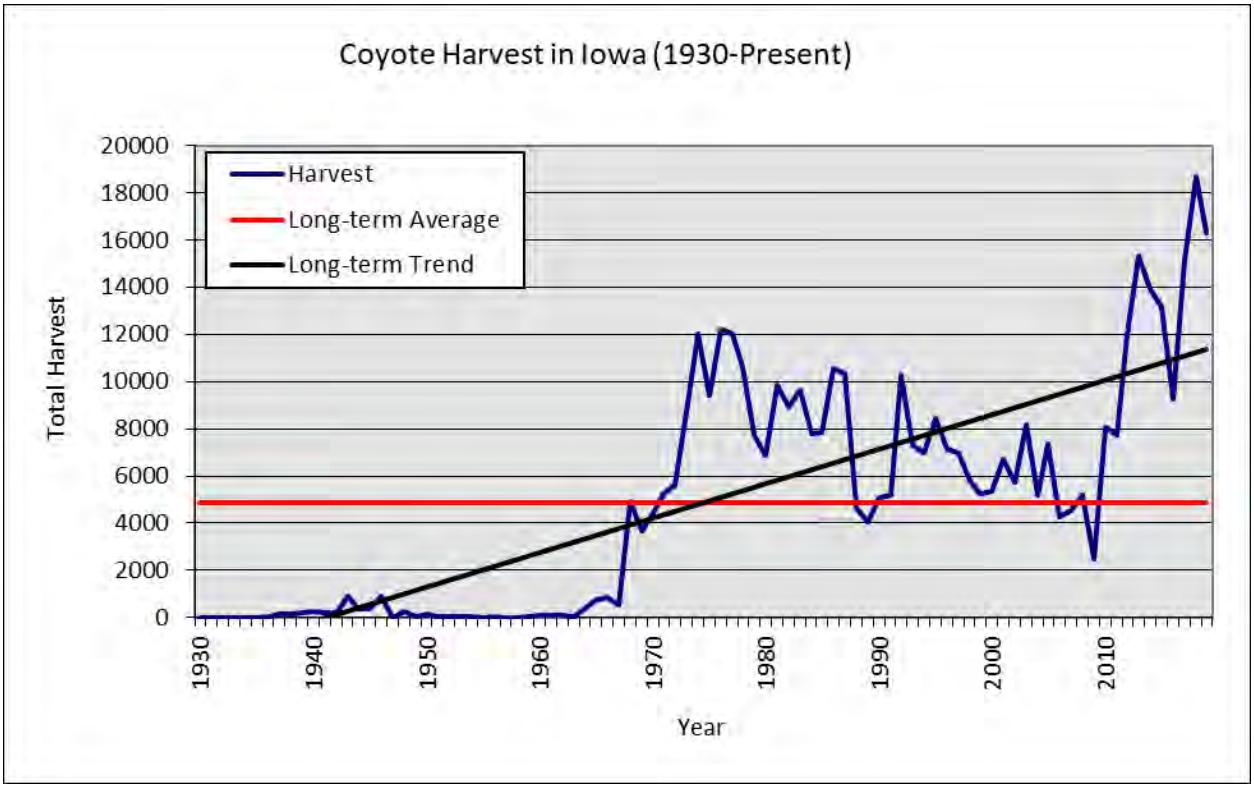


Figure 3.11 Annual coyote harvests reported by licensed fur dealers in Iowa (1930-present).

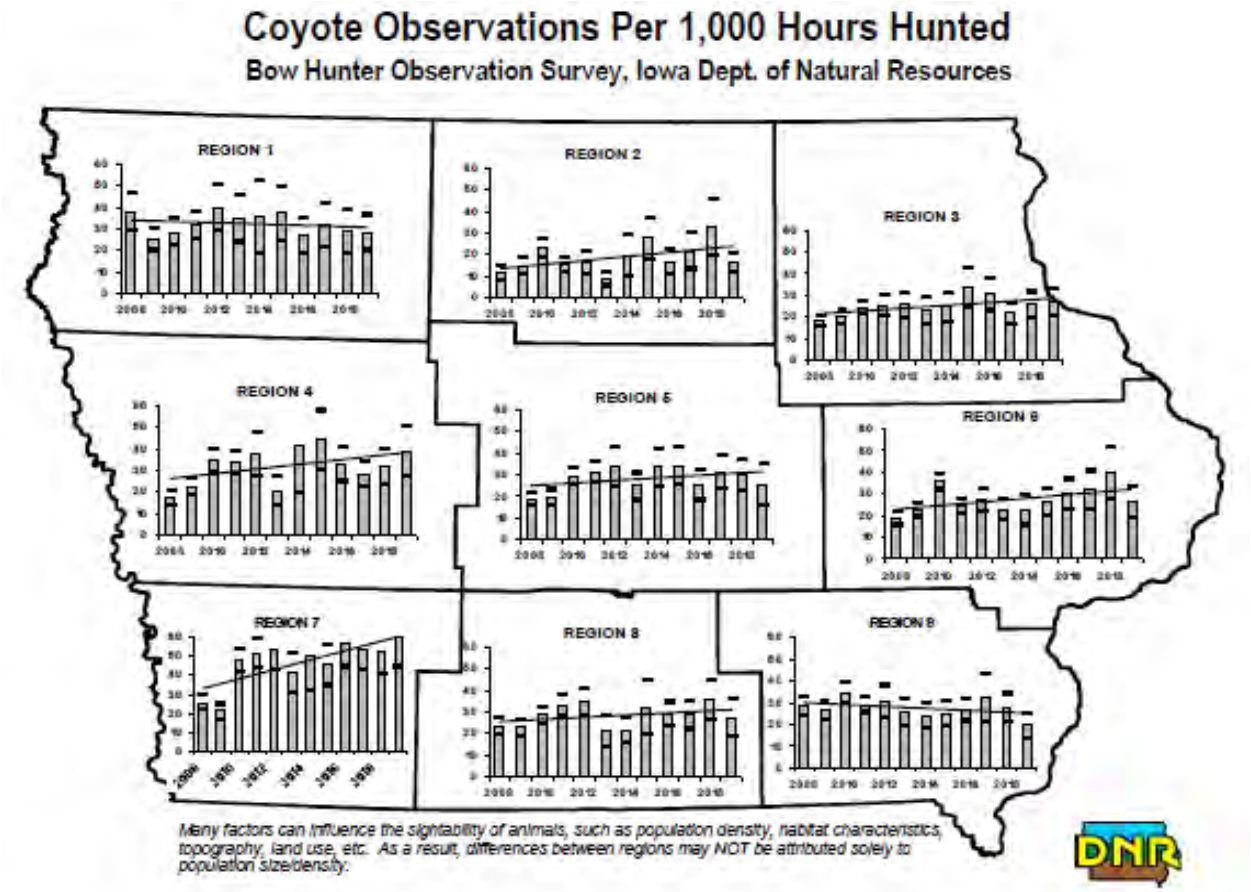


Figure 3.12 Results of coyote Bowhunter Observation Survey in Iowa (2008-present).

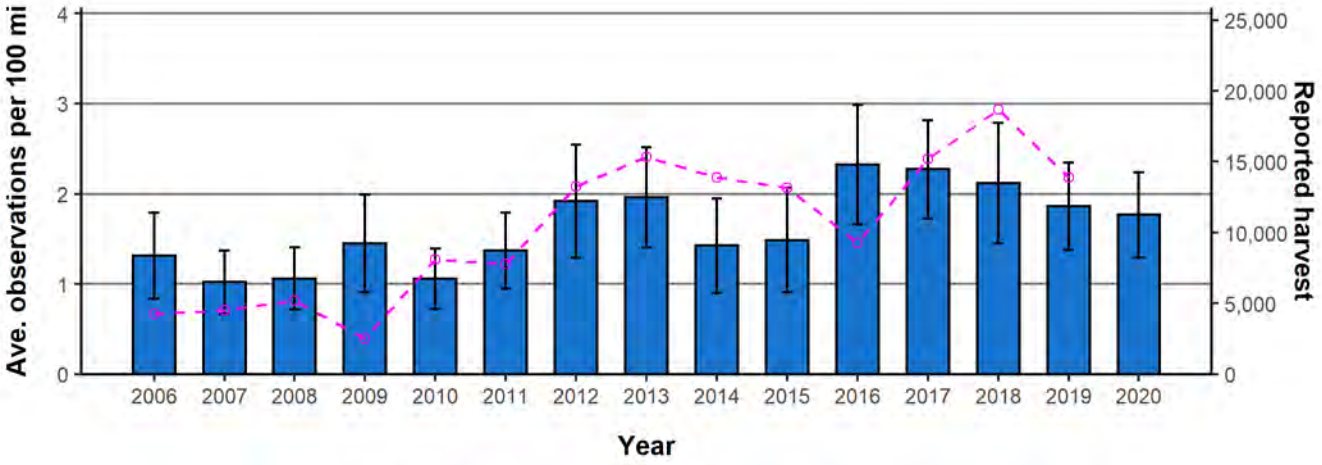


Figure 3.13 Total coyote observations by year during the Iowa Spring Spotlight Survey, 2008- present.

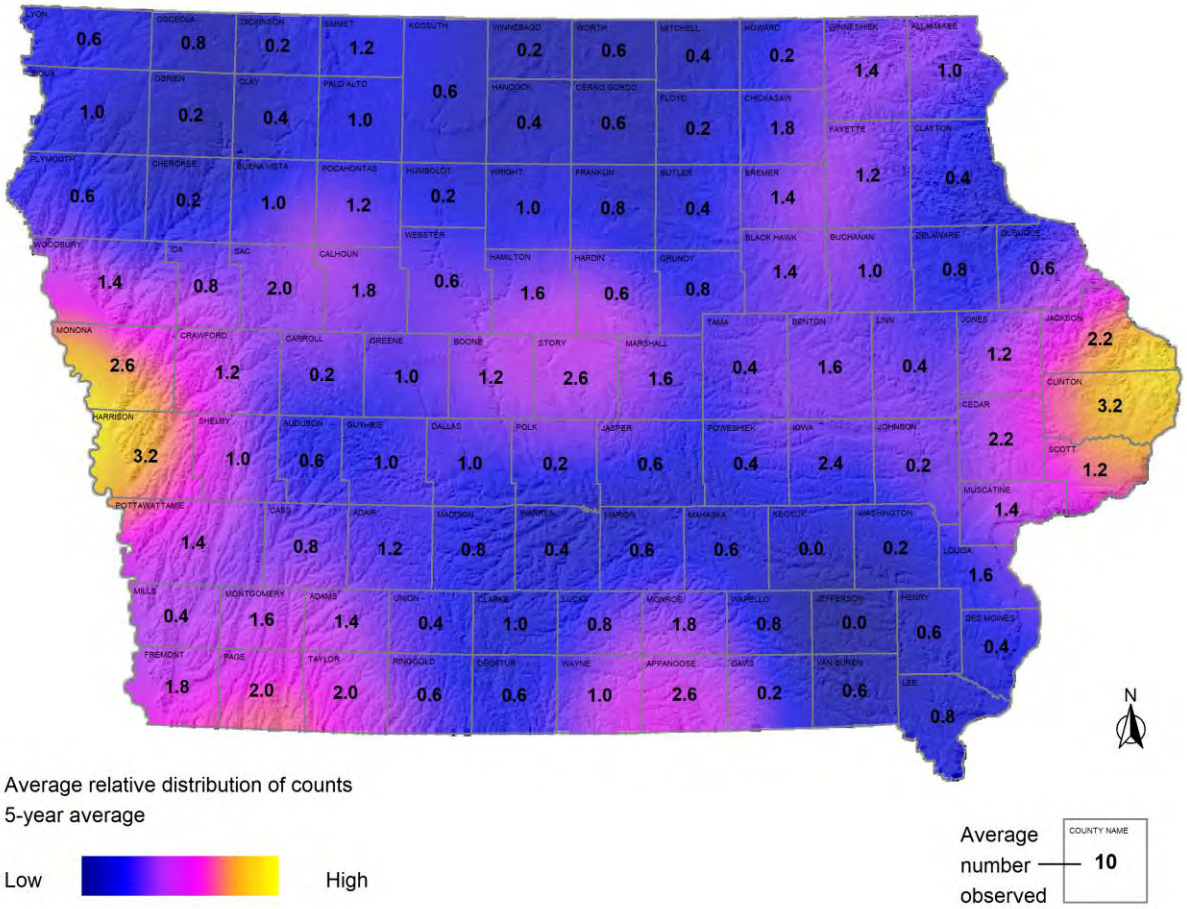


Figure 3.14 Relative distribution of average Spring Spotlight Survey coyote observations for the last 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

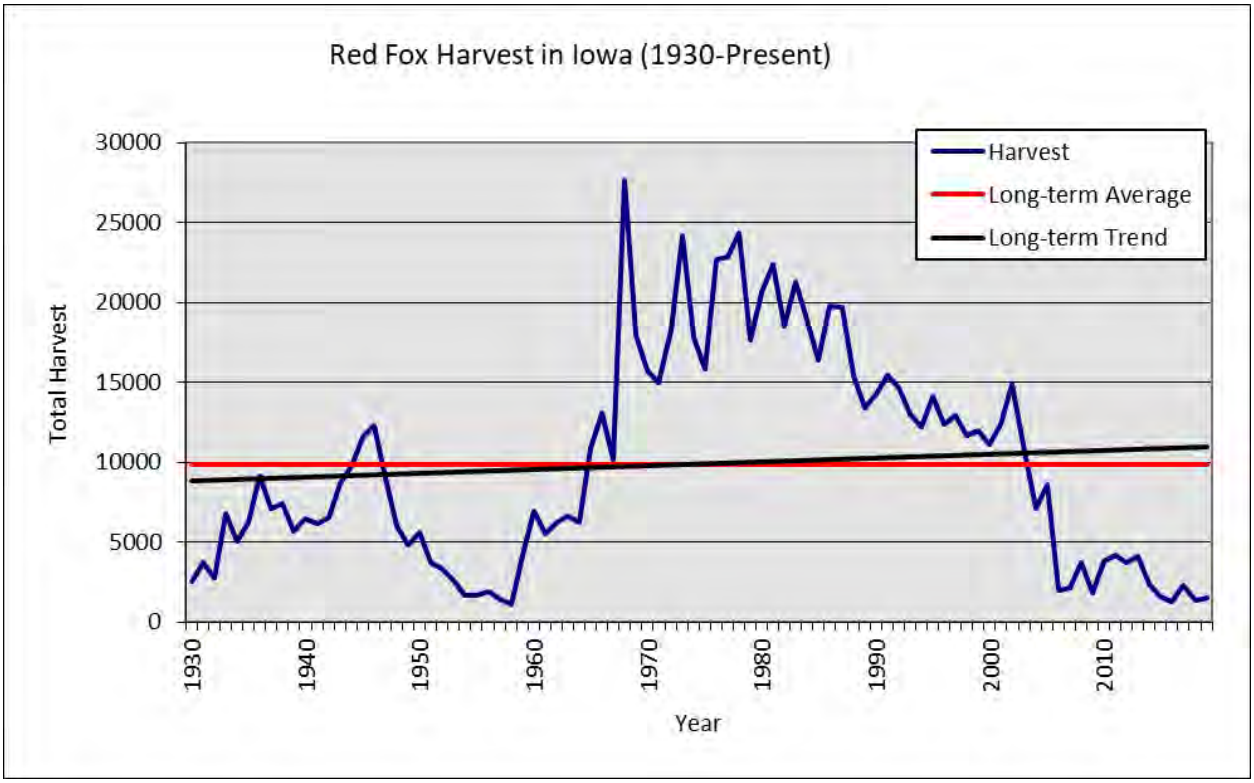


Figure 3.15 Annual red fox harvests reported by licensed fur dealers in Iowa (1930- present).

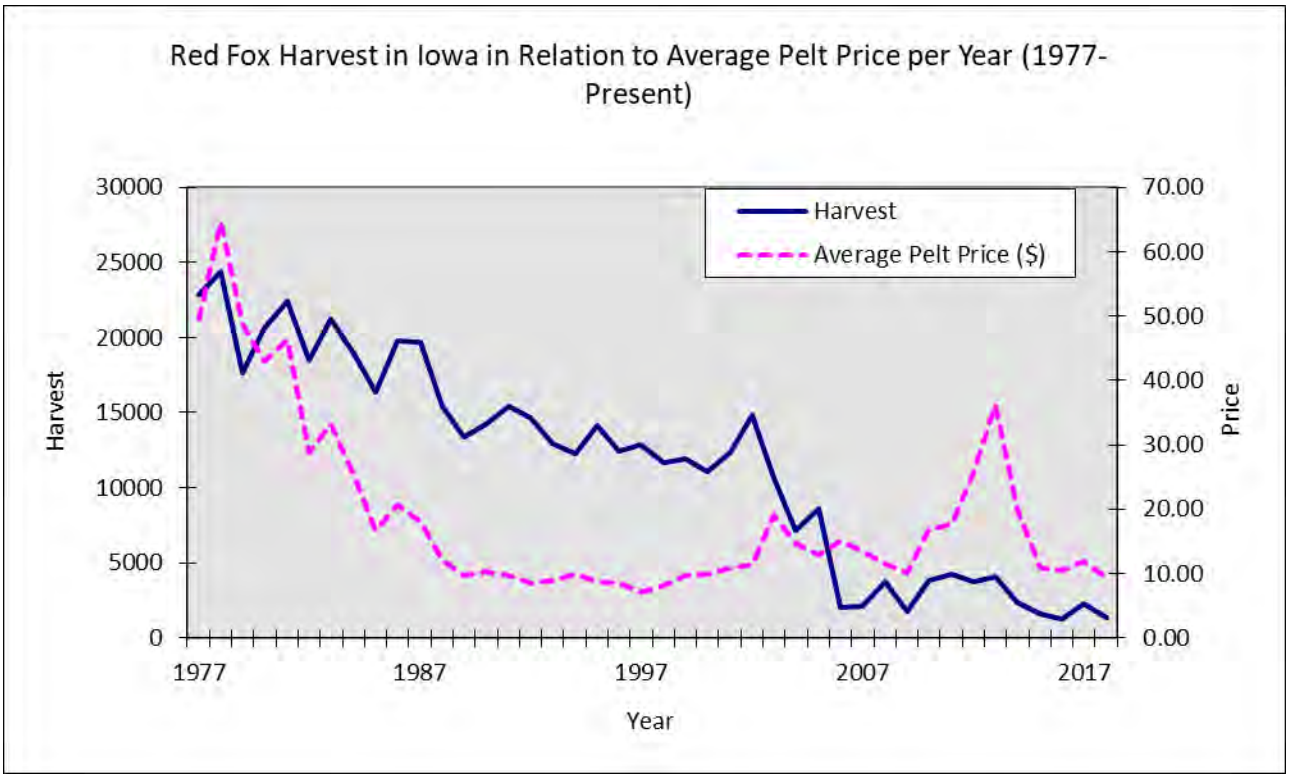


Figure 3.16 Red fox harvest in Iowa and average pelt price paid by fur dealers (1977-present).

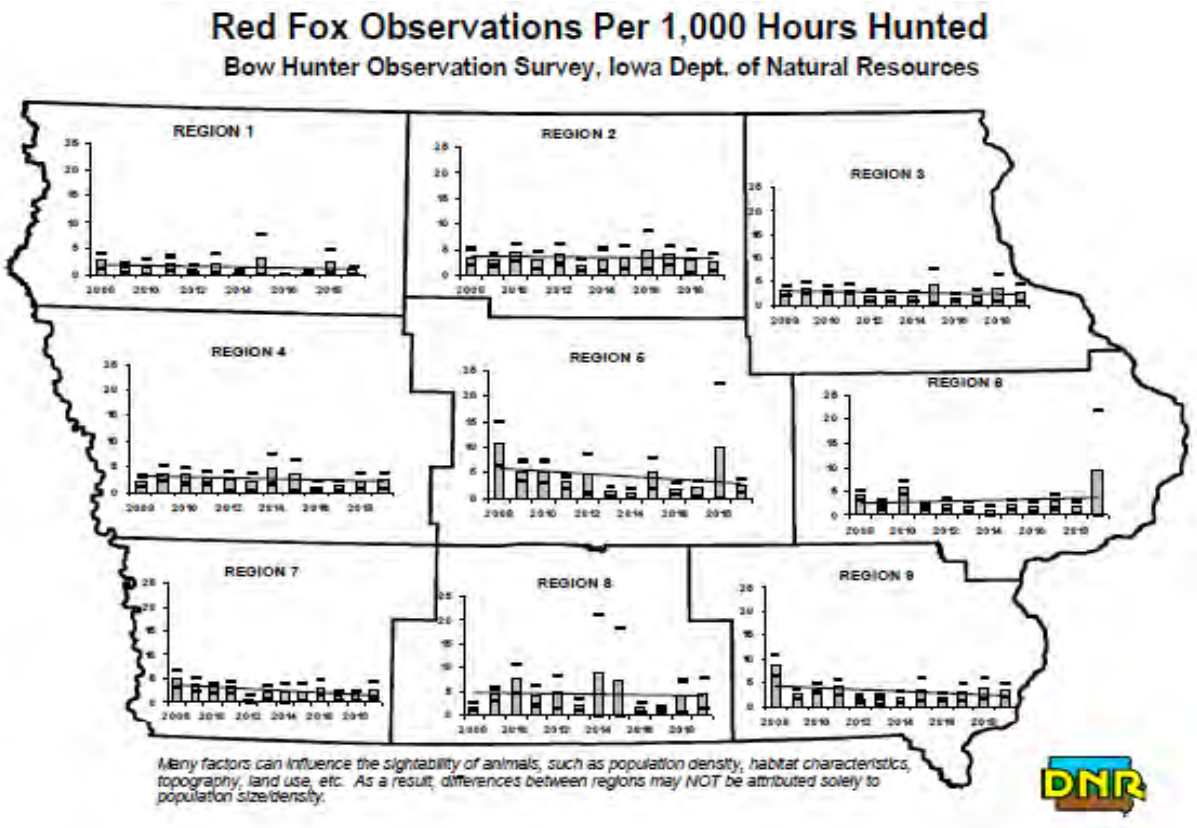


Figure 3.17 Results of red fox Bowhunter Observation Survey in Iowa (2008-present).

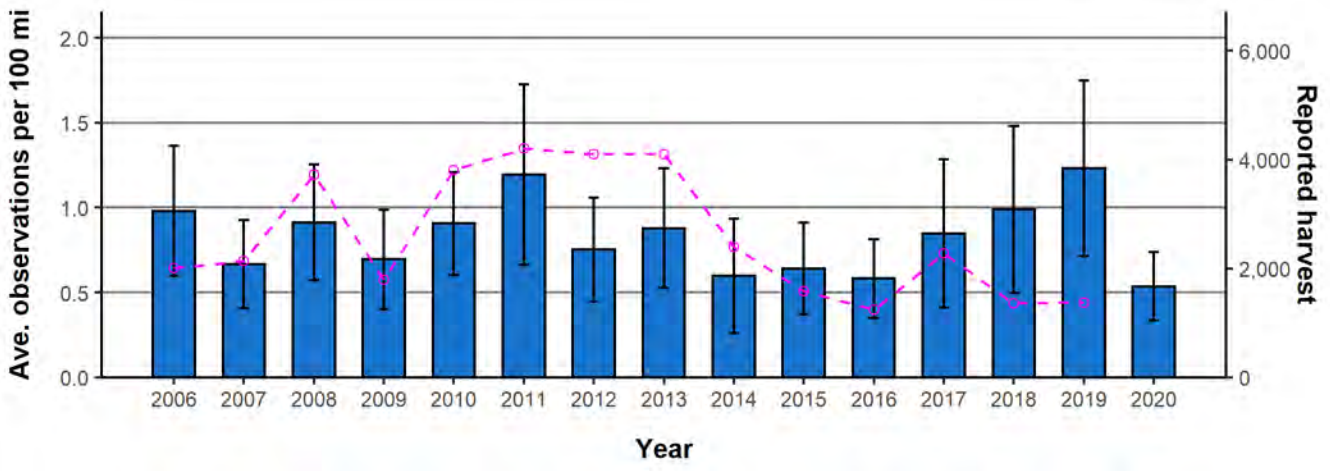


Figure 3.18 Total red fox observations by year during the Iowa Spring Spotlight Survey, 2008- present.

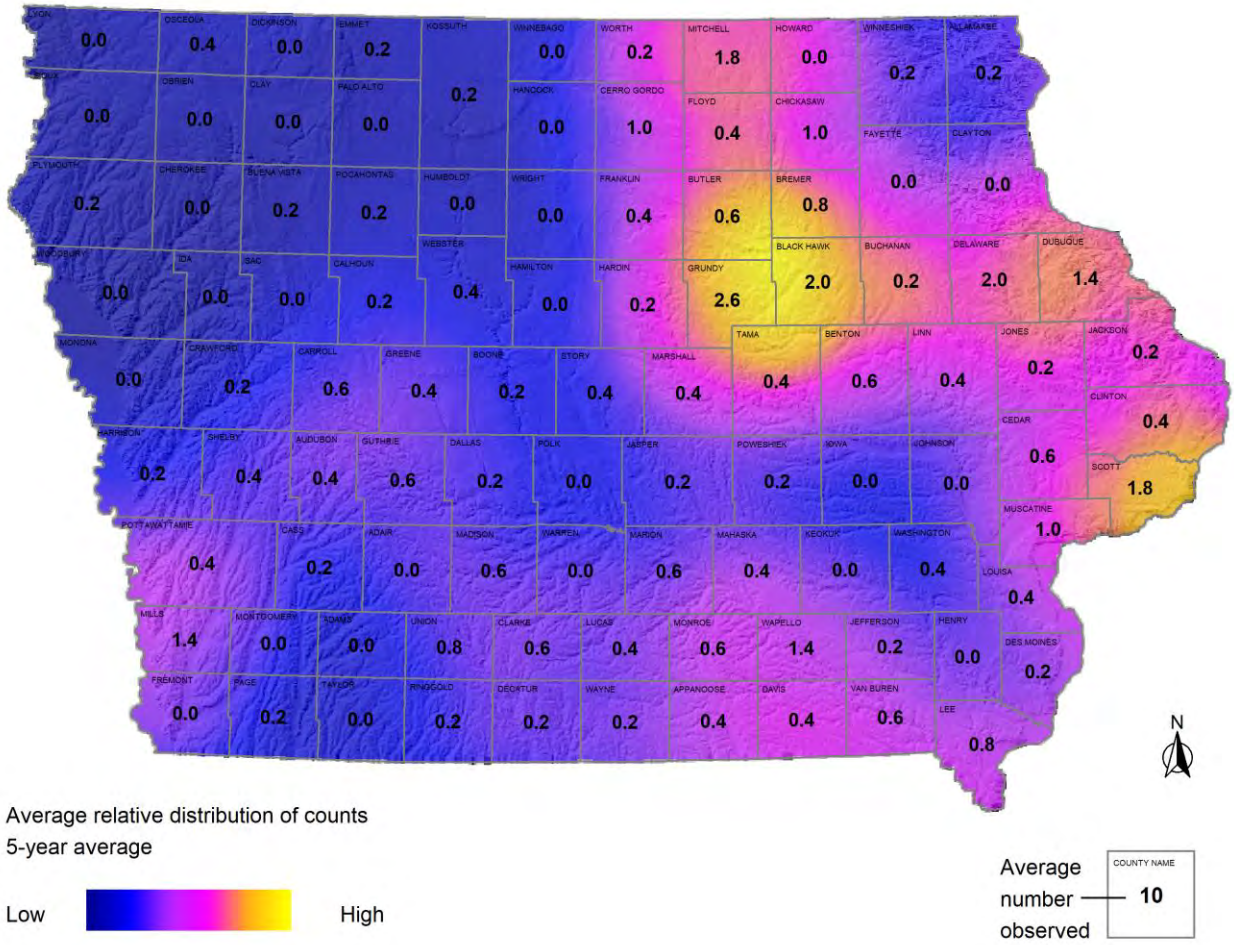


Figure 3.19 Relative distribution of average Spring Spotlight Survey red fox observations for the last 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

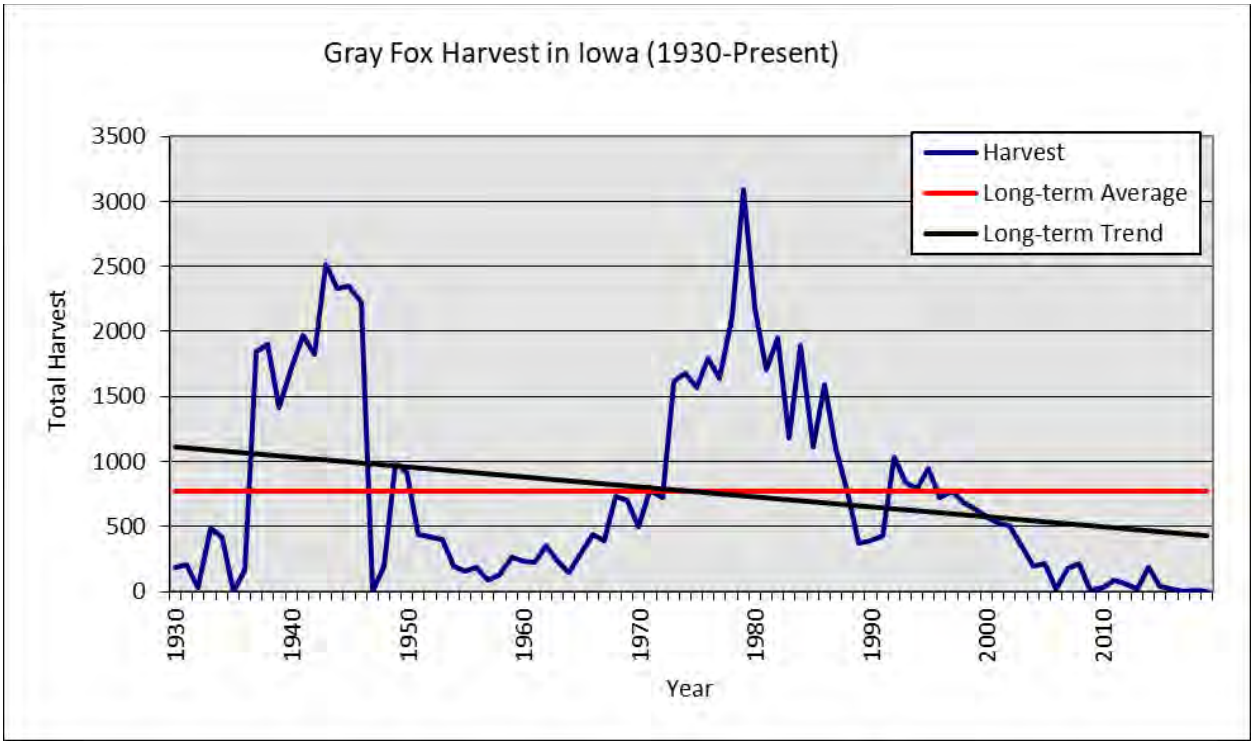


Figure 3.20 Annual gray fox harvests reported by licensed fur dealers in Iowa (1930- present).

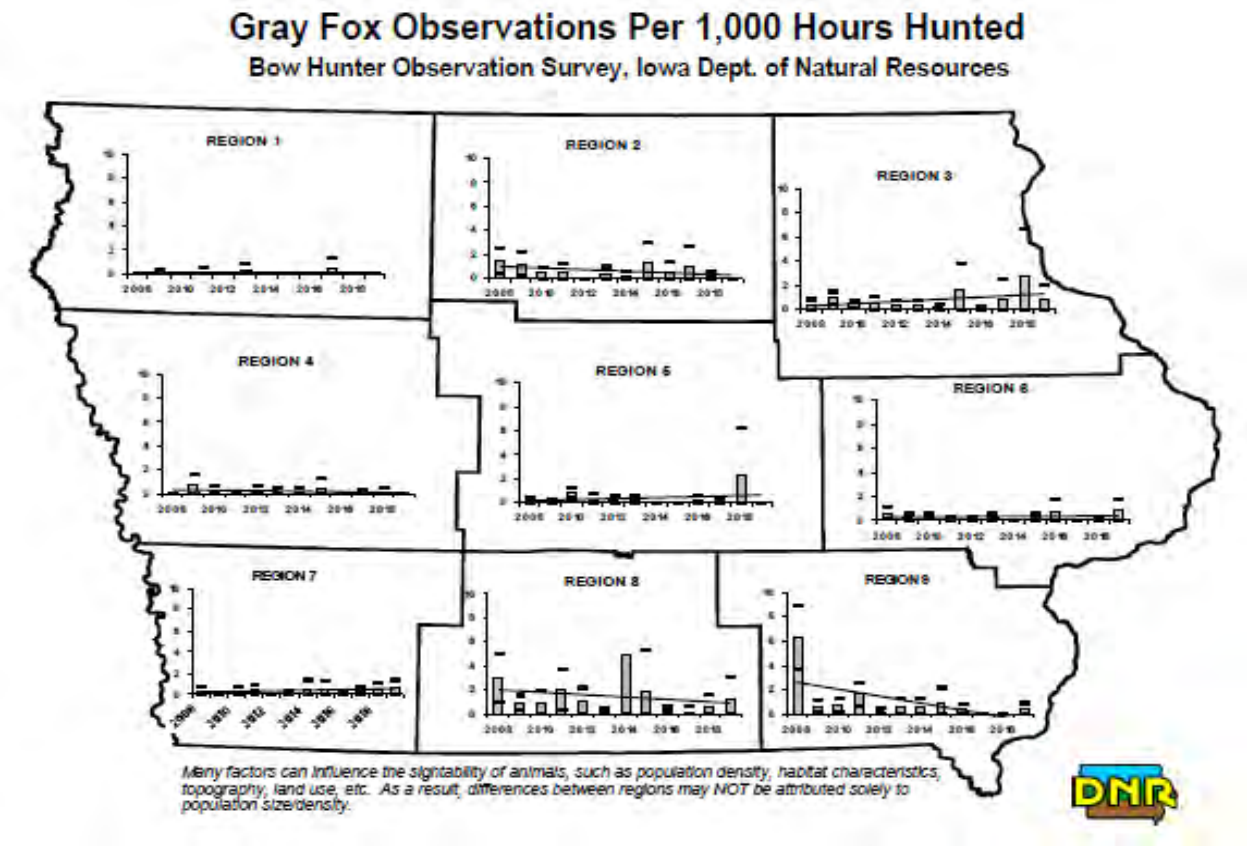


Figure 3.21 Results of gray fox Bowhunter Observation Survey in Iowa (2008- present).

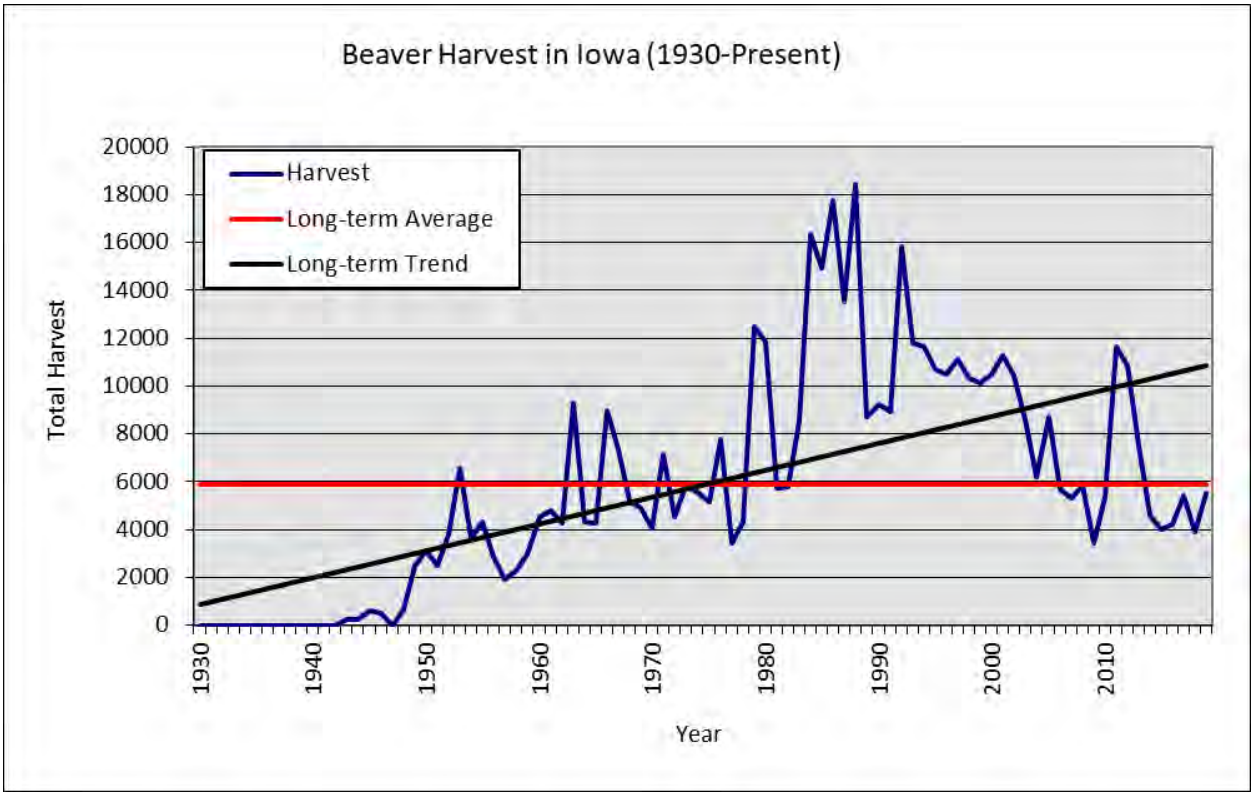


Figure 3.22 Annual beaver harvests reported by licensed fur dealers in Iowa (1930- present).

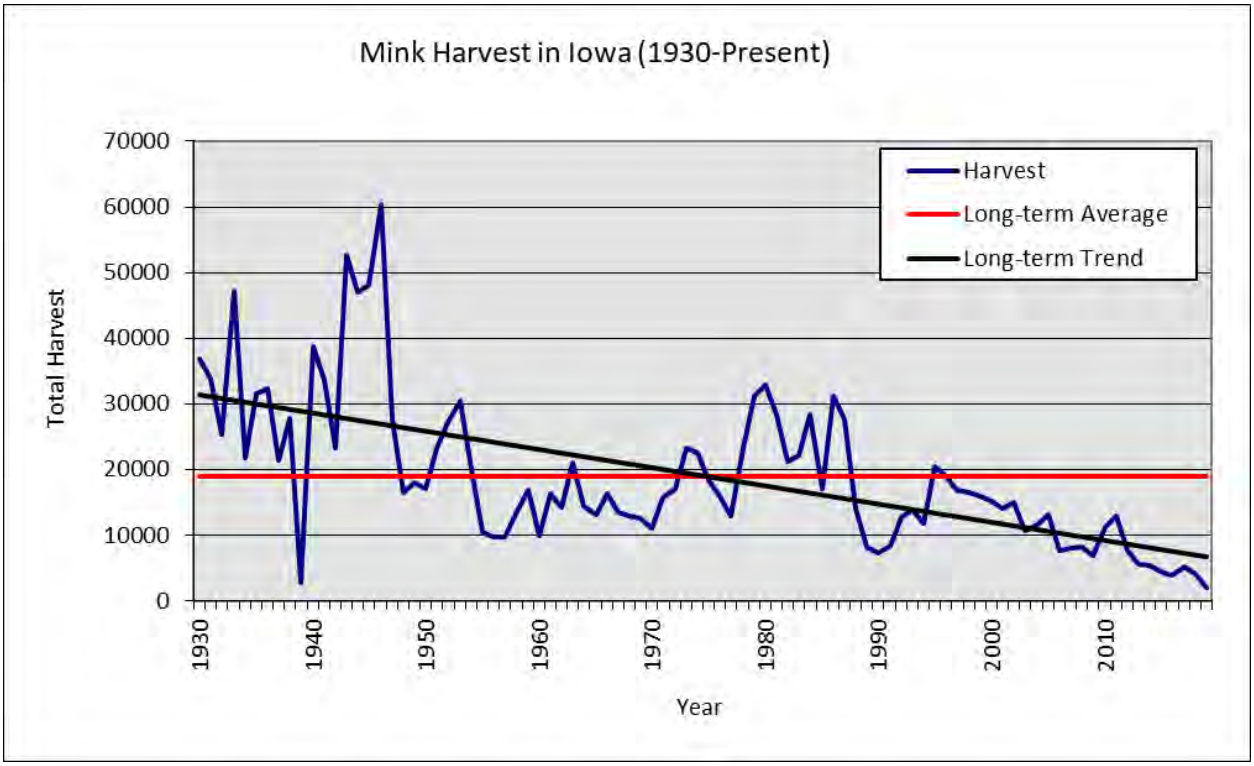


Figure 3.23 Annual mink harvests reported by licensed fur dealers in Iowa (1930-present).

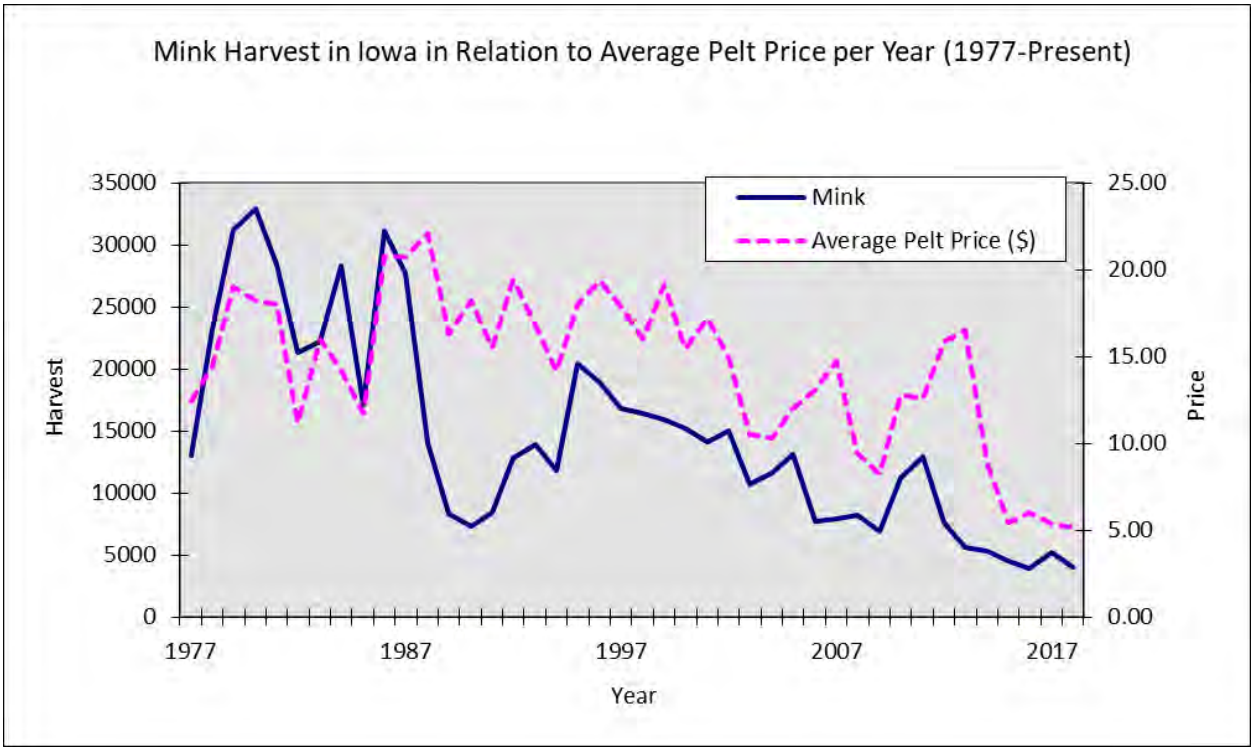


Figure 3.24 Mink harvest in Iowa and average pelt price paid by fur dealers (1977- present).

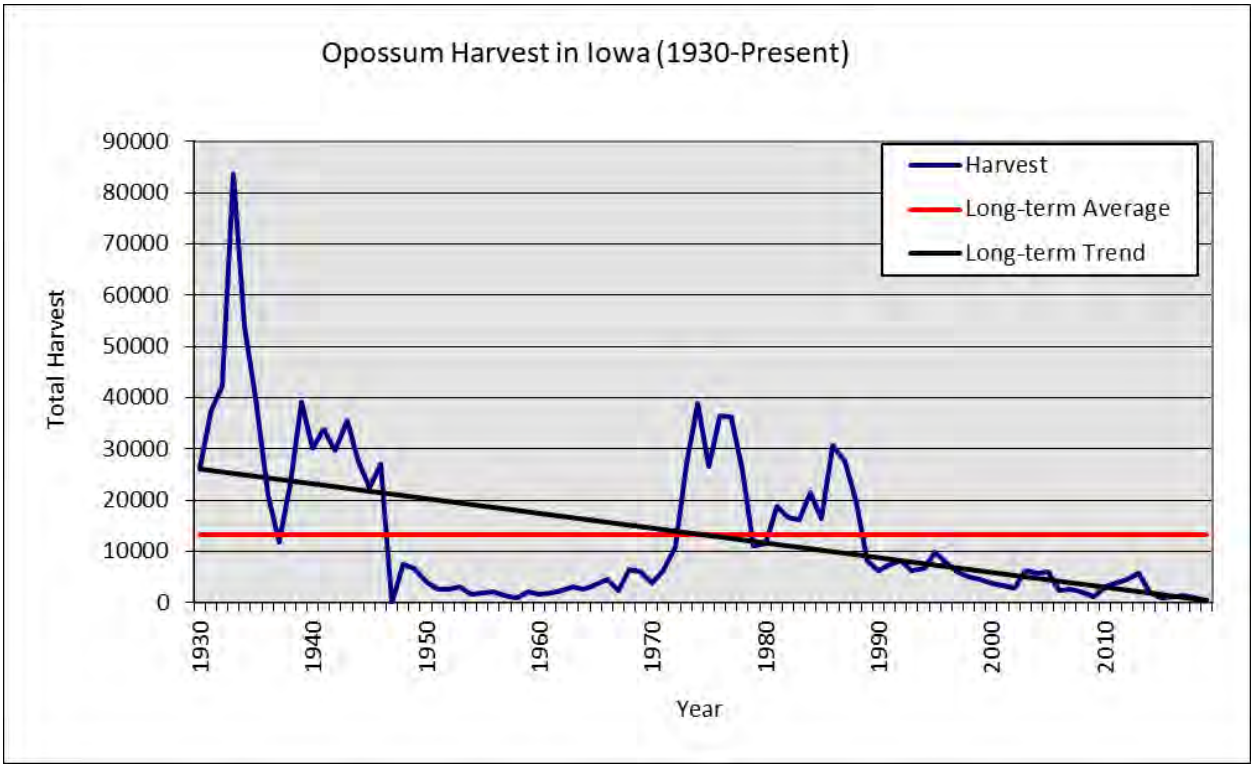


Figure 3.25 Annual opossum harvests reported by licensed fur dealers in Iowa (1930-present).

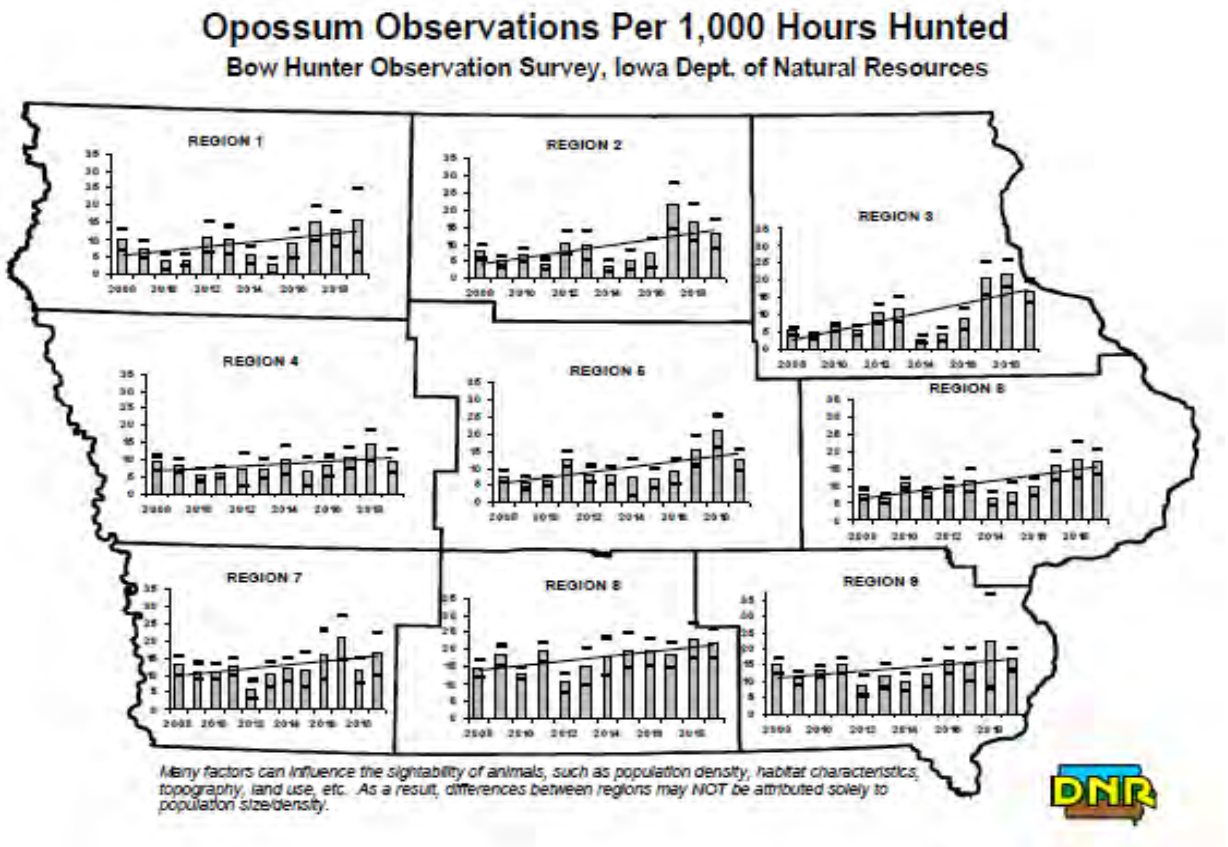


Figure 3.26 Results of opossum Bowhunter Observation Survey in Iowa (2008-present).

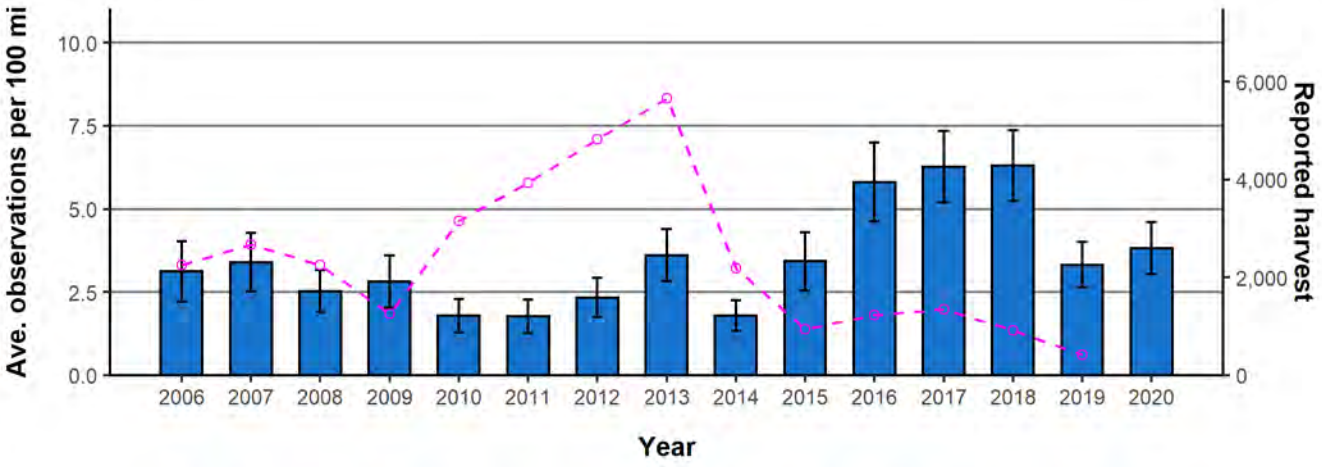


Figure 3.27 Total Virginia opossum observations by year during the Iowa Spring Spotlight Survey, 2008-present.

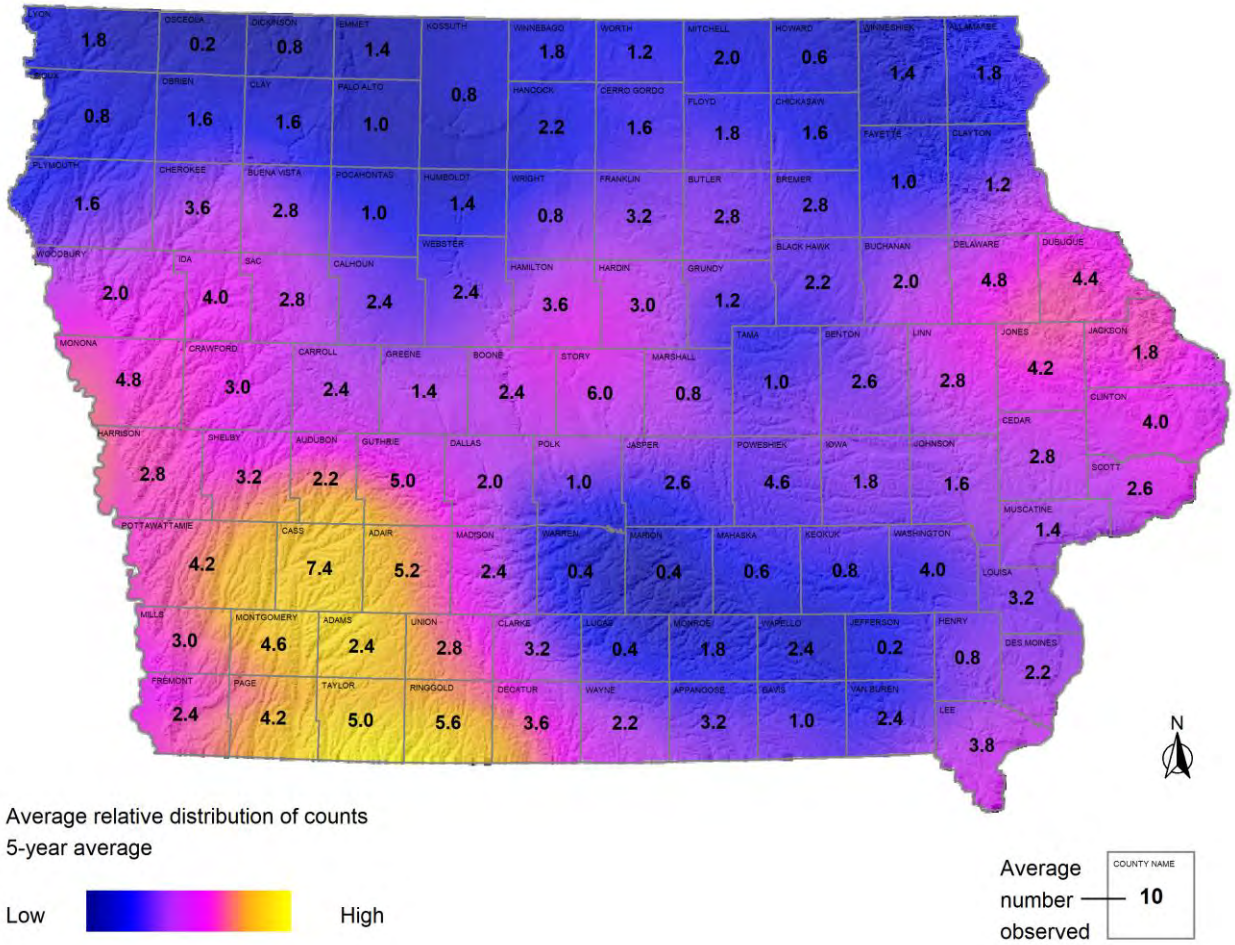


Figure 3.28 Relative distribution of average Spring Spotlight Survey Virginia opossum observations for the last 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

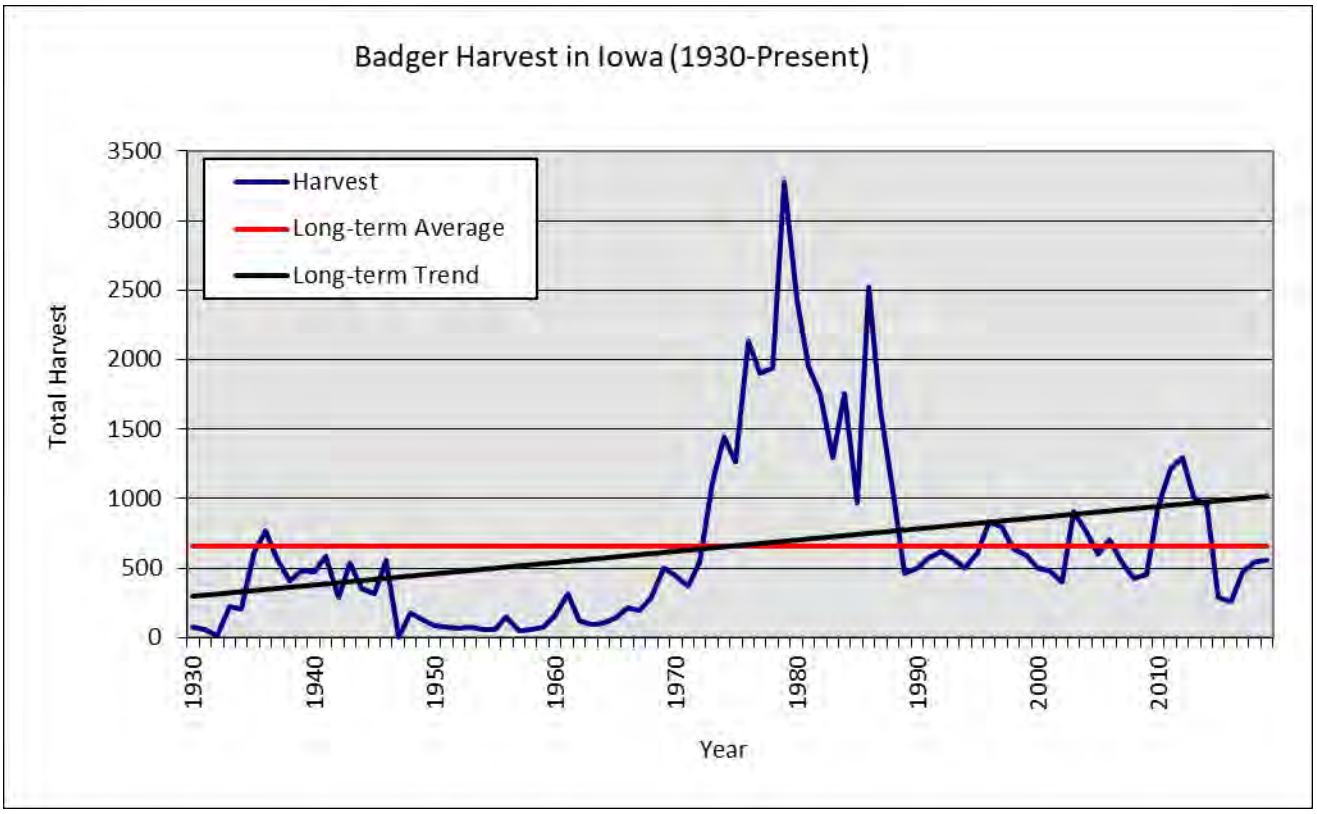


Figure 3.29. Annual badger harvests reported by licensed fur dealers in Iowa (1930-present).

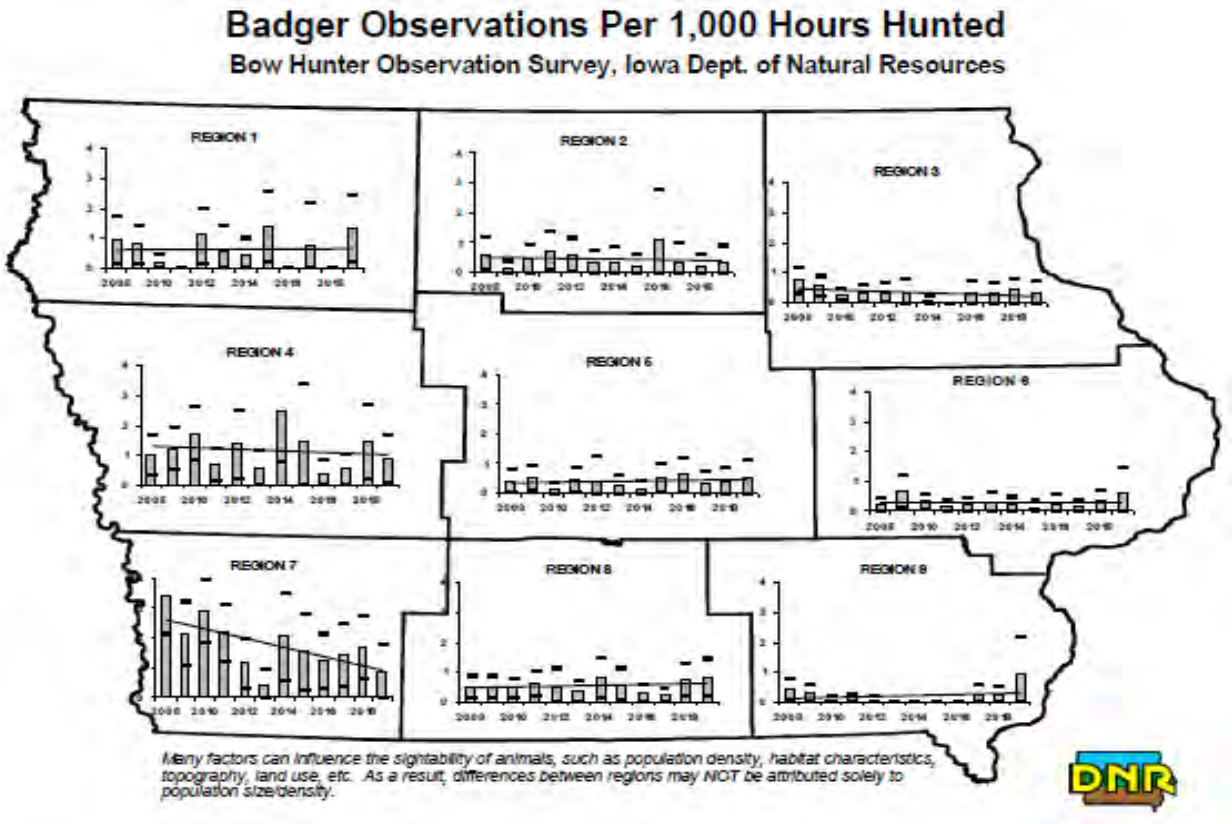


Figure 3.30 Results of badger Bowhunter Observation Survey in Iowa (2008-present).

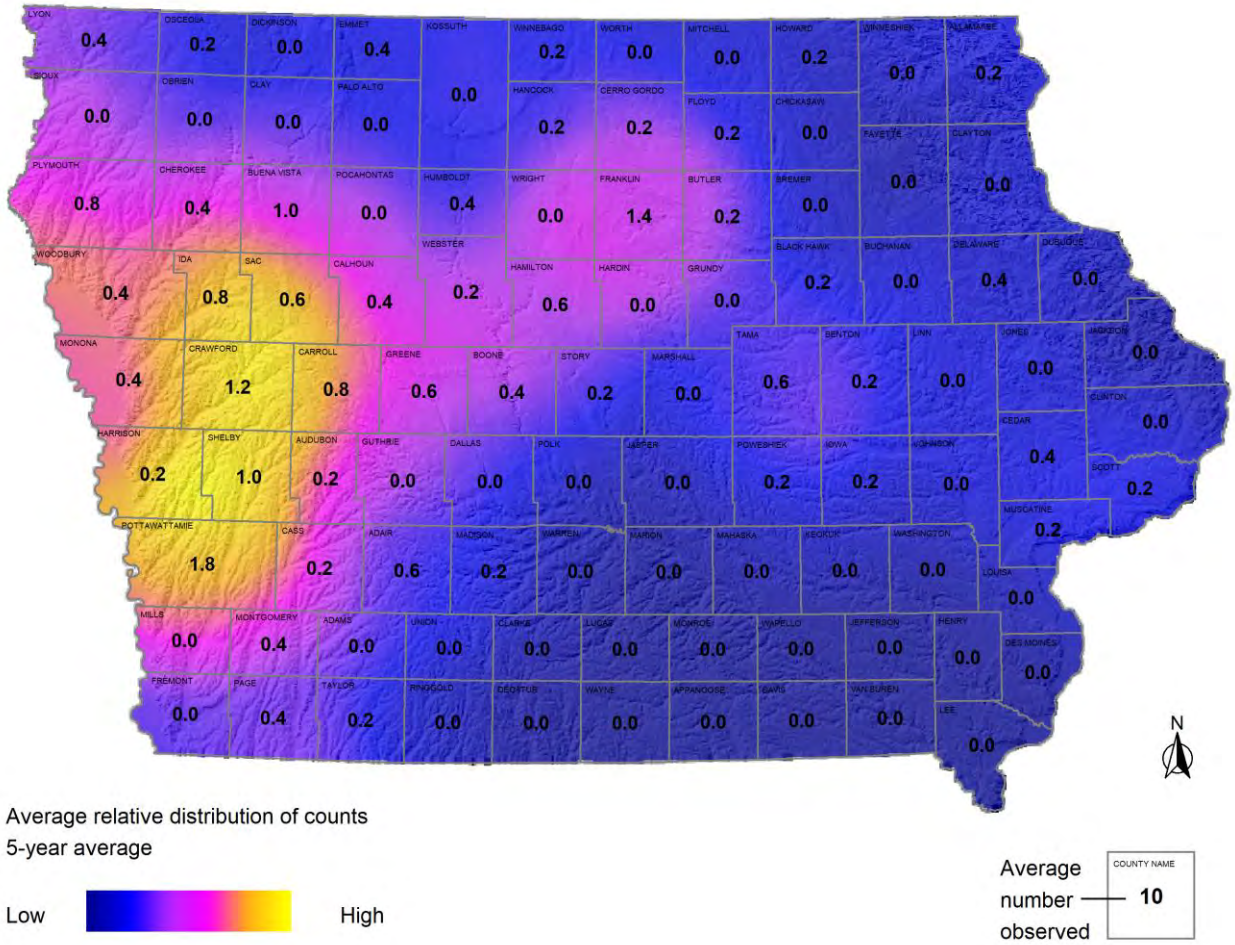


Figure 3.31 Relative distribution of average Spring Spotlight Survey American badger observations for the last 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

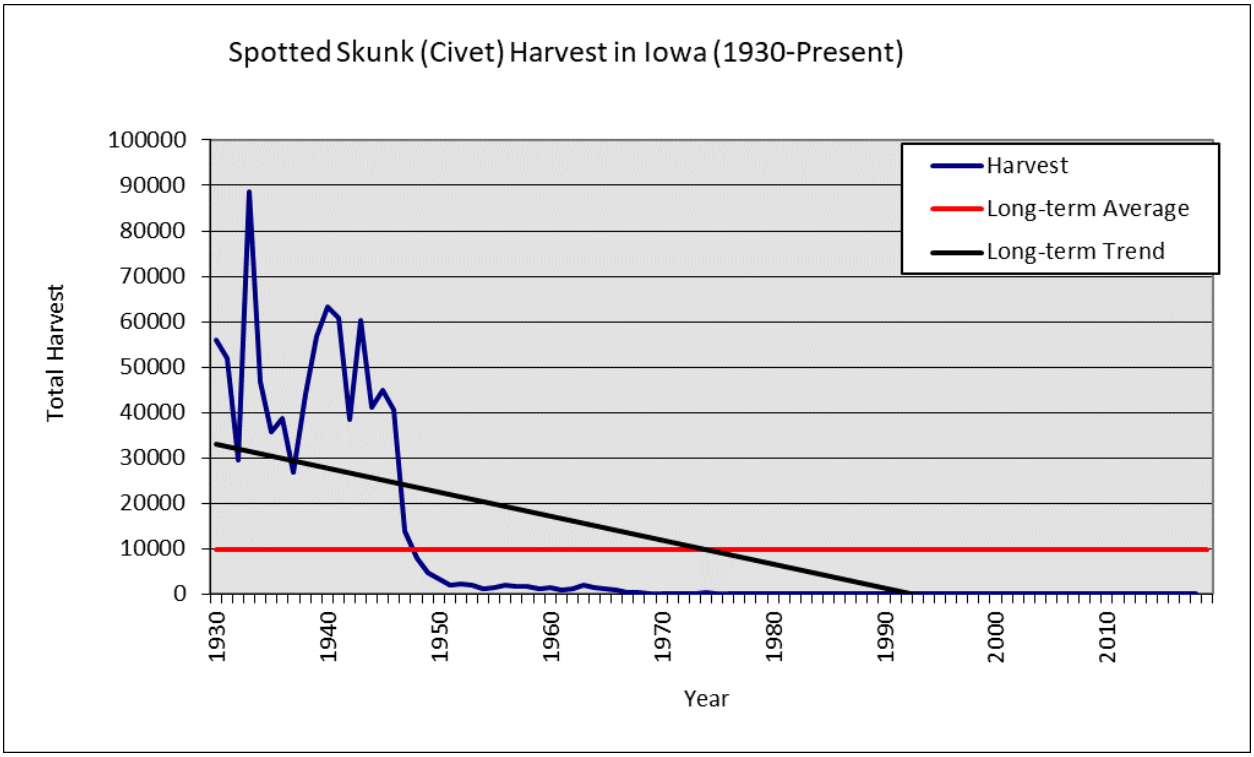


Figure 3.32 Annual spotted skunk harvests reported by licensed fur dealers in Iowa (1930-present).

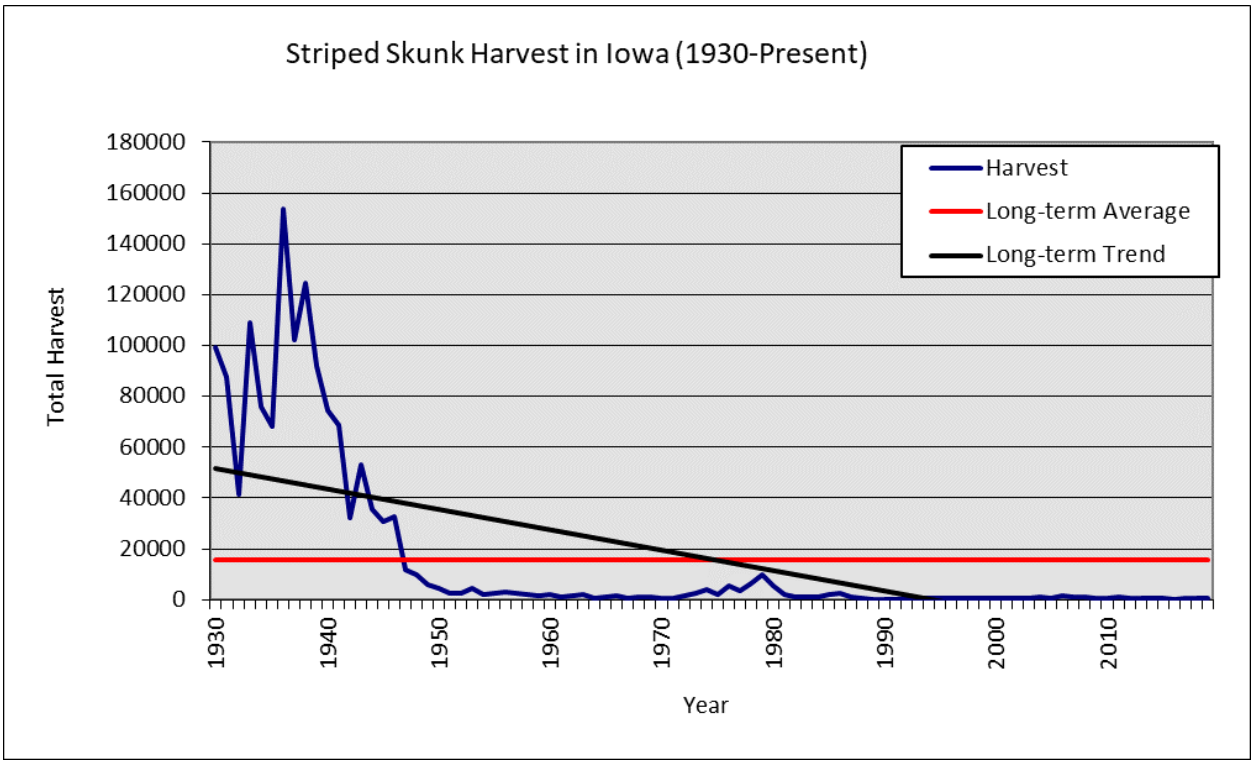


Figure 3.33 Annual striped skunk harvests reported by licensed fur dealers in Iowa (1930-present).

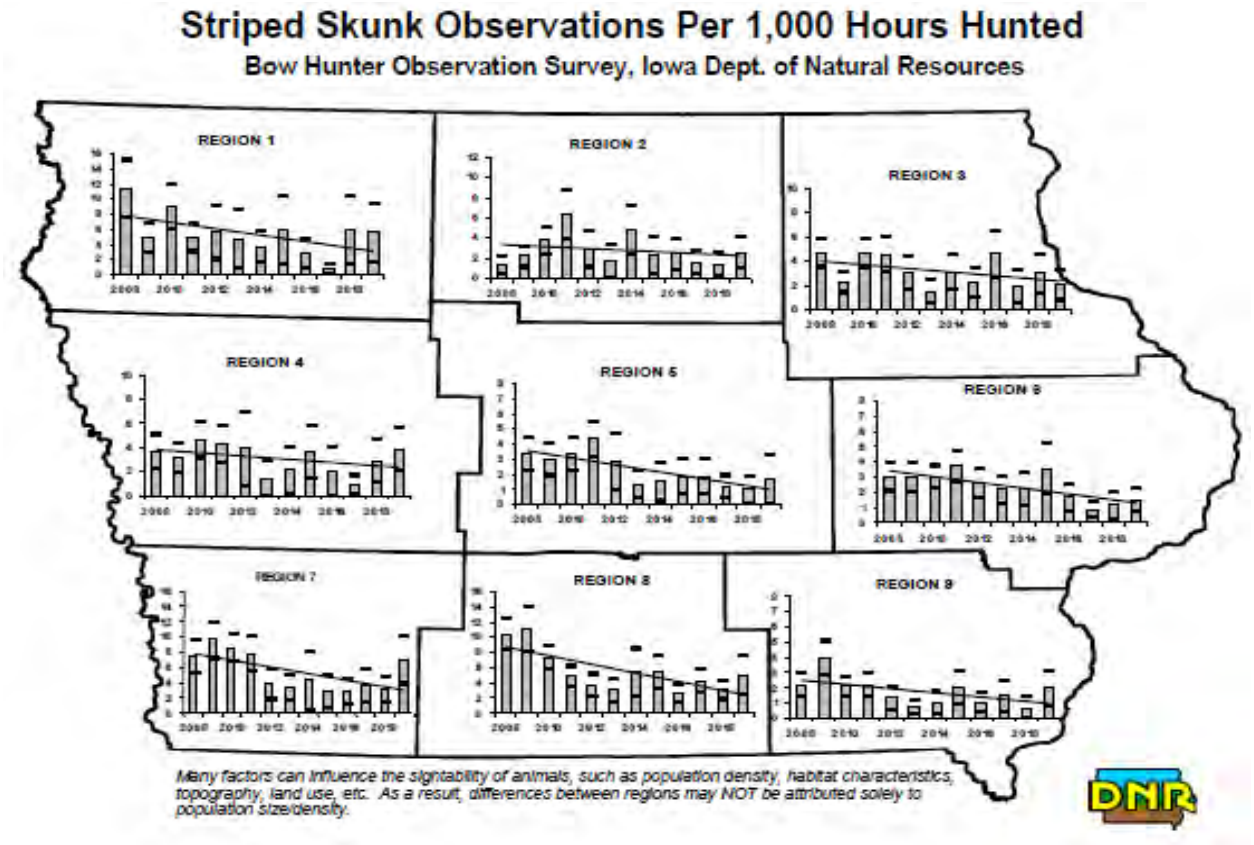


Figure 3.34 Results of striped skunk Bowhunter Observation Survey in Iowa (2008-present).

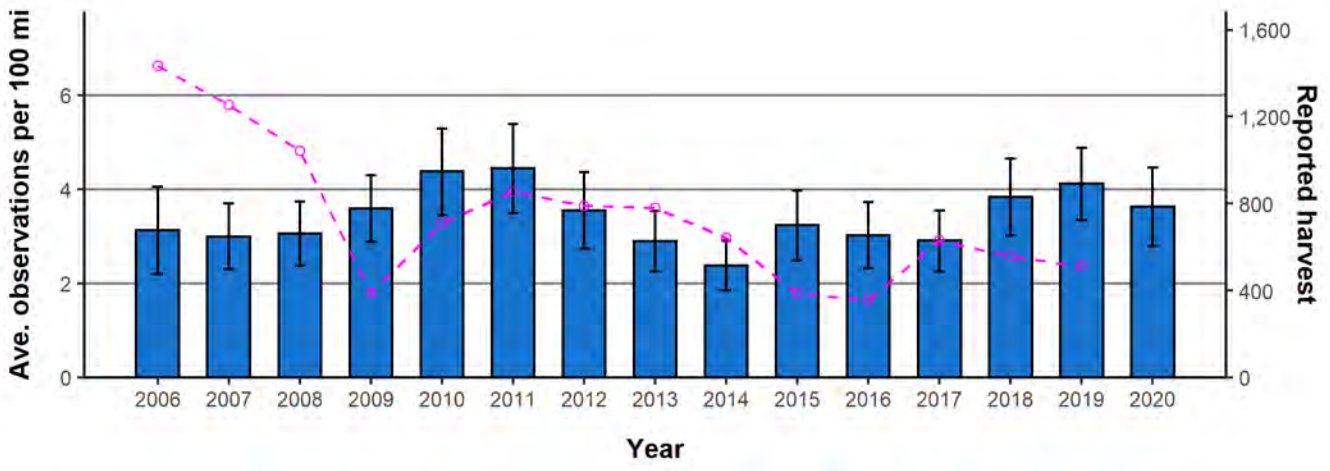


Figure 3.35 Total striped skunk observations by year during the Iowa Spring Spotlight Survey, 2008- present.

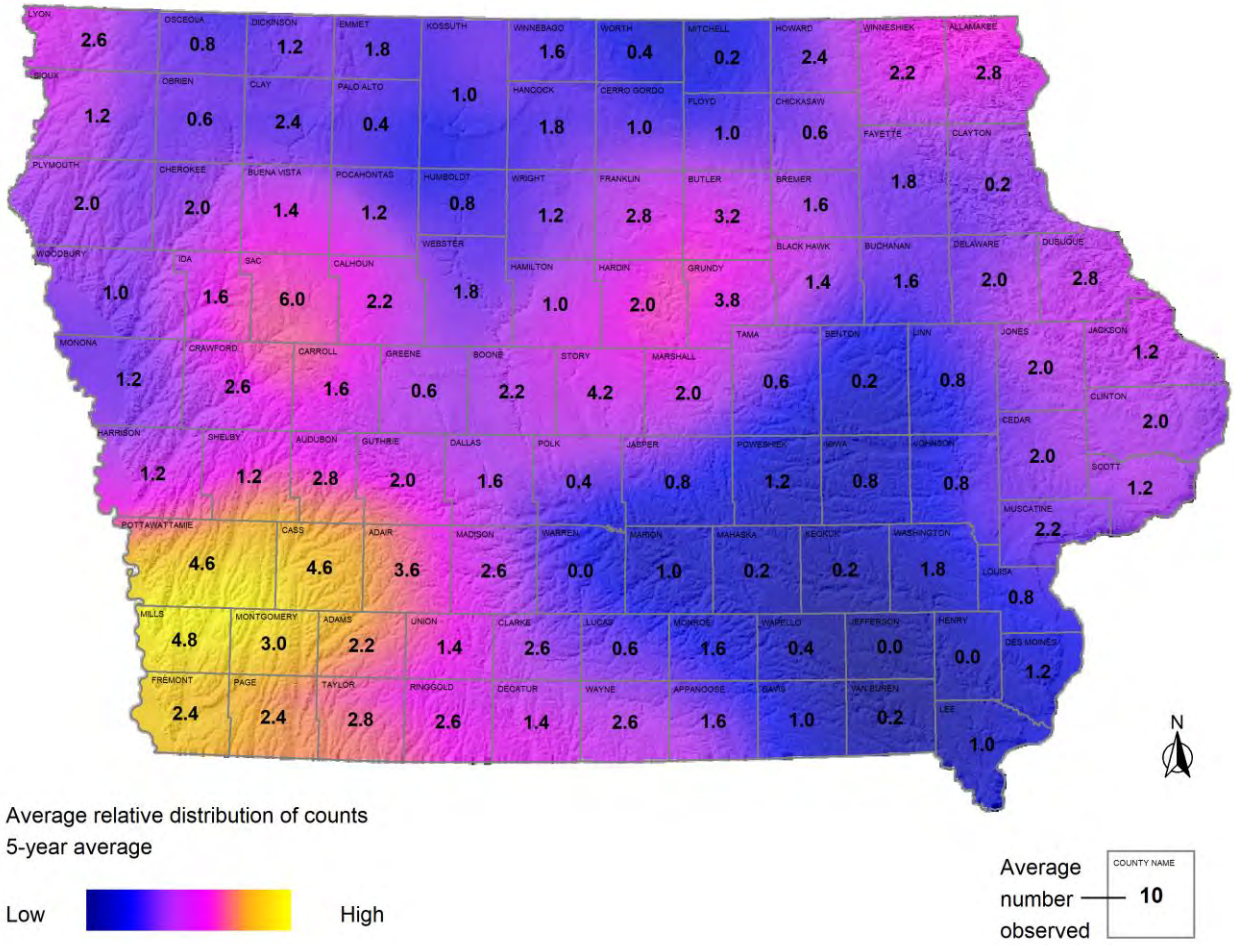


Figure 3.36 Relative distribution of average Spring Spotlight Survey striped skunk observations for the last 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties). Skunk includes all observations recorded as "striped skunk" and "skunk" and likely includes none or few spotted skunk observations due to the rarity of the species in the state.

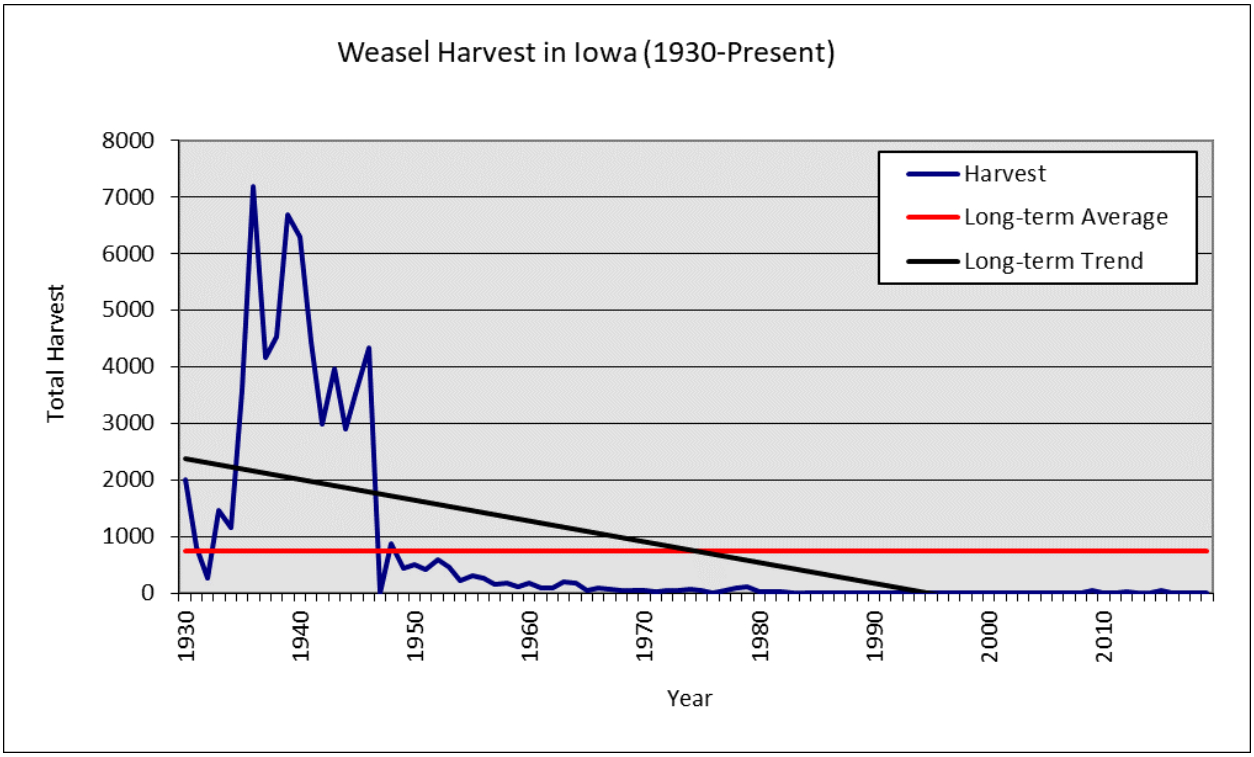


Figure 3.37 Annual weasel harvests reported by licensed fur dealers in Iowa (1930-present).

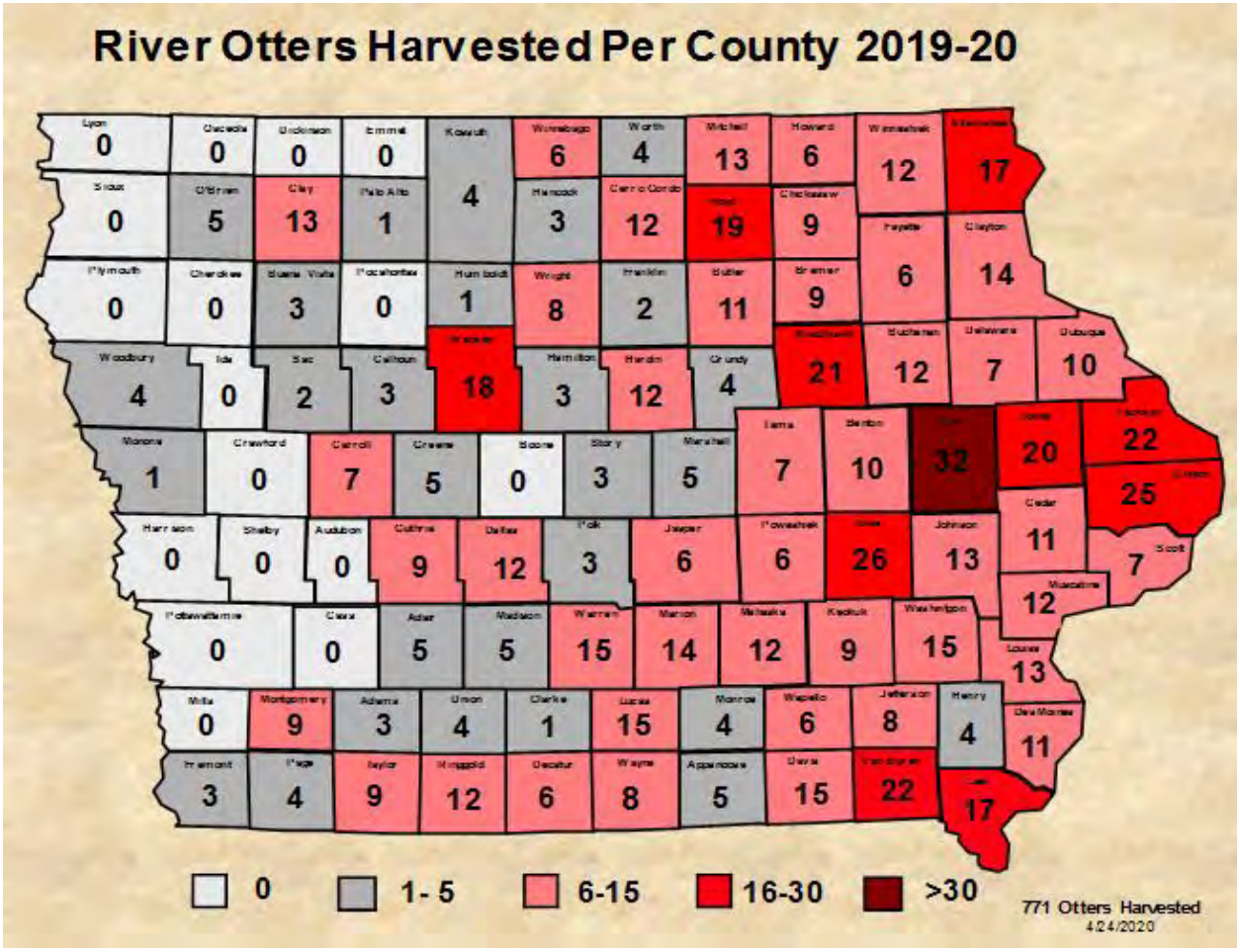


Figure 3.38 River otter harvest per county in Iowa, 2019-20.

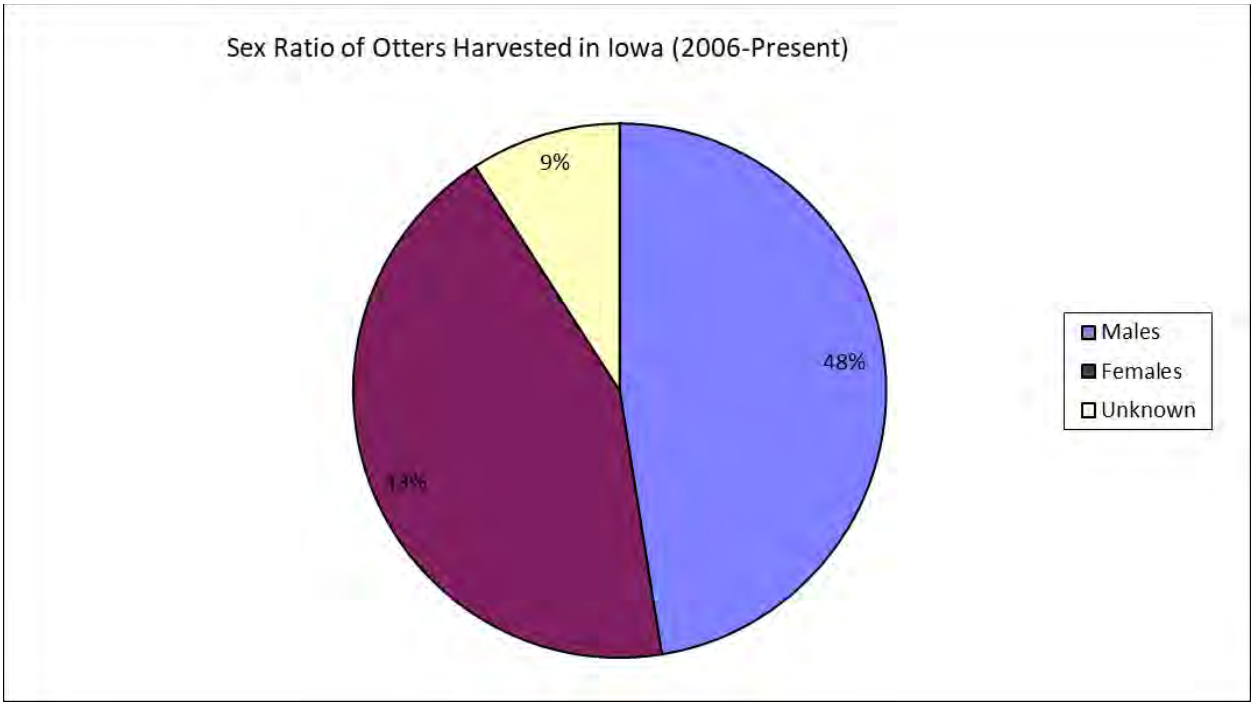


Figure 3.39 Sex ratio of harvested river otters in Iowa (2006-present).

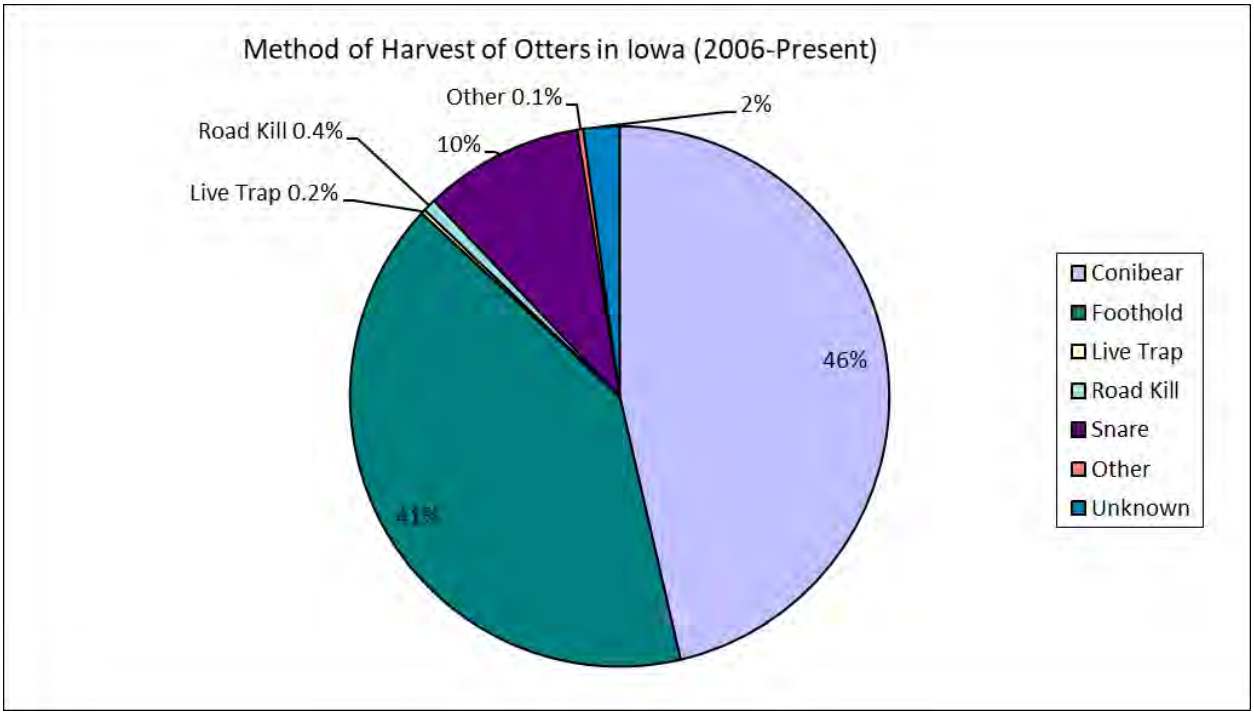


Figure 3.40 Harvest method of river otters in Iowa (2006-present).

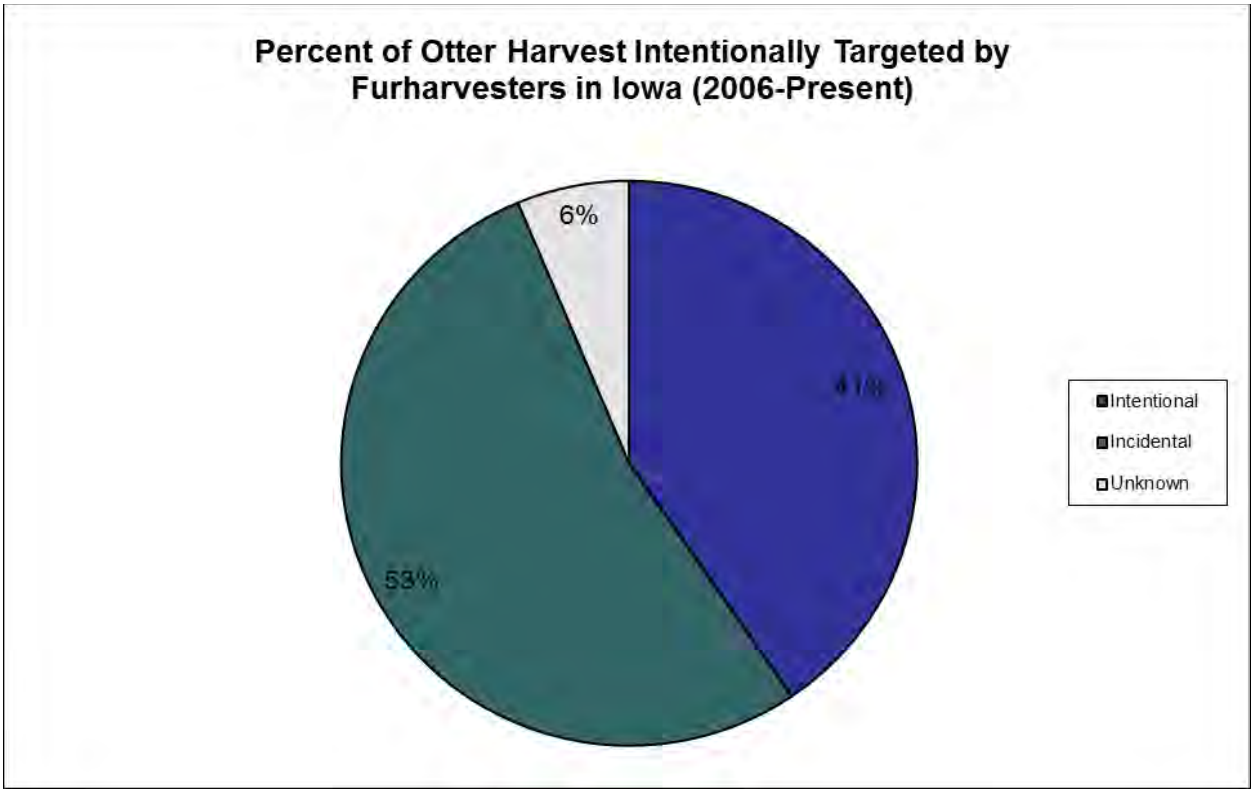


Figure 3.41 Percent of river otters intentionally and incidentally harvested in Iowa (2006-present).

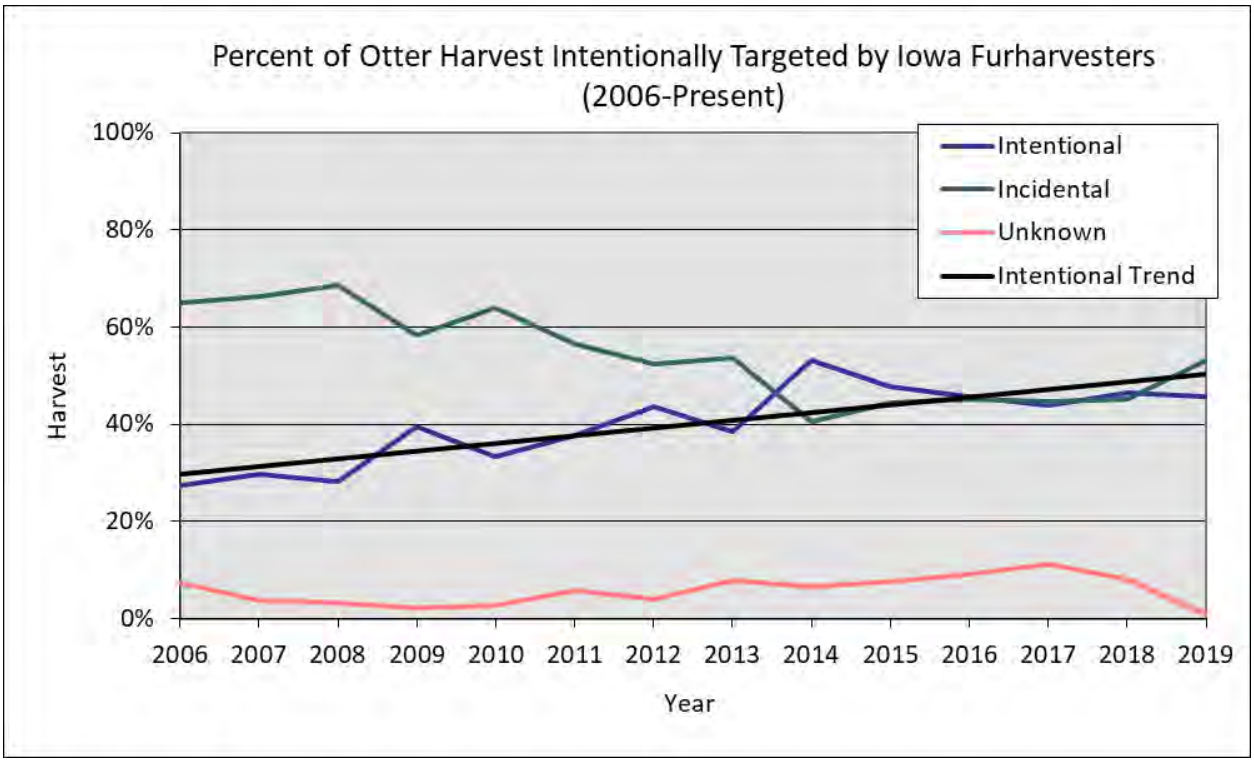


Figure 3.42 Trend for furharvesters intentionally targeting river otters in Iowa (2006-present).

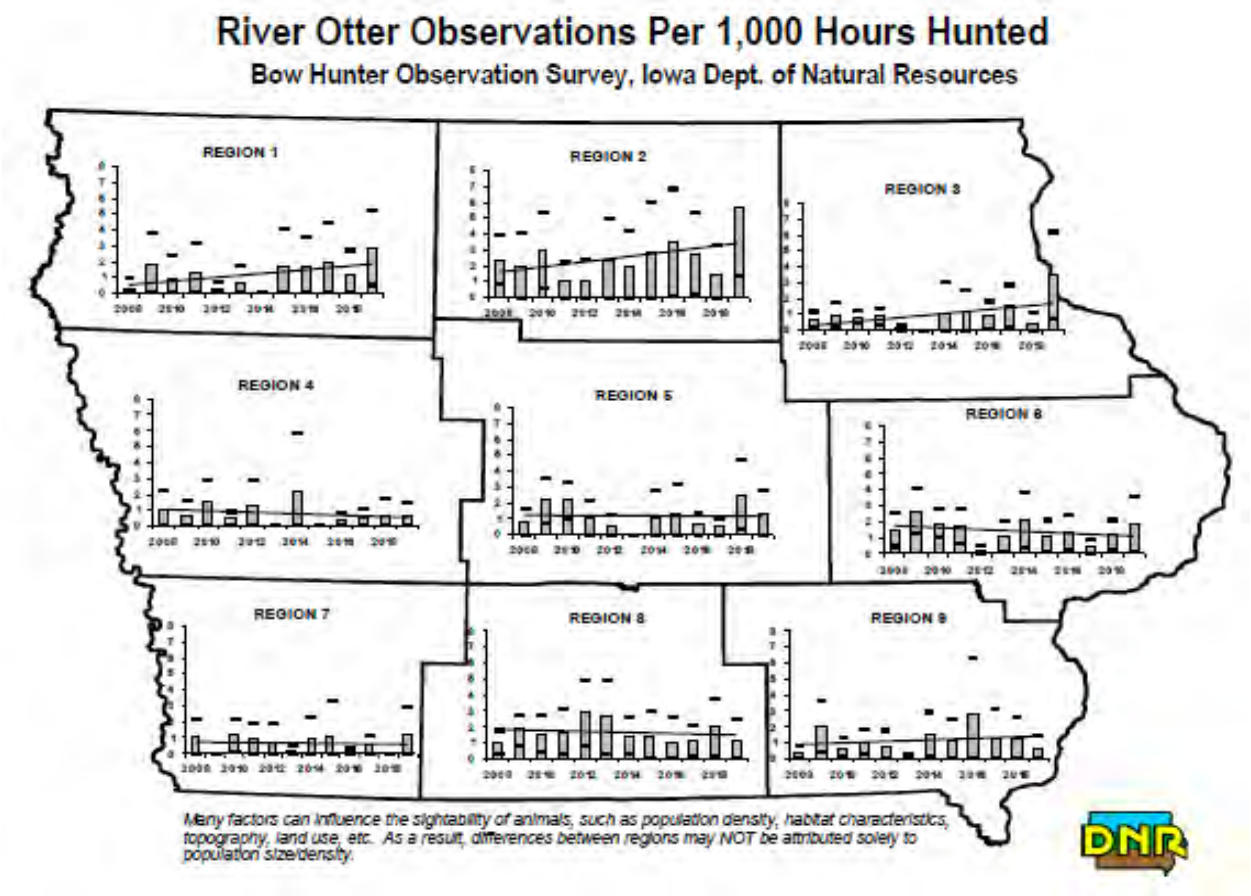


Figure 3.43 Results of river otter Bowhunter Observation Survey in Iowa (2008-present).

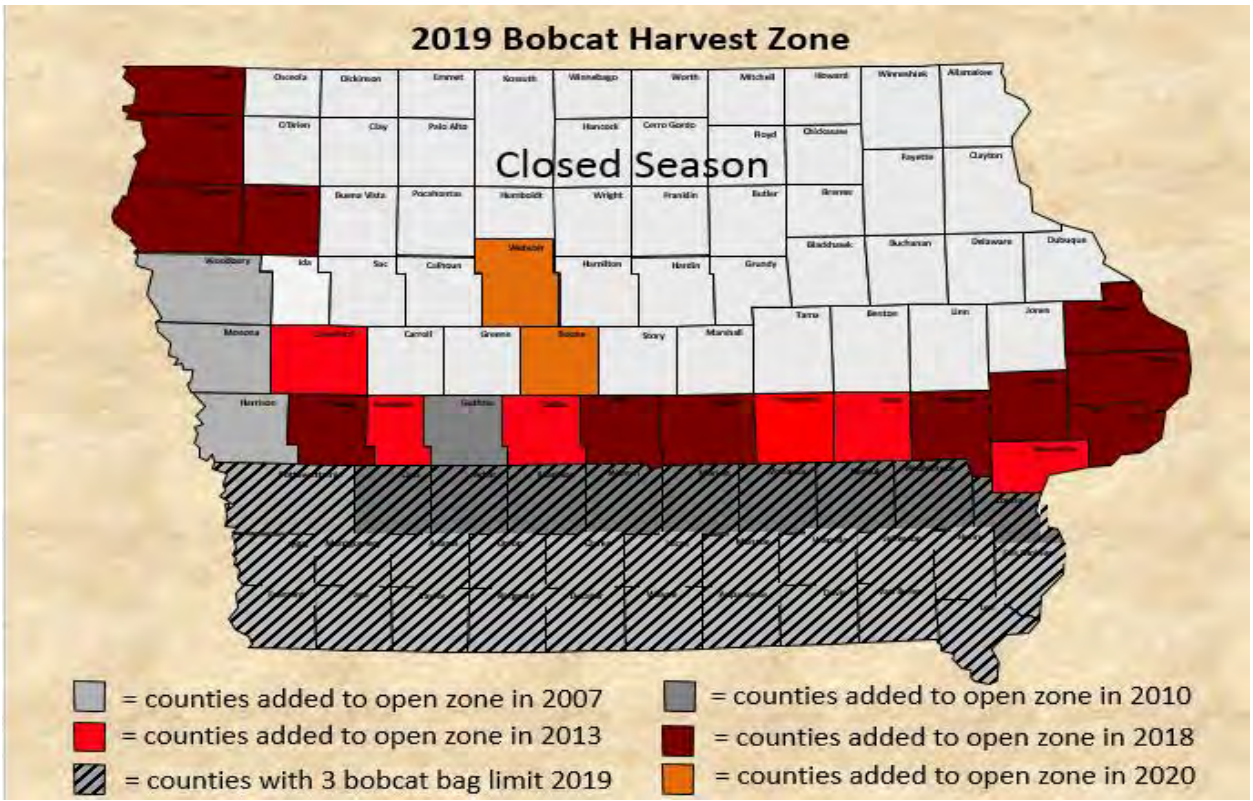


Figure 3.44 Open harvest zone for bobcat hunting/trapping season in Iowa (2019-2020).

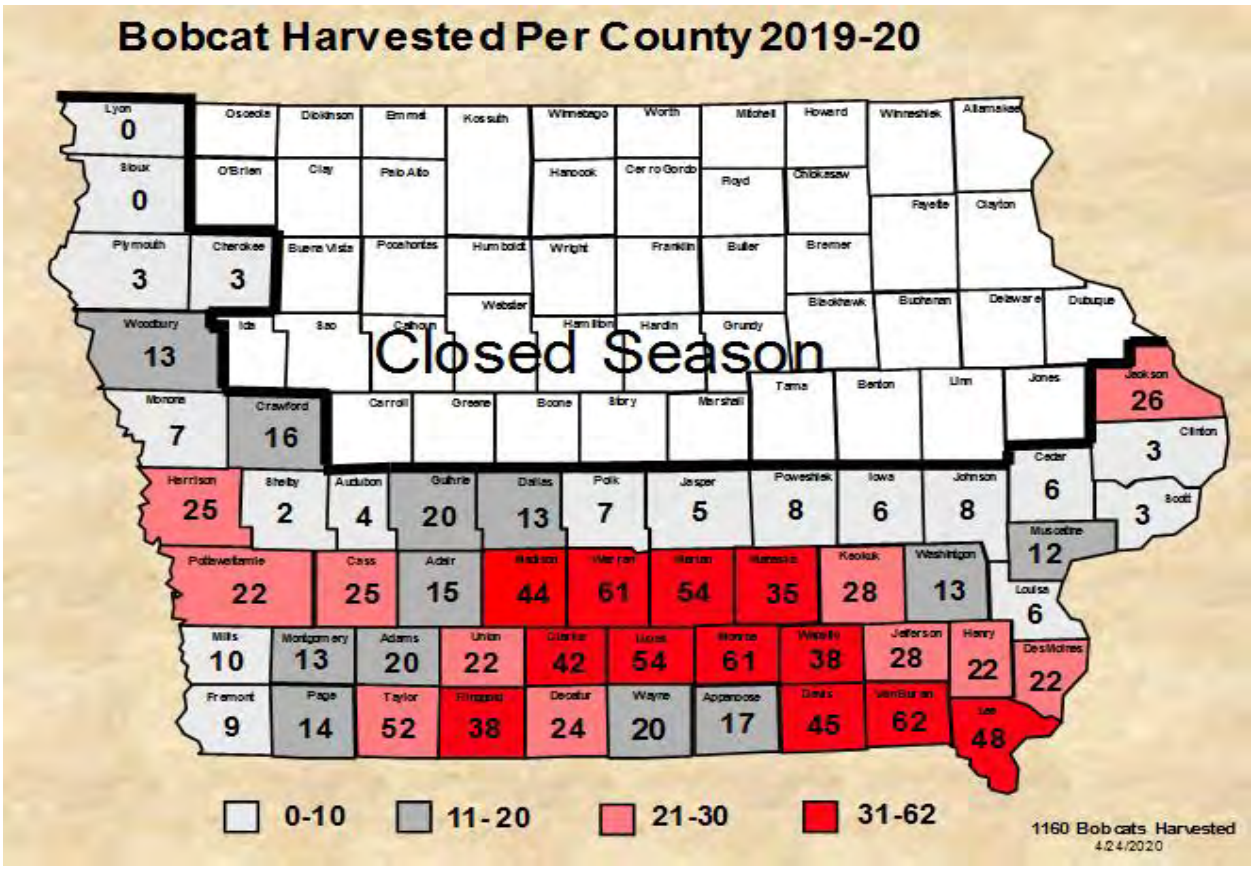


Figure 3.45 Bobcat harvest per county in Iowa (2019-2020).

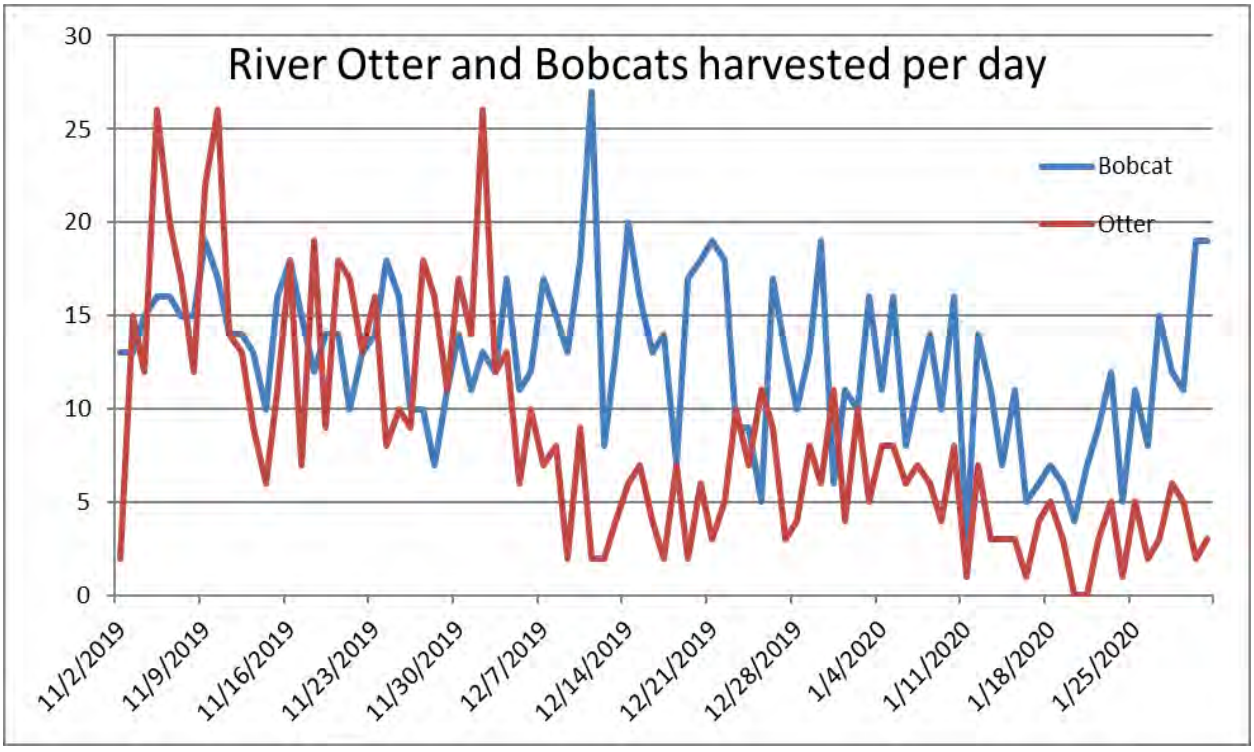


Figure 3.46 River Otter and bobcats harvested per day in Iowa (2019-2020).

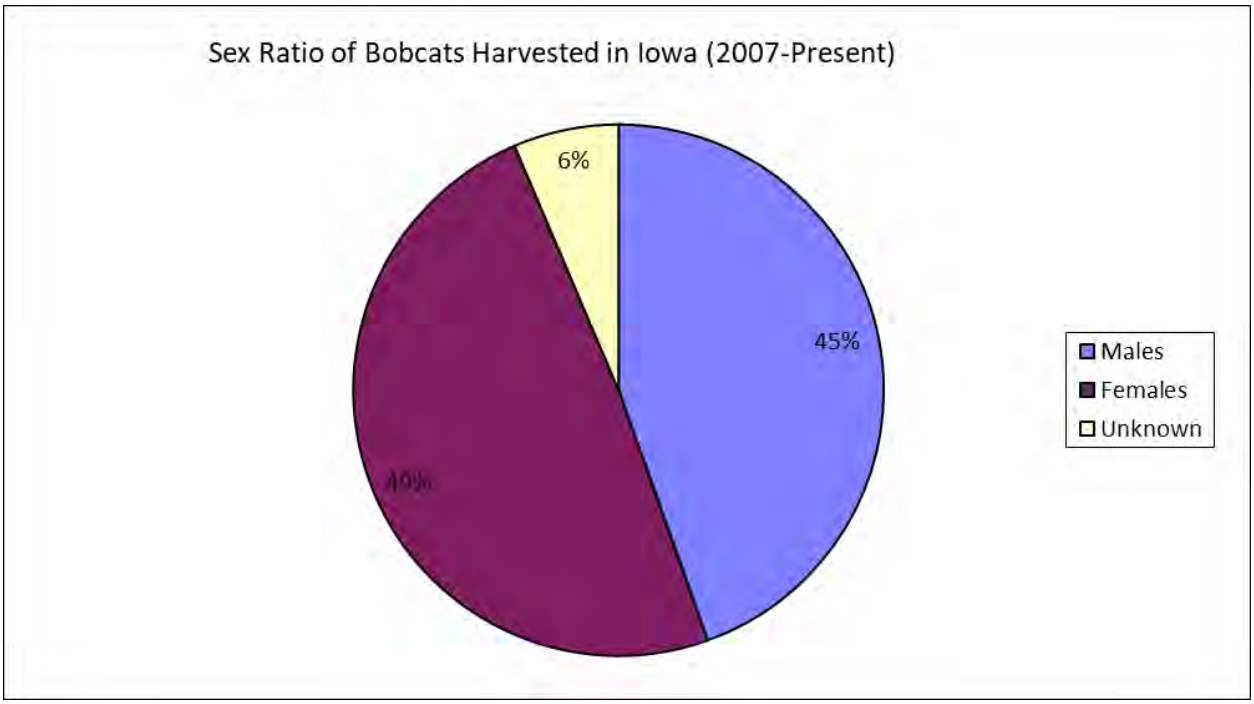


Figure 3.47 Sex ratio of harvested bobcats in Iowa (2007-present).

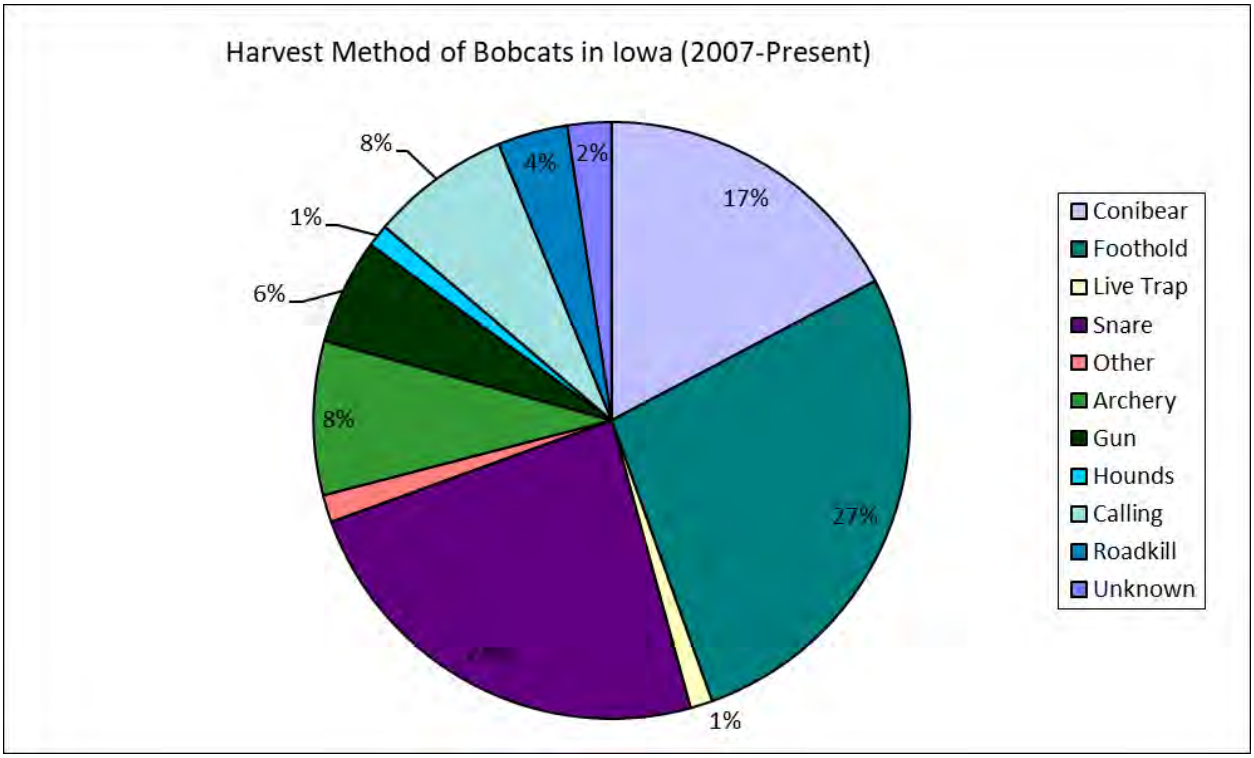


Figure 3.48 Harvest method of bobcats in Iowa (2007-present).

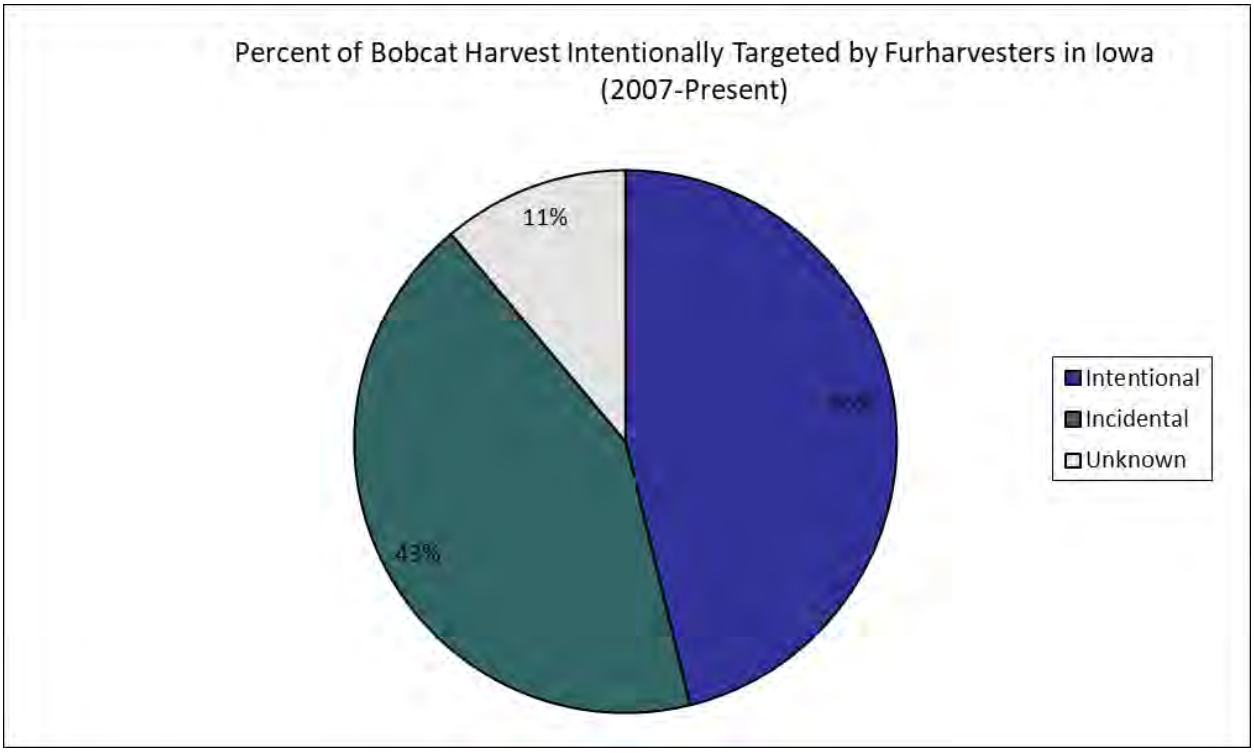


Figure 3.49 Percent of bobcats intentionally and incidentally harvested in Iowa (2007-present).

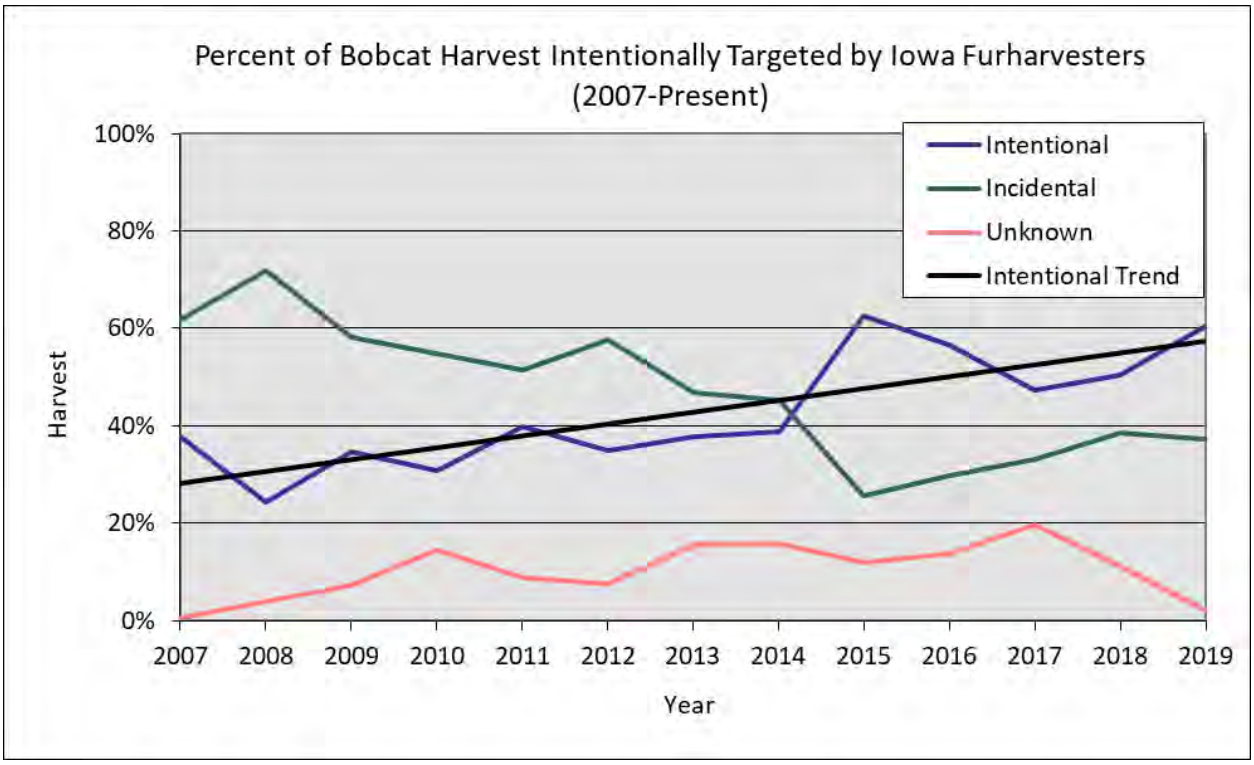


Figure 3.50 Trend for furharvesters intentionally targeting bobcats in Iowa (2007-present).

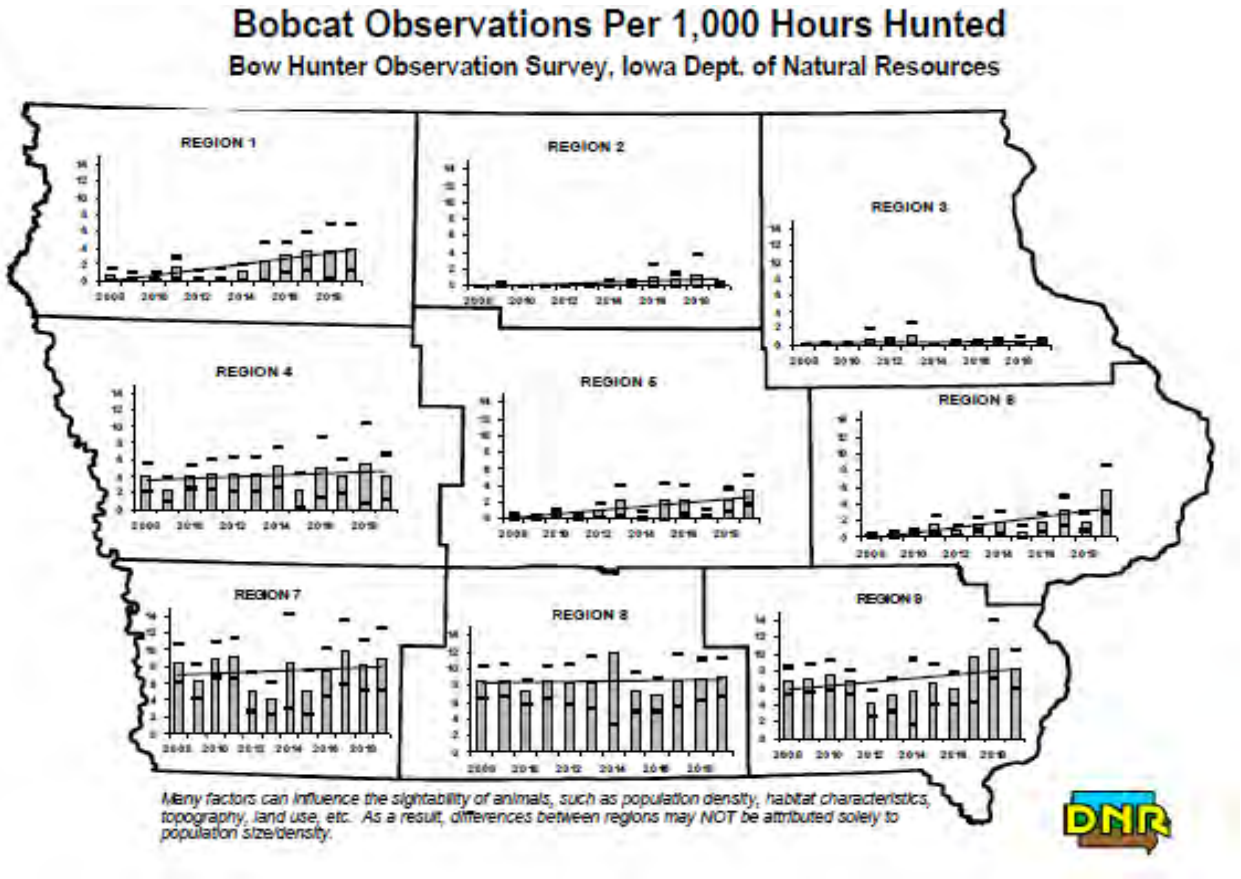


Figure 3.51 Results of bobcat Bowhunter Observation Survey in Iowa (2008-present).

Tables

Table 3.1 Statewide furbearer harvest in Iowa listed by species as reported in licensed fur dealer reports, 1930-Present

Data for each year includes harvest for the winter of the succeeding year, e.g., 1930=1930+1931 (winter).

Season	Muskrat	Mink	Striped Skunk	Raccoon	Spotted Skunk	Red Fox	Gray Fox	Opossum	Weasel	Coyote	Badger	Beaver	Bobcat[a]	Otter[a]
1930-31	381,651	36,842	99,321	11,740	55,938	2,550	182	26,230	2,018		75			
1931-32	293,294	33,780	87,701	12,951	52,022	3,723	208	37,558	801	3	56			
1932-33	181,038	25,303	41,511	10,468	29,505	2,755	35	42,415	256	1	17			
1933-34	380,275	47,119	108,776	15,447	88,532	6,807	486	83,625	1,468		227			
1934-35	113,889	21,755	75,900	14,719	46,676	5,065	417	54,025	1,149		207			
1935-36	351,968	31,613	68,231	19,353	35,767	6,218		39,961	3,602		611			
1936-37	212,332	32,337	153,497	15,037	38,724	9,133	170	20,985	7,190	22	768			
1937-38	176,759	21,438	102,212	13,287	26,928	7,111	1,846	11,755	4,159	146	569			
1938-39	308,015	27,783	124,322	15,014	43,971	7,403	1,900	23,303	4,529	162	412			
1939-40	46,003	2,877	91,838	16,465	56,708	5,706	1,413	39,050	6,692	183	486			
1940-41	350,700	38,817	74,251	19,756	63,256	6,505	1,730	30,131	6,290	259	470			
1941-42	262,007	33,650	68,840	22,512	60,944	6,137	1,967	33,839	4,440	202	586			
1942-43	262,562	23,297	32,437	20,128	38,508	6,560	1,823	29,691	2,982	209	287			
1943-44	722,360	52,760	53,199	38,303	60,238	8,695	2,516	35,579	3,966	926	538	235		
1944-45	457,573	47,040	35,737	36,803	41,235	9,785	2,332	27,513	2,905	388	354	259		
1945-46	418,417	48,145	30,755	41,084	44,827	11,554	2,350	22,501	3,607	388	314	623		
1946-47	387,614	60,397	32,458	61,880	40,661	12,259	2,223	26,960	4,334	915	553	494		
1947-48	17,059	27,638	11,903	55,601	13,944	8,963								
1948-49	164,736	16,571	9,712	61,419	7,815	6,015	192	7,563	881	265	182	670		
1949-50	171,820	17,973	6,136	58,527	4,532	4,826	983	6,681	433	57	136	2,489		
1950-51	117,051	17,007	4,270	56,075	3,321	5,618	917	4,090	509	131	90	3,103		
1951-52	67,211	23,257	2,558	67,211	1,842	3,703	443	2,600	412	34	81	2,465		
1952-53	62,356	27,222	2,730	62,356	2,143	3,313	420	2,632	584	34	67	3,790		
1953-54	335,451	30,459	4,511	79,939	1,892	2,573	399	3,203	470	17	82	6,565		
1954-55	143,886	20,051	2,278	49,592	1,122	1,679	196	1,758	229	45	63	3,635		
1955-56	80,414	10,548	2,677	50,849	1,480	1,678	156	1,774	304	6	57	4,336		
1956-57	79,109	9,706	3,219	58,944	1,888	1,892	183	2,062	263	24	153	2,874		
1957-58	65,969	9,838	2,690	48,134	1,778	1,389	90	1,494	149	9	47	1,938		
1958-59	130,668	13,308	1,988	29,361	1,710	1,147	132	953	181	6	58	2,289		
1959-60	164,485	16,942	1,789	59,814	1,171	4,162	262	2,065	113	61	77	2,980		
1960-61	144,119	10,033	2,044	45,279	1,475	6,952	232	1,701	183	97	162	4,519		

Season	Muskrat	Mink	Striped Skunk	Raccoon	Spotted Skunk	Red Fox	Gray Fox	Opossum	Weasel	Coyote	Badger	Beaver	Bobcat[a]	Otter[a]
1961-62	351,822	16,365	1,307	49,659	918	5,486	223	1,979	89	113	317	4,790		
1962-63	467,985	14,312	1,817	64,250	1,182	6,261	356	2,339	93	92	121	4,269		
1963-64	555,055	21,032	1,940	77,428	1,835	6,610	232	3,052	203	61	99	9,294		
1964-65	259,908	14,394	443	64,936	1,446	6,194	143	2,600	172	340	106	4,326		
1965-66	261,459	13,105	1,097	80,801	1,121	10,853	303	3,559	52	732	147	4,273		
1966-67	389,242	16,269	1,349	85,563	764	13,072	441	4,654	85	864	212	8,991		
1967-68	231,811	13,509	830	77,435	376	10,195	393	2,331	66	512	201	7,334		
1968-69	232,133	12,974	1,290	128,228	308	27,661	729	6,413	47	4,922	287	5,221		
1969-70	306,967	12,616	1,146	137,453	197	17,993	702	5,891	48	3,678	502	4,905		
1970-71	345,538	11,110	700	94,174	113	15,725	503	3,721	41	4,430	446	4,073		
1971-72	449,442	15,855	756	131,247	109	14,978	780	6,157	22	5,240	373	7,138		
1972-73	399,021	17,093	1,579	173,162	131	18,281	722	10,849	40	5,616	551	4,527		
1973-74	638,317	23,269	2,779	255,212	188	24,145	1,624	26,947	52	8,713	1,121	5,834		
1974-75	465,488	22,517	3,935	275,518	280	17,829	1,682	38,844	71	12,020	1,438	5,556		
1975-76	386,679	18,406	1,937	292,064	106	15,838	1,574	26,485	50	9,444	1,267	5,154		
1976-77	252,754	15,956	5,441	264,819	46	22,699	1,795	36,493	4	12,226	2,136	7,773		
1977-78	257,237	13,037	3,588	264,367	7	22,831	1,640	36,186	36	12,011	1,900	3,432		
1978-79	467,721	23,277	6,545	251,985		24,348	2,115	26,160	82	10,627	1,936	4,327		
1979-80	741,403	31,270	10,022	308,277		17,629	3,093	10,978	122	7,745	3,274	12,498		
1980-81	739,419	32,950	5,616	235,717		20,602	2,175	11,664	32	6,847	2,427	11,831		
1981-82	521,945	28,455	1,913	291,227		22,385	1,710	18,730	16	9,860	1,946	5,705		
1982-83	428,252	21,307	1,194	255,926		18,527	1,953	16,761	16	8,930	1,754	5,809		
1983-84	464,793	22,245	1,152	261,875		21,257	1,185	16,179		9,636	1,298	8,563		
1984-85	372,466	28,346	1,032	334,179		18,916	1,896	21,455		7,809	1,754	16,323		
1985-86	254,412	17,116	1,861	270,805		16,346	1,114	16,296		7,858	975	14,931		
1986-87	482,811	31,139	2,540	390,773		19,740	1,593	30,760		10,582	2,520	17,778		
1987-88	515,611	27,712	1,198	307,587		19,666	1,091	27,623		10,348	1,642	13,509		
1988-89	192,214	13,996	712	190,556		15,445	769	19,824		4,650	1,043	18,459		
1989-90	73,415	8,293	245	118,653		13,359	374	8,114		4,073	468	8,706		
1990-91	70,133	7,363	189	103,468		14,268	393	6,243		5,068	503	9,246		
1991-92	91,206	8,469	211	110,342		15,463	429	7,411		5,213	572	8,943		
1992-93	124,638	12,839	791	110,203		14,660	1,036	8,192		10,286	621	15,839		
1993-94	163,842	13,946	643	118,463		12,986	836	6,243		7,313	571	11,788		
1994-95	178,683	11,819	510	112,686		12,243	789	6,782		6,986	502	11,643		

Season	Muskrat	Mink	Striped Skunk	Raccoon	Spotted Skunk	Red Fox	Gray Fox	Opossum	Weasel	Coyote	Badger	Beaver	Bobcat[a]	Otter[a]
1995-96	158,241	20,392	786	118,136		14,136	948	9,781		8,462	614	10,678		
1996-97	123,460	18,946	693	123,698		12,402	721	7,643		7,159	832	10,481		
1997-98	113,621	16,832	649	149,492		12,896	768	6,012		6,992	796	11,122		
1998-99	90,126	16,461	536	106,641		11,646	681	5,123		5,786	642	10,336		
1999-00	86,998	15,931	528	101,233		11,968	631	4,649		5,231	597	10,108		
2000-01	84,972	15,235	469	94,989		11,103	576	3,922		5,348	506	10,478		
2001-02	78,867	14,162	398	143,206		12,349	529	3,361		6,702	487	11,287		
2002-03	89,421	14,986	417	118,531		14,869	507	2,905		5,746	402	10,431		
2003-04	54,919	10,711	842	177,315		10,608	365	6,184		8,178	912	8,591		
2004-05	45,516	11,662	930	179,185		7,122	198	5,858		5,197	761	6,221		
2005-06	79,328	13,162	793	163,746		8,587	219	5,916		7,381	606	8,698		
2006-07	64,799	7,706	1,434	156,379		2,013	20	2,254		4,258	704	5,675		466
2007-08	55,476	7,967	1,256	143,271		2,143	178	2,673		4,513	536	5,303	154	416
2008-09	48,794	8,236	1,042	124,789		3,729	217	2,251		5,176	431	5,829	234	479
2009-10	44,436	6,905	388	115,349		1,792	13	1,261	56	2,501	454	3,431	236	508
2010-11	98,079	11,262	708	236,943		3,810	26	3,156	7	8,089	946	5,382	274	456
2011-12	78,422	12,977	858	326,368		4,209	85	3,932	3	7,765	1,220	11,652	398	770
2012-13	54,382	8,060	788	303,496		4,104	63	4,820	31	13,261	1,343	15,457	528	971
2013-14	30,584	5,582	779	308,025		4,099	16	5,668	9	15,347	1,006	7,496	978	1,165
2014-15	44,175	5,332	642	200,509		2,397	182	2,187	3	13,911	957	4,591	706	835
2015-16	33,327	4,545	386	89,061		1,581	44	940	50	13,158	289	4,021	535	692
2016-17	38,944	3,957	355	82,126		1,239	19	1,231	10	9,283	261	4,214	591	556
2017-18	40,913	5,182	630	106,842		2,284	4	1,341	2	15,185	470	5,438	214	430
2018-19	16,320	4,021	557	115,132		1,357	7	914	1	18,676	547	3,893	687	576
2019-20	14,851	2,026	738	100,857		1,487	2	532	5	16,326	559	5,505	1,160	771
Average														
5-Year	28,871	3,946	533	98,804	0	1,590	15	992	14	14,526	425	4,614	758	683
10-Year	45,000	6,294	644	186,936	0	2,657	45	2,472	12	13,100	760	6,765	668	762
20-Year	54,826	8,684	721	164,306	0	5,044	164	3,065	16	9,300	670	7,180	561	678
50-Year	214,928	14,800	1,494	188,172	123	12,282	798	10,792	32	8,463	998	8,714	561	678
Long term[1]	231,706	19,001	15,838	126,027	18,327	9,892	791	13,440	1,059	5,165	671	7,005	561	678

[1]Long-term data dates back to 1930.

[a]Otter and bobcat harvest data was recorded from the harvest reporting system, not licensed fur dealers.

Table 3.2 Number of licensed fur harvesters and fur dealers in Iowa, 2003-Present

Year	Resident Furharvesters	Lifetime Furharvesters	Non-Resident Furharvesters	Total	Resident Fur Dealers	Non-Resident Fur Dealers	Total
2003	14,404	-	99	14,503	43	2	45
2004	14,607	-	91	14,698	46	3	49
2005	13,376	-	83	13,459	41	2	43
2006	14,542	-	100	14,642	38	5	43
2007	15,279	-	134	15,413	39	4	43
2008	15,523	-	168	15,691	40	4	44
2009	14,098	-	99	14,197	34	3	37
2010	15,033	-	144	15,177	34	2	36
2011	16,928	-	121	17,049	34	5	39
2012	19,197	-	171	19,268	36	4	40
2013	20,148	455	248	20,818	36	6	42
2014	18,482	560	144	19,186	44	5	49
2015	14,659	955	670	16,284	40	4	44
2016	14,539	248	29	14,816	34	5	39
2017	14,100	296	97	14,493	31	5	36
2018	13,656	300	185	14,141	32	3	35
2019	14,112	295	129	14,536	31	4	35

Table 3.3 Total number of pelts sold in Iowa and average, minimum, and maximum prices paid per species by fur dealers, 2017-Present

	No. of Pelts Sold in Iowa	Price Paid per Pelt ($)		
		Average	Minimum	Maximum
Raccoon				
2017-18	106842	5.71	1.95	8.00
2018-19	115132	7.90	2.65	11.00
2019-20	100857	4.96	1.95	6.11
Muskrat				
2017-18	40913	2.43	1.44	3.57
2018-19	16320	2.64	0.79	4.00
2019-20	14851	2.61	1.00	4.89
Mink				
2017-18	5182	5.38	2.00	8.10
2018-19	4021	5.17	2.00	10.00
2019-20	2026	3.36	1.00	5.00
Beaver				
2017-18	5438	6.80	3.00	8.69
2018-19	3893	6.83	4.76	10.00
2019-20	5505	6.37	3.50	10.00
Coyote				
2017-18	15185	21.17	2.00	28.28
2018-19	18676	24.97	5.77	35.02
2019-20	16326	26.68	8.51	35.26

	No. of Pelts Sold in Iowa	Price Paid per Pelt ($)		
		Average	Minimum	Maximum
Red Fox				
2017-18	2284	11.81	4.00	22.33
2018-19	1358	9.39	7.46	15.00
2019-20	1487	8.14	1.50	12.50
Opossum				
2017-18	1341	0.84	0.00	3.00
2018-19	914	1.02	0.50	1.50
2019-20	532	0.80	0.50	5.21
Badger				
2017-18	470	10.02	2.00	20.00
2018-19	547	12.22	3.50	21.00
2019-20	559	11.66	3.50	22.50
Striped Skunk				
2017-18	630	2.67	0.50	7.00
2018-19	557	2.81	0.75	10.00
2019-20	738	3.26	0.80	6.27
River Otter				
2017-18	430	17.91	10.00	28.00
2018-19	406	19.04	8.75	30.00
2019-20	512	15.42	11.00	25.00
Bobcat				
2017-18	214	38.40	10.00	75.00
2018-19	271	58.60	14.33	100.00
2019-20	230	29.37	10.00	52.00
Gray Fox				
2017-18	4	11.00	8.00	15.00
2018-19	7	10.00	10.00	10.00
2019-20	2	10.00	10.00	10.00
Weasel				
2017-18	2	1.50	1.00	2.00
2018-19	1	1.00	1.00	1.00
2019-20	8	2.00	2.00	2.00

Table 3.4 Value ($) of pelts from important furbearer species harvested in Iowa, 1930-Present

Data for each year includes harvest from the winter of the succeeding year, e.g., 1930 = 1930+1931 (winter).

Season	Mink		Muskrat		Raccoon		Red Fox		All Species
	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Total Value
1930-31	3.50	128,947	0.42	160,293	4.50	52,830	6.85	17,467	534,409
1931-32	3.60	121,608	0.52	152,512	4.40	56,984	4.50	16,753	497,260
1932-33	3.00	75,909	0.30	54,311	2.60	27,216	3.25	8,953	213,186
1933-34	4.40	207,323	0.52	197,743	3.45	53,292	4.50	30,631	615,688
1934-35	4.40	95,810	0.70	79,722	3.50	51,516	4.00	20,260	348,843
1935-36	5.93	187,465	0.98	344,928	3.95	76,444	2.95	18,343	723,451
1936-37	9.00	291,033	1.25	265,440	4.00	60,148	3.00	27,399	842,666
1937-38	5.60	120,052	0.60	106,055	3.65	48,497	3.00	21,333	412,361
1938-39	7.25	201,426	0.75	231,011	2.80	42,039	3.50	25,910	723,099
1939-40	6.25	17,981	1.05	48,303	2.45	40,339	2.50	14,265	277,519
1940-41	7.30	283,364	1.21	424,347	3.71	73,294	2.70	17,563	979,482
1941-42	6.75	227,137	1.32	345,849	4.90	110,308	4.50	27,616	903,874
1942-43	6.15	143,276	1.47	385,966	3.65	73,467	5.40	35,424	741,621
1943-44	12.50	659,500	2.25	1,625,310	3.25	277,696	10.00	86,950	2,961,462
1944-45	6.75	317,520	1.32	603,966	4.90	180,334	4.50	44,032	1,267,151
1945-46	28.16	1,355,763	2.18	912,149	2.89	118,732	3.95	45,638	2,630,655
1946-47	18.14	1,095,601	1.71	622,819	1.97	121,903	2.03	24,885	2,003,965
1947-48	29.73	821,677	2.40	40,941	2.61	145,118	1.26	11,293	1,018,093
1948-49	18.30	303,249	1.62	266,872	2.23	136,964	0.88	5,293	737,577
1949-50	12.15	218,371	1.38	237,371	1.95	114,127	0.60	2,895	611,352
1950-51	23.50	399,664	1.81	211,862	2.95	165,421	0.75	4,213	828,250
1951-52	17.48	406,532	1.37	361,081	2.67	179,453	0.39	1,444	972,134
1952-53	16.40	446,440	1.13	444,587	1.72	107,252	0.42	1,391	1,026,952
1953-54	13.49	380,891	0.69	231,461	1.57	125,504	0.36	926	773,398
1954-55	17.59	352,697	0.93	133,813	1.71	84,802	0.36	604	594,635
1955-56	18.03	190,180	1.11	98,259	2.81	142,885	0.24	402	458,230
1956-57	15.09	146,463	0.83	65,657	1.81	106,688	0.20	378	339,464
1957-58	12.50	122,975	0.75	49,476	1.15	55,354	0.25	347	251,660
1958-59	14.31	190,437	0.77	100,614	1.78	52,262	0.51	584	363,240
1959-60	16.63	281,745	0.83	136,500	2.82	168,675	1.43	5,951	621,201
1960-61	10.38	104,142	0.61	87,912	1.96	88,746	1.24	8,620	327,976
1961-62	10.20	166,923	0.58	204,056	2.31	114,712	1.36	7,460	527,389
1962-63	11.08	158,576	0.83	388,427	2.42	155,485	1.81	11,332	743,506
1963-64	10.90	229,248	1.17	649,414	1.44	111,496	1.86	12,294	1,069,812
1964-65	8.73	125,659	1.02	265,106	1.51	98,053	1.84	11,396	536,544
1965-66	7.83	102,612	1.32	345,244	2.47	199,578	5.80	62,947	753,832
1966-67	7.84	127,548	0.98	381,457	2.17	185,671	3.02	39,477	815,957
1967-68	8.08	109,152	0.70	162,267	2.63	203,654	4.12	42,003	600,422
1968-69	11.44	148,422	0.92	213,562	4.62	592,413	10.39	287,397	1,355,639
1969-70	7.06	89,068	1.15	353,012	3.43	471,463	5.86	105,448	1,090,212

Season	Mink		Muskrat		Raccoon		Red Fox		All Species
	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Total Value
1970-71	4.93	54,772	0.88	311,993	2.35	211,308	6.05	95,136	736,023
1971-72	7.86	124,620	1.37	615,735	5.20	682,484	10.59	158,617	1,700,782
1972-73	13.50	230,755	2.05	817,993	8.50	1,471,877	21.87	399,805	3,061,442
1973-74	11.35	264,103	2.25	1,436,213	9.80	2,501,077	26.95	650,707	5,083,978
1974-75	8.67	195,222	2.40	1,117,171	10.60	2,920,490	19.56	348,735	4,818,166
1975-76	9.65	177,617	2.85	1,102,035	17.85	5,213,342	39.88	631,619	7,390,136
1976-77	14.06	224,341	4.31	1,089,369	22.51	5,961,075	46.33	1,051,644	8,976,168
1977-78	12.44	162,180	4.77	1,227,020	22.27	5,887,453	49.53	1,130,819	8,871,156
1978-79	14.48	337,050	4.49	2,100,067	31.18	7,856,892	64.65	1,574,098	12,516,946
1979-80	19.04	595,380	5.64	4,181,512	29.97	9,239,061	48.71	858,708	15,499,322
1980-81	18.20	599,690	5.88	4,347,783	21.47	5,060,843	42.88	883,413	11,269,768
1981-82	17.99	511,905	3.84	2,004,268	27.69	8,064,075	46.29	1,036,201	12,021,854
1982-83	11.18	238,212	2.18	933,589	16.54	4,233,016	28.85	534,503	6,235,053
1983-84	16.03	356,481	2.30	1,152,686	14.23	3,726,481	33.16	704,882	6,180,169
1984-85	14.22	403,080	2.88	1,072,702	18.94	6,329,350	25.24	477,439	8,574,748
1985-86	11.76	201,274	1.89	480,838	14.34	3,883,343	16.70	272,978	5,163,651
1986-87	20.79	647,379	3.39	1,636,729	18.22	7,119,884	20.73	409,210	10,335,629
1987-88	20.76	575,301	3.32	1,711,828	16.65	5,121,323	18.07	355,365	8,097,250
1988-89	22.06	308,751	2.05	394,038	7.96	1,516,825	12.15	187,656	2,602,695
1989-90	16.34	138,890	1.02	76,500	4.74	568,800	9.70	135,800	1,018,622
1990-91	18.26	134,448	2.08	145,876	4.96	513,201	10.22	145,898	1,074,761
1991-92	15.49	131,184	1.96	178,764	5.36	591,433	9.63	148,909	1,198,863
1992-93	19.46	249,846	1.58	196,928	6.36	700,891	8.43	123,078	1,579,821
1993-94	16.78	234,014	1.83	299,831	5.81	688,270	8.98	116,614	1,388,729
1994-95	14.13	167,003	1.95	348,432	6.89	706,686	9.86	120,716	1,409,848
1995-96	18.01	367,259	1.78	281,670	6.83	808,371	8.76	123,831	1,745,504
1996-97	19.36	336,795	1.56	182,598	8.92	1,103,386	8.43	104,549	1,661,687
1997-98	17.86	302,303	1.51	171,568	7.79	1,169,643	7.04	90,788	1,729,199
1998-99	16.05	264,199	1.66	149,609	7.21	768,882	8.21	95,637	1,203,362
1999-00	19.16	255,583	1.55	134,847	8.13	823,024	9.68	115,850	1,329,304
2000-01	15.46	235,533	2.09	177,591	9.26	879,598	9.86	109,476	1,378,689
2001-02	17.23	244,011	2.43	191,647	11.69	1,674,078	10.86	134,110	2,168,918
2002-03	14.96	244,191	1.85	165,429	12.16	1,441,370	11.36	168,912	2,069,869
2003-04	10.51	112,573	2.06	113,133	10.11	1,792,655	19.16	203,441	2,589,802
2004-05	10.27	119,769	1.85	85,115	9.62	1,723,760	14.68	104,551	1,965,131
2005-06	12.03	158,339	6.15	487,867	11.43	1,871,612	12.81	109,999	2,827,822
2006-07	13.07	100,703	5.79	375,339	10.18	1,591,138	15.13	36,503	2,204,483
2007-08	14.76	116,876	3.08	170,886	12.34	1,442,250	13.55	29,038	1,757,223
2008-09	9.48	78,077	2.51	122,473	9.23	1,151,822	11.57	43,145	1,293,846
2009-10	8.22	56,760	3.97	176,411	8.80	1,015,071	10.04	17,992	1,095,999
2010-11	12.83	144,542	5.31	645,472	12.52	2,965,833	16.81	64,030	4,020,719
2011-12a	12.62	193,285	5.93	511,780	10.86	4,098,994	17.74	106,182	5,288,094

Season	Mink		Muskrat		Raccoon		Red Fox		All Species
	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Total Value
2012-13	15.91	305,842	7.48	423,249	13.60	4,664,032	25.85	128,958	5,983,493
2013-14a	16.50	92,077	9.28	283,731	15.85	4,882,917	36.27	148,689	6,034,386
2014-15a	8.77	46,781	4.79	211,583	10.66	2,137,468	20.14	48,281	2,905,703
2015-16a	5.42	24,641	2.35	78,280	4.53	403,850	10.85	17,155	926,640
2016-17	6.01	23,782	2.35	97,699	4.76	390,605	10.47	12,966	728,652
2017-18	5.38	27,897	2.43	99,249	5.71	610,135	11.81	26,971	1,146,285
2018-19	5.17	20,795	2.64	43,149	7.90	909,346	9.39	12,741	1,512,178
2019-20	3.36	6,817	2.61	38,800	4.96	500,632	8.14	12,109	1,053,056
Average									
5-Year	5.07	20,786	2.48	70,235	5.57	562,913	10.13	16,388	1,073,362
10-Year	9.20	88,646	4.52	242,699	9.14	2,156,381	16.75	57,808	2,959,921
20-Year	10.90	117,664	3.85	224,644	9.81	1,807,358	14.82	76,763	2,447,549
50-Year	13.56	222,859	3.08	687,862	11.71	2,631,799	19.47	292,369	4,068,512
Long-term[1]	12.61	247,726	2.20	515,364	7.76	1,520,675	12.11	174,733	2,627,998

[1]Long-term data dates back to 1930.

[a]For years when there furharvesters which reported number of pelts purchased without average price paid per pelt, total values for those furharvesters were estimated using the overall average price paid per pelt calculated from all furharvesters.

Table 3.5 Percent of fox, raccoon, and coyote furs purchased from hunters and trappers statewide in Iowa; determined from fur dealer reports 1975-Present

Data for each year includes harvest from the succeeding year, e.g., 1975=1975+1976 (winter). (Unk: Unknown)

Season	Raccoon			Red and Gray Fox			Coyote			Bobcat		
	Trapper	Hunter	Unk	Trapper	Hunter	Unk	Trapper	Hunter	Unk	Trapper	Hunter	Unk
1975-76	28	60	12	45	48	7	18	72	10			
1976-77	28	66	6	55	41	4	28	68	4			
1977-78	24	68	8	36	55	9	18	72	10			
1978-79	31	61	8	37	58	5	17	74	9			
1979-80	30	58	12	53	32	15	30	59	11			
1980-81	33	60	7	66	29	5	33	60	7			
1981-82	42	46	12	38	46	16	20	74	6			
1982-83	35	53	12	47	45	8	25	69	6			
1983-84	37	50	13	33	59	8	17	67	16			
1984-85	33	41	26	49	31	20	26	60	14			
1985-86	37	52	11	39	54	7	23	65	12			
1986-87	46	49	5	59	35	6	34	62	4			
1987-88	49	47	4	53	43	4	32	62	6			
1988-89	49	46	5	58	34	8	30	67	3			
1989-90	35	45	20	48	28	24	24	61	15			
1990-91	38	55	7	43	46	11	28	66	6			
1991-92	41	51	8	44	49	7	25	67	8			
1992-93	45	50	5	40	52	8	36	54	6			
1993-94	43	52	5	43	50	7	34	57	9			

Season	Raccoon			Red and Gray Fox			Coyote			Bobcat		
	Trapper	Hunter	Unk	Trapper	Hunter	Unk	Trapper	Hunter	Unk	Trapper	Hunter	Unk
1994-95	44	46	10	39	55	6	33	59	8			
1995-96	47	45	8	41	52	7	30	65	5			
1996-97	48	48	4	44	48	8	32	58	10			
1997-98	48	46	5	40	47	13	29	62	9			
1998-99	46	47	5	46	48	6	33	63	4			
1999-00	42	53	5	45	46	9	34	61	5			
2000-01	38	46	16	34	58	8	31	58	11			
2001-02	43	47	10	52	43	5	36	56	8			
2002-03	48	42	10	56	38	6	32	59	9			
2003-04	49	43	8	52	44	4	35	58	7			
2004-05	43	49	8	49	45	6	32	60	8			
2005-06	39	52	9	53	38	9	30	64	6			
2006-07	49	47	4	51	45	4	34	58	8			
2007-08	48	49	6	44	51	6	37	57	6			
2008-09	44	48	8	40	55	5	35	59	6			
2009-10	45	46	9	36	48	6	36	58	6			
2010-11	63	14	23	46	24	30	18	53	29			
2011-12a	63	28	9	73	15	12	41	43	16			
2012-13	69	31	0	80	20	0	47	53	0	70	15	15
2013-14a	73	27	0	82	18	0	47	53	0	96	4	0
2014-15a	78	22	0	84	16	0	49	51	0	62	38	0
2015-16a	68	32	0	73	27	0	40	60	0	92	8	0
2016-17	67	34	0	72	28	0	40	60	0	90	5	0
2017-18	72	28	0	76	24	0	42	58	0	97	3	0
2018-19	70	30	0	64	26	12	36	64	0	95	5	0
2019-20	64	36	0	55	45	0	29	71	0	83	17	0
Average												
5-Year	68	32	0	68	30	2	37	63	0	91	8	1
10-Year	69	28	3	71	24	5	39	57	5	86	12	3
20-Year	57	37	6	59	35	6	36	58	6	86	12	3
Total Avg	47	45	8	51	41	8	31	61	7	86	12	3

Table 3.6 Trapping and hunting furbearer harvest seasons in Iowa, 2010-Present

Season	Species*	Trapping Season Dates		Hunting Season Dates		Bag Limit	
		Open	Close	Open	Close	Daily	Possession
2010-11	ra, stsk, ba, op, rf, gf	Nov 6	Jan 31	Nov 6	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 6	Jan 31			No Limit	No Limit
	be	Nov 6	Apr 01			No Limit	No Limit
	co	Nov 6	Jan 31	Continuous open season		No Limit	No Limit
	ot[1,9]	Nov 6	Jan 31			2	2
	bc[4,9]	Nov 6	Jan 31	Nov 6	Jan 31	1	1
	spsk, gw	Continuous closed season		Continuous closed season			
2011-12	ra, stsk, ba, op, rf, gf	Nov 5	Jan 31	Nov 5	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 5	Jan 31			No Limit	No Limit
	be	Nov 5	Apr 15			No Limit	No Limit
	co	Nov 5	Jan 31	Continuous open season		No Limit	No Limit
	ot[5,9]	Nov 5	Jan 31			3	3
	bc[6,9]	Nov 5	Jan 31	Nov 5	Jan 31	1	1
	spsk, gw	Continuous closed season		Continuous closed season			
2012-13	ra, stsk, ba, op, rf, gf	Nov 3	Jan 31	Nov 3	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 3	Jan 31			No Limit	No Limit
	be	Nov 5	Apr 15			No Limit	No Limit
	co	Nov 3	Jan 31	Continuous open season		No Limit	No Limit
	ot[7,9]	Nov 3	Jan 31			3	3
	bc[8,9]	Nov 3	Jan 31	Nov 3	Jan 31	1	1
	spsk, gw	Continuous closed season		Continuous closed season			
2013-14	ra, stsk, ba, op, rf, gf	Nov 2	Jan 31			No Limit	No Limit
	mi, mu, we	Nov 2	Jan 31			No Limit	No Limit
	be					No Limit	No Limit
	co	Nov 2	Jan 31	Continuous open season		No Limit	No Limit
	ot[9]	Nov 2	Jan 31			2	2
	bc[9]	Nov 2	Jan 31	Nov 2	Jan 31	1	1
	spsk, gw	Continuous closed season		Continuous closed season			
2014-15	ra, stsk, ba, op, rf, gf	Nov 1	Jan 31			No Limit	No Limit
	mi, mu, we	Nov 1	Jan 31			No Limit	No Limit
	be	Nov 1	Apr 15			No Limit	No Limit
	co	Nov 1	Jan 31	Continuous open season		No Limit	No Limit
	ot[9]	Nov 1	Jan 31			2	2
	bc[9]	Nov 1	Jan 31	Nov 1	Jan 31	1	1
	spsk, gw	Continuous closed season		Continuous closed season			
2015-16	ra, stsk, ba, op, rf, gf	Nov 7	Jan 31	Nov 7	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 7	Jan 31			No Limit	No Limit
	be	Nov 7	Apr 15			No Limit	No Limit
	co	Nov 7	Jan 31	Continuous open season		No Limit	No Limit
	ot[9]	Nov 7	Jan 31			2	2
	bc[9]	Nov 7	Jan 31	Nov 7	Jan 31	1	1

Season	Species*	Trapping Season Dates		Hunting Season Dates		Bag Limit	
		Open	Close	Open	Close	Daily	Possession
	spsk, gw	Continuous closed season		Continuous closed season			
2016-17	ra, stsk, ba, op, rf, gf	Nov 5	Jan 31	Nov 5	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 5	Jan 31			No Limit	No Limit
	be	Nov 5	Apr 15			No Limit	No Limit
	co	Nov 5	Jan 31	Continuous open season		No Limit	No Limit
	ot[9]	Nov 5	Jan 31			2	2
	bc[9]	Nov 5	Jan 31	Nov 5	Jan 31	1	1
	spsk, gw	Continuous closed season		Continuous closed season			
2017-18	ra, stsk, ba, op, rf, gf	Nov 4	Jan 31	Nov 4	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 4	Jan 31			No Limit	No Limit
	be	Nov 4	Apr 15			No Limit	No Limit
	co	Nov 4	Jan 31	Continuous open season		No Limit	No Limit
	ot[9]	Nov 4	Jan 31			2	2
	bc[9]	Nov 4	Jan 31	Nov 4	Jan 31	1	1
	spsk, gw	Continuous closed season		Continuous closed season			
2018-19	ra, stsk, ba, op, rf, gf	Nov 3	Jan 31	Nov 3	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 3	Jan 31			No Limit	No Limit
	be	Nov 3	Apr 15			No Limit	No Limit
	co	Nov 3	Jan 31	Continuous open season		No Limit	No Limit
	ot[9]	Nov 3	Jan 31			2	2
	bc[9, 10]	Nov 3	Jan 31	Nov 3	Jan 31	1	1
	spsk, gw	Continuous closed season		Continuous closed season			
2019-20	ra, stsk, ba, op, rf, gf	Nov 2	Jan 31	Nov 2	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 2	Jan 31			No Limit	No Limit
	be	Nov 2	Apr 15			No Limit	No Limit
	co	Nov 2	Jan 31	Continuous open season		No Limit	No Limit
	ot[9]	Nov 2	Jan 31			2	2
	bc[9, 10,11]	Nov 2	Jan 31	Nov 2	Jan 31	3	3
	spsk, gw	Continuous closed season		Continuous closed season			

*Species codes: ba-badger; bc-bobcat; be-beaver; co-coyote; gr-gray fox; gw-gray wolf; mi-mink; mu-muskrat; op-opossum; ot-otter; ra-raccoon; rf-red fox; spsk-spotted skunk; stsk-striped skunk; we-weasel.

[1]State-wide quota of 500 animals, plus a 48-hour grace period. Season bag limit of two per licensed furharvester

[2]Quota of 200 animals in the southern two tiers of counties only, plus a 48-hour grace period. Season bag limit of one per licensed furharvester, either hunted or trapped.

[3]Quota of 200 animals in the southern two tiers of counties and Pottawattamie, Harrison, Monona, and Woodbury counties along the Missouri river only, plus a 48-hour grace period. Season bag limit of one per licensed furharvester, either hunted or trapped.

[4]Quota of 250 animals in the southern three tiers of counties, Harrison, Monona, and Woodbury counties along the Missouri river, and Guthrie County only, plus a 48-hour grace period. Season bag limit of one per licensed furharvester, either hunted or trapped.

[5]State-wide quota of 650 animals, plus a 48-hour grace period. Season bag limit of three per licensed furharvester.

[6]Quota of 350 animals in the southern three tiers of counties, Harrison, Monona, and Woodbury counties along the Missouri river, and Guthrie County only, plus a 48-hour grace period. Season bag limit of one per licensed furharvester, either hunted or trapped.

[7]State-wide quota of 850 animals, plus a 48-hour grace period. Season bag limit of three per licensed furharvester.

[8]Quota of 450 animals in the southern three tiers of counties, Harrison, Monona, and Woodbury counties along the Missouri river, and Guthrie County only, plus a 48-hour grace period. Season bag limit of one per licensed furharvester, either hunted or trapped.

[9] CITES tag required.

[10] 12 counties added to bobcat harvest zone (=53 total) in 2018.

Table 3.7 Results of the Iowa raccoon spotlight survey with raccoon harvest and pelt price, 1977-Present
The spotlight survey is conducted in April each year. Harvest data are from previous harvest season.

Year	Total Number of Routes	Mean Number Observed	Raccoon Harvest	Average Pelt Price ($)
1977	57	10	264,367	22.27
1978	83	11	251,985	31.18
1979	82	8	308,277	29.97
1980	85	9	235,717	21.47
1981	85	10	291,227	27.69
1982	84	13	255,926	16.54
1983	82	13	261,875	14.23
1984	84	12	334,179	18.94
1985	83	11	270,805	13.91
1986	80	11	390,773	18.22
1987	79	12	307,587	16.65
1988	83	15	190,556	7.96
1989	84	17	118,653	4.74
1990	86	17	103,468	4.62
1991	84	18	110,342	4.96
1992	82	22	110,203	5.36
1993	84	21	118,463	5.81
1994	89	21	112,686	6.89
1995	87	24	118,136	6.83
1996	89	24	123,698	8.26
1997	88	22	149,492	7.79
1998	88	23	106,641	7.21
1999	88	22	101,233	8.13
2000	88	24	94,989	9.26
2001	88	21	143,206	11.69
2002	88	21	118,531	12.16
2003	88	21	177,313	10.11
2004	88	21	179,185	9.62
2005	82	19	163,746	11.43
2006	84	22	156,379	10.18
2007	83	23	143,271	12.24
2008	81	24	124,789	9.23
2009	78	29	115,349	8.80
2010	81	24	236,943	12.52
2011	85	29	326,368	10.86
2012	89	34	273,339	13.60
2013	99	34	308,025	15.85
2014	99	38	200,509	10.66
2015	99	36	89,061	4.53
2016	99	37	82,126	4.76
2017	99	37	106,842	5.71
2018	99	48	115,132	7.90

Year	Total Number of Routes	Mean Number Observed	Raccoon Harvest	Average Pelt Price ($)
2019	99	56	10,857	4.96
2020	99	45		
5-Year Avg	99	45	98,804	5.57
10-Year Avg	97	39	183,920	9.14
20- Year Avg	90	31	162,798	9.80
Total Avg	87	23	183,541	11.76

Table 3.8 Otter harvest seasons and harvest data in Iowa, 2006-Present

Season	Harvest Season					Male Harvest	Female Harvest	Unknown Sex Harvest	Total Harvest[2]	Quota
	No. of Counties[1]	Open Date	Close Date	Season Length	Average Catch Rate per Day					
2006[a,b,d]	Statewide	Nov 4	Nov 17	14	33	197	191	80	468	400
2007[b,e]	Statewide	Nov 3	Nov 25	23	18	192	185	42	419	400
2008[b,e]	Statewide	Nov 1	Nov 27	25	19	222	218	40	480	500
2009[b,e]	Statewide	Nov 7	Dec 4	28	18	225	240	49	514	500
2010[b,e]	Statewide	Nov 6	Nov 24	19	24	200	206	51	457	500
2011[c,e]	Statewide	Nov 5	Nov 23	19	41	360	335	75	770	650
2012[c,e]	Statewide	Nov 3	Nov 25	23	42	446	460	67	973	850
2013[b]	Statewide	Nov 2	Jan 31	91	13	559	484	122	1165	none
2014[b]	Statewide	Nov 1	Jan 31	92	9	409	345	81	835	none
2015[b]	Statewide	Nov 7	Jan 31	86	8	343	279	70	692	none
2016[b]	Statewide	Nov 5	Jan 31	88	6	291	228	37	556	none
2017[b]	Statewide	Nov 4	Jan 31	89	9	392	363	67	822	None
2018[b]	Statewide	Nov 3	Jan 31	90	6	275	239	62	576	None
2019	Statewide	Nov 2	Jan 31	91	8	398	349	24	771	None
					Total	4509	4122	867	9498	

*Harvest data excludes known road-killed otters.

[a]First regulated otter harvest season in Iowa.

[b]Season bag limit of two per licensed furharvester.

[c]Season bag limit of three per licensed furharvester.

[d]Harvest data includes animals harvested during a 72-hour grace period following season closure.

[e]Harvest data includes animals harvested during a 48-hour grace period following season closure.

[1]Statewide includes 99 Iowa counties.

[2]Data includes harvest from unknown sources; may include road-killed animals. Source of collection was not specified in some harvest reports.

Table 3.9 Otter harvest methods by season in Iowa, 2006-Present

Season	Harvest Method						Total Harvest	Harvest Quota
	Conibear	Foothold	Live Trap	Snare	Other[1]	Unknown[1]		
2006[a,b]	160	254	0	26	4	22	468	400
2007[c]	141	231	3	40	0	1	419	400
2008[c]	174	239	0	49	0	17	480	500
2009[c]	197	249	2	52	0	8	514	500
2010[c]	196	198	0	39	0	23	457	500
2011[c]	305	340	1	96	0	28	770	650
2012[c]	371	470	5	116	2	7	973	850
2013	549	471	1	119	6	19	1165	none
2014	422	308	2	79	12	12	835	none
2015	358	228	1	74	18	13	692	none
2016	288	183	3	58	3	11	556	none
2017	451	272	2	59	13	25	822	None
2018	325	184	1	38	11	17	576	none
2019	468	219	4	65	13	2	771	none
Total	4405	3846	25	910	92	205	9498	

[a]First regulated otter harvest season in Iowa

[b]Harvest data includes animals harvested during a 72-hour grace period following season closure.

[c]Harvest data includes animals harvested during a 48-hour grace period following season closure.

[1]Data may include road-killed animals. Source of collection was not specified in some harvest reports.

Table 3.10 Bobcat harvest seasons and harvest data in Iowa, 2007-Present

Season	Harvest Season					Male Harvest	Female Harvest	Unknown Sex Harvest	Total Harvest[2]	Quota
	No. of Counties[1]	Open Date	Close Date	Season Length	Average Catch Rate per Day					
2007[a]	21	3-Nov	21-Nov	19	8	69	71	14	154	150
2008	25	1-Nov	21-Nov	21	11	103	117	14	234	200
2009	25	7-Nov	30-Nov	24	9	107	107	21	235	200
2010	35	6-Nov	23-Nov	18	15	100	140	34	274	250
2011	35	5-Nov	29-Nov	25	16	162	209	27	398	350
2012	35	3-Nov	1-Dec	29	18	233	263	32	528	450
2013	41	2-Nov	31-Jan	91	11	436	484	58	978	None
2014	41	1-Nov	31-Jan	92	8	315	356	35	706	None
2015	41	7-Nov	31-Jan	86	6	228	274	33	535	None
2016	41	5-Nov	31-Jan	88	7	253	303	35	591	None
2017	41	4-Nov	31-Jan	89	9	364	401	54	819	None
2018	53	3-Nov	31-Jan	90	8	330	297	60	687	None
2019[b]	53	2-Nov	31-Jan	90	13	552	557	51	1160	None
Total						3252	3579	468	7299	

*Season bag limit of one per licensed furharvester (2007-present).

*Harvest data includes animals harvested during a 48-hour grace period following season closure.

*Harvest data excludes known road-killed bobcats.

[a] First regulated bobcat harvest season in Iowa.

[b] Bag limit in lower 3 tier counties (31) increased from 1 to 3 bobcats in 2019

Table 3.11 Bobcat harvest methods by season in Iowa, 2007-Present

Season	Harvest Method											Total Harvest	Harvest Quota
	Conibear	Foothold	Live Trap	Snare	Archery	Gun	Calling	Hounds	Roadkill	Other	Unknown		
2007[a]	37	26	0	40	20	4		6	5		16	154	150
2008	72	35	3	85	23	3		7	2		4	234	200
2009	56	35	0	82	24	7		4	14		13	235	200
2010	58	50	1	92	38	6		4	6		19	274	250
2011	114	85	3	122	32	5		6	7		24	398	350
2012	107	143	7	167	47	16	15	7	15		4	528	450
2013	223	231	7	328	51	37	51	5	30	10	5	978	none
2014	124	217	7	174	45	44	31	14	27	4	19	706	none
2015	63	157	9	89	51	33	64	8	38	19	4	535	none
2016	88	181	5	91	56	39	74	5	34	11	7	591	none
2017	90	271	14	132	68	51	112	8	40	8	25	819	none
2018	81	184	8	107	50	82	106	11	34	12	12	687	none
2019	147	375	24	224	72	67	172	4	47	6	22	1160	none
Total	1260	1990	88	1733	577	394	625	89	299	70	174	7299	

*Harvest data includes animals harvested during a 48-hour grace period following season closure.
[a]First regulated bobcat harvest season in Iowa

WATERFOWL MANAGEMENT, SEASONS, AND HARVESTS IN IOWA

Duck Breeding Populations

Breeding population estimates are made each year for 10 key species of ducks in the principal breeding areas of Alaska, Canada, and the northcentral United States (Table 4.1, Figure 4.1). Surveys are conducted in May and early June by the U.S. Fish and Wildlife Service (USFWS), Canadian Wildlife Service, and provincial and state conservation agencies. Ducks are counted from fixed-wing aircraft on the same transects each year. Estimates of ducks and ponds seen from the air are corrected for visibility bias by conducting ground counts on a sample of transects. The estimates in Table 4.1 are not the entire continental breeding populations of ducks; a portion of each population (potentially 25% for mallards) nests outside the surveyed areas. Surveys did not occur in spring 2020 due to the Covid-19 pandemic.

Although numbers of breeding ducks have fluctuated substantially from year to year, trend analysis suggests that total duck numbers are near all-time highs. This positive trend, however, is the result of increasing numbers of some species (e.g., mallards and blue-winged teal) and decreasing numbers of others (e.g., pintails and scaup). Despite the improvements in duck numbers in the 1990's, there are still concerns about the long-term loss of both wetland and upland habitat in the prairie pothole region and the long-term outlook for duck populations in the future.

Duck populations have fluctuated substantially over time. The drought of the 1980's pushed many populations to near record low levels. The resiliency of these birds, however, was dramatically illustrated when most populations rebounded after water returned to the prairies in the 1990's. Pintails and scaup were exceptions to this rule; pintails because drought continued to plague their primary nesting areas in Alberta and scaup for reasons apparently related to nutritional deficiencies on migration habitats. Duck populations will continue to fluctuate in the future as the numbers of wetlands on the landscape in north-central North America rise and fall with changes in the weather.

Iowa's Canada Goose Population

Temperate breeding Canada geese nested throughout Iowa prior to European settlement, but were extirpated from most of the Midwest, including Iowa, by 1900. The Canada goose restoration program initiated by the Iowa Conservation Commission in 1964, the forerunner to the Iowa Dept. of Natural Resources (IADNR), has successfully restored this species to most of its former nesting range in Iowa (see Giant Canada Goose Restoration). Iowa's Canada goose population exhibited steady growth during 1965-2010, declined during 2011-2013, but appears to have recovered since (Figure 4.2). Each summer, IADNR staff estimate the numbers of adult Canada geese and goslings in their wildlife units. To obtain a statistically valid estimate of this population, an aerial survey is also conducted each spring. The results of an aerial survey conducted during April 2019 indicated the population was 83,055 (±16,727) (±95% Conf. Limit). The survey was not conducted in 2020 due to Covid-19.

Waterfowl Harvests

Waterfowl harvests and hunter activity in Iowa are estimated annually by the USFWS (Table 4.2). Harvest estimates are calculated by combining the results of 2 surveys: 1) a survey of randomly selected hunters from the Harvest Information Program (HIP), which is used to calculate the total number of waterfowl killed, and 2) a survey that solicits duck wings and goose tails, which is used to estimate the species composition of the harvest.

Iowa's duck harvests have fluctuated substantially since 1961. The lowest harvests of all ducks and mallards occurred in the early 1960's, years with low duck populations and restrictive hunting regulations. The highest duck harvest was in 1979, a year with good duck numbers and, perhaps more importantly, excellent habitat conditions in Iowa due to above normal rainfall in August and September. Duck harvests began to decline in 1985, bottoming out in 1988 and 1989. Reasons for reduced harvests included smaller breeding populations and fall flights, shorter seasons, reduced bag limits, fewer hunters, and poor local habitat conditions. Duck harvests have increased in recent years as a result of improvements in duck numbers, liberal hunting regulations, and increases in numbers of active hunters.

The addition of an experimental Special September Teal season in 2014-2018 allowed Iowan's additional opportunity to hunt teal. Blue-winged teal harvest increased during 2014 and 2015. However, total duck harvest has declined since the implementation of the teal season, particularly for wood ducks.

Iowa's Canada goose harvest was relatively constant during 1967-85, but began to increase in 1986 as a result of increasing numbers of local giant Canada geese (Table 4.2). Canada goose harvests increased substantially after 1988, but were dampened in 1993 when restrictive Canada goose hunting regulations were implemented to reduce the harvest of Eastern Prairie Population (EPP) Canada geese. EPP geese nest on the west coast of Hudson Bay and are one of the two principle migrant Canada goose populations that fly through Iowa (the other consists of small Canada geese, commonly called “cacklers” or “hutchies,” that nest on Baffin Island in the Arctic). The floods of 1993 may have also contributed to the decrease in the Canada goose harvest that year. Canada goose harvests resumed their increasing trend in the mid 1990’s, and peaked at 78,600 in 2005. The apparent drop in harvest in 1998 and 1999 may be an artifact of how the estimates were calculated rather than an actual change in harvest. At that time, the USFWS was converting from the old waterfowl stamp survey methodology to the new Harvest Information Program (HIP) survey. Harvest numbers from 1999 to the present are HIP estimates. Canada goose harvest during 2015-2019 is the first period where Iowa’s estimated Canada goose harvest was higher than the estimated mallard harvest.

The snow goose harvest in Iowa has declined since the early 1970's, despite record high numbers of snow geese in the Flyway in the 1990's and 2000’s. Declining harvests resulted from shifting snow goose migration patterns, later migrations, increased use of refuges, and large numbers of older geese in the population. By the mid 1990’s, the mid-continent light goose population was severely damaging Arctic breeding habitats. To increase harvests of light geese, more liberal hunting regulations were implemented (liberal bag limits, 107-day seasons) and a conservation order was implemented in 1999 to permit taking light geese after March 10 and to allow for hunting beyond the 107-day limit imposed by the Migratory Bird Treaty with Canada and Mexico. The harvest during the conservation order period in Iowa has ranged from 8,200 to 56,830 during 1999-2020. During the 1998-2019 regular light goose seasons, the harvest ranged from 0 to 15,000.

Waterfowl Seasons

Iowa waterfowl hunters have experienced a wide range of duck and goose seasons since the USFWS began regulating waterfowl hunting in 1918 (Table 4.3 and Table 4.4). Nearly every conceivable season-date combination has been tried in the past 90 years. Duck hunting regulations are inherently complex because they involve many species. The general lack of consistency in regulations, however, has made interpretation of the effects of these regulations on duck harvests very difficult. Goose hunting regulations, on the other hand, have been less complex and more consistent. The relative secure goose breeding habitat, along with consistently conservative seasons and bag limits, have enabled goose populations to prosper. The growing temperate-breeding Canada goose population, however, has complicated traditional Canada goose harvest management. It is particularly challenging to develop hunting regulations that will increase harvests of local Canada geese while limiting harvests of migrant geese from Arctic and sub-Arctic regions.

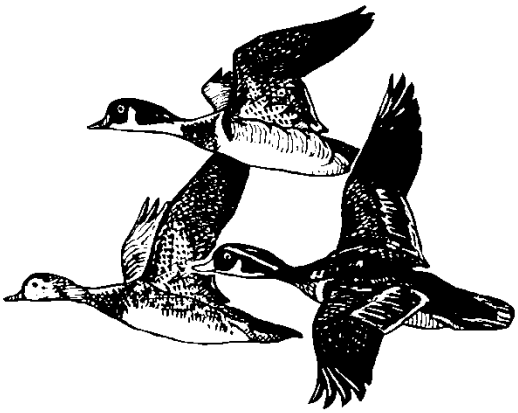
In 2019 Iowa held a 16-day Special September Teal season. This was the second year of an operational season. Estimates of teal harvest during the first two experimental seasons were substantial (2014 = 48,870, 2015 = 33,733), however Iowa’s entire season duck harvest has not increased.

Waterfowl Banding

Ducks and geese are captured and banded with leg bands to obtain information on survival rates, hunting mortality, migration patterns and timing, and the relationships of harvest areas to production areas. Banding is conducted at the request of the USFWS and the Mississippi Flyway Council (MFC). Both state and federal personnel band ducks in Iowa, but IADNR personnel band all the Canada geese and more than 95% of the wood ducks (Table 4.5). Nearly 300,000 ducks and geese have been banded by IADNR personnel since 1964.

The USFWS, in concert with the MFC, determines banding priorities. In the 1960's emphasis was placed on banding blue-winged teal to evaluate special teal seasons. Winter mallard banding was conducted in the 1970’s to supplement breeding grounds bandings and examine hen mortality during spring and summer. Wood duck bandings were used to evaluate Iowa's September duck seasons. Wood duck bandings are also important to measure the effects of hunting on wood duck populations, an aspect that has been particularly important since 2008 when the wood duck bag limit was increased from 2 to 3 birds per day.

Canada goose banding has increased with the growth of the local Canada goose population in Iowa. Migrant Canada geese have also been banded as part of cooperative projects with the MFC. Canada goose banding will be increasingly important as the Mississippi Flyway, USFWS and state conservation agencies attempt to balance harvest of abundant temperate breeding Canada goose populations and migrant Canada goose populations, which have been stable or decreasing.



Figures

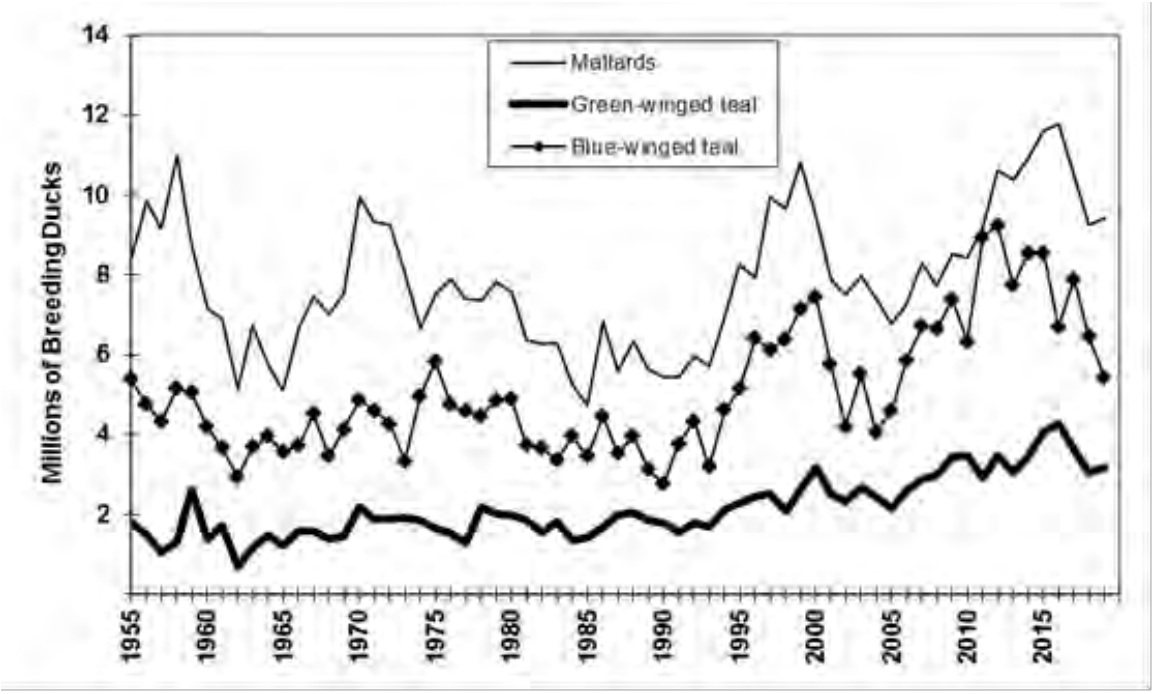


Figure 4.1 Breeding populations of ducks important to Iowa. (Source USFWS)

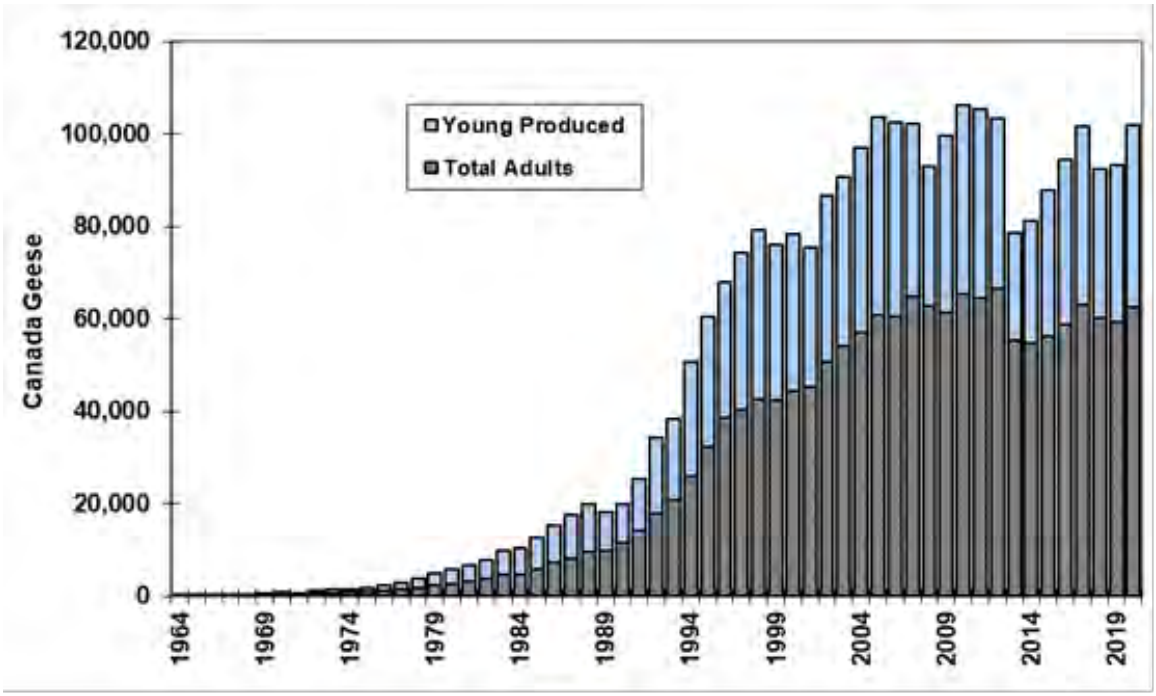


Figure 4.2 Iowa's Canada goose population (Source: Iowa DNR).

Figure 4.3 Goose harvests and active hunters in Iowa (1961-2019) (Source: USFWS).

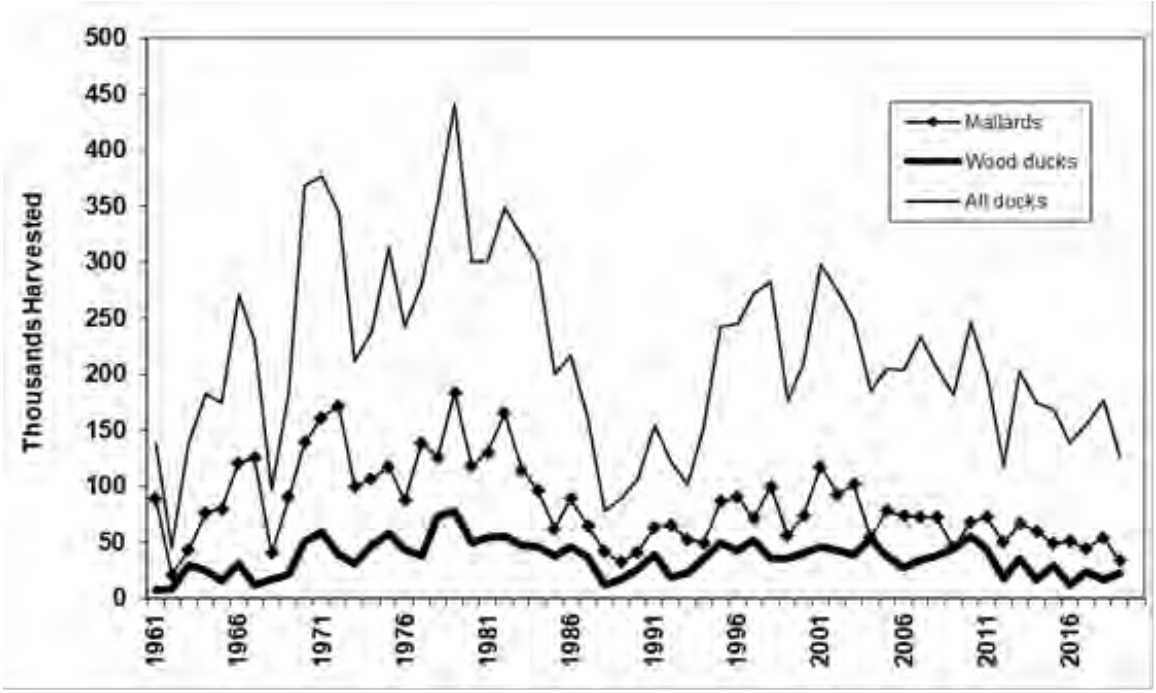


Figure 4.4 Duck harvests in Iowa (1961-2019) (Source: USFWS).

Tables

Table 4.1 Breeding population estimates for 10 species of ducks (in thousands) in the traditional survey region in North America. (Source: USFWS)

Year	Mallard	Gadwall	American Wigeon	Green Winged Teal	Blue Winged Teal	Northern Shoveler	Northern Pintail	Red-Head	Canvas Back	Scaup
1955	8,356	663	3,067	1,823	5,381	1,571	9,387	572	599	5,609
1956	9,842	783	3,118	1,480	4,763	1,630	9,897	755	696	5,734
1957	9,151	691	2,852	1,053	4,312	1,459	6,311	542	615	5,745
1958	10,994	454	2,421	1,326	5,165	1,187	5,552	443	742	5,286
1959	8,746	527	3,703	2,601	5,046	1,456	5,483	493	481	6,961
1960	7,164	721	2,937	1,390	4,185	1,743	5,414	495	600	4,826
1961	6,912	594	2,817	1,709	3,655	1,256	3,676	319	428	5,335
1962	5,139	846	1,882	700	2,940	1,183	3,395	503	354	5,240
1963	6,723	1,092	1,706	1,155	3,681	1,278	3,622	413	499	5,396
1964	5,740	825	2,495	1,505	3,961	1,608	3,013	527	649	5,058
1965	5,101	1,270	2,312	1,237	3,570	1,372	3,549	599	520	4,652
1966	6,680	1,672	2,282	1,580	3,718	2,103	4,764	713	658	4,432
1967	7,470	1,385	2,320	1,588	4,509	2,291	5,270	734	500	4,932
1968	7,019	1,947	2,282	1,405	3,459	1,646	3,470	493	561	4,360
1969	7,536	1,573	2,919	1,468	4,133	2,145	5,900	633	501	5,131
1970	9,960	1,606	3,447	2,171	4,858	2,220	6,369	624	578	5,634
1971	9,306	1,603	3,281	1,881	4,607	2,005	5,874	534	444	5,063
1972	9,255	1,621	3,172	1,895	4,277	2,441	7,018	551	426	7,932
1973	8,060	1,247	2,864	1,936	3,334	1,624	4,351	498	617	6,222
1974	6,681	1,592	2,665	1,840	4,968	2,006	6,583	627	504	5,720
1975	7,494	1,641	2,692	1,667	5,829	1,962	5,878	829	591	6,427
1976	7,894	1,245	2,476	1,536	4,747	1,756	5,475	668	610	5,779
1977	7,396	1,312	2,560	1,291	4,589	1,475	3,935	637	667	6,247
1978	7,353	1,561	3,286	2,194	4,471	1,978	5,106	738	369	5,936

Year	Mallard	Gadwall	American Wigeon	Green Winged Teal	Blue Winged Teal	Northern Shoveler	Northern Pintail	Red-Head	Canvas Back	Scaup
1979	7,816	1,751	3,087	2,019	4,861	2,386	5,382	695	573	7,540
1980	7,570	1,391	3,558	1,994	4,884	1,902	4,514	753	727	6,314
1981	6,367	1,402	2,924	1,851	3,726	2,325	3,472	596	610	5,918
1982	6,254	1,637	2,440	1,543	3,657	2,141	3,709	617	510	5,468
1983	6,313	1,517	2,606	1,836	3,366	1,870	3,506	709	523	7,136
1984	5,247	1,532	2,987	1,361	3,956	1,620	2,969	673	520	6,909
1985	4,754	1,304	2,040	1,435	3,459	1,697	2,511	579	373	5,038
1986	6,836	1,540	1,732	1,682	4,463	2,118	2,737	560	437	5,204
1987	5,613	1,311	1,982	2,003	3,518	1,951	2,629	502	451	4,837
1988	6,331	1,349	2,194	2,058	3,975	1,680	2,011	441	436	4,684
1989	5,650	1,416	1,974	1,843	3,128	1,540	2,113	511	478	4,344
1990	5,452	1,672	1,860	1,790	2,776	1,759	2,257	481	539	4,294
1991	5,444	1,584	2,254	1,558	3,764	1,716	1,803	446	491	5,255
1992	5,976	2,033	2,208	1,773	4,333	1,954	2,098	596	482	4,639
1993	5,708	1,755	2,053	1,695	3,193	2,047	2,053	485	472	4,080
1994	6,980	2,318	2,382	2,108	4,616	2,912	2,972	654	526	4,529
1995	8,269	2,836	2,615	2,301	5,140	2,855	2,758	889	771	4,446
1996	7,941	2,984	2,273	2,459	6,416	3,449	2,736	834	849	4,250
1997	9,940	3,897	3,118	2,507	6,124	4,120	3,558	918	689	4,112
1998	9,640	3,742	2,858	2,087	6,399	3,183	2,521	1,005	686	3,472
1999	10,806	3,236	2,920	2,631	7,150	3,890	3,058	973	716	4,412
2000	9,470	3,158	2,733	3,194	7,431	3,521	2,908	926	707	4,026
2001	7,904	2,679	2,494	2,509	5,757	3,314	3,296	712	580	3,694
2002	7,504	2,235	2,334	2,334	4,207	2,138	1,790	565	487	3,524
2003	7,950	2,549	2,551	2,679	5,518	3,620	2,558	637	558	3,734
2004	7,425	2,590	1,981	2,461	4,073	2,810	2,185	605	617	3,807
2005	6,755	2,179	2,225	2,157	4,586	3,592	2,561	592	521	3,387
2006	7,277	2,825	2,171	2,587	5,860	3,680	3,386	916	691	3,247
2007	8,307	3,356	2,807	2,890	6,708	4,553	3,335	1,009	865	3,452
2008	7,724	2,728	2,487	2,980	6,640	3,508	2,613	1,056	489	3,738
2009	8,512	3,054	2,469	3,444	7,384	4,376	3,225	1,044	662	4,172
2010	8,430	2,977	2,425	3,476	6,329	4,057	3,509	1,064	585	4,244
2011	9,183	3,257	2,084	2,900	8,949	4,641	4,429	1,356	692	4,319
2012	10,602	3,586	2,145	3,471	9,242	5,018	3,473	1,270	760	5,239
2013	10,372	3,351	2,644	3,053	7,732	4,751	3,335	1,202	787	4,166
2014	10,900	3,811	3,117	3,440	8,542	5,279	3,220	1,279	685	4,611
2015	11,600	3,834	3,037	4,080	8,547	4,391	3,043	1,195	757	4,395
2016	11,793	3,712	3,411	4,275	6,689	3,967	2,618	1,289	736	4,992
2017	10,488	4,180	2,777	3,605	7,888	4,353	2,889	1,115	732	4,371
2018	9,255	2,886	2,820	3,043	6,450	4,208	2,365	999	686	3,989
2019	9,423	3,258	2,832	3,178	5,427	3,649	2,268	732	652	3,590
2020	Survey not conducted.									
Percent Change in 2019 from:										
2018	2%	13%	0%	4%	-16%	-13%	-4%	-27%	-5%	-10%
1955-2018	20%	57%	9%	47%	7%	39%	-42%	0%	11%	-28%

Year	Mallard	Gadwall	American Wigeon	Green Winged Teal	Blue Winged Teal	Northern Shoveler	Northern Pintail	Red-Head	Canvas Back	Scaup
1955-19 Statistics										
Average	7,873	2,044	2,603	2,165	5,093	2,614	3,841	730	589	4,942
Maximum	11,793	4,180	3,703	4,275	9,242	5,279	9,897	1,356	865	7,932
Minimum	4,754	454	1,706	700	2,776	1,183	1,790	319	354	3,247

Table 4.2 Selected waterfowl harvest and hunter activity estimates for Iowa. (Source is USFWS)

Data for 2001 to the present is based on the Harvest Information Program and is preliminary.

Year	Days & Harvest (1,000s)								Federal Duck Stamp	Avg Seasonal Duck Bag	Active Adult Hunters
	Mallard	Wood Duck	B-W Teal	G-W Teal	All Ducks	Canada Geese	Snow Geese	Days Hunted			
1961	88.5	6.8	0.5	16.3	139.4			230.4	41,147	3.9	33,500
1962	21.3	7.8	0.4	5.6	45.1	6.6	12.2	162.0	30,602	2.1	24,000
1963	43.0	29.0	27.9	14.9	139.2	7.2	10.4	228.2	37,166	4.7	29,700
1964	76.6	24.5	17.9	26.8	182.1	4.3	8.5	236.9	37,668	6.2	30,900
1965	79.8	15.4	43.8	22.3	174.6	6.6	26.3	271.6	39,941	6.0	34,000
1966	121.3	30.8	47.3	40.7	270.2	7.2	17.9	361.2	47,438	7.4	41,300
1967	124.9	12.4	43.3	38.4	229.4	12.4	16.8	394.6	52,269	6.6	44,300
1968	40.4	16.1	0.9	19.7	96.3	10.6	10.8	270.0	45,753	2.6	37,500
1969	89.9	21.1	53.3	22.3	183.7	15.5	43.2	397.3	54,807	5.1	47,500
1970	139.2	50.6	51.6	45.2	368.7	12.6	48.3	496.6	65,822	6.0	56,900
1971	160.9	59.3	49.6	26.6	376.2	10.4	46.1	536.5	68,401	6.3	58,700
1972	171.8	39.3	31.2	23.9	344.5	5.0	39.3	513.8	57,907	6.4	50,800
1973	99.9	31.0	18.5	18.1	211.9	11.6	32.5	401.1	57,196	3.9	48,700
1974	106.1	46.7	26.0	24.0	238.0	7.7	45.1	450.6	60,446	4.3	51,600
1975	117.4	57.5	51.0	38.6	313.6	13.5	41.2	446.1	58,791	5.9	49,700
1976	87.5	44.0	33.0	27.5	242.2	9.3	15.8	359.6	55,449	5.0	45,400
1977	138.7	37.9	17.0	38.7	280.0	7.8	29.1	407.3	57,143	5.3	46,200
1978	125.6	73.6	41.1	41.7	351.4	11.9	23.9	424.9	56,259	6.7	47,800
1979	183.3	77.8	69.2	38.0	441.0	10.0	43.2	496.7	49,845	9.5	44,400
1980	118.1	49.1	39.0	37.3	299.9	11.7	23.1	384.6	47,008	6.6	41,100
1981	130.2	54.3	34.6	27.7	301.1	10.2	23.1	371.5	41,648	7.9	35,900
1982	164.9	55.3	58.2	24.3	348.8	10.2	14.0	354.9	40,599	9.6	34,400
1983	115.2	47.3	74.0	27.8	324.2	11.5	16.5	310.4	40,381	8.5	34,000
1984	96.3	46.3	56.8	36.2	299.5	13.3	22.0	300.3	41,078	7.5	35,300
1985	62.0	37.4	41.5	22.6	199.8	10.4	8.5	241.4	33,304	6.8	27,900
1986	88.9	46.0	26.9	18.3	217.0	17.2	11.8	244.0	33,504	7.3	27,900
1987	64.8	36.1	14.2	20.1	161.1	15.1	3.6	207.0	30,248	6.0	25,500
1988	41.6	11.4	1.4	12.5	78.3	12.1	10.1	131.8	22,008	4.3	17,300
1989	32.2	17.0	2.9	17.9	87.8	20.2	4.4	127.5	21,686	4.7	16,600
1990	41.3	25.6	4.6	17.8	105.8	26.6	3.1	159.3	24,686	4.9	20,800
1991	63.1	39.4	6.6	13.3	154.2	29.3	8.1	196.7	24,989	6.8	21,400
1992	64.9	18.8	2.9	14.3	122.8	28.7	4.1	198.6	26,744	5.1	22,800

Year	Days & Harvest (1,000s)								Federal Duck Stamp	Avg Seasonal Duck Bag	Active Adult Hunters
	Mallard	Wood Duck	B-W Teal	G-W Teal	All Ducks	Canada Geese	Snow Geese	Days Hunted			
1993	52.7	22.2	4.1	7.9	100.9	17.3	9.5	176.5	25,640	4.7	21,092
1994	49.1	34.9	17.5	22.5	151.8	26.1	2.4	232.6	29,206	6.0	24,523
1995	86.1	49.2	38.9	23.7	242.3	48.0	4.6	280.2	30,282	8.2	25,792
1996	90.6	42.5	36.2	31.0	244.7	59.5	5.4	284.2	30,945	7.9	26,338
1997	71.2	52.1	54.5	32.7	272.0	52.2	15.2	338.3	36,062	8.3	30,737
1998	99.6	36.0	47.7	41.9	281.9	33.2	15.6	292.8	30,864	9.9	27,454
1999	55.9	35.8	41.9	17.4	176.7	33.0	12.5	271.9	32,419	7.2	27,024
2000	74.2	39.9	25.3	25.4	209.6	61.0	0.6	288.4	30,951	8.2	26,693
2001	117.2	45.5	49.3	29.7	296.4	58.1	5.2	203.5	32,090	11.9	25,000
2002	97.2	44.5	50.6	43.0	287.2	67.1	1.1	185.7	30,806	12.3	23,300
2003	101.7	38.6	30.1	29.4	248.9	55.5	14.4	187.1	30,206	11.0	22,500
2004	54.7	52.9	28.5	16.8	184.5	70.3	1.0	203.0	28,649	9.0	23,900
2005	77.9	38.1	39.0	21.2	205.2	78.6	0.6	128.9	26,943	11.8	20,800
2006	73.2	26.7	27.8	31.9	203.3	73.9	0.2	129.9	29,380	11.3	21,300
2007	72.7	34.2	40.3	39.5	232.8	64.6	0.3	151.4	26,531	11.4	23,700
2008	72.3	38.3	15.0	31.3	206.1	62.2	0.8	135.8	26,354	10.9	21,700
2009	45.3	45.1	35.5	22.5	181.5	62.0	0.0	130.3	Not avail.	10.3	19,500
2010	68.3	55.5	46.8	20.3	245.5	65.8	0.2	149.1	Not avail.	11.1	25,200
2011	72.0	43.3	23.4	19.7	201.8	52.0	0.1	136.2	Not avail.	10.8	24,900
2012	50.0	18.2	14.8	13.0	117.7	38.9	0.0	69.7	Not avail.	9.4	13,800
2013	66.6	35.9	42.7	19.3	202.3	73.7	0.0	128.5	Not avail.	14.1	14,400
2014	60.0	16.1	56.6	17.5	174.1	47.3	1.6	96.6	Not avail.	12.5	13,900
2015	48.8	29.9	47.1	16.1	167.8	53.6	0.0	119.8	NA	11.5	14,555
2016	51.3	11.6	18.3	23.2	138.6	56.9	1.2	105.4	NA	10.3	13,500
2017	44.3	23.6	37.4	21.0	156.0	59.6	0.0	99.2	NA	11.6	15,700
2018	53.9	16.9	47.6	18.0	176.1	46.1	0.2	97.8	NA	10.9	16,700
2019	33.5	22.8	26.7	13.1	127.6	52.6	0.0	77.0	NA	12.4	10,300
Percent Change in 2019 From:											
2018	-38%	35%	-44%	-274%	-28%	14%	-100%	-21%		14%	-38%
1961-2018 Average	-60%	-36%	-19%	-47%	-41%	67%	-98%	-69%		59%	-65%
1961-18 Statistics											
Average	84.5	36.1	32.8	25.1	217.6	31.6	13.3	257.5	39,196.8	7.8	30,134.6
Maximum	183.3	77.8	74.0	45.2	441.0	78.6	48.3	536.5	68,401.0	14.1	58,700.0
Minimum	21.3	6.8	0.4	5.6	45.1	4.3	0.0	69.7	21,686.0	2.1	13,500.0
10-yr avg											
1961-70	82.5	21.5	28.7	25.2	182.9	9.2	21.6	304.9	45261	5.0	37960
1971-80	130.9	51.6	37.6	31.4	309.9	9.9	33.9	442.1	56845	6.0	48440
1981-90	83.7	37.7	31.5	22.5	212.3	14.7	11.7	244.8	32914	6.8	27560
1991-00	70.7	37.1	27.6	23.0	195.7	39.2	7.8	256.0	29973	7.2	25385
2001-10	77.6	41.7	36.1	28.4	227.9	65.3	2.4	160.5	28939.6	11.1	22690

Table 4.3 Duck and coot seasons in Iowa

Year	Season Length	Season Dates	Shooting Hours	Limits		Additional Bag Limit Information
				Duck Bag/Poss	Coot Bag/Poss	
		Statewide				
1917	227	Sep 1-Apr 15	Unknown	?	?	
1918	107	Sep 16-Dec 31	SR-SS	25/none	25/none	
1919	107	Sep 16-Dec 31	SR-SS	25/none	25/none	
1920	107	Sep 16-Dec 31	SR-SS	25/none	25/none	
1921	107	Sep 16-Dec 31	SR-SS	25/none	25/none	
1922	107	Sep 16-Dec 31	SR-SS	25/none	25/none	
1923	107	Sep 16-Dec 31	SR-SS	25/none	25/none	
1924	107	Sep 16-Dec 31	½ SR-SS	15/50 WF	25/none	WF = all waterfowl combined
1925	107	Sep 16-Dec 31	½ SR-SS	15/50 WF	25/none	
1926	107	Sep 16-Dec 31	½ SR-SS	15/50 WF	25/none	
1927	107	Sep 16-Dec 31	½ SR-SS	15/50 WF	25/none	
1928	107	Sep 16-Dec 31	½ SR-SS	15/50 WF	25/none	
1929	107	Sep 16-Dec 31	½ SR-SS	15/21 DC	25/none	DC = all ducks combined
1930	107	Sep 16-Dec 31	½ SR-SS	15/21 DC	25/none	
1931	30	Oct 20-Nov 19	½ SR-SS	15/21 DC	25/none	
1932	61	Oct 1-Nov 30	½ SR-SS	15/21*[a]	25/none	*[a]Closed season on Wd, Ru, & Bu.
1933	61	Oct 1-Nov 30	½ SR-SS	12/24*[a]	25/none	
1934	30	Oct 10-Nov 18	SR-SS	12/24*[a]	25/none	Live decoys limited to 25. Season included 10 rest days.
1935	30	Oct 21-Nov 19	7am-4pm	10/10*[a]	15/15	Use of live decoys prohibited.
1936	30	Nov 1-Nov 30	7am-4pm	10/10*[b]	15/15	*[b]Closed sea. on Wd, Cb, Rh, Ru, & Bu.
1937	30	Oct 9-Nov 7	7am-4pm	10/10*[b]	25/25	
1938	45	Oct 15-Nov 28	7am-4pm	10/20*[c]	25/25	*[c]Only 1 Bu, 1 Cb, 1 Ru, and 1 Rh, & no more than 3 in aggregate
1939	45	Oct 22-Dec 5	7am-4pm	10/20*[c]	25/25	
1940	60	Oct 16-Dec 14	SR-4pm	10/20*[c]	25/25	
1941	60	Oct 16-Dec 14	SR-4pm	10/20*[d]	25/25	*[d]Only 3 Rh or 3 Bu or 3 in aggregate & only 1 Wd in poss at any time.
1942	70	Oct 15-Dec 23	SR-SS	10/20*[d]	25/25	
1943	70	Sep 25-Dec 3	½ SR-SS	10/20*[d]	25/25	
1944	80	Sep 20-Dec 8	½ SR-SS	10/20*[e]	25/25	*[e]Only 5 each or in comb.: Ma, Pt, or Wg & only 1 Wd. 25 Am or Rm or comb.
1945	80	Sep 20-Dec 8	½ SR-SS	10/20*[f]	25/25	*[f]Only 1 Wd in poss. at any time 25 Cm or Rm or comb.

Year	Season Length	Season Dates	Shooting Hours	Limits		Additional Bag Limit Information
				Duck Bag/Poss	Coot Bag/Poss	
1946	45	Oct 26-Dec 9	½ SR-½ SS	7/14*[f]	25/25	
1947	30	Oct 21-Nov 19	½ SR-1 SS	4/8*[f]	15/15	
1948	30	Oct 29-Nov 27	½ SR-1 SS	4/8*[f]	15/15	
1949	40	Oct 21-Nov 29	½ SR-1 SS	4/8*[f]	15/15	
1950	35	Oct 20-Nov 23	½ SR-1 SS	4/8*[f]	15/15	
1951	45	Oct 12-Nov 25	½ SR-1 SS	4/8*[f]	10/10	
1952	55	Oct 8-Dec 1	½ SR-1 SS	4/8*[g]	10/10	*[g]Only 1 Wd in poss. at any time. 1 Hm or 25 Cm or Rm or comb.
1953	55	Oct 8-Dec 1	½ SR-SS	4/8*[g]	10/10	
1954	55	Oct 15-Dec 8	½ SR-1 SS	4/8*[h]	10/10	*[h]Closed sea. on Wd.; 1 Hm or 25 Cm or Rm or comb.
1955	70	Oct 8-Dec 16	½ SR-½ SS	4/8*[g]	10/10	
1956	70	Oct 6-Dec 14	½ SR-½ SS	4/8*[h]	10/10	
1957	70	Oct 5-Dec 13	½ SR-SS	4/8*[i]	10/10	*[i]Closed season on Wd.; 5 mergansers, only 1 Hm.
1958	70	Oct 4-Dec 12	½ SR-SS	4/8*[ii]	10/10	*[ii]Only 2 Cb or 2 Rh or 2 in comb.; No Wd season. 5 merg. only 1 Hm.
1959	50	Oct 20-Dec 8	SR-SS	3/6*[j]	3/6	*[j]Only 1 Wd, 1 Cb, 1 Rh, or 1 Ru.; 5 mergansers, only 1 Hm.
1960	50	Oct 15-Dec 3	½ SR-SS	3/6*[k]	8/12	*[k]Only 1 Wd. Closed sea. on Cb & Rh.; 5 mergansers, only 1 Hm.
1961	30	Oct 21-Nov 19	SR-SS	2/4*[k]	6/6	
1962	25	Oct 27-Nov 20	SR-SS	2/4*[l]	6/6	*[l]Only 1 Ma or Bd, 2 Wd. No Cb or Rh.; 2 bonus Sc., 5 merg., only 1 Hm.
1963	35	Oct 5-13 Oct 26-Nov 20	SR-SS	4/8*[m]	8/8	*[m]Only 2 Ma or Bd, 2 Wd. No Cb or Rh.; 5 mergansers, only 1 Hm.
1964	35	Oct 3-4 Oct 24-Nov 25	SR-SS	4/8*[n]	10/20	*[n]Only 2 Ma or Bd, 2 Wd, 2 Cb or 2 Rh.; 5 mergansers, only 1 Hm.
1965	40	Sep 11-19 (teal season) Oct 23-Dec 1	SR-SS ½ SR-SS	4/8*[o]	10/20	*[o]Only 1 Ma or Pt or Bd, 2 Wd, 2 Cb or Rh.; 5 mergansers, only 1 Hm.
1966	45	Sep 17-25 (teal season) Oct 15-Nov 28	SR-SS ½ SR-SS	4/8*[oo]	10/20	*[oo]Only 2 Ma or Bd, 2 Wd, 2 Cb.; 5 mergansers, only 1 Hm.
1967	40	Sep 16-24 (teal season) Oct 21-Nov 29	SR-SS ½ SR-SS	4/8*[p]	10/20	*[p]Only 2 Ma or Bd, 1 Wd, & 1 Cb.; 5 mergansers, only 1 Hm.
1968	30	Oct 26-Nov 24	½ SR-SS	3/6*[q]	10/20	*[q]Only 1 Ma, 2 Bd, 2 Wd, 1 Cb or Rh.; 5 mergansers, only 1 Hm.
1969	30	Sep 13-21 (teal season) Oct 25-Nov 23	SR-SS ½ SR-SS	4/8*[r]	10/20	*[r]Only 2 Ma, 2 Bd, 2 Wd, 1 Cb or Rh.; 5 mergansers, only 1 Hm.
1970	55	Oct 3-Nov 26	SR-SS	PS*[s]	15/30	*[s]90 pt = Hn Ma, Bd, Wd, Rh, Cb, Hm.; 20 pt= Dr Ma, Hn Pt, Rn. 10 pt= all other.

Year	Season Length	Season Dates		Shooting Hours	Limits		Additional Bag Limit Information
					Duck Bag/Poss	Coot Bag/Poss	
1971	50	Oct 2-Nov 20		½ SR-SS	PS*[t]	15/30	*[t]100 pt= Cb, Rh. 90 pt= Hn Ma, Bd, Wd, Hm.; 20 pt= Dr Ma, Hn Pt, Rn. 10 pt= all other.
1972	50	Oct 7-12 Oct 21-Dec 3		SR-SS	PS*[u]	15/30	*[u]90 pt= Hn Ma, Bd, Wd, Hm. 20 pt= Dr Ma, Hn Pt, Rn. 10 pt= all other.; Closed season on Cb & Rh.
First year state duck stamp required							
1973	45	Oct 6-10 Oct 20-Nov 28		SR-SS	PS*[v]	15/30	*[v]100 pt= Cb, Rh. 90 pt= Hn Ma, Wd, Hm.; 25 pt= Dr Ma, Pt, Bd, Rn & all others.; 15 pt= Bt, Gt, Ga, Wg, Sh, Sc, Cm, Rm.
1974	45	Oct 5-12 Oct 26-Dec 1		SR-SS	PS*[w]	15/30	*[w]100 pt= Cb, Rh. 90 pt= Hn Ma, Bd, Wd, Hm.; 35 pt= Dr Ma, Rn, Md. 15 pt= all others.
1975	45	Oct 4-11 Oct 25-Nov 30		½ SR-SS	PS*[x]	15/30	*[x]100 pt= Cb, Rh. 90 pt= Hn Ma, Bd, Wd, Hm.; 35 pt= Dr Ma, Rn, Wg, & all others.; 10 pt= Bwt, Gwt, Ga, Pt, Sh, Sc.
1976	50	Oct 2-7 Oct 23-Dec 5		½ SR-SS	PS*[y]	15/30	*[y]100 pt= Cb. 70 pt= Hn Ma, Bd, Wd, Rh, Hm.; 25 pt= Dr Ma, Rn, Wg, & all others.; 10 pt= Bt, Gt, Ct, Ga, Pt, Sh, Sc, Cm, Rm.
1977	45	Oct 8-15 Oct 22-Nov 27		SR-SS	PS*[y]	15/30	
1978	50	Oct 1-8 Oct 21-Dec 1		½ SR-SS	PS*[z]	15/30	*[z]100 pt= Cb. 70 pt= Hn Ma, Bd, Wd, Rh, Hm.; 35 pt= Dr Ma, Rn, & all others.; 10 pt= Bt, Gt, Ct, Ga, Wg, Pt, Sh, Sc, Cm, Rm.
1979	50	Sep 22-26 Oct 20-Dec 3		½ SR-SS	PS*[aa]	15/30	*[aa]100 pt= Cb. 70 pt= Hn Ma, Bd, Wd, Rh, Hm.; 25 pt= Dr Ma, Rn, & all others.; 10 pt= Bt, Gt, Ct, Ga, Wg, Pt, Sh, Sc, Cm, Rm.
1980	50	Sep 20-24 Oct 18-Dec 1		½ SR-SS	PS*[aa]	15/30	
1981	50	Sep 19-23 Oct 17-Nov 30		½ SR-SS	PS*[aa]	15/30	
1982	50	Sep 18-22 Oct 23-Dec 6		½ SR-SS	PS*[aa]	15/30	
		North Zone (1)	**South Zone (1)**				
1983	50	Sep 17-21 Oct 15-Nov 28	Sep 17-21 Oct 22-Dec 5	½ SR-SS	PS*[ab]	15/30	*[ab]100 pt= Cb, Bd. 70 pt= Hn Ma, Wd, Rh, Hm.; 25 pt= Dr Ma, Rn, & all others.; 10 pt= Bt, Gt, Ct, Ga, Wg, Pt, Sh, Sc, Cm, Rm.
1984	50	Sep 22-26 Oct 20-Dec 3	Sep 22-26 Oct 27-Dec 10	½ SR-SS	PS*[ab]	15/30	
1985	40	Sep 21-23 Oct 19-Nov 24	Sep 21-23 Oct 26-Dec 1	½ SR-SS	PS*[ac]	15/30	*[ac]100 pt= Hn Ma, Cb, Bd. 70 pt= Wd, Rh, Hm.; 35 pt= Dr Ma, Pt, Rn, & all others.; 20 pt= Bt, Gt, Ct, Ga, Wg, Sh, Sc, Cm, Rm.
1986	40	Sep 20-24 Oct 18-Nov 21	Sep 20-22 Oct 25-Nov 30	½ SR-SS	PS*[ad]	15/30	*[ad]100 pt= Hn Ma, Bd. 70 pt= Wd, Rh, Hm.; 35 pt= Dr Ma, Pt, Rn, & all others.; 20 pt= Bt, Gt, Ct, Ga, Wg, Sh, Sc, Cm, Rm.; Closed season on Cb.

Year	Season Length	Season Dates		Shooting Hours	Limits		Additional Bag Limit Information
					Duck Bag/Poss	Coot Bag/Poss	
		North Zone (2)	South Zone (2)				
1987 (*SH)	40	Sep 19-23 Oct 17-Nov 20	Sep 19-21 Oct 24-Nov 29	½ SR-SS	PS*[ad]	15/30	
1988	30	Oct 8-9 Oct 22-Nov 18	Oct 22-28 Nov 5-27	SR-SS	3/6*[ae]	15/30	*[ae]Only 2 Ma (1 Hn), 2 Wd, 1 Pt, 1 Rh,1 Bd.; 5 merg., only 1 Hm. Closed sea. on Cb.
1989	30	Oct 7-8 Oct 21-Nov 17	Oct 21-27 Nov 4-26	SR-SS	3/6*[ae]	15/30	
1990	30	Oct 6-7 Oct 20-Nov 16	Oct 20-26 Nov 3-25	½ SR-SS	3/6*[ae]	15/30	
1991	30	Oct 5-6 Oct 19-Nov 15	Oct 19-25 Nov 9-Dec 1	½ SR-SS	3/6*[ae]	15/30	
1992	30	Oct 10-13 Oct 24-Nov 18	Oct 24-30 Nov 7-29	½ SR-SS	3/6*[ae]	15/30	
1993	30	Oct 2-4 Oct 23-Nov 18	Oct 23-29 Nov 6-28	½ SR-SS	3/6*[ae]	15/30	
1994	40	Sept 17-19 Oct 15-Nov 20	Oct 1-3 Oct 22-Nov 27	½ SR-SS	3/6*[af]	15/30	*[af]Only 2 Ma (1 Hn), 2 Wd, 1 Pt, 1 Rh,1 Bd, 1 Cb.; 5 merg., only 1 Hm.
1995	50	Sept 23-27 Oct 15-Nov 28	Sept 23-25 Oct 21-Dec 6	½ SR-SS	5/10*[ag]	15/30	*[ag]Only 4 Ma (1 Hn), 2 Wd, 1 Pt, 1 Rh,1 Bd, 1 Cb.; 5 merg., only 1 Hm.
1996	50	Sept 21-25 Oct 19-Dec 2	Sept 21-23 Oct 19-Dec 4	½ SR-SS	5/10*[ah]	15/30	*[ah]Only 4 Ma (1 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb.; 5 merg., only 1 Hm.
Youth Day		Oct 5	Oct 5	½ SR-SS	5/10*[ah]		
1997	60	Sept 20-24 Oct 11-Dec 4	Sept 20-24 Oct 18-Dec 11	½ SR-SS	6/12*[ai]	15/30	*[ai]Only 4 Ma (2 Hn), 2 Wd, 3 Pt, 2 Rh,1 Bd, 1 Cb.; 5 merg., only 1 Hm.
Youth Day		Sept 27	Sept 27	½ SR-SS	6/12*[ai]	15/30	
1998 (*HIP)	60	Sept 19-23 Oct 10-Dec 3	Sept 19-23 Oct 17-Dec 10	½ SR-SS	6/12*[aj]	15/30	*[aj]Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb.; 5 merg., only 1 Hm.
Youth Day		Sept 26	Sept 26	½ SR-SS	6/12*[aj]	15/30	
1999	60	Sept 18-22 Oct 16-Dec 9	Sept 18-22 Oct 16-Dec 9	½ SR-SS	6/12*[ak]	15/30	*[ak]Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb & 3 Sc. 5 merg., only 1 Hm.
Youth Day		Oct 9	Oct 9	½ SR-SS	6/12*[ak]	15/30	
2000	60	Sept 23-27 Oct 14-Dec 7	Sept 23-27 Oct 14-Dec 7	½ SR-SS	6/12*[ak]	15/30	
Youth Day		Oct 7-8	Oct 7-8	½ SR-SS	6/12*[ak]	15/30	
2001	60	Sept 22-26 Oct 13-Dec 6	Sept 22-26 Oct 13-Dec 6	½ SR-SS	6/12*[ak]	15/30	
Canvasback		Oct. 27-Nov 15	Nov 17-Dec 6				
Youth Day		Oct 6-7	Oct 6-7	½ SR-SS	6/12*[ak]	15/30	
2002	60	Sept 21-25 Oct 12-Dec 5	Sept 21-23 Oct 19-Dec 14	½ SR-SS	6/12*[al]	15/30	*[al]Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, & 3 Sc. 5 merg., only 1 Hm. Closed sea. on Cb

Year	Season Length	Season Dates		Shooting Hours	Limits		Additional Bag Limit Information
					Duck Bag/Poss	Coot Bag/Poss	
Pintail		Sept 21-25 Oct 12-Nov 5	Sept 21-23 Oct 19-Nov 14				
Youth Day		Oct 5-6	Oct 5-6	½ SR-SS	6/12*[al]	15/30	
2003	60	Sept 20-24 Oct 11-Dec 4	Sept 20-22 Oct 18-Dec 13	½ SR-SS	6/12*[ak]	15/30	*[ak]Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb & 3 Sc. 5 merg., only 1 Hm.
Pintail		Sept 20-24 Oct 11-Nov 4	Sept 20-22 Oct 18-Nov 13				
Canvasback		Oct 18-Nov 16	Oct 25-Nov 23				
Youth Day		Oct 4-5	Oct 4-5	½ SR-SS	6/12*ak	15/30	
2004	60	Sept 18-22 Oct 16-Dec 9	Sept 25-26 Oct 16-Dec 12	½ SR-SS	6/12*[ak]	15/30	
Pintail		Sept 18-22 Oct 16-Nov 9	Sept 25-26 Oct 16-Nov 12				
Canvasback		Oct 23-Nov 21	Oct 23-Nov 21				
Youth Day		Oct 2-3	Oct 9-10	½ SR-SS	6/12*[ak]	15/30	
2005	60	Sept 17-21 Oct 15-Dec 8	Sept 24-28 Oct 22-Dec 15	½ SR-SS	6/12*[am]	15/30	*[am]Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb & 2 Sc. 5 merg., only 1 Hm.
Canvasback		Oct 22-Nov 20	Oct 29-Nov 27				
Youth Day		Oct 8-9	Oct 8-9	½ SR-SS	6/12*[am]	15/30	
		North Zone (3)	**South Zone (3)**				
2006	60	Sept 23-27 Oct 14-Dec 7	Sept 23-27 Oct 21-Dec 14	½ SR-SS	6/12*[an]	15/30	*[an]Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb & 2 Sc. 5 merg., only 2 Hm.
Youth Day		Oct 7-8	Oct 7-8	½ SR-SS	6/12*[an]	15/30	
2007	60	Sept 22-26 Oct 13-Dec 6	Sept 22-26 Oct 20-Dec 13	½ SR-SS	6/12*[ao]	15/30	*[ao]Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 2 Cb & 2 Sc. 5 merg., only 2 Hm.
Youth Day		Oct 6-7	Oct 6-7	½ SR-SS	6/12*[ao]	15/30	
2008	60	Sept 20-24 Oct 18-Dec 11	Sept 20-24 Oct 18-Dec 11	½ SR-SS	6/12*[ap]	15/30	*[ap]Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,1 Bd, & 1 Sc (Nov 1-20 limit 2 Sc). 5 merg., only 2 Hm. Closed season on Cb.
Youth Day		Oct 4-5	Oct 4-5	½ SR-SS	6/12*[ap]	15/30	
2009	60	Sept 19-23 Oct 10-Dec 3	Sept 19-23 Oct 17-Dec 10	½ SR-SS	6/12*[aq]	15/30	*[aq]Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb, & 2 Sc. 5 merg., only 2 Hm.
Youth Day		Oct 3-4	Oct 3-4	½ SR-SS	6/12*[aq]	15/30	
2010	60	Sept 18-22 Oct 16-Dec 9	Sept 18-22 Oct 23-Dec 16	½ SR-SS	6/12*[ar]	15/30	*[ar]Only 4 Ma (2 Hn), 3 Wd, 2 Pt, 2 Rh,1 Bd, 1 Cb, & 2 Sc. 5 merg., only 2 Hm.
Youth Day		Oct 2-3	Oct 9-10	½ SR-SS	6/12*[ar]	15/30	
		North Zone (4)	**South Zone (4)**				
2011	60	Sept 17-21 Oct 15-Dec 8	Sept 17-21 Oct 22-Dec 15	½ SR-SS	6/12*[ar]	15/30	
Youth Day		Oct 1-2	Oct 8-9	½ SR-SS	6/12*[ar]	15/30	

Year	Season Length	Season Dates			Shooting Hours	Limits		Additional Bag Limit Information
						Duck Bag/Poss	Coot Bag/Poss	
		North Zone (5)	South Zone (5)	Missouri River (5)				
2012	60	Sept 22-26 Oct 13-Dec 6	Sept 22-26 Oct 20-Dec 13	Sept 22-26 Oct 27-Dec 20	½ SR-SS	6/12*[as]	15/30	*[as]Only 4 Ma (2 Hn), 3 Wd, 2 Pt, 2 Rh,1 Bd, 1 Cb, & 4 Sc. 5 merg., only 2 Hm.
Youth Day		Oct 6-7	Oct 13-14	Oct 20-21	½ SR-SS	6/12*as	15/30	
2013	60	Sept 21-25 Oct 12-Dec 5	Sept 21-25 Oct 19-Dec 12	Sept 21-25 Oct 26-Dec 19	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 2 Pt, 2 Rh,1 Bd, 2 Cb, & 4 Sc. 5 merg., only 2 Hm.
Youth Day		Oct 5-6	Oct 12-13	Oct 19-20	½ SR-SS	6/18*[at]	15/45	
2014	60	Oct 4-19 Oct 25-Dec 7	Oct 4-8 Oct 18-Dec 11	Oct 4-8 Oct 25-Dec 18	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 2 Pt, 2 Rh,1 Bd, 2 Cb, & 4 Sc. 5 merg., only 2 Hm.
Youth Day		Sep 27-28	Oct 11-12	Oct 18-19	½ SR-SS	6/18*[at]	15/45	
Teal		Sep 6-21	Sep 6-21	Sep 6-21	SR-SS	6/18		
2015	60	Oct 3-18 Oct 24-Dec 6	Oct 3-7 Oct 17-Dec 10	Oct 3-7 Oct 24-Dec 17	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 2 Pt, 2 Rh,1 Bd, 2 Cb, & 4 Sc. 5 merg., only 2 Hm.
Youth Day		Sep 26-27	Oct 10-11	Oct 17-18	½ SR-SS	6/18*[at]	15/45	
Teal		Sep 5-20	Sep 5-20	Sep 5-20	SR-SS	6/18		
2016	60	Sep 24-Oct 2 Oct 15-Dec 4	Oct 1-5 Oct 22-Dec 15	Oct 8-9 Oct 22-Dec 18	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 2 Pt, 2 Rh,1 Bd, 2 Cb, & 4 Sc. 5 merg., only 2 Hm.
Youth Day		Sep 17-18	Sep 24-25	Oct 1-2	½ SR-SS	6/18*[at]	15/45	
Teal		Sep 3-11	Sep 3-11	Sep 3-18	SR-SS	6/18		
2017	60	Sep 23-Oct 1 Oct 14-Dec 3	Sep 30-Oct 4 Oct 21-Dec 14	Oct 7-8 Oct 21-Dec 17	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,2 Bd, 2 Cb, & 3 Sc. 5 merg., only 2 Hm
Youth Day		Sep 16-17	Sep 23-24	Sep 30-Oct 1	½ SR-SS	6/18*[at]	15/45	
Teal		Sep 2-10	Sep 2-10	Sep 2-17	SR-SS	6/18		
2018	60	Sep 29-Oct 5 Oct 13-Dec 4	Oct 4-Oct 12 Oct 20-Dec 11	Oct 13-19 Oct 17-Dec 18	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,2 Bd, 2 Cb, & 3 Sc. 5 merg., only 2 Hm
Youth Day		Sep 22-23	Sep 29-30	Oct 6-Oct 7	½ SR-SS	6/18*[at]	15/45	
Teal		Sep 1-16	Sep 1-16	Sep 1-16	SR-SS	6/18		
2019	60	Sep 28-Oct 4 Oct 12-Dec 3	Oct 5-Oct 111 Oct 19-Dec 10	Oct 12-18 Oct 27-Dec 17	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,2 Bd, 2 Cb, & 3 Sc. 5 merg., only 2 Hm
Youth Day		Sep 21-22	Sep 28-29	Oct 5-Oct 6	½ SR-SS	6/18*[at]	15/45	
Teal		Sep 1-16	Sep 1-16	Sep 1-16	SR-SS	6/18		

DUCK SPECIES: Ma = Mallard, Wd = Wood duck, Bd = Black duck, Cb = Canvasback, Rh = Redhead, Ru = Ruddy duck, Bu = Bufflehead, Pt = Pintail, Wg = Wigeon, Sc = Scaup, Rn = Ring-necked duck Bt = Blue-winged teal, Gt = Green-winged teal, Ga = Gadwall, Sh = Shoveler, Ct = Cinnamon teal, Md = Mottled duck, (Hn = Hen, Dr = Drake) Cm = Common merganser, Rm = Red-breasted merganser, Hm = Hooded merganser

SHOOTING HOURS: SR to SS = sunrise to sunset, ½ SR to SS = ½ hour before sunrise to sunset, ½ SR to ½ SS = ½ hour before sunrise to ½ hour before sunset, ½ SR to 1 SS = ½ hour before sunrise to 1 hour before sunset. Shooting hours began at 12:00 pm (Noon) on opening day for hunting seasons 1931-33, 1947-54, & 1959-63. Iowa set daily shooting hours at sunrise or later during 27 of the 72 hunting seasons between 1918-89. Federal regulations set daily shooting hours at sunrise or later during 16 of the 90 hunting seasons between 1918-2007.

LIMIT: BAG = Daily bag limit,

POSS = Possession limit

POSS LIMIT = Twice the daily bag limit unless otherwise noted.

Year	Season Length	Season Dates	Shooting Hours	Limits		Additional Bag Limit Information
				Duck Bag/Poss	Coot Bag/Poss	

PS = Point System was used to determine the daily bag limit. The daily bag limit was obtained when the point value of the last duck taken, added to the point values of the previous ducks bagged, equaled or exceeded 100 points.

SPEC. REGULATIONS: Wood duck season was closed by Federal regulation from the 1918 through the 1940 season. Canvasback and redhead seasons were closed on the Mississippi River from 1975 thru 1979. Canvasback season was closed on the Mississippi River in 1980-82. Canvasback season closed on Pools 9 & 19 on the Mississippi River from 1983-85. Canvasback season closed statewide 1936-37, 1960-63, 1972, 1986-93, 2002, 2008.

DUCK ZONE BOUNDARY (1) = a line running from the Nebraska-Iowa border along I-80 to the Iowa-Illinois border.

DUCK ZONE BOUNDARY (2) = a line running from the Nebraska-Iowa border along St Hwy 175, east to St Hwy 37, southeast to US Hwy 59, south to I-80 and along I-80 to the Iowa-Illinois border.

DUCK ZONE BOUNDARY (3) = a line running from the Nebraska-Iowa border along St Hwy 175, east to St Hwy 37, southeast to St Hwy 183, northeast to St Hwy 141, east to US Hwy 30, and along US Hwy 30 to the Iowa-Illinois border.

DUCK ZONE BOUNDARY (4) = a line beginning on the South Dakota-Iowa border at I-29, southeast to Woodbury Co Rd D38, east to Woodbury Co Rd K45, southeast to St Hwy 175, east to St Hwy 37, southeast to St Hwy 183, northeast to St Hwy 141, east to US Hwy 30, and along US Hwy 30 to the Iowa-Illinois border.

DUCK ZONE BOUNDARY (5) = The North Zone is all of Iowa north of a line beginning on the on the South Dakota-Iowa border at I-29, southeast to St Hwy 175, east to St Hwy 37, southeast to St Hwy 183, northeast to St Hwy 141, east to US Hwy 30, and along US Hwy 30 to the Iowa-Illinois border. The Missouri River Zone includes all lands and water in Iowa west of I-29 and north of Hwy 175. The South Zone is the remainder of the state not in the North or Missouri River Zones. (*SH) Steel shot required statewide for hunting all migratory gamebirds except woodcock.

STEEL SHOT REGULATIONS HISTORY: In 1977, no person could hunt waterfowl on all waters and a 150-yard zone thereto in Fremont and Mills Counties while possessing 12-gauge shotshells loaded with any shot other than steel. Drainage ditches, temporary sheet water and the Missouri River were exempt. During 1978 & 1979, no person could hunt waterfowl on all waters and a 150-yard zone thereto in Fremont and Mills Counties and on the Upper Mississippi Wildlife Refuge while possessing 12-gauge shotshells loaded with any shot other than steel. Drainage ditches, temporary sheet water, and the Missouri River in Mills and Fremont Counties were exempt. In 1980, Sweet Marsh in Bremer County, Big Marsh in Butler County, and the Princeton Area in Scott County, were added to the areas previously described in the steel shot regulations and the rule now applied to all shotgun gauges. In 1981, Green Island in Jackson County was added to the list of areas previously described where steel shot was required. During the 1982 through 1984 seasons, the previously described list of areas for steel shot remained the same. During the 1985 & 1986 seasons, no person could hunt migratory game birds except woodcock on any lands or waters under the jurisdiction of the State Conservation Commission, the US Government, or any county conservation board, or on all waters and a 150-yard zone adjacent to these waters, including reservoirs, lakes, ponds, marshes, bayous, swamps, rivers, streams, and seasonally flooded areas of all types, while possessing shotshells loaded with shot other than steel shot. Temporary sheet water, farm ponds less than 2 acres in size, and streams with water less than 25 feet in width where the hunting was occurring were exempt. In addition, no person could hunt waterfowl in the zone bounded on the west by the Missouri River, on the south by I-680, on the east by I-29 and on the north by the Soldier River, while possessing any shotshells loaded with shot other than steel shot. From 1987 to the present, no person could hunt migratory game birds except woodcock on all lands and waters within the State of Iowa while possessing any shotshell loaded with shot other than steel shot, or copper or nickel coated steel shot. In 1998, nontoxic shot was required for any shotgun shooting (except turkey hunting) on most DNR managed wildlife areas in Iowa's prairie pothole region that had waterfowl production potential. (*HIP) First year migratory bird hunters in Iowa registered (by phone) for the federal Harvest Information Program (HIP).

Table 4.4 Goose seasons in Iowa

Year	Goose Species	Season Length	Season Dates	Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
			Statewide			
1917	Ca/Sn/Wf	227	Sep 1 Apr 15	Unknown	?	
1918	Ca/Sn/Wf	107	Sep 16-Dec 31	SR-SS	8/none	
1919	Ca/Sn/Wf	107	Sep 16-Dec 31	SR-SS	8/none	
1920	Ca/Sn/Wf	107	Sep 16-Dec 31	SR-SS	8/none	
1921	Ca/Sn/Wf	107	Sep 16-Dec 31	SR-SS	8/none	
1922	Ca/Sn/Wf	107	Sep 16-Dec 31	SR-SS	8/none	
1923	Ca/Sn/Wf	107	Sep 16-Dec 31	SR-SS	8/none	
1924	Ca/Sn/Wf	107	Sep 16-Dec 31	½ SR-SS	8/50 WF	WF = all waterfowl combined
1925	Ca/Sn/Wf	107	Sep 16-Dec 31	½ SR-SS	8/50 WF	
1926	Ca/Sn/Wf	107	Sep 16-Dec 31	½ SR-SS	8/50 WF	
1927	Ca/Sn/Wf	107	Sep 16-Dec 31	½ SR-SS	8/50 WF	
1928	Ca/Sn/Wf	107	Sep 16-Dec 31	½ SR-SS	8/50 WF	
1929	Ca/Sn/Wf	107	Sep 16-Dec 31	½ SR-SS	8/50 WF	
1930	Ca/Sn/Wf	107	Sep 16-Dec 31	½ SR-SS	4/8	
1931	Ca/Sn/Wf	30	Oct 20-Nov 19	½ SR-SS	4/8	
1932	Ca/Sn/Wf	61	Oct 1-Nov 30	½ SR-SS	4/8	
1933	Ca/Sn/Wf	61	Oct 1-Nov 30	½ SR-SS	4/8	
1934	Ca/Sn/Wf	30	Oct 10-Nov 18	SR-SS	4/8	(included 10 rest days)
1935	Ca/Sn/Wf	30	Oct 21-Nov 19	7am-4pm	4/4	
1936	Ca/Sn/Wf	30	Nov 1-Nov 30	7am-4pm	4/4	
1937	Ca/Sn/Wf	30	Oct 9-Nov 7	7am-4pm	5/5	
1938	Ca/Sn/Wf	45	Oct 15-Nov 28	7am-4pm	5/10	
1939	Ca/Sn/Wf	45	Oct 22-Dec 5	7am-4pm	4/8	
1940	Ca/Sn/Wf	60	Oct 16-Dec 14	SR-4pm	3/6	
1941	Ca/Sn/Wf	60	Oct 16-Dec 14	SR-4pm	3/6	
1942	Ca/Sn/Wf	70	Oct 15-Dec 23	SR-SS	2/4	
1943	Ca/Sn/Wf	70	Sep 25-Dec 3	½ SR-SS	2/4	
1944	Ca/Sn/Wf	80	Sep 20-Dec 8	½ SR-SS	2/4*[a]	*[a]Sn goose poss. limit = 8.
1945	Ca/Sn/Wf	80	Sep 20-Dec 8	½ SR-SS	2/4*[a]	
1946	Ca/Sn/Wf	45	Oct 26-Dec 9	½ SR-½ SS	4/4*[b]	*[b]Closed Ca goose season.
1947	Ca/Sn/Wf	30	Oct 21-Nov 19	½ SR-1 SS	4/4*[c]	*[c]Only 1 Ca or 1 Wf goose in bag.
1948	Ca/Sn/Wf	30	Oct 29-Nov 27	½ SR-1 SS	4/4*[c]	
1949	Ca/Sn/Wf	40	Oct 21-Nov 29	½ SR-1 SS	4/4*[c]	
1950	Ca/Sn/Wf	35	Oct 20-Nov 23	½ SR-1 SS	4/4*[c]	
1951	Ca/Sn/Wf	45	Oct 12-Nov 25	½ SR-1 SS	5/5*[d]	*[d]Only 2 Ca or 2 Wf, or 1 Ca & 1 Wf.
1952	Ca/Sn/Wf	55	Oct 8-Dec 1	½ SR-1 SS	5/5*[d]	
1953	Ca/Sn/Wf	55	Oct 8-Dec 1	½ SR-SS	5/5*[d]	
1954	Ca/Sn/Wf	55	Oct 15-Dec 8	½ SR-1 SS	5/5*[d]	
1955	Ca/Sn/Wf	70	Oct 8-Dec 16	½ SR-½ SS	5/5*[d]	

Year	Goose Species	Season Length	Season Dates		Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
1956	Ca/Sn/Wf	70	Oct 6-Dec 14		½ SR-½ SS	5/5*[d]	
1957	Ca/Sn/Wf	70	Oct 5-Dec 13		½ SR-SS	5/5*[d]	
1958	Ca/Sn/Wf	70	Oct 4-Dec 12		½ SR-SS	5/5*[d]	
1959	Ca/Sn/Wf	70	Oct 7-Dec 15		SR-SS	5/5*[d]	
1960	Ca/Sn/Wf	70	Oct 8-Dec 16		½ SR-SS	5/5*[d]	
1961	Ca/Sn/Wf	70	Oct 7-Dec 15		SR-SS	5/5*[d]	
1962	Ca/Sn/Wf	70	Oct 6-Dec 14		SR-SS	5/5*[d]	
1963	Ca/Sn/Wf	70	Oct 5-Dec 13		SR-SS	5/5*[d]	
1964	Ca/Sn/Wf	70	Oct 3-Dec 11		SR-SS	5/5*[d]	
1965	Ca/Sn/Wf	70	Oct 2-Dec 10		½ SR-SS	5/5*[d]	
1966	Ca/Sn/Wf	70	Oct 1-Dec 9		½ SR-SS	5/5*[d]	
1967	Ca/Sn/Wf	70	Sep 30-Dec 8		½ SR-SS	5/5*[d]	
1968	Ca/Sn/Wf	70	Sep 28-Dec 6		½ SR-SS	5/5*[d]	
1969	Ca/Sn/Wf	70	Oct 4-Dec 12		½ SR-SS	5/5*[d]	
1970	Ca	23	Oct 3-Nov 26		SR-SS	1/1*[e]	*[e]Bag & pos. lim.= 5 w/ only 1 Ca, 1 Ca + 1 WF, or 2 Wf.
	Sn/Wf	70	Oct 3-Dec 11			5/5*[e]	
1971	Ca	23	Oct 9-Oct 31		½ SR-SS	1/1*[e]	
	Sn/Wf	70	Oct 2-Dec 10			5/5*[e]	
1972	Ca	23	Oct 1-Nov 9		SR-SS	1/2*[f]	*[f]Bag lim.= 5 w/ only 1 Ca,1 Ca + 1 WF, or 2 Wf. Pos. lim.= 5 w/ only 2 Ca, 1 Ca + 1 WF, or 2 Wf.
	Sn/Wf	70	Oct 7-Dec 15			5/5*[f]	
First year state duck stamp required							
1973	Ca	40	Oct 1-Nov 9		SR-SS	1/2*[g]	*[g]Bag lim.= 5 w/ only 1 Ca & 2 Wf. Pos lim.= 5 w/ only 2 Ca & 2 Wf.
	Sn/Wf	70	Oct 1-Dec 9			5/5*[g]	
1974	Ca	45	Oct 1-Nov 14		SR-SS	1/2*[g]	
	Sn/Wf	70	Oct 1-Dec 9			5/5*[g]	
1975	Ca	45	Oct 1-Nov 14		½ SR-SS	2/2*[h]	*[h]Bag lim.= 5 w/ only 2 Ca & 2 Wf. Pos lim.= Bag lim.
	Sn/Wf	70	Oct 1-Dec 9			5/10*[h]	
1976	Ca	45	Oct 1-Nov 14		½ SR-SS	5/10*[h]	
	Sn/Wf	70	Oct 1-Dec 9			5/10*[h]	
1977	Ca	45	Oct 1-Nov 14		SR-SS	5/10*[h]	
	Sn/Wf	70	Oct 1-Dec 9			5/10*[h]	
1978	Ca/Sn/Wf	70	Oct 1-Dec 9		½ SR-SS	5/10*[h]	
1979	Ca/Sn/Wf	70	Sep 29-Dec 7		½ SR-SS	5/10*[h]	
1980	Ca/Sn/Wf	70	Oct 4-Dec 12		½ SR-SS	5/10*[i]	*[i]Bag lim.= 5 w/ only 2 Ca & 2 Wf. Pos lim.= 10 w/ only 4 Ca & 4 Wf.
1981	Ca/Sn/Wf	70	Oct 3-Dec 11		½ SR-SS	5/10*[i]	
1982	Ca/Sn/Wf	70	Oct 2-Dec 10		½ SR-SS	5/10*[i]	
1983	Ca/Sn/Wf	70	Oct 1-Dec 9		½ SR-SS	5/10*[i]	
			Most of State	**SW Zone (1)**			
1984	Ca/Sn/Wf	70	Sep 29-Dec 7	Oct 13-Dec 21	½ SR-SS	5/10*[i]	
1985	Ca/Sn/Wf	70	Sep 28-Dec 6	Oct 12-Dec 20	½ SR-SS	5/10*[i]	

Year	Goose Species	Season Length	Season Dates		Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
1986	Ca/Sn/Wf	70	Oct 4-Dec 12	Oct 18-Dec 26	½ SR-SS	5/10*[i]	
1987	Ca	45	Oct 3-Nov 16	Oct 17-Nov 30	½ SR-SS	2/4*[i]	
(*SH)	Sn/Wf	70	Oct 3-Dec 11	Oct 17-Dec 25		5/10*[i]	
1988	Ca	45	Oct 1-Nov 14	Oct 15-Nov 28	SR-SS	2/4*[i]	
	Sn/Wf	70	Oct 1-Dec 9	Oct 15-Dec 23		5/10*[i]	
			Most of State	**SW Zone (2)**			
1989	Ca	45	Sep 30-Nov 13	Oct 14-Nov 27	SR-SS	2/4*[j]	*[j]Bag lim.= 7 w/ only 2 Ca & 2 Wf. Pos lim.= 14 w/ only 4 Ca & 4 Wf.
	Sn/Br	80	Sep 30-Dec 18	Oct 14-Jan 1		7/14*[j]	
	Wf	70	Sep 30-Dec 8	Oct 14-Dec 22		2/4*[j]	
1990	Ca/Wf/Br	70	Sep 29-Dec 7	Oct 13-Dec 21	½ SR-SS	2/4*[j]	
	Sn	80	Sep 29-Dec 17	Oct 13-Dec 31		7/14*[j]	
1991	Ca/Wf/Br	70	Sep 28-Dec 6	Oct 12-Dec 20	½ SR-SS/1	2/4*[j]	
	Sn	80	Sep 28-Dec 16	Oct 12-Dec 30		7/14*[j]	
1992	Ca/Wf/Br	70	Oct 3-Dec 11	Oct 10-Dec 18	½ SR-SS/1	2/4*[j]	
	Sn	80	Oct 3-Dec 21	Oct 10-Dec 28		7/14*[j]	
			North Zone (1)	**South Zone (1)**			
1993	Ca/Wf/Br	55	Oct 9-Dec 2	Oct 23-Dec 16	½ SR-SS	2/4*[j]	
	Sn	80	Oct 9-Dec 27	Oct 23-Jan 10		7/14*[j]	
1994	Ca/Wf/Br	55	Oct 8-Dec 1	Oct 22-Dec 15	½ SR-SS	2/4*[j]	
	Sn	102	Oct 1-Dec 10	Oct 1-Jan 10		7/14*[j]	
1995	Ca/Wf/Br	70	Sep 30-Dec 8	Oct 14-Dec 22	½ SR-SS	2/4*[k]	*k) Bag lim.= 10 w/ only 2 Ca & 2 Wf. Pos lim.= 20 w/ only 4 Ca & 4 Wf.
	Sn	107	Sep 30-Jan 10	Oct 14-Jan 10		10/20*[k]	
			None	Feb 24-Mar 10, 1996 south of Interstate 80.			
1996	Ca	2	Sep 14-15	None	½ SR-SS	2/4*[l]	*[l]Bag lim.= 2 Ca.
	Ca/Wf/Br	70	Sep 28-Dec 6	Oct 5-Oct 13	½ SR-SS	2/4*[m]	*[m]Bag lim.= 2 Ca, 2 Wf, & 2 Br. Pos lim.= 4 Ca, 4 Wf, & 4 Br.
				Oct 19-Dec 18			
	Sn	107	Oct 12-Jan 10, 1997		½ SR-SS	10/30	
			Feb 22-Mar 9, 1997				
1997	Ca	2	Sep 13-14	None	½ SR-SS	2/4*[l]	
	Ca/Wf/Br	70	Oct 4-Dec 12	Oct 4-Oct 12	½ SR-SS	2/4*[m]	
				Oct 18-Dec 17			
	Sn/Ro	107	Oct 4-Dec 31		½ SR-SS	10/30	
			Feb 21-Mar 10, 1998				
1998	Ca	2	Sep 12-13[b]	None	½ SR-SS	2/4*[l]	
(*HIP)	Ca/Wf/Br	70	Oct 3-Dec 11	Oct 3-Oct 11	½ SR-SS	[a]2/4*[m]	
				Oct 17-Dec 16			
	Sn/Ro	107	Oct 3-Dec 31		½ SR-SS	20/none	
			Feb 20-Mar 10, 1999				
	Sn/Ro	[c]Cons. Or.	March 11-April 16, 1999		½ SR-SS/½	20/none	
1999	Ca	2	Sep 11-12[b]	None	½ SR-SS	2/4*[l]	
	Ca/Wf/Br	70	Oct 2-Dec 10	Oct 2-Oct 10	½ SR-SS	2/4*[m]	
				Oct 16-Dec 15			

Year	Goose Species	Season Length	Season Dates		Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
	Sn/Ro	107	Oct 2-Dec 26		½ SR-SS	20/none	
			Feb 19-Mar 10, 2000				
	Sn/Ro	[c]Cons. Or.	March 11-April 16, 2000		½ SR-SS/½	20/none	
2000	Ca	2	Sep 9-10[b]	None	½ SR-SS	2/4*[l]	
	Ca/Wf/Br	70	Sep 30-Dec 8	Sep 30-Oct 15 Nov 4-Dec 27	½ SR-SS	2/4*[m]	
	Sn/Ro	107	Sep 30-Jan 14, 2001		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Feb 15-April 15, 2001		½ SR-SS/½	20/none	
2001	Ca/Wf/Br	70	Sep 29-Dec 7	Sep 29-Oct 21 Nov 10-Dec 26	½ SR-SS	2/4*[m]	
	Sn/Ro	107	Sep 29-Jan 13, 2002		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Feb 2-April 15, 2002		½ SR-SS/½	20/none	
2002	Ca/Wf/Br	70	Sep 28-Dec 6	Sep 28-Oct 20 Nov 9-Dec 25	½ SR-SS	2/4*[m]	*[m]Bag lim.= 2 Ca, 2 Wf, & 2 Br. Pos lim.= 4 Ca, 4 Wf, & 4 Br.
	Sn/Ro	107	Sep 28-Jan 12, 2003		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Feb 1-April 15, 2003		½ SR-SS/½	20/none	
2003	Ca	15	Sep 1-15 in metro zones[d]		½ SR-SS	3/6*[n]	*[n]Bag lim.= 3 Ca.
	Ca & Br	70	Sep 27-Dec 5	Sep 27-Oct 19 Nov 8-Dec 24	½ SR-SS	2/4 *[o]	*[o]Bag lim.= 2 Ca & 2 Br. Pos lim.= 4 Ca & 4 Br.
	Wf	86	Sept 27-Dec 21	Sept 27-Dec 21	½ SR-SS	2/4	
	Sn/Ro	107	Sep 27-Jan 11, 2004		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 12-April 15, 2004		½ SR-SS/½	20/none	
			North Zone (2)	**South Zone (2)**			
2004	Ca	15	Sep 1-15 in metro zones[d]		½ SR-SS	3/6*[n]	
	Ca	2	Sep 11-12	None	½ SR-SS	2/4*[l]	*[l]Bag lim.= 2 Ca.
	Ca & Br	60	Sep 25-Oct 3 Oct 16-Dec 5	Oct 2-10 Oct 30-Dec 19	½ SR-SS	2/4*[o]	
	Wf	86	Sept 25-Dec 19	Oct 2-Dec 26	½ SR-SS	2/4	
	Sn/Ro	107	Sep 25-Jan 9, 2005		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 10-April 15, 2005		½ SR-SS/½	20/none	
2005	Ca	15	Sep 1-15 in metro zones[d]		½ SR-SS	3/6*[n]	
	Ca	2	Sep 10-11	Sep 10-11	½ SR-SS	2/4*[l]	
	Ca & Br	70	Oct 1-9 Oct 15-Dec 4 Dec 24-Jan 2	Oct 1-9 Oct 22-Dec 4 Dec 24-Jan 9	½ SR-SS	2/4*[o]	
	Wf	72	Oct 1-Dec 11	Oct 1-Dec 11	½ SR-SS	2/4	
	Sn/Ro	107	Oct 1-Jan 15, 2006		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 16-April 15, 2006		½ SR-SS/½	20/none	
2006	Ca	15	Sep 1-15 in metro zones[d]		½ SR-SS	3/6*[n]	
	Ca	2	Sep 9-10	Sep 9-10	½ SR-SS	2/4*[l]	

Year	Goose Species	Season Length	Season Dates			Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
	Ca & Br	90	Sep 30-Dec 10	Sep 30-Oct 8		½ SR-SS	2/4*[p]	*[p]Bag lim.= 2 Ca & 1 Br. Pos lim.= 4 Ca & 2 Br.
			Dec 16-Jan 2	Oct 21-Jan 9				
	Wf	72	Sep 30-Dec 10	Sep 30-Dec 10		½ SR-SS	2/4	
	Sn/Ro	107	Sep 30-Jan 14, 2007			½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 15-April 15, 2007			½ SR-SS/½	20/none	
2007	Ca	15	Sep 1-15 in metro zones[d]			½ SR-SS	5/10*[q]	*[q]Bag lim.= 5 Ca.
	Ca	2	Sep 8-9	Sep 8-9		½ SR-SS	2/4*[l]	
	Ca & Br	90	Sep 29-Dec 9	Sep 29-Oct 7		½ SR-SS	2/4*[p]	
			Dec 15-Jan 1	Oct 20-Jan 8				
	Wf	72	Sep 29-Dec 9	Sep 29-Dec 9		½ SR-SS	2/4	
	Sn/Ro	107	Sep 29-Jan 13, 2008			½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 14-April 15, 2008			½ SR-SS/½	20/none	
2008	Ca	15	Sep 1-15 in metro zones[e]			½ SR-SS	5/10*[q]	
	Ca & Br	90	Sep 27-Oct 5	Sep 27-Oct 5		½ SR-SS	2/4*[p]	
			Oct 18-Dec 21	Oct 18-Dec 21				
			Dec 27-Jan 11	Dec 27-Jan 11				
	Wf	72	Sep 27-Dec 7	Sep 27-Dec 7		½ SR-SS	2/4	
	Sn/Ro	107	Sep 27-Jan 11, 2009			½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 12-April 15, 2009			½ SR-SS/½	20/none	
			North Zone (3)	**South Zone (3)**				
2009	Ca	15	Sep 1-15 in metro zones[e]			½ SR-SS	5/10*[q]	
	Ca & Br	90	Sep 26-Oct 4	Sep 26-Oct 4		½ SR-SS	2/4*[p]	
			Oct 10-Dec 13	Oct 17-Dec 13				
			Dec 19-Jan 3	Dec 19-Jan 10				
	Wf	72	Sep 26-Dec 6	Sep 26-Dec 6		½ SR-SS	2/4	
	Sn/Ro	107	Sep 26-Jan 10, 2010			½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 11-April 15, 2010			½ SR-SS/½	20/none	
2010	Ca	9	Sep 4-12 in metro zones[e]			½ SR-SS	5/10*[q]	
	Ca & Br	98	Sep 25-Oct 10	Oct 2-Oct 17		½ SR-SS	2-3/4-6*[r]	*[r]Bag lim.= 2 Ca & 1 Br through Oct. 31 and 3 Ca & 1 Br thereafter.
			Oct 16-Jan 5	Oct 23-Jan 12				
	Wf	72	Sep 25-Dec 5	Oct 2-Dec 12		½ SR-SS	2/4	
	Sn/Ro	107	Sep 25-Jan 9	Oct 2-Jan 14		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 15-April 15, 2011			½ SR-SS/½	20/none	
			North Zone (4)	**South Zone (4)**				
2011	Ca	9	Sep 3-11 in metro zones[e]			½ SR-SS	5/10 *q	
	Ca & Br	98	Sep 24-Oct 9	Oct 1-Oct 16		½ SR-SS	2-3/4-6*[r]	
			Oct 15-Jan 4	Oct 22-Jan 11				
	Wf	74	Sep 24-Dec 6	Oct 1-Dec 13		½ SR-SS	2/4	
	Sn/Ro	107	Sep 24-Jan 8	Oct 1-Jan 13		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 14-April 15, 2012			½ SR-SS/½	20/none	
			North Zone (5)	**South Zone (5)**	**Missouri River (5)**			
2012	Ca	9	Sep 1-9 in metro zones[e]			½ SR-SS	5/10*[q]	
	Ca & Br	98	Sep 29-Dec 11	Oct 6-Jan 11	Oct 13-Jan 18	½ SR-SS	2-3/4-6*[r]	

Year	Goose Species	Season Length	Season Dates			Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
	Wf	74	Sep 29-Dec 11	Oct 6-Dec 18	Oct 13-Dec. 25	½ SR-SS	2/4	
	Sn/Ro	107	Sep 24-Jan 8	Oct 1-Jan 13	Oct 13-Jan 18	½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 14-April 15, 2013			½ SR-SS	20/none	
2013	Ca	9	Sep 7-15 in metro zones[e]			½ SR-SS	5/15*[q]	
	Ca & Br	98	Sep 28-Jan 3,	Oct 5-Jan 10	Oct 12-Jan 17	½ SR-SS	2-3/6-9*[r]	
	Wf	74	Sep 28-Dec 10	Oct 5-Dec 17	Oct 12-Dec. 24	½ SR-SS	2/6	
	Sn/Ro	107	Sep 28-Jan 12	Oct 5-Jan 17	Oct 12-Jan 17	½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 18-April 15, 2014			½ SR-SS	20/none	
2014	Ca	9	Sep 6-14 in metro zones[e]			½ SR-SS	5/15*[q]	
	Ca & Br	98	Sep 27-Jan 2,	Oct 4-Jan 9	Oct 11-Jan 16	½ SR-SS	2-3/6-9*[r]	
	Wf	74	Sep 27-Dec 9	Oct 4-Dec 16	Oct 11-Dec. 23	½ SR-SS	2/6	
	Sn/Ro	107	Sep 27-Jan 11	Oct 4-Jan 16	Oct 11-Jan 16	½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 17-April 15, 2015			½ SR-SS	20/none	
2015	Ca	9	Sep 5-13 in metro zones[e]			½ SR-SS	5/15*[q]	
	Ca & Br	98	Sep 26-Jan 1	Oct 3-Jan 8	Oct 10-Jan 15	½ SR-SS	2-3/6-9*[r]	
	Wf	74	Sep 26-Jan 1	Oct 3-Jan 8	Oct 10-Jan 15	½ SR-SS	5/15**	**in aggregate with Ca & Br
	Sn/Ro	107	Sep 26-Jan 10	Oct 3-Jan 15	Oct 3-Jan 15	½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 16-April 15, 2016			½ SR-SS	20/none	
2016	Ca	9	Sep 3-11 in metro zones[e]			½ SR-SS	5/15*[q]	
	Dark Geese	98	Sep 24-Oct 9	Oct 1-9	Oct 8-16	½ SR-SS	5/15*[r]	*[r]Aggregate bag lim.= 2 Ca & 1 Br through Oct. 31 and 3 Ca, 5 Wf, & 1 Br thereafter.
			Oct 15-Jan 4	Oct 22-Jan 18	Oct 22-Jan 18	½ SR-SS		
	Sn/Ro	107	Sep 24-Oct 9	Oct 1-9	Oct 8-16	½ SR-SS	20/none	
			Oct 15-Jan 13	Oct 22-Jan 27	Oct 22-Jan 27	½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 28-April 15, 2017			½ SR-SS	20/none	
2017	Ca	9	Sep 2-10 in metro zones[e]			½ SR-SS	5/15*[q]	
	Dark Geese	98	Sep 23-Oct 8	Sep 30-8		½ SR-SS	5/15*[r]	*[r]Aggregate bag lim.= 2 Ca & 1 Br through Oct. 31 and 3 Ca, 5 Wf, & 1 Br thereafter.
			Oct 14-Jan 1	Oct 21-Jan 15		½ SR-SS		
	Sn/Ro	107	Sep 23-Oct 8	Sep 30 1-8		½ SR-SS	20/none	
			Oct 14-Jan 10	Oct 21-Jan 24		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 25-April 15, 2018			½ SR-SS	20/none	
2018	Ca	9	Sep 1-9 in metro zones[e]			½ SR-SS	5/15*[q]	
	Dark Geese	98	Sep 22-Oct 7	Sep 29-Oct 14		½ SR-SS	5/15*[r]	*[r]Aggregate bag lim.= 2 Ca & 1 Br through Oct. 31 and 3 Ca, 5 Wf, & 1 Br thereafter.
	Sn/Ro		Oct 13-Dec 4	Oct 20-Dec 11		½ SR-SS	20/none	
			Dec 15-Jan 12	Dec 22-Jan 19		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 27-April 15, 2019			½ SR-SS	20/none	
2019	Ca	9	Sep 7-15 in metro zones[e]			½ SR-SS	5/15*[q]	
	Dark Geese	98	Sep 21-Oct 6	Sep 28-Oct 13		½ SR-SS	5/15*[r]	*[r]Aggregate bag lim.= 2 Ca & 1 Br through Oct. 31 and 3 Ca, 5 Wf, & 1 Br thereafter.
	Sn/Ro		Oct 12-Dec 3	Oct 19-Dec 10		½ SR-SS	20/none	
			Dec 14-Jan 121	Dec 21-Jan 18		½ SR-SS	20/none	

Year	Goose Species	Season Length	Season Dates	Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
	Sn/Ro	[c]Cons. Or.	Jan 26-April 15, 2020	½ SR-SS	20/none	

GOOSE SPECIES: Ca = Canada goose, Sn = Snow goose, Wf = White-fronted goose, Br = Brant, Ro = Ross's goose

SEASON LENGTH: Maximum number of days the season could be open.

SHOOTING HOURS: SR-SS = sunrise to sunset, ½ SR-SS = ½ hour before sunrise to sunset, ½ SR-½ SS= ½ hour before sunrise to ½ hour before sunset, ½ SR-1 SS = ½ hour before sunrise to 1 hour before sunset. ½ SR to SS/1 = ½ hour before sunrise to sunset in all of state except SW Zone where shooting hours were ½ hour before sunrise to 1pm until Dec. 1 in 1991 and until Nov. 29 in 1992, then ½ hour before sunrise to sunset thereafter. ½ SR-SS ½ = ½ hour before sunrise to ½ hour after sunset.

LIMIT: BAG = Daily bag limit, **POSS** = Possession limit

SW ZONE(1) = that portion of the state south and west of a line running from the Iowa-Missouri state line along US Hwy 71 to St Hwy 92 and west on Hwy 92 to the Nebraska-Iowa border.

SW ZONE(2) = that portion of the state south and west of a line running from the Iowa-Missouri state line along US Hwy 71 to I-80, west on I-80 to US Hwy 59, north on US Hwy 59 to St Hwy 37, then NW on Hwy 37 to St Hwy 175, and west on Hwy 175 to the Nebraska-Iowa border.

GOOSE ZONE BOUNDARY (1) = a line running from the Nebraska-Iowa border along St Hwy 175, southeast to St Hwy 37, east to US Hwy 59, south to I-80, and along I-80 to the Iowa-Illinois border. This was the same boundary used to divide the north and south duck zones during 1993-2003.

GOOSE ZONE BOUNDARY (2) = a line running from the Nebraska-Iowa border along St Hwy 20. This change was made in the 2004 season and was maintained through the 2008 season.

GOOSE ZONE BOUNDARY (3) = a line running from the Nebraska-Iowa border along St Hwy 175, east to St Hwy 37, southeast to St Hwy 183, northeast to St Hwy 141, east to US Hwy 30, and along US Hwy 30 to the Iowa-Illinois border. The duck and goose zone boundaries were identical from 1993-2003. The goose zone boundary was moved to Hwy 20 from 2004-2008. In 2009, the goose zone boundary was changed to match the duck zone boundary, i.e., along Hwy 30.

GOOSE ZONE BOUNDARY (4) = a line beginning on the South Dakota-Iowa border at Interstate 29, southeast to Woodbury Co Rd D38, east to Woodbury Co Rd K45, southeast to St Hwy 175, east to St Hwy 37, southeast to St Hwy 183, northeast to St Hwy 141, east to US Hwy 30, and along US Hwy 30 to the Iowa-Illinois border.

GOOSE ZONE BOUNDARY (5) = The North Zone is all of Iowa north of a line beginning on the on the South Dakota-Iowa border at I-29, southeast to St Hwy 175, east to St Hwy 37, southeast to St Hwy 183, northeast to St Hwy 141, east to US Hwy 30, and along US 30 to the Iowa-Illinois border. The Missouri River Zone includes all lands and water in Iowa west of I-29 and north of Hwy 175. The South Zone is the remainder of the state not in the North or Missouri River Zones.

(*SH) Steel shot required statewide for hunting all migratory gamebirds except woodcock. See Iowa's Duck and Coot Seasons for a complete history of steel shot regulations in Iowa.

(*HIP) First year migratory bird hunters in Iowa registered (by phone) for the federal Harvest Information Program (HIP).

SPECIAL REGULATIONS: Ross's goose season was closed by Federal regulation from 1942-61.

[a]The daily limit was 2 Canada geese through Oct. 31 and 1 thereafter except in the south zone where it was 2 after Nov. 30.

[b]The special 2-day September Canada goose season was only open in the north zone west of Hwy 63.

[c]A conservation order was issued by the USFWS to permit the taking of light geese (snow + ross) after the regular season, including after March 10, the last day regular waterfowl seasons can be open. Hunters could use electronic calls and unplugged shotguns and hunt until ½ hour after sunset. Hunters had to be fully licensed to hunt waterfowl in Iowa (no Fed. Mig. Bird stamp) and registered with HIP.

[d]This special September Canada goose season was only open in the Des Moines and Cedar Rapids/Iowa City zones.

[e]This special September Canada goose season was only open in the Des Moines, Cedar Rapids/Iowa City and Cedar Falls/Waterloo zones.

Table 4.5 Waterfowl banded in Iowa

(Numbers include both state and federal bandings.)

Year	Canada Geese	Mallards	Wood Ducks	Blue-winged Teal	Trumpeter Swans	Other Waterfowl Species	Total Waterfowl	Mourning Doves
1964	51	440	488	6,046		273	7,298	0
1965	32	533	571	4,485		120	5,741	0
1966	61	504	564	3,836		172	5,137	0
1967	66	1,928	410	4,022		113	6,539	0
1968	91	1,809	315	3,716		63	5,994	0
1969	53	2,282	414	1,634		135	4,518	0
1970	143	2,368	935	2,649		236	6,331	0
1971	301	1,901	1,644	1,395		330	5,571	0
1972	148	672	1,381	1,000		127	3,328	0
1973	410	1,022	1,665	601		115	3,813	0
1974	268	522	1,333	638		34	2,795	0
1975	222	563	2,026	248		164	3,223	0
1976	544	3,165	1,620	334		19	5,682	0
1977	799	678	1,261	223		25	2,986	0
1978	633	4,418	1,765	1,022		98	7,936	0
1979	409	4,683	1,490	509		3	7,094	0
1980	775	2,175	1,302	1,880		85	6,217	0
1981	736	350	1,523	919		86	3,614	0
1982	975	99	2,747	26		1	3,848	0
1983	1,444	446	2,411	35		3	4,339	0
1984	1,293	110	2,489	38		6	3,936	0
1985	1,710	389	1,953	30		1	4,083	0
1986	1,847	383	2,623	18		3	4,874	0
1987	2,127	380	2,199	98		8	4,812	0
1988	2,421	349	2,115	37		2	4,924	0
1989	1,712	70	2,636	0		0	4,418	0
1990	1,556	13	1,908	64		0	3,541	0
1991	1,880	151	4,874	0		0	6,905	0
1992	2,043	392	3,776	0		13	6,224	0
1993	2,538	130	2,931	0		1	5,600	0
1994	3,737	146	3,631	0		0	7,514	0
1995	3,671	221	6,717	0		0	10,609	0
1996	3,809	263	4,188	0		0	8,260	0
1997	4,852	77	4,375	0		0	9,304	0
1998	4,462	292	4,837	0	58	0	9,649	0
1999	6,073	229	4,669	0	46	0	11,017	0
2000	2,971	133	2,380	0	90	0	5,574	0
2001	2,942	60	3,711	0	78	0	6,791	0
2002	3,479	338	3,146	207	68	0	7,238	0
2003	4,066	259	4,048	0	87	0	8,460	1987
2004	3,338	143	4,769	0	91	0	8,341	2326

Year	Canada Geese	Mallards	Wood Ducks	Blue-winged Teal	Trumpeter Swans	Other Waterfowl Species	Total Waterfowl	Mourning Doves
2005	4,983	338	2,823	0	113	0	8,257	2079
2006	4,203	210	2,729	0	78	0	7,220	1000
2007	4,283	231	2,321	0	73	0	6,908	986
2008	3,288	157	2,402	100	69	0	6,016	1,699
2009	3,593	31	2,552	0	81	0	6,257	1,266
2010	3,568	8	2,770	0	69	0	6,415	1,084
2011	3,765	40	2,252	0	51	0	6,108	2,227
2012	3,586	254	2,917	0	20	0	6,777	2,205
2013	3,483	16	3,355	0	20	0	6,874	2,080
2014	3,464	293	2,093	0	18	0	5,868	1,976
2015	3,421	34	3,301	0	18	0	6,774	1,929
2016	3,945	51	2,096	0	5	0	6,097	1,914
2017	4,310	0	1,633	0	0	0	5,943	2,212
2018	4,374	0	1,204	0	0	0	5,578	1,882
2019	4,110	0	2,199	0	0	0	6,309	2,025
Totals	129,064	36,749	136,487	35,810	1,133	2,236	341,479	30,77
Recent 10-year Avg	3,784	66	2,397	0	26	0	6,273	1,891

Table 4.6 Giant Canada goose production and populations in Iowa, 1964-Present

Year	Young Produced	Nesting Adults	Non-breeding Adults	Total Adults	Total Geese	% Change from Prev. Year
1964	24	16	16	32	56	
1965	17	28	37	65	82	46%
1966	66	44	34	78	144	76%
1967	66	42	80	122	188	31%
1968	114	66	100	166	280	49%
1969	121	78	304	382	503	80%
1970	348	228	288	516	864	72%
1971	330	208	234	442	772	-11%
1972	402	268	481	749	1,151	49%
1973	590	404	399	803	1,393	21%
1974	763	498	407	905	1,668	20%
1975	961	602	356	958	1,919	15%
1976	1,234	754	433	1,187	2,421	26%
1977	1,401	914	596	1,510	2,911	20%
1978	2,045	1,266	610	1,876	3,921	35%
1979	2,459	1,588	884	2,472	4,931	26%
1980	3,011	1,969	842	2,811	5,822	18%
1981	3,636	2,238	912	3,150	6,786	17%
1982	3,966	2,531	1,298	3,829	7,795	15%

Year	Young Produced	Nesting Adults	Non-breeding Adults	Total Adults	Total Geese	% Change from Prev. Year
1983	5,235	3,177	1,486	4,663	9,898	27%
1984	5,796	3,307	1,429	4,736	10,532	6%
1985	6,742	3,791	2,155	5,946	12,688	20%
1986	8,139	4,626	2,610	7,230	15,357	22%
1987	9,418	5,480	2,748	8,228	17,646	15%
1988	10,408	5,820	3,761	9,581	19,989	13%
1989	8,249	4,875	4,993	9,868	18,117	-9%
1990	8,432	5,291	6,168	11,459	19,891	10%
1991	11,218	7,087	7,208	14,295	25,513	28%
1992	16,406	8,931	9,108	18,039	34,445	35%
1993	17,720	10,632	10,079	20,711	38,431	11%
1994	24,732	13,312	12,726	26,038	50,770	32%
1995	28,392	15,262	16,924	32,186	60,578	19%
1996	29,266	16,699	22,030	38,729	67,995	12%
1997	34,057	18,047	22,428	40,355	74,406	9%
1998	36,443	18,794	24,066	42,720	79,157	6%
1999	33,586	17,733	24,826	42,334	75,920	-4%
2000	33,923	17,340	27,163	44,398	78,321	3%
2001	30,264	17,996	27,337	45,246	75,510	-4%
2002	36,071	19,751	30,971	50,674	86,745	15%
2003	36,564	21,072	33,180	54,212	90,776	5%
2004	39,992	22,042	34,990	56,992	96,984	7%
2005	42,905	23,750	37,021	60,751	103,656	7%
2006	42,040	23,734	36,715	60,425	102,465	-1%
2007	37,452	24,590	40,206	64,782	102,234	0%
2008	30,231	23,420	39,320	62,740	92,971	-9%
2009	38,251	23,344	37,931	61,275	99,526	8%
2010	40,940	23,380	41,898	65,278	106,218	7%
2011	40,906	24,039	40,457	64,496	105,402	-1%
2012	37,021	23,363	43,062	66,425	103,446	-2%
2013	23,257	20,042	38,867	55,309	77,926	-25%
2014	26,549	19,189	37,499	54,653	79,633	2%
2015	31,489	20,580	38,898	56,223	85,373	7%
2016	35,602	21,577	39,633	58,760	91,763	7%
2017	38,612	21,932	41,099	63,111	99,499	3%
2018	32,243	21,094	39,172	60,077	92,203	-7%
2019	33,690	21,123	38,518	59,468	92,863	1%
2020	39,458	22,150	10,226	62,376	101,799	10%

UPLAND WILDLIFE

The Iowa Department of Natural Resources (DNR) conducts 2 statewide surveys to monitor upland game populations in Iowa, the August Roadside survey and the Small Game Harvest survey.

DNR Wildlife and Enforcement Bureau personnel throughout the state of Iowa conduct August Roadside Survey each year during the first half of August. The survey generates data from 218 30-mile routes on ring-necked pheasants, bobwhite quail, gray partridge, cottontail rabbits, and white-tailed jackrabbits. Staff run routes on sunny, calm mornings with a heavy dew.

The Small Game Harvest Survey is a mail survey of Iowa small game hunters conducted following the small game hunting seasons. Each year a random sample of small game hunters (5% of licensed hunters) are send a postcard and survey participants are asked which species they hunted, how many days they hunted, and how many of each species they harvested.

The data from these 2 surveys form the basis for historical information on upland game populations in Iowa and are summarized in the historical text and tables. Both surveys have been conducted annually since 1962. The full reports for both surveys can be found on the DNR's website at http://www.iowadnr.gov/pheasantsurvey.

Historical Summary of Populations & Harvest

<u>Ring-necked Pheasant</u>

The genus Phasianus or true pheasant is native to Southeast Asia. The ring-necked pheasant now found in Iowa has been classified as (*Phasianus colchicus torquatus*). This name suggests a cross between 2 of the true Asiatic pheasants. One the Rion Caucasian (Black-necked) pheasant (*Phasianus colchicus colchicus*) native to the area between the Black and Caspian Seas and the true Chinese ring-necked pheasant (*Phasianus torquatus torquatus*) found in eastern China and northwestern Indo-China.

Owen Denny first successfully introduced the ring-necked pheasant into the United States in the Willamette Valley of Oregon in 1882. Mr. Denny transported wild birds from China to the US to establish a population on his land. It is believed that the majority of the pheasant range in the US was stocked with birds from this original wild foundation or other wild birds from China.

Early records for Iowa are limited, but accounts suggest attempts were made to establish pheasants in Iowa as early as 1884, but the first recorded successful release was an accidental release, following a windstorm, of approximately 2,000 birds from the William Benton game farm in Cedar Falls. Where Mr. Benton's birds were from is unknown, but reports

say they were from an importer in Tacoma, Washington and thus very likely wild birds from China or wild birds from the Owen Denny Farm. The conservation department mentions pheasants for the first time in 1910. Early on eggs were purchased from breeders (wild or tame is unknown) and given to landowners to raise and release statewide, the 1910 biennial report indicates 6,000 eggs were distributed to applicants in 82 counties. Egg distribution met with poor success and the conservation department established a hatchery in 1913 and by 1914 mostly young birds were distributed (1,088 that year). Another 10,912 birds were distributed statewide from 1915-16. Records show all northwest counties received 200-800 bird plantings of pheasants from 1915 to 1918, with a planting of 2,500 in Winnebago County.

In 1905, it was generally assumed that southern Iowa had better pheasant habitat than northern Iowa. The existence of this belief is supported by the fact that up until 1913 it was customary to make stockings in timber. It is interesting to note Iowa's pheasant populations reached their highest abundance in NW and NC Iowa. The early success, 1920-40's, of pheasants in north central Iowa was undoubtedly due to the abundance of grassy habitats (tame and native hay, oats, flax, and prairie pothole wetlands) interspersed with weedy crop fields.

Pheasants did extremely well in northern Iowa with crop depredation reported in 1923, with the first open season in 1925. Policy changed in 1924-25 and wild birds and eggs were trapped and moved in an effort to establish populations in southern Iowa. Between 1925-1931 some 26,498 wild birds and 60,000 wild eggs were gathered from areas of undue abundance in northern Iowa and distributed to other regions, mostly southern Iowa. From 1927-30 and additional 10,211 birds and 31,372 eggs were distributed in southern Iowa counties. During, 1929-30 the average southern Iowa county received over 500 birds. However, by 1936 the policy on stocking had changed:

"The old policy of stocking birds without paying attention to the habitat has been discontinued … for instance, during the past 20-25 years there have been thousands of pheasants released in southern Iowa and … in except a few cases pheasants disappeared after two or three generations in most counties."

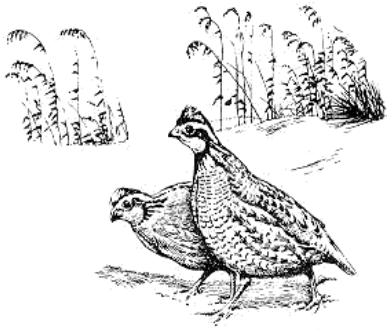
With the success of wild birds, the state game farms were shut down in 1932, but following several bad weather years, it was re-established in 1938. Populations recovered with good weather in the 1940's and stocking was greatly reduced, approximately 4,000 chicks and spent adults in 1943. The state game farm operated at approximately the same level until 1961.

Through the 1940-50's it became increasingly evident that pen-raised birds were not contributing to wild pheasant numbers. So similar to 1924-25, in 1955 a new policy of trap and transfer of wild birds was started in southern Iowa. Increasing wild populations in Union and Adair counties were trapped (1,375 birds) and transplanted to Ringgold, Decatur, Wayne, Washington, and Appanoose counties. Also new wild birds were brought to the state game farm. These new "wild" birds were distributed to unoccupied range (Washington, Keokuk, Henry, Davis, and VanBuren Counties) thru 1973. The state game farm was closed in late 1970's and dismantled.

Iowa's first pheasant season was held October 20-22, 1925 in Kossuth, Humboldt, Winnebago, Hancock, Wright, Cerro Gordo, Franklin, Mitchell, Floyd, Butler, Grundy, Blackhawk and Bremer counties. The hunting season opened 1/2 hour before sunrise and ended at noon with a bag limit of 3 cocks. It appears the decision to open counties to hunting in these early years was based largely on pheasant crop depredation complaints, as annual pheasant censuses, predecessor to the August Roadside Survey, were not begun until 1935. Flush count records show 7 men flushed 850 pheasants in 5 hours in Hancock County in 1931. By 1945 most of northern Iowa was open to hunting and by 1965, all of Iowa, except a few southeastern counties, were open to pheasant hunting. The entire state was opened to hunting in 1976. Historically (1930-50's), the NW, NC, and C regions had Iowa's highest pheasant densities (Figure 5.1). However, intensified agriculture has led to a decline in pheasant populations since the 1960's (Figure 5.2). Regionally, the greatest declines have occurred in the NC, C, and SW regions (Figure 5.7). By the early 1970's southern Iowa had become the states premiere pheasant range.

Populations have declined following severe winter weather in 1964-65, 1966-67, 1978-79, 1981- 82, 2000-01, and 2007-11, with recoveries occurring in years with milder winters (Table 5.1). While the number of broods sighted/30-mile route has also fluctuated with the severity of the winter (Figure 5.3), the all-time lows recorded in 1983, 1984, 1993, 1999, 2001, and 2007-11 were the results of very cool and/or wet conditions during spring and early summer (Table 5.2; Figure

5.3). Observed brood sizes have declined slightly since 1962, with the 2010 estimate of 4.0 chicks/brood the lowest ever recorded (Table 5.2; Figure 5.3). Modest recoveries of all survey parameters occurred between 1984 and 1996 with the enrollment and seeding down of 2.2 million acres of row crops in the 10-year federal Conservation Reserve program (CRP). Pheasant populations in historical ranges, northern and central regions, have rebound since the inception of CRP (Figure 5.7). Populations in the southern regions initially responded to CRP the same way northern and central populations did, but have declined since 1992. Declines in SW and SC regions, in particular, are likely related to wet weather during the nesting season, lack of habitat management on CRP acres and other land use changes. The pheasant season opens the last Saturday in October and runs through January 10th, statewide with a bag/possession limit of 3/12 roosters (Table 5.10). Shooting hours are 8 am-4:30 pm. Iowa's first youth pheasant season was held during the 1997-98 hunting season. Youth hunting is allowed statewide for resident hunter's 15 years or younger whom a licensed adult accompanied. The youth pheasant season opens the weekend proceeding the regular season. Bag limit is 1 rooster/day with 2 in possession after the first day (Table 5.10).

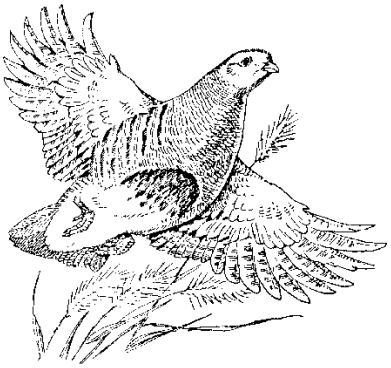


Bobwhite Quail

Our native bobwhite was probably never very abundant on Iowa's virgin prairie; most populations were likely restricted to the prairie-timber edges of Iowa. Early settlement changed Iowa's landscape forever. At least initially these changes proved to be a boom to Iowa's quail population. Between 1860-90 settlers began carving up Iowa a ¼ section at a time, but early settlers lacked timber and wire to make fences, so they planted Osage hedges instead. Three to 6 miles of some of the finest quail cover ever grown in ever 1/4 section, all within spitting distance of newly planted "weedy" grain fields. Quail populations exploded like never seen before or likely to be seen again. Quail could be found in every county, but these conditions could not last. By 1920 reports show quail populations beginning to decline as farming practices improved and hedgerows were replaced with barbed wire fence. The 1931-32 winter quail survey reported population densities of 1 quail per 20-40+ acres in the northern third of the state, 1 quail/6-20 ac. in the central third and 1 quail/1-6 ac. in the southern third of the state. However, quail populations have declined steadily, both nationally and in Iowa since the 1930's. Large scale landscape changes and clean farming practices are considered the major factors in this decline.

Since survey procedures were standardized in the early 1960's the mean number of quail/30 miles sighted on the August roadside survey has fluctuated over the years with significant declines occurring since 1977 (Figure 5.6). This decline, along with the severe fluctuations in SW and SC Iowa in recent years, are related to losses in shrubby habitat and clean farming practices that have occurred since row-crop agriculture expanded in the mid 70's and early 80's (Figure 5.8). Similar to pheasants, quail numbers have declined sharply following harsh winters in 1964-65, 1966-67, 1978-79, 1981-82, 2000-01, and 2007-11 (Figure 5.8). Populations rebounded between 2012-18 with 5 consecutive relatively mild winters across southern Iowa, which led to above normal hen survival and increased populations.

Quail have been hunted in Iowa since settlement. The first bag limit was set in 1878 at 25 birds/day, it was reduced to 15/day in 1915. The season was closed in 1917 and a limited season reopened in 1933. Currently the season opens the last Saturday in October and runs through January 31st, statewide, with a bag/possession limit of 8/16 birds. Shooting hours are 8 am-4:30 pm (Table 5.11).



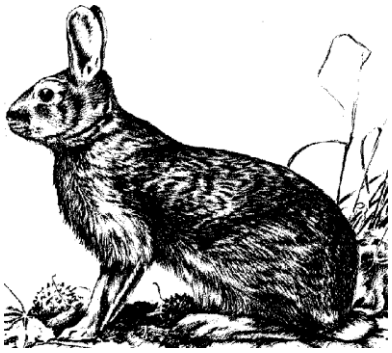
Gray Partridge

Senator HW Grant of Waterloo made the first release of fifty Hungarian or gray partridge in Iowa in Blackhawk County in 1902, but all birds died. The first successful release of Huns in Iowa occurred in Palo Alto County in 1905. This release constitutes Iowa's first wild stock.

Successful releases were made in Humboldt county in 1906, O'Brien in 1909, and in Kossuth in 1910. By 1914 most northern Iowa counties had received standardized releases of 20 pairs each. All releases, similar to pheasants, were made on leased timbered lands. Reports show many local farmers were surprised when the bird promptly moved to the nearest prairie upland. By 1932 it is estimated the state conservation commission had stocked 20,000+ partridge in Iowa. Most plantings were in northern Iowa, although a few were attempted in south central Iowa; all southern attempts failed. The birds gained their strongest hold in northwest Iowa in Osceola, O'Brien, Dickinson, and Clay counties and were generally present in most northern Iowa counties by 1940.

While numbers of other upland game birds have decreased over time, the number of gray partridge sighted on roadside counts had been increasing until 1990 (Figure 5.6). Not only had the mean number partridge per 30-mile route increased statewide, but partridge populations had expanded their range from the NW and NC regions to all other regions of the state by 1986 (Figure 5.9). While losses of woody cover and nesting cover have created less favorable conditions for pheasant and quail, partridge were more adept at coping with row-crop expansion. The statewide increase in partridge numbers between 1983-89 can be attributed a drought during these years and improved nesting conditions on land enrolled in CRP. Following the drought populations have returned to levels seen prior to 1983 (Figure 5.6). Huns come from the arid, steppe region of southeastern Europe and northern Asia, and research has shown they do not reproduce well in this country during years with wet springs.

Iowa's first partridge season was held in 11 northwestern counties in 1937-39. Partridge season was standardized in 1989 to opens the second Saturday in October and runs through January 31st, statewide, with a bag/possession limit of 8/16 birds. Shooting hours are 8 am-4:30 pm. (Table 5.12).



Eastern Cottontail

Little is known about the presettlement distribution of cottontail rabbits in Iowa. Cultivation by man no doubt favored rabbits much the same way it favored quail at the turn of the century. Cottontails prefer habitats similar to quail, favoring shrubby-grassy edge habitats. Cottontails may have up to 6 litters a year in Iowa and reproduce best during warm moderately wet springs. Numbers of cottontail rabbits observed on the August roadside survey have fluctuated

with changing land use and weather conditions (Figure 5.6). Hunter interest has declined in recent years (Figure 5.12). Cottontails have been hunted in Iowa since settlers first arrived. The cottontail season was standardized in 1978 and opened the first Saturday in September through February 28th, statewide, with a bag/possession limit of 10/20 rabbits. Shooting hours are sunrise to sunset (Table 5.13). The rule regarding the opening day of the cottontail season was changed in 1997 to open the 1997-98 season on Sept. 1st. This change in date allows inclusion of the Labor Day weekend in all years. It was changed again in 2008 to open the Saturday before Labor Day to allow youth hunters to participate in the opener.

White-tailed Jackrabbit

Before settlement, white-tailed jackrabbits were found across in Iowa, except for a few southeastern counties. Their greatest abundance however was on the glaciated soils of the Des Moines Lobe and the Missouri Loess soils of northwestern Iowa. They are most at home on the wide-open expanses of prairie/wetland/pasture habitat types, although moderate cultivation favors the species. Dry growing seasons appear conducive to jackrabbit abundance as population's decline in wet years. Jackrabbit counts have declined greatly over time, closely paralleling the losses of pasture, hay, and small grain acreages. Because of this downward trend, the bag/possession limit was reduced from 2/4 to 1/2 following the 2005-06 hunting season. The hunting season on jackrabbits was closed during 2011-12 hunting season because of continued declines on DNR roadside surveys. It may be reopened if populations recover due to landscape changes like grass-based biomass. Jacks have been hunted in Iowa since the time of settlement. Conservation officers reported hunters killing 180+ jacks on two circle hunts in Carroll and Buena Vista counties during the winter of 1960. Historic trends in jackrabbit population, harvest, and hunting seasons can be found in Table 5.3, Table 5.6, and Table 5.13.

Figures

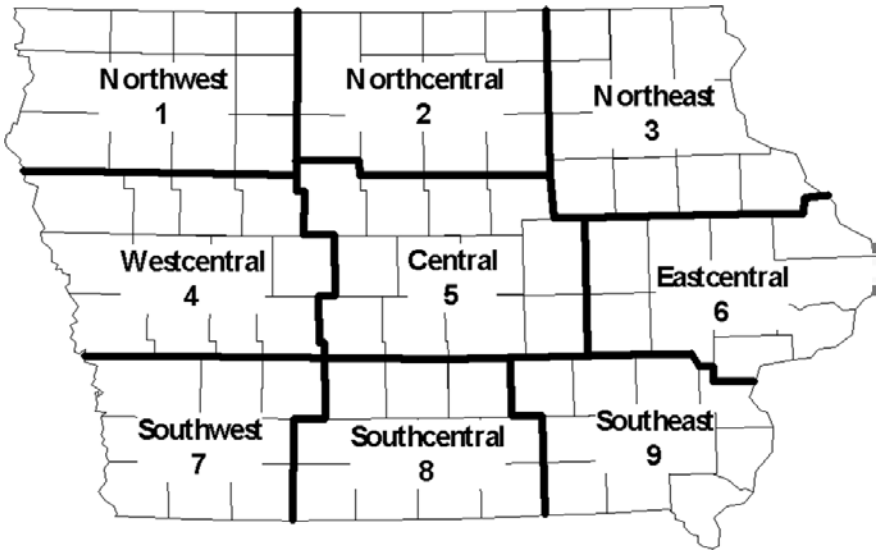


Figure 5.1 Survey regions for the August Roadside Survey.

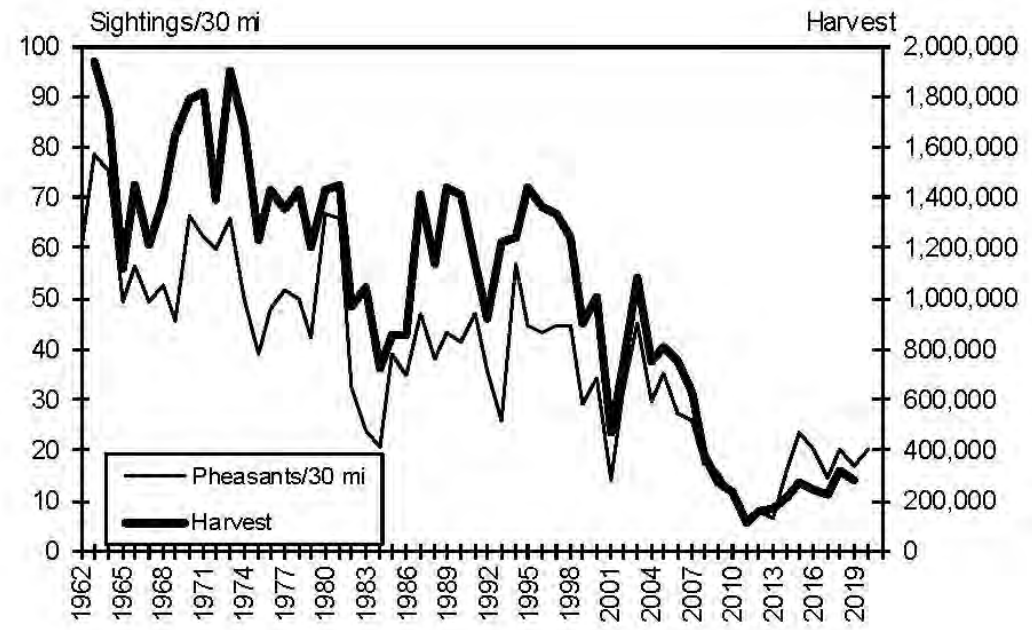


Figure 5.2 Statewide trends in pheasant harvest and August roadside survey counts.

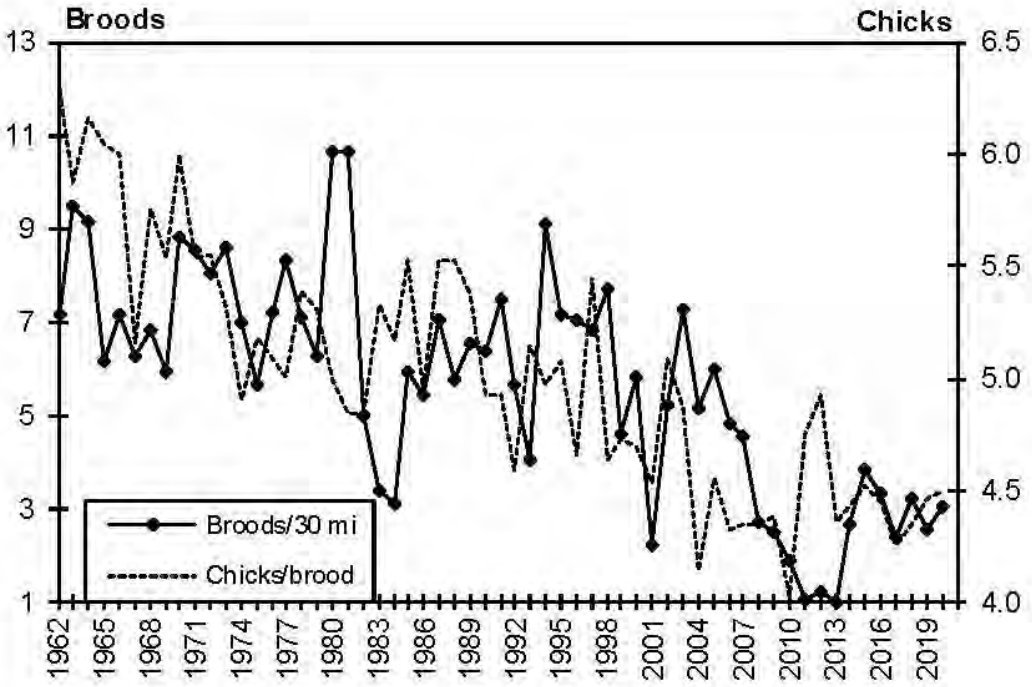


Figure 5.3 Statewide trends in pheasant broods and average brood size from August roadside survey.

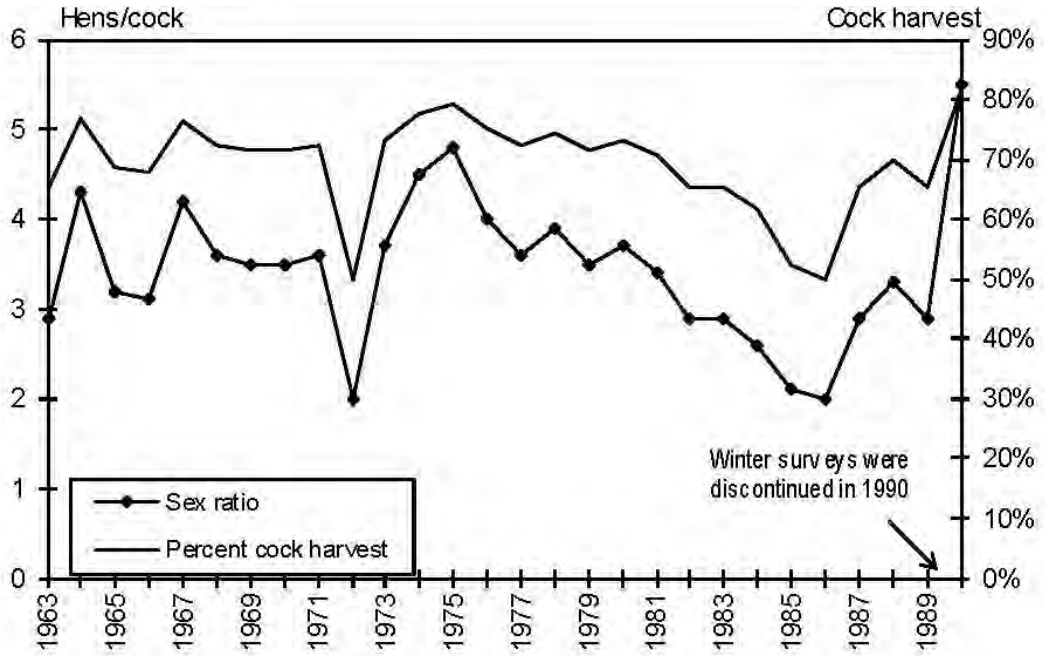


Figure 5.4 Statewide sex ratio and estimated cock harvest from winter pheasant surveys.

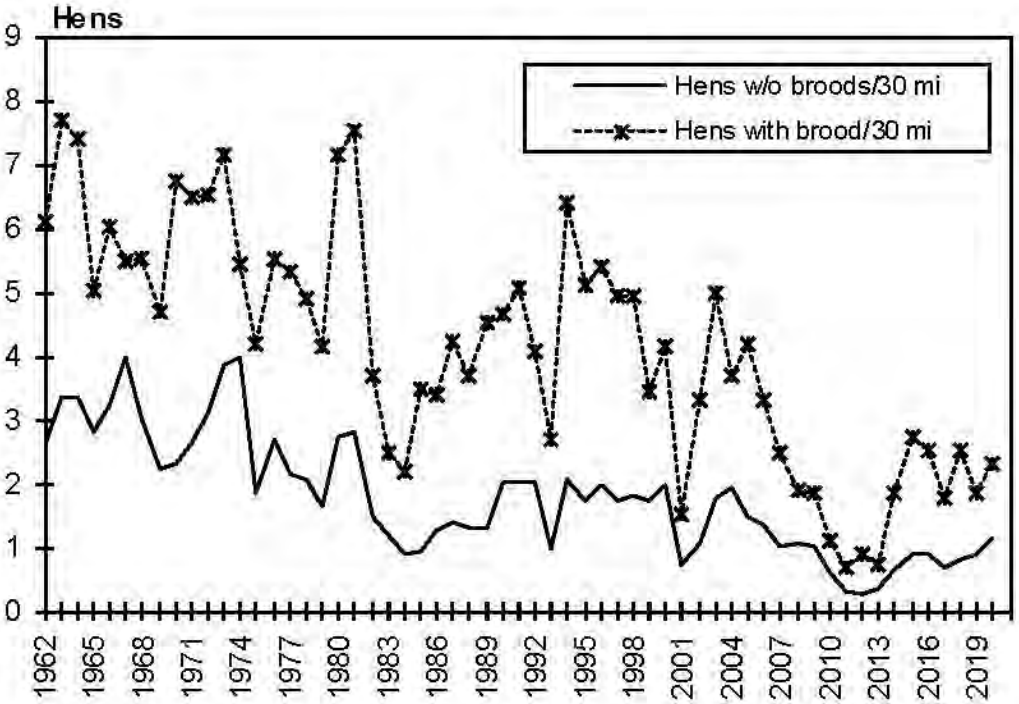


Figure 5.5 Statewide trends in pheasant hens with and without broods from August roadside survey.

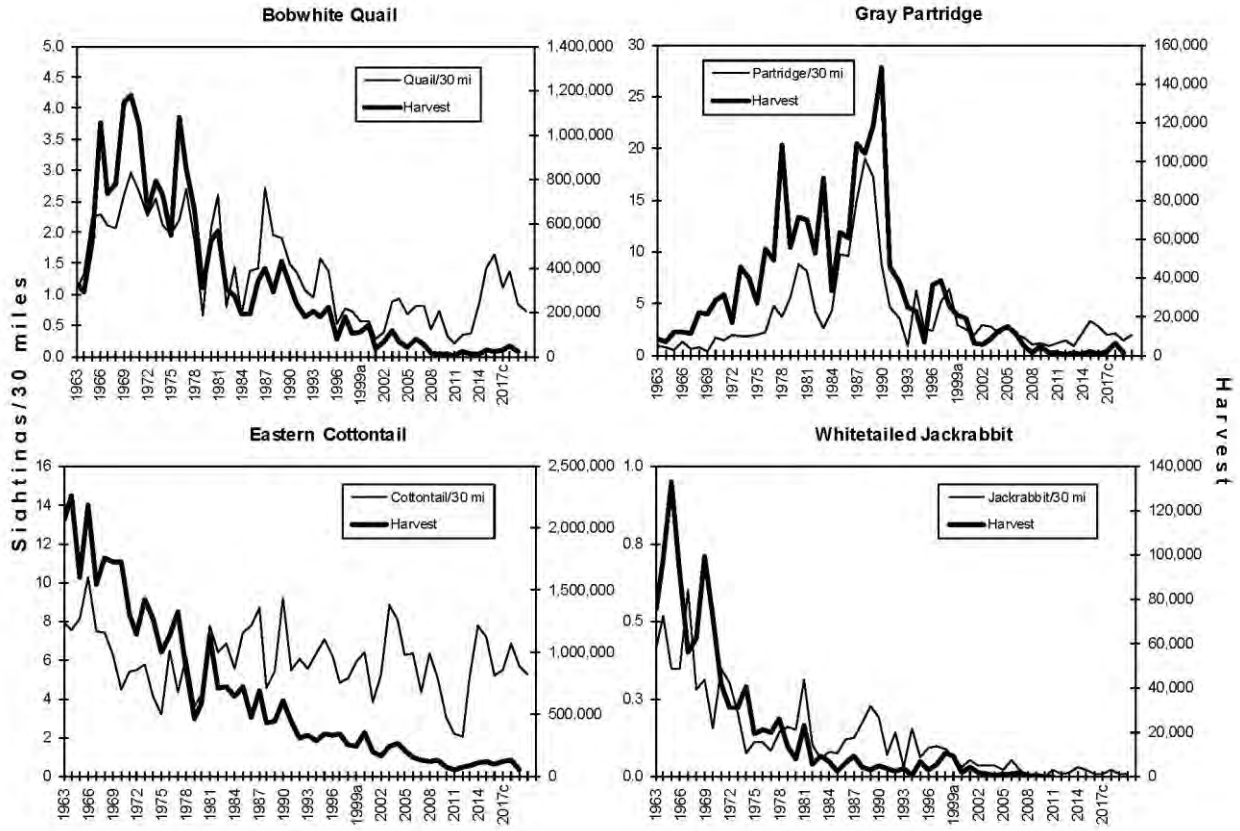


Figure 5.6 Statewide trends in small game harvests and August roadside survey counts.

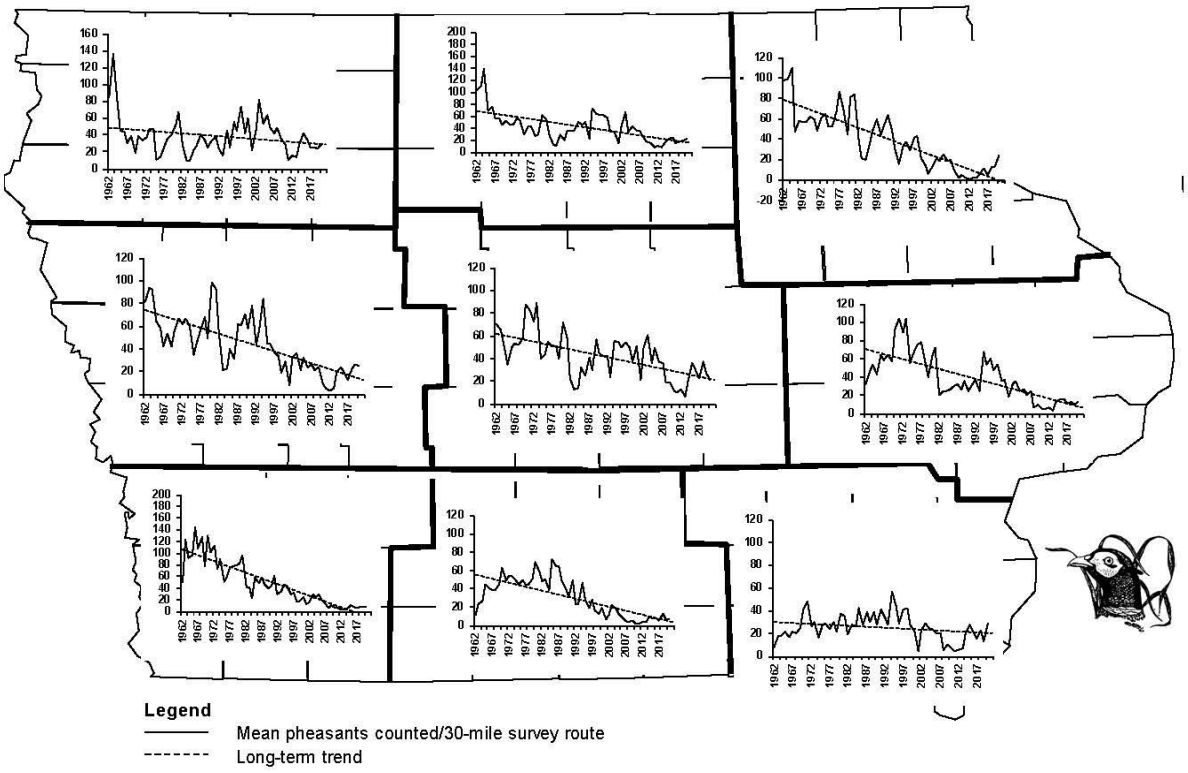


Figure 5.7 Regional trends in ring-necked pheasant numbers from the August roadside survey (1962-present). Note: Because of variation in historical counts, vertical axises among survey regions are not to the same scale.

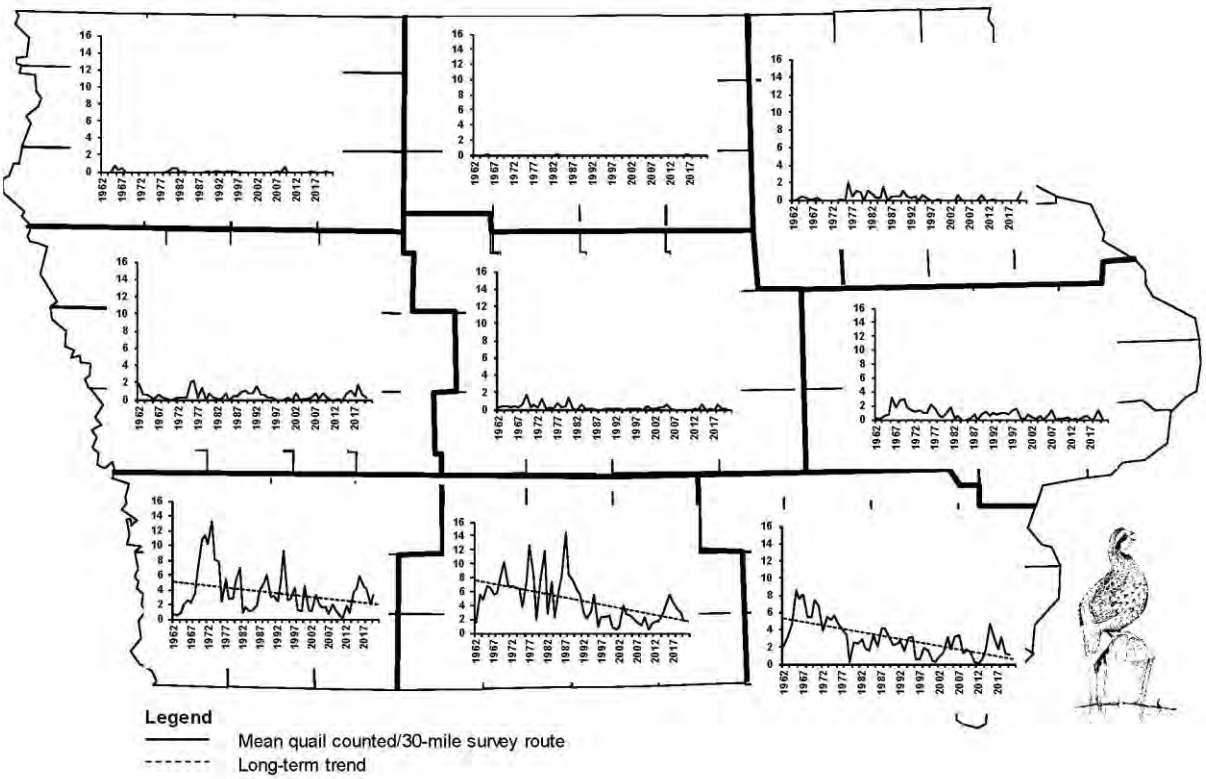


Figure 5.8 Regional trends in bobwhite quail numbers from the August roadside survey (1962-present).

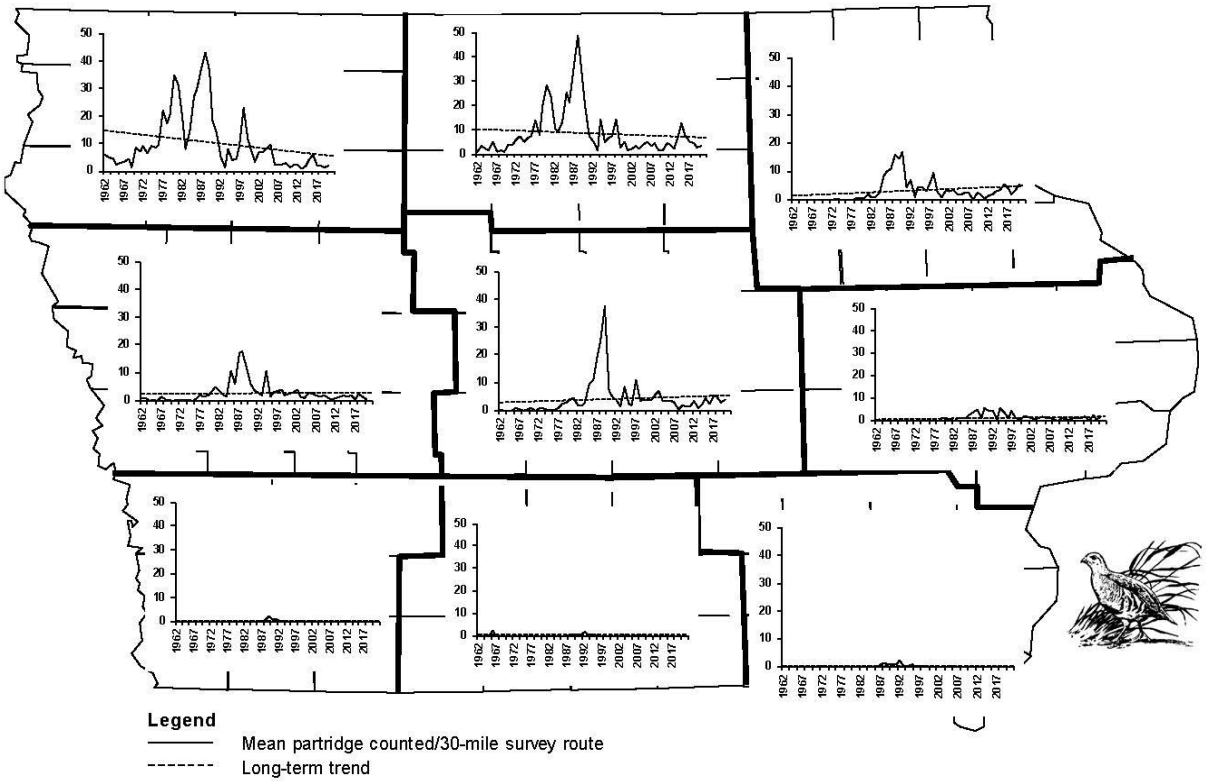


Figure 5.9 Regional trends in gray partridge numbers from the August roadside survey (1963-present).

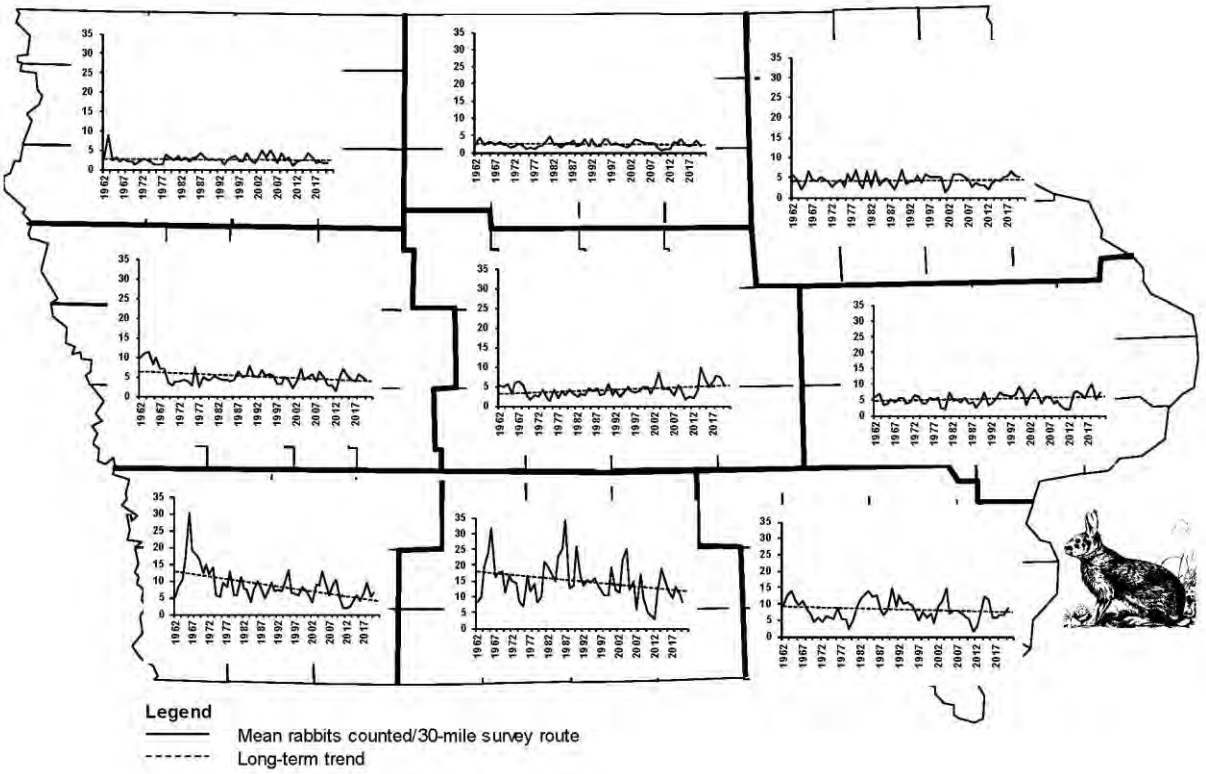


Figure 5.10 Regional trends in cottontail rabbit numbers from the August roadside survey (1962-present).

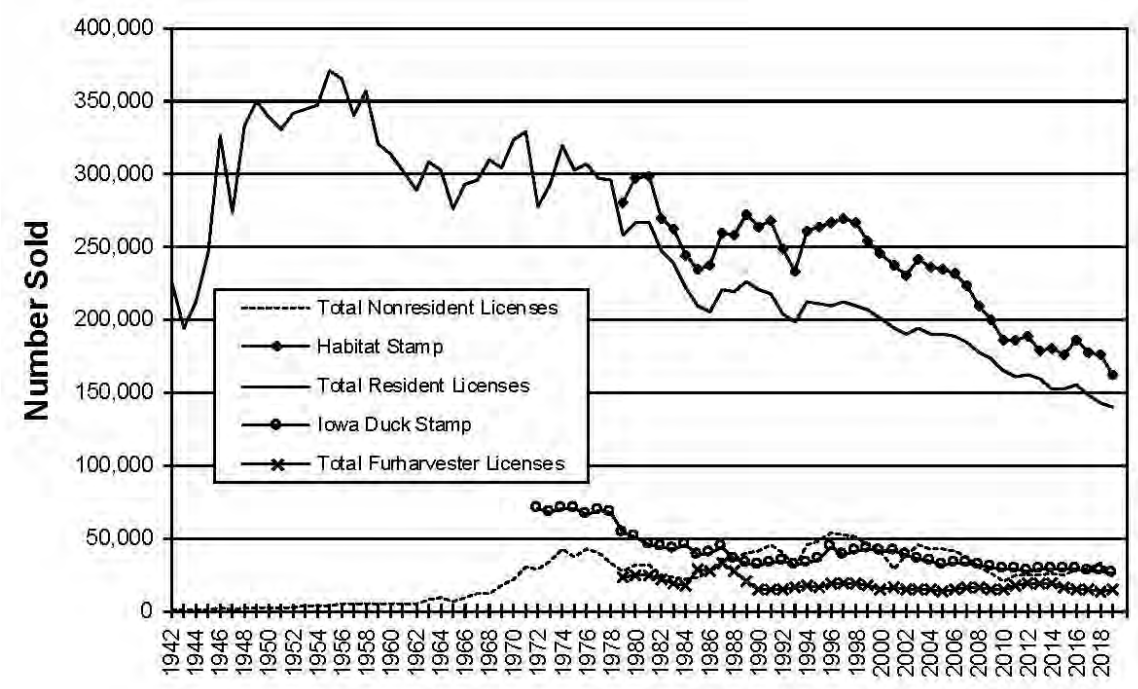


Figure 5.11 Sales of Iowa hunting licenses.

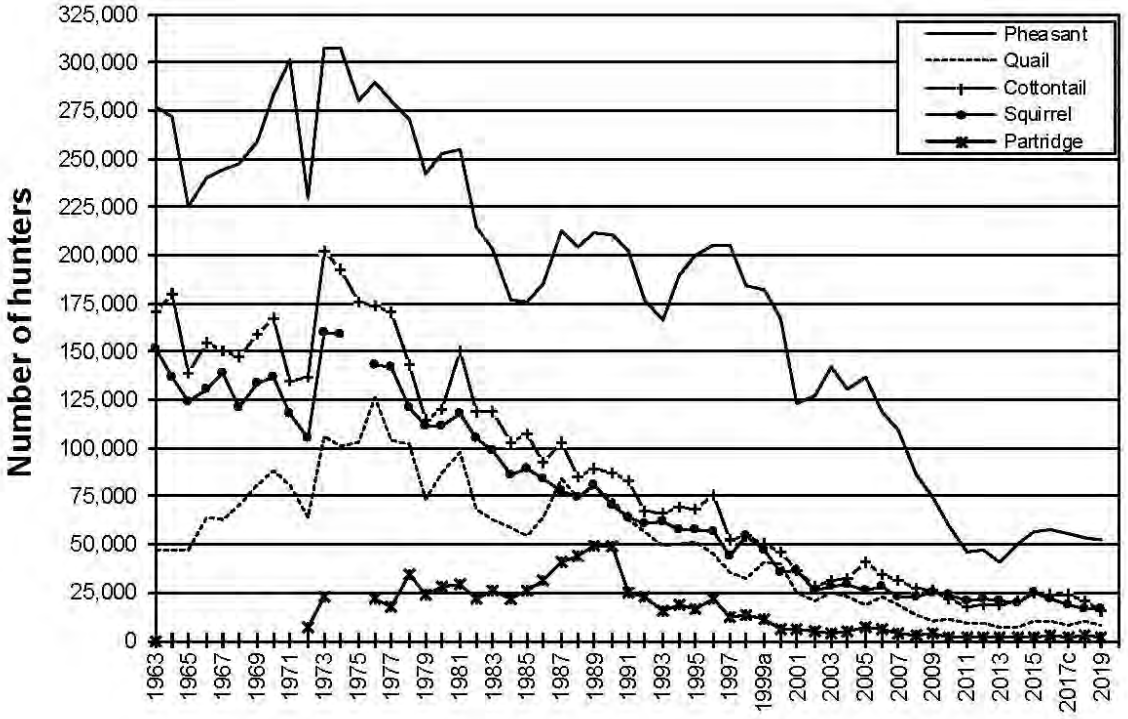


Figure 5.12 Estimated number of Iowa small-game hunters (resident and non-resident hunters combined).

Tables

Table 5.1 Mean number of pheasants counted/30-mile route on the August roadside survey regionally and statewide, 1962-Present

Severe winter weather preceded the August counts in 1965, 75, 79, 01, 04 08, 10, 11. Abnormally wet weather occurred during 1973, 82, 84, 95, 99, 01, 08, 13 nest seasons. Winter sex ratio and cock harvest data are statewide estimates. Sex ratio counts were done the year succeeding the year listed.

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	State wide	Sex[a] Ratio	Cock[b] Harvest
1962	84.2	104.6	98.0	81.7	70.6	32.3	52.4	12.0	7.4	61.1		
1963	135.8	110.3	99.5	94.2	65.0	47.1	123.1	23.2	18.2	78.7	2.9	66%
1964	96.4	137.8	109.9	92.9	54.5	53.9	92.6	26.3	18.2	75.4	4.3	77%
1965	45.4	67.5	47.7	64.7	35.5	43.9	97.6	44.4	21.5	49.6	3.2	69%
1966	43.5	75.3	57.5	58.4	49.3	63.9	144.1	40.7	17.1	56.6	3.1	68%
1967	31.0	56.8	57.2	42.4	53.2	58.6	108.3	38.8	21.1	49.1	4.2	76%
1968	38.0	56.0	56.6	53.5	52.2	64.3	127.4	38.7	19.7	52.7	3.6	72%
1969	18.8	44.7	62.5	42.2	57.6	57.2	77.9	44.2	25.2	45.5	3.5	71%
1970	39.2	53.0	59.6	56.1	87.8	91.7	129.1	63.8	40.5	66.2	3.5	71%
1971	34.6	45.2	49.0	66.2	82.6	104.3	101.6	49.7	48.4	62.0	3.6	72%
1972	37.9	44.6	61.0	61.4	73.2	88.6	112.3	54.3	25.8	59.6	2.0	50%
1973	47.0	56.9	65.4	66.3	88.7	103.5	72.4	54.3	30.2	65.8	3.7	73%
1974	46.6	53.2	52.5	60.5	40.0	55.9	90.1	49.6	16.8	49.7	4.5	78%
1975	10.5	28.7	52.3	34.3	43.2	64.3	51.0	45.4	27.4	38.8	4.8	79%
1976	14.8	42.2	68.1	44.8	54.9	75.4	61.7	49.2	28.7	48.2	4.0	75%
1977	26.9	44.2	86.7	56.9	50.8	78.5	75.1	44.3	24.4	51.7	3.6	72%

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	State wide	Sex[a] Ratio	Cock[b] Harvest
1978	36.3	26.1	68.8	67.8	50.5	63.2	76.7	45.5	30.5	49.7	3.9	74%
1979	40.1	29.6	44.8	49.4	39.2	39.6	80.9	51.5	21.8	42.4	3.5	71%
1980	51.2	61.7	81.2	98.7	72.2	63.5	82.1	68.9	37.2	67.0	3.7	73%
1981	66.4	53.5	83.6	92.9	57.8	72.9	97.1	57.8	35.2	65.9	3.4	71%
1982	26.7	27.9	38.9	55.5	23.1	20.9	41.6	47.7	19.3	32.3	2.9	66%
1983	9.6	12.8	21.7	21.6	13.3	25.3	42.6	51.1	27.5	23.7	2.9	66%
1984	8.8	11.1	19.2	22.1	14.4	24.5	23.8	38.5	26.4	20.6	2.6	62%
1985	21.6	28.0	36.4	40.0	32.7	26.0	59.2	72.6	42.0	38.9	2.1	52%
1986	27.5	20.4	48.2	31.2	24.8	29.0	49.7	65.2	27.2	34.8	2.0	50%
1987	40.2	36.8	59.7	61.4	41.1	33.2	58.5	64.2	39.0	46.8	2.9	66%
1988	33.6	35.0	45.1	60.8	29.6	26.0	45.7	49.8	29.8	38.1	3.3	70%
1989	25.3	36.5	52.1	69.9	57.1	35.3	38.6	40.0	39.0	43.2	2.9	66%
1990	34.3	49.4	63.9	57.9	44.3	24.7	44.5	31.7	27.3	41.2	5.5	82%
1991	37.3	45.3	48.8	77.6	41.6	33.3	61.2	49.4	41.6	46.8	Discontinued	
1992	24.4	50.5	30.5	44.0	42.1	37.8	29.4	23.6	34.2	35.8		
1993	15.8	21.4	15.2	55.2	23.8	25.0	34.3	24.0	28.1	25.9		
1994	45.0	74.1	33.3	83.3	55.6	67.8	47.3	46.0	56.7	56.9		
1995	26.0	63.2	37.6	44.7	54.3	54.3	43.7	27.8	43.2	44.6		
1996	54.7	61.8	29.5	45.2	49.8	59.4	29.8	19.5	28.2	43.4		
1997	46.1	62.0	41.2	37.3	54.7	47.4	31.7	28.8	41.3	44.8		
1998	74.2	56.7	43.1	33.9	49.6	53.9	18.1	15.7	41.7	44.6		
1999	42.7	33.6	21.6	19.5	37.9	36.0	17.5	12.9	27.0	29.1		
2000	60.6	33.3	14.9	29.0	50.3	37.0	25.5	19.3	22.0	34.3		
2001	22.4	16.0	6.2	8.4	22.0	19.0	12.0	7.3	4.6	13.9		
2002	47.0	42.9	13.6	32.0	49.9	32.0	15.7	11.7	22.6	31.7		
2003	81.2	67.3	20.7	36.1	61.2	35.6	29.3	21.8	28.2	44.9		
2004	54.4	34.4	19.0	21.5	35.6	24.4	24.9	19.6	24.4	29.7		
2005	63.5	42.3	25.3	32.0	49.9	25.9	28.9	12.6	23.5	35.1		
2006	48.3	36.1	18.4	23.7	36.8	20.4	20.3	9.0	20.0	27.0		
2007	41.3	35.0	20.1	26.0	36.2	25.0	12.8	5.6	19.8	25.8		
2008	49.4	25.4	9.1	21.2	18.6	7.4	5.7	4.4	5.3	17.5		
2009	35.5	16.6	2.6	23.5	19.1	9.3	10.0	4.8	10.1	15.4		
2010	29.6	16.2	4.7	8.8	11.7	5.3	6.1	1.8	6.6	10.8		
2011	11.1	7.3	2.4	5.5	10.2	5.9	6.3	2.9	4.7	6.6		
2012	16.3	10.9	1.3	3.5	12.3	6.3	4.4	4.0	5.4	7.8		
2013	14.3	9.0	2.7	5.2	7.1	4.2	2.5	4.4	6.3	6.5		
2014	29.3	18.1	2.6	20.8	19.9	13.0	6.5	9.8	19.8	16.3		
2015	42.4	22.5	8.1	23.6	36.4	16.7	11.3	8.2	27.8	23.2		
2016	33.0	24.1	11.2	20.5	30.9	15.4	8.7	7.8	22.2	20.4		
2017	25.8	15.1	5.3	13.0	22.7	12.0	6.8	5.8	15.5	14.4		
2018	25.9	18.1	13.1	22.7	37.4	12.2	8.7	12.3	22.2	20.2		
2019	23.3	20.9	12.8	26.4	27.3	9.1	7.3	6.8	12.3	17.0		
2020	28.5	22.9	24.4	25.4	20.9	13.6	7.3	6.4	28.2	20.0		

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	State wide	Sex[a] Ratio	Cock[b] Harvest
Statistics:												
10 Yr Avg.	25.0	16.9	8.4	16.7	22.5	10.8	7.0	6.8	16.4	15.2		
Long-term Avg	39.3	41.6	38.7	43.6	42.1	39.5	48.0	30.5	25.2	38.4	3.4	69%
Percent Change from:												
2019	22.1	9.6	91.0	-3.8	-23.4	49.0	0.5	-6.5	129.2	17.7		
10 Yr Avg.	14.1	35.5	191.1	52.4	-7.1	25.5	5.1	-6.8	71.4	31.0		
Long-term Avg	-27.6	-44.9	-37.2	-41.8	-50.4	-65.6	-84.7	-79.1	11.8	-48.0		

[a]Hens per cock.

[b]Percent cock harvest calculated as [((hens/cocks)-1)/(hens/cock)] *100 (Wooley, JB etal.1978. IA WL Res Bull No 24.)

Table 5.2 Mean number of broods counted/30-mile route and chicks/brood observed on the August roadside survey, 1962-Present

Year	North West		North Central		North East		West Central		Central		East Central		South West		South Central		South East		Statewide	
	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood
1962	10.1	5.1	11.5	5.7	10.1	6.3	9.6	7.7	8.0	7.5	4.2	5.4	5.5	5.8			1.0	7.3	7.7	6.3
1963	17.2		16.6		11.7	5.2	12.3		8.4	5.9	5.8		15.4	5.4	3.4		2.6	5.4	10.4	5.4
1964	12.1	5.2	17.0	6.1	22.7	7.3	13.0	5.8	7.3	5.3	6.5	6.2	12.1	6.4	3.1	8.7	1.8	6.3	9.8	6.1
1965	5.9	5.9	8.0	6.2	5.7	5.7	8.7	5.0	4.7	5.8	4.8	7.6	13.3	5.8	5.9	6.0	2.5	6.0	6.2	6.0
1966	5.5	5.6	9.2	5.9	7.7	4.5	8.1	5.9	6.2	6.4	7.7	6.3	19.0	6.3	5.1	6.2	1.8	7.4	7.2	6.0
1967	3.9	4.6	6.7	5.3	7.1	5.4	5.3	4.8	7.0	5.0	7.5	5.5	13.9	5.4	6.0	5.6	2.3	5.1	6.3	5.2
1968	5.2	5.1	6.4	6.2	6.3	6.3	7.3	5.1	7.1	5.8	8.5	5.6	16.8	5.8	5.5	5.9	2.3	6.4	6.8	5.8
1969	2.3	4.9	5.4	6.0	7.5	6.7	5.2	5.8	7.0	5.6	8.7	5.0	10.8	5.4	6.4	5.5	3.3	5.4	6.0	5.5
1970	5.4	5.9	7.0	5.7	7.7	6.1	7.4	5.7	12.3	5.9	11.7	6.2	18.0	6.4	8.8	5.9	4.6	6.4	8.8	6.0
1971	4.2	5.5	6.3	5.4	6.8	5.0	9.6	4.9	10.7	6.2	14.0	5.8	15.0	5.7	7.4	5.4	6.8	5.8	8.5	5.5
1972	5.2	5.3	5.9	5.7	8.6	5.4	8.1	5.0	9.8	5.9	11.2	6.0	15.1	6.1	7.7	5.7	3.8	4.8	8.0	5.6
1973	6.4	4.6	7.2	5.6	8.8	5.5	8.6	4.7	11.8	5.1	13.0	5.6	9.7	5.4	7.5	5.9	4.1	5.5	8.6	5.3
1974	6.7	4.6	7.3	4.8	6.9	5.5	8.5	5.0	5.4	4.7	8.3	4.4	12.1	5.4	7.8	5.0	2.2	5.2	7.0	4.9
1975	1.4	5.4	4.1	5.0	8.3	4.9	4.7	5.3	6.4	4.8	9.1	5.1	7.4	5.4	6.5	5.8	4.4	5.2	5.7	5.2
1976	2.3	5.1	6.0	5.1	9.7	5.1	6.3	5.2	8.9	4.6	11.3	5.3	9.7	5.2	7.8	5.4	3.9	4.9	7.2	5.1
1977	4.6	4.9	6.4	5.7	12.8	5.6	10.7	4.6	7.7	4.7	13.1	4.8	12.3	5.2	7.1	5.1	4.1	4.7	8.3	5.0
1978	5.9	5.2	3.5	5.4	9.1	5.4	9.9	5.0	6.9	5.4	8.8	5.5	11.1	5.5	7.4	5.5	4.0	5.8	7.1	5.4
1979	6.7	4.5	4.0	5.7	5.5	5.3	7.3	5.4	5.4	5.9	6.1	5.0	11.1	5.8	8.7	5.2	3.3	5.0	6.3	5.3
1980	8.1	4.9	9.4	5.2	12.1	5.2	16.6	4.9	11.3	5.0	9.9	4.8	13.5	4.5	11.6	5.3	5.8	5.2	10.7	5.0
1981	11.4	4.4	8.7	4.9	11.2	5.4	15.5	4.8	10.0	4.6	11.5	5.0	16.9	4.4	8.8	5.2	5.5	4.7	10.7	4.8
1982	4.4	4.3	4.1	5.3	6.2	4.9	8.9	4.7	3.6	5.6	3.0	4.5	6.9	4.3	6.8	5.4	2.9	4.2	5.0	4.9
1983	1.6	4.7	1.9	4.9	3.1	5.2	2.8	4.9	1.8	5.4	3.6	5.4	5.9	5.3	7.5	5.9	3.8	5.8	3.4	5.3
1984	1.3	5.9	1.5	5.7	2.8	5.3	3.5	5.2	2.3	5.0	3.6	5.1	3.6	4.4	5.8	5.2	4.1	4.8	3.1	5.2
1985	3.5	5.4	4.2	5.3	4.9	6.1	5.8	5.3	5.4	5.5	3.9	5.4	8.9	5.7	12.2	5.3	5.7	6.1	6.0	5.5
1986	3.9	5.9	2.9	5.0	7.1	5.5	5.6	3.8	4.1	4.7	4.9	4.4	8.1	4.9	10.3	5.3	3.8	4.9	5.4	5.0
1987	5.8	6.2	5.0	6.2	8.5	5.8	9.3	5.1	6.3	4.9	4.8	5.6	9.9	5.0	10.5	5.4	5.7	5.4	7.1	5.5
1988	5.3	5.1	5.0	5.6	5.8	6.6	9.7	5.1	4.0	6.1	3.5	5.8	7.8	4.9	8.5	4.9	4.3	5.5	5.7	5.5
1989	3.8	5.2	5.0	5.9	8.2	5.1	10.9	5.3	8.1	5.4	5.5	5.4	6.9	4.6	6.5	5.2	5.5	5.9	6.5	5.4
1990	5.2	5.0	6.9	5.4	9.6	5.4	9.8	4.5	6.6	4.9	3.9	4.7	7.3	4.9	5.8	4.4	4.1	5.2	6.4	4.9
1991	5.8	4.7	6.4	5.4	7.7	5.4	12.5	4.8	7.1	4.3	4.9	5.0	11.5	4.2	7.9	5.1	6.6	5.2	7.5	4.9
1992	4.3	4.0	7.1	5.6	4.6	4.9	6.9	4.4	6.8	4.4	5.7	5.2	5.1	4.1	4.2	3.9	5.6	4.7	5.7	4.6
1993	2.4	4.8	3.4	5.4	2.3	4.9	8.9	5.1	3.8	5.2	3.6	5.4	5.8	4.3	3.7	5.5	4.2	5.2	4.0	5.1
1994	7.5	4.6	11.2	5.5	5.7	4.5	14.2	4.5	9.4	4.8	10.0	5.4	8.9	4.1	6.8	5.4	8.7	5.4	9.1	5.0

Year	North West		North Central		North East		West Central		Central		East Central		South West		South Central		South East		Statewide	
	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood	Broods per 30m	Chicks per brood
1995	4.8	4.6	10.1	5.0	5.7	5.4	8.1	4.5	9.4	4.5	7.4	6.1	7.3	4.6	4.3	5.5	6.1	5.6	7.2	5.1
1996	9.1	4.6	9.6	5.0	4.8	4.5	7.4	4.6	8.5	4.9	8.9	5.6	5.6	4.0	3.7	3.7	4.0	4.8	7.1	4.7
1997	6.8	5.7	9.1	5.1	6.7	5.1	5.9	5.0	8.6	5.1	7.0	5.4	5.7	3.7	3.8	6.9	6.1	6.3	6.8	5.4
1998	14.1	4.2	9.6	4.7	6.7	5.4	6.1	4.7	8.3	4.6	8.8	5.2	4.3	3.2	2.7	4.3	6.3	5.1	7.7	4.6
1999	7.2	4.5	5.5	4.1	3.5	4.6	3.5	4.2	6.1	4.6	4.7	5.8	3.1	3.8	1.9	5.2	4.1	5.9	4.6	4.7
2000	11.3	4.7	5.5	4.9	2.4	4.7	4.7	5.3	8.8	4.2	5.7	5.2	4.4	4.3	3.5	3.7	3.3	5.2	5.8	4.7
2001	3.3	4.6	2.7	4.6	0.9	5.4	1.6	3.2	3.3	4.9	2.9	5.6	2.3	3.8	1.2	4.4	0.7	3.4	2.2	4.5
2002	7.4	5.1	7.8	5.0	2.4	4.7	5.3	4.8	7.9	5.0	4.5	5.9	3.5	3.4	1.8	5.5	3.6	5.5	5.2	5.1
2003	13.9	4.5	10.3	5.4	4.1	3.7	5.6	5.4	10.3	4.6	5.6	5.3	4.7	4.9	3.5	4.6	4.1	5.3	7.3	4.9
2004	9.5	4.1	6.0	4.0	2.7	4.5	4.1	3.4	6.2	4.1	3.5	5.0	4.8	3.7	3.4	4.4	4.6	4.2	5.2	4.1
2005	11.7	4.2	7.2	4.3	4.2	4.7	6.1	3.9	8.3	4.6	3.5	5.2	4.9	4.2	2.1	4.8	3.9	5.1	6.0	4.6
2006	7.7	4.8	7.1	4.1	3.4	4.0	4.7	4.0	6.6	4.3	4.0	4.1	4.1	3.9	1.4	4.5	3.1	5.1	4.8	4.3
2007	7.7	4.2	6.1	4.3	3.4	4.1	4.7	4.7	6.4	4.3	4.5	4.3	2.4	3.6	0.8	4.2	3.3	5.1	4.6	4.3
2008	8.6	4.6	4.0	4.2	1.5	3.4	2.9	4.9	2.7	4.4	1.1	5.0	0.8	3.5	0.7	4.3	0.8	3.9	2.7	4.4
2009	5.5	4.4	2.9	3.4	0.6	2.2	3.9	4.6	2.7	5.1	1.2	6.4	1.9	4.1	0.8	4.6	2.2	3.6	2.5	4.4
2010	4.9	4.0	2.7	4.5	1.0	4.0	1.8	3.8	2.1	3.9	0.8	5.0	0.9	4.8	0.5	2.5	1.2	4.2	1.9	4.0
2011	1.7	4.1	1.2	4.2	0.4	4.8	0.9	4.0	1.8	4.0	1.0	4.9	1.1	5.0	0.4	2.0	0.7	3.0	1.1	4.8
2012	2.7	4.9	1.6	5.2	0.3	3.4	0.6	3.9	1.9	5.1	1.0	6.0	0.8	3.7	0.6	5.0	0.8	5.7	1.2	4.9
2013	2.1	4.5	1.4	4.0	0.5	3.3	0.8	4.4	1.2	4.7	0.7	4.8	0.4	3.0	0.6	4.7	0.9	4.8	1.0	4.4
2014	4.7	4.5	3.3	4.6	0.5	2.8	3.4	4.5	3.2	4.7	1.8	5.5	1.2	3.1	1.8	4.4	3.1	4.6	2.7	4.4
2015	6.7	4.9	3.6	4.6	1.2	6.0	3.6	4.9	6.5	3.9	2.6	3.9	1.8	4.4	1.5	3.9	5.0	4.6	3.8	4.5
2016	5.6	4.5	4.3	4.0	1.9	4.0	3.5	4.5	4.5	5.3	2.5	4.4	1.2	4.7	1.1	4.3	4.0	4.0	3.4	4.5
2017	4.2	4.5	2.5	4.2	1.0	3.2	2.0	4.2	4.3	4.3	1.6	5.0	0.9	3.6	0.9	4.1	2.7	4.4	2.4	4.3
2018	4.2	4.0	2.4	4.9	2.4	4.1	4.0	4.0	5.9	4.4	1.8	4.1	1.4	3.2	1.8	5.5	3.8	4.4	3.2	4.3
2019	3.8	4.0	3.0	5.2	1.9	4.4	4.0	4.6	4.3	4.3	1.2	5.0	1.2	4.0	0.9	4.7	1.7	3.7	2.6	4.5
2020	4.7	4.2	3.6	4.7	3.7	4.9	4.2	4.2	3.5	3.8	1.8	5.1	0.9	4.6	1.1	4.1	3.8	5.2	3.1	4.5
Statistics:																				
10 Yr Avg.	4.0	4.4	2.7	4.6	1.4	4.1	2.7	4.3	3.7	4.5	1.6	4.9	1.1	3.9	1.1	4.3	2.6	4.5	2.5	4.5
LT Avg	6.0	4.8	6.0	5.1	5.4	5.0	6.7	4.8	6.3	5.0	5.6	5.3	7.3	4.7	4.7	5.1	3.7	5.1	5.7	5.0
Percent Change from:																				
2019	21.8	4.1	18.5	-8.5	97.3	11.0	4.2	-8.0	-19.4	-11.1	48.8	1.8	-24.4	15.7	27.3	-12.7	126.9	38.3	20.4	0.6
10 Yr Avg.	15.5	-5.0	32.4	3.4	168.5	19.9	55.7	-1.9	-5.8	-14.4	13.4	4.4	-18.7	17.2	3.8	-3.7	43.3	15.9	25.9	-0.2
LT Avg	-22.4	-13.3	-40.3	-7.4	-32.9	-1.6	-36.7	-11.8	-44.8	-23.2	-67.6	-4.0	-87.8	-1.4	-76.1	-18.5	2.4	0.6	-45.9	-10.3

Table 5.3 Mean number of bobwhite quail and white-tailed jackrabbits counted/30-mile route on the August roadside survey, regionally and statewide, 1962-Present

	Quail per Route										
Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide	Jack Rabbits Statewide
1962	0.00	0.00	0.00	2.22	0.25	0.18	0.88		2.00	0.62	0.449
1963	0.00	0.29	0.08	0.50	0.47	0.13	0.54	5.58	3.20	1.12	0.408
1964	0.00	0.00	0.29	0.64	0.50	0.60	0.83	4.69	4.47	1.39	0.530
1965	0.81	0.04	0.32	0.28	0.25	0.81	2.08	6.76	8.27	2.21	0.346
1966	0.22	0.00	0.12	0.11	0.44	3.05	2.58	6.65	7.59	2.29	0.348
1967	0.38	0.00	0.16	0.56	0.20	1.81	2.17	5.48	8.09	2.10	0.599
1968	0.00	0.00	0.28	0.17	0.65	2.68	3.46	5.81	5.55	2.06	0.278
1969	0.00	0.00	0.00	0.06	1.68	3.00	6.83	8.58	5.40	2.60	0.308
1970	0.00	0.00	0.00	0.00	0.17	1.64	10.75	10.15	7.36	2.95	0.155
1971	0.00	0.00	0.00	0.06	0.52	1.35	11.42	6.82	6.79	2.64	0.345
1972	0.00	0.00	0.00	0.26	0.25	1.13	10.27	6.84	3.80	2.26	0.300
1973	0.00	0.00	0.00	0.21	1.24	1.29	13.31	6.58	5.55	2.54	0.202
1974	0.00	0.00	0.11	0.25	0.13	1.00	8.07	6.39	5.13	2.11	0.072
1975	0.00	0.00	0.00	2.00	0.30	0.92	7.64	3.78	5.64	1.98	0.108
1976	0.00	0.00	2.00	2.21	0.16	2.04	2.40	7.39	4.68	2.19	0.109
1977	0.00	0.00	0.41	0.21	0.68	1.55	5.40	12.63	3.96	2.69	0.085
1978	0.00	0.00	1.06	1.37	0.17	0.50	2.73	8.42	3.40	1.87	0.141
1979	0.04	0.00	0.88	0.00	0.35	0.32	2.75	2.00	0.30	0.66	0.158
1980	0.36	0.00	0.00	0.68	1.39	1.00	5.27	7.88	2.61	2.05	0.149
1981	0.40	0.00	1.00	0.21	0.10	1.64	7.00	11.84	2.43	2.60	0.310
1982	0.00	0.00	0.67	0.05	0.00	0.14	0.87	2.64	2.83	0.79	0.099
1983	0.08	0.08	0.28	0.16	0.50	0.57	1.64	7.32	1.87	1.44	0.055
1984	0.00	0.00	0.22	0.80	0.03	0.00	1.13	2.40	1.57	0.66	0.078
1985	0.00	0.00	1.44	0.00	0.10	0.00	1.27	6.24	3.30	1.37	0.074
1986	0.00	0.00	0.00	0.37	0.03	0.14	1.73	8.16	2.09	1.42	0.118
1987	0.00	0.00	0.33	0.47	0.00	0.74	3.93	14.52	4.17	2.70	0.123
1988	0.00	0.00	0.44	0.94	0.00	0.00	4.87	8.46	4.13	1.96	0.173
1989	0.04	0.00	0.33	1.06	0.10	0.70	6.07	7.67	3.17	1.91	0.223
1990	0.00	0.00	1.00	0.72	0.13	1.04	2.93	6.25	2.21	1.48	0.188
1991	0.08	0.00	0.47	0.72	0.13	0.52	3.13	5.54	2.33	1.34	0.068
1992	0.12	0.00	0.22	1.50	0.07	0.96	2.43	2.83	2.71	1.07	0.143
1993	0.00	0.00	0.37	0.50	0.03	0.78	5.07	2.13	1.61	0.96	0.030
1994	0.08	0.00	0.00	0.65	0.00	0.87	9.19	3.21	3.04	1.58	0.155
1995	0.08	0.00	0.63	0.17	0.06	0.86	2.53	5.54	3.22	1.37	0.058
1996	0.08	0.00	0.21	0.28	0.09	0.71	2.73	0.88	0.65	0.51	0.092
1997	0.00	0.00	0.00	0.00	0.07	1.24	4.27	2.25	0.50	0.77	0.098
1998	0.00	0.00	0.00	0.00	0.07	1.48	1.20	2.30	1.81	0.72	0.086
1999	0.00	0.00	0.05	0.00	0.00	0.13	1.07	2.50	1.50	0.57	0.060
2000	0.00	0.00	0.00	0.20	0.47	0.17	4.40	0.83	0.41	0.57	0.029
2001	0.00	0.00	0.00	0.00	0.09	0.76	1.31	0.50	0.32	0.29	0.053
2002	0.00	0.00	0.00	0.70	0.03	0.27	1.06	0.88	0.96	0.39	0.034

Quail per Route											
Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide	Jack Rabbits Statewide
2003	0.00	0.00	0.00	0.00	0.22	0.14	3.27	3.92	1.36	0.89	0.033
2004	0.00	0.00	0.50	0.05	0.19	0.55	2.19	2.64	3.19	0.93	0.033
2005	0.00	0.00	0.00	0.09	0.53	0.00	1.71	2.52	1.64	0.69	0.019
2006	0.00	0.00	0.00	0.32	0.03	0.52	1.65	2.16	3.22	0.82	0.052
2007	0.04	0.00	0.00	0.78	0.00	1.40	0.63	1.52	3.30	0.81	0.019
2008	0.00	0.00	0.00	0.13	0.00	0.00	2.00	1.04	1.26	0.45	0.000
2009	0.58	0.00	0.00	0.67	0.00	0.18	1.22	2.24	1.67	0.72	0.005
2010	0.00	0.00	0.56	0.30	0.00	0.05	0.44	0.50	1.32	0.33	0.000
2011	0.00	0.00	0.00	0.00	0.00	0.35	0.07	1.28	0.22	0.22	0.019
2012	0.00	0.00	0.00	0.00	0.07	0.00	1.75	1.68	0.13	0.36	0.005
2013	0.00	0.00	0.05	0.04	0.00	0.10	0.78	1.68	0.78	0.36	0.009
2014	0.00	0.00	0.00	0.00	0.59	0.00	3.65	2.71	1.76	0.86	0.028
2015	0.00	0.00	0.00	0.81	0.00	0.30	4.06	3.88	4.58	1.42	0.019
2016	0.15	0.07	0.00	1.14	0.07	0.41	5.83	5.50	3.00	1.65	0.005
2017	0.00	0.00	0.00	0.33	0.00	0.00	4.41	4.56	1.70	1.11	0.005
2018	0.00	0.00	0.00	1.76	0.65	0.14	4.06	3.46	3.17	1.37	0.019
2019	0.00	0.00	0.00	0.52	0.09	1.32	1.94	2.88	1.25	0.84	0.005
2020	0.08	0.00	0.90	0.17	0.06	0.13	3.28	1.76	1.00	0.72	0.005
Statistics:											
10 Yr Avg.	0.02	0.01	0.10	0.48	0.15	0.27	2.98	2.94	1.76	0.89	0.01
LT Avg.	0.06	0.00	0.26	0.47	0.24	0.75	3.59	4.66	2.98	1.35	0.13
Percent Change from:											
2019						-90.1	68.9	-38.9	-20.0	-14.2	0.00
10 Yr Avg.						-52.5	9.9	-40.1	-43.1	-19.1	-58.0
LT Avg.						-82.7	-8.7	-62.2	-66.4	-46.4	-96.1

Table 5.4 Mean number of gray partridge counted/30-mile route on the August roadside survey, regionally and statewide, 1962-Present

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
1962	5.77	0.87	0.00	0.82	0.08	0.00	0.00		0.00	.89
1963	4.67	2.92	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.91
1964	4.63	2.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79
1965	2.38	1.52	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.48
1966	2.70	4.96	0.00	0.00	0.76	0.00	0.00	2.05	0.00	1.30
1967	3.33	1.13	0.00	1.11	0.20	0.00	0.00	0.00	0.00	0.66
1968	4.13	1.30	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.68
1969	1.25	1.14	0.00	0.17	0.32	0.00	0.00	0.00	0.00	0.38
1970	8.43	4.00	0.00	0.00	0.75	0.00	0.00	0.00	0.00	1.66
1971	7.09	3.55	0.00	0.29	0.00	0.00	0.00	0.00	0.00	1.44
1972	8.92	5.44	0.00	0.47	0.61	0.00	0.00	0.00	0.20	1.92

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
1973	6.57	7.08	0.22	0.32	0.52	0.00	0.00	0.00	0.00	1.87
1974	9.00	4.79	0.00	0.30	0.33	0.00	0.00	0.00	0.00	1.82
1975	8.50	6.73	0.00	0.00	0.19	0.00	0.00	0.00	0.00	1.98
1976	9.50	7.20	0.00	0.84	0.23	0.00	0.00	0.00	0.00	2.14
1977	22.04	13.88	0.00	1.58	0.55	0.00	0.00	0.00	0.00	4.70
1978	17.23	7.68	0.11	1.42	2.43	0.00	0.00	0.00	0.00	3.73
1979	20.28	19.32	0.18	1.58	2.90	0.77	0.00	0.00	0.00	5.59
1980	35.04	28.08	0.11	3.00	4.03	0.82	0.00	0.00	0.00	8.81
1981	31.44	23.60	1.78	5.00	4.19	0.32	0.00	0.00	0.00	8.08
1982	18.48	10.16	0.94	3.37	1.87	0.00	0.00	0.00	0.00	4.21
1983	8.04	8.88	0.72	1.84	1.87	0.65	0.00	0.00	0.00	2.65
1984	14.16	13.24	2.11	1.05	3.03	1.05	0.00	0.00	0.00	4.22
1985	26.84	25.23	8.06	10.68	9.26	1.18	0.00	0.00	0.00	9.75
1986	29.48	21.04	10.00	5.79	11.13	2.41	0.13	0.00	0.00	9.62
1987	36.88	35.08	10.56	17.00	20.32	3.17	0.00	0.00	0.61	14.93
1988	42.84	48.65	15.61	17.83	25.07	4.48	0.20	0.38	1.39	19.00
1989	36.54	31.82	14.39	12.06	37.48	0.96	2.07	0.38	0.70	17.27
1990	18.40	20.12	16.68	5.89	6.93	5.52	1.00	0.38	0.88	8.75
1991	13.88	7.52	4.16	3.17	4.23	4.00	0.87	0.54	0.58	4.59
1992	5.15	4.76	6.67	2.61	3.77	4.17	0.07	1.46	2.05	3.58
1993	1.33	1.39	0.84	2.00	1.19	0.17	0.00	0.13	0.17	0.85
1994	7.92	14.48	4.47	10.41	8.29	5.39	0.13	0.29	0.35	6.17
1995	3.72	4.86	4.11	1.28	2.52	3.18	0.00	0.29	0.78	2.47
1996	4.42	6.64	3.00	2.61	1.81	1.24	0.00	0.00	0.00	2.37
1997	9.00	7.33	6.47	3.16	10.77	3.95	0.00	0.00	0.36	5.10
1998	23.00	13.96	9.17	3.58	3.36	1.24	0.07	0.00	0.05	6.42
1999	11.41	2.75	2.11	1.84	3.68	0.52	0.00	0.00	0.09	2.83
2000	6.54	4.75	0.90	2.05	4.00	1.74	0.00	0.00	0.00	2.53
2001	3.23	1.30	3.44	2.75	3.94	1.33	0.13	0.00	0.00	1.90
2002	7.04	2.04	2.94	4.00	5.88	1.23	0.00	0.00	0.00	2.82
2003	6.77	3.04	3.20	1.50	7.00	0.13	0.00	0.00	0.00	2.76
2004	7.77	2.30	1.90	0.86	3.25	1.00	0.00	0.04	0.00	2.12
2005	9.31	3.59	1.80	2.68	3.53	1.83	0.00	0.00	0.36	2.79
2006	2.50	4.96	2.10	2.14	3.53	0.86	0.00	0.00	0.39	2.01
2007	2.19	2.93	2.30	1.96	2.90	0.85	0.00	0.28	0.00	1.62
2008	2.39	4.11	0.00	1.09	0.40	0.20	0.00	0.12	0.00	1.03
2009	2.92	1.39	2.29	1.57	1.83	0.00	0.00	0.00	0.21	1.17
2010	1.15	1.69	1.83	0.83	1.40	1.26	0.00	0.00	0.00	0.93
2011	2.46	4.19	0.47	0.24	1.16	0.61	0.00	0.00	0.00	1.15
2012	2.50	3.56	1.33	0.71	3.45	0.05	0.06	0.00	0.00	1.47
2013	1.00	2.00	1.65	1.09	0.63	0.81	0.00	0.00	0.00	0.81
2014	1.81	7.74	2.65	1.91	2.53	0.87	0.00	0.00	0.00	2.13
2015	3.80	12.41	3.37	1.19	4.53	1.00	0.00	0.00	0.00	3.26

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
2016	5.73	7.22	5.26	1.59	2.39	1.55	0.00	0.00	0.00	2.76
2017	2.04	4.69	3.90	0.14	5.16	0.00	0.00	0.00	0.00	1.99
2018	1.62	4.22	2.00	2.29	4.77	2.27	0.00	0.00	0.08	2.09
2019	1.13	2.78	3.10	1.52	2.81	0.05	0.00	0.00	0.00	1.35
2020	1.58	3.33	5.05	0.39	4.03	1.83	0.00	0.00	0.00	1.90
Statistics:										
10 Yr Avg.	2.37	5.21	2.88	1.11	3.15	0.90	0.01	0.00	0.01	1.89
LT Avg.	10.17	8.63	2.95	2.65	4.13	1.10	0.08	0.11	0.16	3.65
Percent Change from:										
2019	40.7	20.0	62.9	-74.3	43.3					40.5
10 Yr Avg.	-33.1	-36.1	75.4	-64.7	28.1	102.4				0.6
LT Avg.	-84.4	-61.4	71.3	-85.3	-2.4	66.7				-47.9

Table 5.5 Mean number of cottontail rabbits counted/30-mile route on the August roadside survey, regionally and statewide (1962-Present).

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
1962	3.2	2.7	5.5	9.8	5.1	6.2	5.1	8.1	9.3	6.0
1963	8.9	4.4	4.2	10.8	5.9	6.9	8.0	9.9	12.8	7.9
1964	2.4	2.3	2.0	11.3	5.7	3.1	10.2	19.4	14.00	7.6
1965	3.1	3.0	3.7	7.9	2.8	4.0	16.2	24.3	11.2	8.1
1966	2.0	3.2	6.5	9.7	5.9	5.0	30.2	31.7	9.5	10.3
1967	2.8	2.4	4.4	6.9	6.1	4.0	18.8	16.3	10.9	7.5
1968	1.9	3.3	4.0	6.9	5.3	5.7	17.7	17.5	8.5	7.4
1969	2.0	2.2	5.0	3.4	2.5	5.6	16.6	18.0	6.8	6.3
1970	1.4	2.0	4.3	2.7	1.7	3.6	12.5	11.3	4.7	4.4
1971	1.9	1.4	3.9	3.7	2.8	4.2	14.8	16.5	5.6	5.4
1972	2.8	1.7	2.7	3.9	2.3	6.4	11.7	14.8	4.7	5.5
1973	2.2	2.6	3.7	3.9	4.2	6.0	13.8	14.3	6.1	5.8
1974	2.1	1.9	4.4	3.6	2.0	3.9	5.8	8.4	6.0	4.1
1975	1.3	1.2	2.5	2.6	1.4	3.6	5.1	7.0	5.2	3.2
1976	1.3	1.6	5.9	7.3	4.2	5.5	9.3	16.4	8.9	6.4
1977	1.4	1.2	4.0	2.2	1.9	5.1	7.9	11.7	5.4	4.3
1978	3.8	2.0	6.9	4.7	3.7	5.5	12.7	14.0	5.2	6.2
1979	3.2	1.7	3.3	4.1	2.7	2.3	5.6	8.2	2.5	3.6
1980	2.3	3.0	2.1	4.2	4.2	1.8	5.5	9.8	4.9	4.2
1981	3.4	4.6	6.4	5.2	3.2	7.4	11.1	21.1	9.0	7.8
1982	2.4	2.3	2.7	4.4	2.5	4.9	7.7	19.5	11.7	6.4
1983	3.1	2.5	6.4	4.2	3.1	5.0	7.2	17.6	12.7	6.8
1984	2.0	1.4	3.0	4.2	2.6	4.0	3.5	14.7	14.0	5.6
1985	3.2	2.7	3.9	3.8	4.4	5.5	7.1	22.9	12.0	7.4
1986	3.0	2.6	4.6	4.3	3.8	3.8	9.7	25.2	12.7	7.7

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
1987	4.1	3.5	3.2	6.3	4.4	4.3	8.1	34.4	7.7	8.6
1988	3.1	1.8	2.0	4.8	2.6	2.5	4.6	12.8	6.7	4.5
1989	2.4	2.4	4.6	5.2	2.9	4.3	6.3	13.5	8.5	5.4
1990	2.7	3.9	7.0	7.7	5.5	7.3	9.2	26.0	14.7	9.2
1991	2.4	1.8	3.4	5.1	2.5	3.3	7.0	16.3	9.1	5.5
1992	2.6	3.8	4.0	4.8	4.1	3.6	7.1	13.7	12.4	6.0
1993	1.3	1.8	3.9	6.5	2.2	5.0	6.7	15.4	10.1	5.5
1994	2.2	1.9	5.4	5.4	3.3	7.4	8.9	14.4	10.4	6.3
1995	3.2	4.0	3.8	5.5	4.8	6.5	13.0	15.7	9.5	7.0
1996	3.6	3.7	5.8	5.2	3.7	6.3	6.4	13.8	8.5	6.2
1997	2.1	2.4	5.2	2.9	3.4	6.2	6.0	11.8	5.1	4.9
1998	2.0	2.7	5.1	3.1	3.7	6.3	5.8	10.4	7.5	5.1
1999	4.1	2.3	5.1	5.0	4.7	9.1	7.9	10.6	6.0	5.9
2000	2.4	2.0	4.9	4.2	4.9	6.9	7.4	19.3	7.2	6.4
2001	1.6	1.6	1.3	2.1	3.0	3.5	5.3	12.0	4.1	3.8
2002	2.7	2.2	2.7	3.7	4.8	6.5	3.8	11.2	9.3	5.3
2003	5.0	3.9	5.7	6.9	8.3	8.0	9.1	21.4	11.0	8.8
2004	3.0	3.3	5.7	4.2	3.9	6.1	8.7	24.9	14.6	8.1
2005	4.7	2.9	5.7	5.0	4.6	3.7	12.6	12.1	7.0	6.2
2006	3.8	2.8	5.2	5.6	4.3	5.8	8.4	14.9	7.8	6.4
2007	1.7	2.6	4.2	3.6	2.8	6.1	5.7	6.1	8.0	4.3
2008	4.0	2.8	2.6	6.1	5.1	3.6	8.8	16.9	7.0	6.3
2009	2.2	1.3	3.7	4.7	4.0	4.5	10.3	9.6	6.1	5.0
2010	2.9	0.8	2.9	2.7	1.6	2.7	4.3	5.1	5.5	3.1
2011	1.1	1.0	2.8	2.5	2.4	2.0	1.9	4.3	1.7	2.2
2012	2.0	1.0	1.9	1.2	1.8	2.0	1.9	3.0	3.3	2.0
2013	2.3	3.0	3.5	4.1	4.1	6.9	2.5	11.4	8.2	5.1
2014	2.3	2.6	4.5	6.9	9.7	7.9	4.5	18.9	12.2	7.8
2015	4.0	3.7	4.1	5.1	6.9	6.8	5.7	15.8	11.3	7.2
2016	3.2	2.4	4.9	4.0	4.9	5.5	3.9	11.9	5.7	5.2
2017	1.6	2.0	5.5	3.6	6.4	8.7	6.5	9.3	5.8	5.4
2018	1.9	2.1	6.4	5.4	7.6	10.2	9.2	13.1	6.6	6.8
2019	1.5	3.3	5.6	4.8	7.3	4.9	5.2	10.8	6.7	5.7
2020	1.6	1.9	5.3	3.6	5.1	7.2	6.5	8.2	8.8	5.2
Statistics:										
10 Yr Avg.	2.2	2.3	4.5	4.1	5.6	6.2	4.8	10.7	7.0	5.3
LT Avg.	2.7	2.5	4.3	4.9	4.1	5.2	8.6	14.8	8.3	6.0
Percent Change from:										
2019	2.7	-43.3	-6.2	-24.2	-30.5	47.0	25.6	-24.2	30.9	-7.1
10 Yr Avg.	-26.5	-17.6	17.9	-12.7	-9.8	16.4	36.0	-23.5	24.8	-0.1
LT Avg.	-40.9	-23.0	22.5	-26.1	24.8	37.6	-24.3	-44.9	6.4	-12.1

Table 5.6 Small game harvest estimates from the Iowa small-game survey, 1963-Present

Resident and NR hunter harvests combined.

Year	Pheasant	Quail	Cottontail	Jackrabbit	Squirrel	Huns	Mourning Dove
1958*	1,548,564						
1959*	1,070,285						
1963	1,935,000	327,977	2,066,472	75,015	1,440,576	8,000	
1964	1,737,400	291,030	2,260,090	97,785	1,111,290	7,000	
1965	1,117,500	513,760	1,602,060	133,000	1,236,400	11,500	
1966	1,449,400	1,051,630	2,180,525	91,690	1,370,250	12,000	
1967	1,212,200	736,520	1,548,035	55,660	1,196,810	11,300	
1968	1,393,900	777,685	1,761,370	62,405	1,014,940	21,600	
1969	1,642,899	1,144,700	1,722,280	98,930	1,164,030	20,900	
1970	1,788,500	1,178,685	1,725,535	71,705	1,115,410	28,300	
1971	1,817,000	1,037,957	1,305,083	41,468	1,172,742	31,100	
1972	1,396,900	657,300	1,148,100	31,200	1,048,000	16,800	
1973	1,905,086	791,242	1,424,927	30,863	1,105,271	45,284	
1974	1,672,476	727,324	1,271,577	40,027	1,119,048	39,976	
1975	1,230,095	543,971	996,227	19,064	1,046,559	26,436	
1976	1,425,500	1,080,500	1,136,300	20,700	1,377,500	54,800	
1977	1,357,862	849,183	1,322,263	19,975	1,283,043	48,991	
1978	1,428,708	660,625	856,999	26,077	815,562	108,473	
1979	1,200,709	312,410	461,285	13,713	696,363	55,414	
1980	1,429,617	524,450	588,363	7,932	844,999	70,764	
1981	1,447,969	563,569	1,134,781	22,860	949,681	69,698	
1982	972,556	302,648	712,227	5,237	759,438	52,782	
1983	1,047,027	270,690	720,012	8,845	669,490	91,035	
1984	724,192	190,708	636,209	6,376	529,316	33,306	
1985	852,716	189,236	717,631	2,108	673,665	62,931	
1986	855,894	339,000	472,585	6,082	506,769	60,018	
1987	1,412,082	397,633	690,091	8,830	532,001	109,061	
1988	1,139,599	289,592	424,561	3,907	510,065	104,094	
1989	1,441,990	426,302	435,791	3,025	583,183	118,282	
1990	1,407,002	321,493	608,805	4,463	466,140	147,922	
1991	1,138,463	231,818	437,144	3,171	407,172	45,541	
1992	925,123	179,825	311,607	2,113	328,644	37,328	
1993	1,226,010	201,461	334,667	3,212	439,477	24,577	
1994	1,245,580	178,589	288,982	262	395,232	22,331	
1995	1,443,010	220,999	335,862	6,280	377,714	6,677	
1996	1,367,060	81,039	331,047	2,666	302,908	36,358	
1997	1,340,050	181,025	340,661	5,063	265,874	38,045	
1998	1,237,980	100,594	255,149	10,008	319,081	25,613	
1999[a]	899,174	110,128	237,409	8,777	242,224	20,200	
2000[b]	1,001,867	140,828	350,739	1,626	217,116	19,258	
2001	470,116	32,226	196,483	3,840	248,833	5,814	
2002	729,460	63,872	167,284	1,637	152,825	5,130	

Year	Pheasant	Quail	Cottontail	Jackrabbit	Squirrel	Huns	Mourning Dove
2003	1,080,466	114,067	243,699	738	202,729	8,204	
2004	756,184	68,256	259,327	151	233,530	12,535	
2005	806,601	40,675	210,591	671	132,195	14,674	
2006	748,025	75,276	155,892	999	165,255	10,724	
2007	631,638	54,444	131,250	1,262	169,478	4,885	
2008	383,083	13,391	122,296	57	120,998	1,420	
2009	271,126	12,136	127,663	608	169,041	4,643	
2010	238,208	11,620	74,044	0	119,590	1,057	
2011	108,905	4,539	51,815	Closed	108,783	1,046	57,285
2012	158,099	20,474	70,003		158,615	611	94,864
2013	166,554	8,708	79,985		90,167	1,370	117,915
2014	215,816	10,705	102,379		110,600	451	137,927
2015	268,464	28,362	113,276		175,507	1,698	117,358
2016	244,769	24,366	99,464		95,805	510	131,468
2017[c]	221,291	26,955	118,942		125,844	1,754	76,837
2018	319,811	47,305	123,309		80,843	6,220	118,855
2019	283,684	20,710	54,285		88,642	853	84,827
Statistics:							
10 Yr Avg.	222,560	20,367	88,558		115,435	1,557	104,108
LT Avg.	1,033,682	329,862	660,588	22,127	568,127	32,058	104,108
Percent Change from:							
2019	-11.3	-56.2	-56.0		9.6	-86.3	-28.6
10 Yr Avg.	27.5	1.7	-38.7		-23.2	-45.2	-18.5
LT Avg.	-72.6	-93.7	-91.8		-84.4	-97.3	-18.5

[a]Small Game Harvest Survey changed from a single to a double mailing. Harvest estimates from 1999-Present are more conservative than pre-1999 estimates.

[b]Survey methodology changed account for unrealistic harvest (e.g. reports of 1 bird harvested for 60 days effort).

[c]Survey methodology changed for unrealistic harvest/day for quail, huns, rabbits, squirrel, and doves.

*Nomsen RC. 1961. Results of the 1958 and 1959 Pheasant Hunter Survey. Ia Acad. Sci. 68:281-283.

Table 5.7 Estimated hunter and harvest numbers for pheasant and quail by residency status from the Iowa small-game survey (1987-Present).

Year	Pheasant				Quail			
	Resident		Non-Resident		Resident		Non-Resident	
	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest
1987	178,203	1,129,395	33,915	251,613	70,026	181,378	13,727	64,760
1988	170,323	902,226	33,682	237,373	59,230	212,646	13,792	76,946
1989	173,017	1,122,951	38,569	319,039	69,591	381,321	10,380	44,981
1990	171,016	1,047,529	39,829	359,473	61,219	269,896	11,667	51,597
1991	161,741	852,158	40,578	286,305	49,713	184,195	11,271	47,623
1992	139,681	677,670	36,749	247,453	47,641	155,919	8,646	23,906
1993	138,619	999,149	27,642	226,857	43,027	175,793	6,318	25,667
1994	147,841	876,365	41,824	369,216	41,504	156,413	8,754	22,176
1995	155,308	1,118,638	44,995	324,368	39,653	193,544	11,185	27,454

Year	Pheasant				Quail			
	Resident		Non-Resident		Resident		Non-Resident	
	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest
1996	155,889	1,059,385	49,704	307,675	33,996	62,438	10,978	18,601
1997*	154,855	1,037,620	50,349	302,432	24,927	134,418	10,546	46,607
1998	141,838	936,181	42,748	301,797	26,393	83,067	5,985	17,527
1999[a]	142,521	684,596	39,152	214,578	32,306	86,058	8,811	24,070
2000[b]	134,873	781,143	32,648	220,724	33,114	114,110	6,843	26,718
2001	99,125	352,469	23,781	117,620	20,459	24,812	4,132	7,414
2002	97,842	548,413	29,757	181,047	16,194	43,492	4,693	20,380
2003	108,819	849,898	33,414	230,568	19,937	99,971	4,958	14,096
2004	99,753	586,632	31,009	169,552	17,139	57,486	5,197	10,770
2005	107,255	641,957	28,937	164,644	15,277	33,714	3,301	6,961
2006	91,642	558,369	27,038	189,656	17,787	49,783	4,769	25,493
2007	85,803	481,754	23,426	149,884	14,227	42,799	4,007	11,645
2008	69,640	299,875	16,231	83,208	12,114	10,716	1,791	2,675
2009	60,708	217,816	13,309	53,310	8,237	11,098	1,942	1,038
2010	51,258	197,266	8,800	40,942	9,150	9,572	1,454	2,048
2011	39,515	75,897	6,460	33,008	8,574	3,664	862	875
2012	41,437	137,215	5,743	20,884	7,947	19,420	822	1,054
2013	34,688	140,348	6,293	26,206	6,165	8,467	320	241
2014	41,200	165,000	8,725	50,816	5,428	9,666	1,118	1,039
2015	46,679	212,858	9,480	55,606	8,189	26,081	1,573	2,281
2016	46,455	200,229	10,763	44,540	9,093	21,452	912	2,914
2017[c]	45,007	177,762	9,908	43,529	7,604	25,448	964	1,507
2018	43,707	266,237	10,196	53,574	7,811	72,791	2,071	4,514
2019	41,708	217,102	10,183	66,582	6,264	16,111	1,867	4,599
Statistics:								
10 Yr Avg.	43,165	182,521	9,078	44,454	7,585	20,336	1,262	2,010
LT Avg.	103,575	592,488	26,237	174,063	25,725	90,232	56253	19,399
Percent Change from:								
2019	-4.6	-18.5	-0.1	24.3	-19.8	-77.9	-9.9	1.9
10 Yr Avg.	-3.4	18.9	12.2	49.8	-17.4	-20.8	48.0	128.8
LT Avg.	-59.7	63.4	-61.2	-61.7	-75.6	-82.1	-66.8	-76.3

[a]Small Game Harvest Survey changed from single to double mailing. Hunter estimates from 1999-Present are more conservative than pree-1999 estimates.

[b]Survey methodology changed account for unrealistic harvest (e.g. reports of 1 bird harvested for 60 days effort).

[c]Survey methodology changed for unrealistic harvest/day for quail, huns, rabbits, squirrel, and doves.

*Iowa lost 800,000 acres of whole field enrollment CRP.

Table 5.8 Sales of hunting-related licenses and stamps in Iowa (1942-Present).

Year[a]	Resident					Non-Resident					
	Furharvester			Resident Hunt[d]	Lifetime over 65	Hunting		Total License[e]	Habitat Stamp[f]	IA Duck Stamp[g]	Hunt Preserve[h]
	over 16[b]	under 16	Total[c]			over 18	under 18				
1942				226,046				447			
1943				193,270				612			
1944				211,657				1,163			
1945				245,609				998			
1946				326,128				1,646			
1947				273,242				632			
1948				332,019				1,727			
1949				349,734				2,256			
1950				338,111				2,393			
1951				329,320				2,371			
1952				340,935				2,391			
1953				343,982				3,115			
1954				346,435				3,203			
1955				369,493				3,936			
1956				364,985				4,544			
1957				339,389				4,422			
1958				355,658				5,521			
1959				320,246				4,535			
1960				313,851				5,352			
1961				301,809				5,448			
1962				288,087				5,470			
1963				307,475				7,531			
1964				301,964				8,370			
1965				275,640				6,505			
1966				292,745				9,638			
1967				295,276				11,244			
1968				309,424				12,223			
1969				303,602				17,326			
1970				322,509				21,898			
1971				328,542				30,264			
1972				277,317				28,559		70,446	
1973				291,755				34,497		67,323	
1974				318,930				42,224		70,797	
1975				302,436				36,382		70,814	
1976				306,489				41,849		66,120	
1977				296,940				39,032		69,023	
1978				295,696				32,848		67,041	
1979	17,602	4,813	22,415	257,676				27,302	279,621	52,865	768
1980	19,366	5,529	24,895	266,655				30,793	296,667	50,202	822
1981	19,116	4,990	24,106	266,053				31,379	297,297	45,751	742
1982	17,505	4,248	21,753	245,969				24,002	269,290	44,391	751
1983	14,964	3,699	18,663	237,851				23,206	261,340	42,981	766
1984	14,537	3,329	17,866	221,519				21,927	243,154	44,445	696
1985	25,156	3,519	28,675	208,444				22,977	233,779	37,681	729
1986	23,709	3,064	26,773	205,356				27,254	236,219	40,157	882
1987	28,923	3,338	32,261	220,674				35,676	259,350	43,357	1,112
1988	24,105	2,380	26,485	218,588				35,023	257,702	34,799	1,696

Year[a]	Resident				Non-Resident						
	Furharvester			Resident Hunt[d]	Lifetime over 65	Hunting		Total License[e]	Habitat Stamp[f]	IA Duck Stamp[g]	Hunt Preserve[h]
	over 16[b]	under 16	Total[c]			over 18	under 18				
1989	18,411	1,530	19,941	226,124				40,197	271,342	32,920	1,499
1990	13,853	973	14,826	219,636				41,500	263,530	31,468	1,786
1991	14,208	719	14,927	217,200				45,792	266,845	32,537	1,454
1992	14,272	793	15,065	203,508				39,211	247,673	34,304	1,810
1993	14,672	829	15,501	197,966				29,231	232,298	31,741	2,137
1994	15,811	952	16,763	211,289				45,610	260,815	33,232	1,870
1995	15,343	903	16,246	210,727				48,028	263,531	34,903	2,467
1996	17,237	1,021	18,258	209,663				53,058	265,653	43,060	2,317
1997	18,330	1,066	19,396	211,530				52,730	269,443	38,275	2,516
1998	18,325	1,078	19,403	208,790				50,511	266,519	40,349	3,107
1999*	***15,804***	***1,004***	***16,808***	***206,210***	***2,885***	***42,379***	***2,086***	***44,465***	***253,943***	***42,588***	***2,772***
2000	12,793	1,936	14,729	200,995	1,642	39,067	1,901	40,968	245,351	40,913	2,898
2001	14,665	658	15,323	194,051	1,515	26,748	1,090	27,838	237,407	40,378	2,963
2002	14,235	644	14,879	189,138	2,339	36,728	1,532	38,260	229,829	37,574	3,282
2003	13,753	651	14,404	193,279	1,772	43,145	1,951	45,096	240,527	35,746	3,173
2004	13,906	701	14,607	190,154	1,786	41,159	1,847	43,006	235,336	34,611	3,254
2005	12,711	665	13,376	189,813	1,886	40,159	1,801	41,960	233,416	31,666	3,165
2006	13,796	746	14,542	188,628	1,973	39,038	1,815	40,853	231,284	31,982	3,370
2007	14,445	834	15,279	184,257	1,970	35,267	1,604	36,871	222,559	31,992	3,010
2008	14,673	850	15,523	177,723	2,074	28,427	1,167	29,594	208,461	30,560	2,665
2009	13,376	722	14,098	172,230	2,257	24,352	1,026	25,378	198,880	29,644	2,562
2010	14,162	871	15,033	164,380	2,016	19,992	773	20,765	185,598	28,263	2,254
2011	15,908	1,020	16,928	160,256	2,109	23,657	714	24,371	185,559	27,930	2,460
2012	17,970	1,215	19,185	161,642	2,350	23,766	793	24,559	187,698	26,420	2,270
2013[i]	17,954	1,382	19,336	158,490	2,374	23,082	756	23,838	178,258	27,867	2,341
2014	17,272	1,206	18,478	152,696	2,399	24,348	798	25,146	179,331	29,122	2,316
2015	15,351	958	16,309	152,147	2,531	23,349	902	24,251	176,364	28,749	2,155
2016	13,383	701	14,084	155,186	2,726	27,598	964	28,562	184,846	28,455	2,435
2017	13,464	636	14,100	147,596	2,976	27,370	940	28,310	176,836	27,345	2,401
2018[j]	12,919	584	13,503	142,763	3,668	31,298	958	32,256	175,701	26,492	2,149
2019	13,813	594	14,407	138,983	3,292	22,181	714	22,895	161,426	26,252	2,129
Statistics:											
10 Yr Avg.	15,220	917	16,136	153,414	2,644	24,664	831	25,495	179,162	27,690	2,291
LT Avg.	16,385	1,643	18,028	249,007	2,311	30,624	1,244	23,554	233,431	40,324	2,096
Percent Change from:											
2019	6.9	1.7	6.7	-2.6	-10.3	-29.1	-25.5	-29.0	-8.1	-0.9	-0.9
10 Yr Avg.	-9.2	-35.2	-10.7	-9.4	24.5	-10.1	-14.1	-10.2	-9.9	-5.2	-7.1
LT Avg	-15.7	-63.8	-20.1	-44.2	42.4	-27.6	-42.6	-2.8	-30.8	-34.9	1.6

[a]Change to ELSI electronic licensing system in 1999*. Resident hunting, combination, fur/fish/game licenses and furharvester w ere license types issued prior to ELSI implementation.

[b]Furharvester (over 16) sales is the sum of discontinued fur (over 16) and fur/fish/game licenses, from 1979-99.

[c]Total furharvester sales is the sum of furharvester over and under 16 columns. Total does not include NR sales.

[d]Total resident licenses is sum of resident hunt, combination, and fur/fish/game, until ELSI system implementation in 1999. License types (2,9,29,30,37) beginning in 2013

[e]For comparisons to previous year's total NR licenses is sum of NR over and under 18 sales after 1999 ELSI implementation.

[fgh]Numbers represent combined resident and non-resident sales. Habitat fee license types (9,20,28,29,30,31,32,37,38,93,94)

[i]New combination hunt/fish/fur/habitat licenses started in 2013. LT combined to maintain similar historical tallies.

[j]Includes Lifetime and Vet Lifetime beginning in 2018

Table 5.9 Estimated hunter numbers (resident & non-resident combined) from the Iowa small-game survey

Year	Pheasant	Quail	Cottontail	Jackrabbit	Squirrel	Huns	Mourning Dove
1958*	267,455						
1959*	238,903						
1963	277,400	47,028	169,994	30,494	150,932		
1964	271,285	46,535	179,585	31,815	136,415		
1965	225,735	46,450	138,379	26,080	123,640		
1966	240,400	63,785	154,647	20,355	130,500		
1967	244,300	62,485	150,050	20,615	138,520		
1968	247,100	70,367	147,380	20,131	120,790		
1969	259,100	81,100	159,000	24,810	133,600		
1970	283,400	87,665	167,190	26,460	136,150		
1971	301,150	80,250	134,470	16,326	118,059		
1972	230,000	63,900	137,000	12,800	105,000	6,400	
1973	307,974	106,150	201,560	23,209	159,473	22,374	
1974	307,200	101,101	192,100		159,000		
1975	280,019	102,668	175,850				
1976	289,592	125,575	173,125	11,600	143,474	22,054	
1977	279,689	103,776	170,074	11,302	141,596	17,691	
1978	270,413	101,916	142,809	14,268	120,503	34,329	
1979	241,972	73,461	114,642	10,029	111,434	23,465	
1980	252,440	86,816	119,901	8,526	111,425	27,554	
1981	254,803	97,430	150,881	11,106	117,942	28,731	
1982	214,263	68,479	118,994	4,862	105,262	21,532	
1983	203,014	63,060	118,535	7,331	98,553	25,366	
1984	176,312	58,630	102,993	5,543	86,380	21,179	
1985	175,225	54,427	107,500	6,568	88,849	25,956	
1986	184,759	63,985	92,727	5,193	84,082	30,822	
1987	212,118	83,754	103,199	7,298	77,819	40,878	
1988	204,659	74,584	84,529	4,376	74,783	44,154	
1989	211,586	79,971	89,054	5,634	80,937	48,785	
1990	210,845	72,886	87,437	4,679	70,539	49,220	
1991	202,319	62,684	83,200	4,001	63,601	25,165	
1992	176,430	56,287	66,967	5,802	60,443	22,949	
1993	166,260	49,345	65,704	1,547	62,175	14,920	
1994	189,664	50,258	68,840	1,239	57,381	18,294	
1995	200,302	50,839	68,499	4,361	57,495	15,954	
1996	205,592	44,974	75,870	2,623	56,382	21,914	
1997	205,203	35,473	51,785	2,872	43,632	12,330	
1998	184,585	32,378	54,588	1,604	53,859	13,502	
1999[a]	181,673	41,117	50,254	2,456	46,994	11,390	
2000[b]	167,521	39,957	46,311	1,572	35,395	6,043	
2001	122,906	24,591	36,125	2,933	36,760	5,757	
2002	127,599	20,887	27,945	1,692	25,482	4,417	

Year	Pheasant	Quail	Cottontail	Jackrabbit	Squirrel	Huns	Mourning Dove
2003	142,233	24,895	31,600	326	27,863	4,054	
2004	130,583	22,336	32,195	600	29,302	4,537	
2005	136,192	18,578	40,225	1,870	25,943	7,147	
2006	118,680	22,556	34,292	1,989	27,746	5,553	
2007	109,229	18,234	31,106	1,502	23,160	3,819	
2008	85,871	13,095	27,191	1,405	22,857	2,996	
2009	74,017	10,179	25,840	1,894	24,586	3,705	
2010	60,058	10,604	22,005	541	23,440	1,229	
2011	45,975	9,436	17,197	Closed	20,420	1,782	8,780
2012	47,180	8,769	18,247		21,698	1,481	9,328
2013	40,981	6,485	18,903		20,203	1,651	8,208
2014	49,925	6,546	20,904		19,704	1,631	11,396
2015	56,159	9,762	24,838		25,081	1,994	11,353
2016	57,218	10,005	23,475		21,874	2,686	13,409
2017[c]	54,915	8,568	23,814		18,428	2,847	9,982
2018	53,266	9,882	20,523		16,749	2,379	9,767
2019	51,891	8,131	15,173		16,018	1,561	9,000
Statistics:							
10 Yr Avg.	51,757	8714	20,456	541	20,349	1,841	10,090
LT Avg.	183,179	50,773	87,837	9,005	73,396	15,507	10,090
Percent Change from:							
2019	-2.6	-17.7	-26.1		-4.4	-34.4	-7.9
10 Yr Avg.	0.3	-6.7	-25.8		-21.3	-15.2	-10.8
LT Avg.	-71.7	-84.0	-82.7		-78.2	-89.9	-10.8

[a]Small Game Harvest Survey changed from a single to a double mailing. Hunter estimates from 1999-Present are more conservative than pre-1999 estimates.
[b]Survey methodology changed account for unrealistic harvest (e.g. report of 1 bird harvested for 60 days effort).
[c]Survey methodology changed for unrealistic harvest/days for quail, huns, rabbits, squirrel, and doves
*Nomsen RC. 1961. Results of the 1958 and 1959 Pheasant Hunter Survey. Ia Acad. Sci. 68:281-283.

Table 5.10 Iowa's ring-necked pheasant hunting seasons

Year	Dates Regular/Youth	Season Length (days)	Shooting Hours	Limit Bag/Poss.		# Counties Open
				Regular	Youth	
1925	22-24 Oct	3	½ hr before sunrise-1200	3/?		13
1926	14-16 Oct	3	½ hr before sunrise-½ hr after sunset	3/9		18
1927	14, 15, 21, 22, 29 Oct	5 in 3 counties		3/?		17
		3 in 14 counties	½ hr sunrise-sunset	3/?		
1928	No Season					
1929	30 Oct-2 Nov	3	½ hr sunrise-sunset	3 any sex/?		24
1930	1, 5, 6, 14, 15 Nov	5	½ hr sunrise-sunset	3 any sex/?		31
1931	6-7 Nov	2	½ hr sunrise-sunset	3 any sex/?		23
1932	16, 18, 19	3	1200-sunset	3 (1 hen)/6 (2 hens)		21

Year	Dates Regular/Youth	Season Length (days)	Shooting Hours	Limit Bag/Poss.		# Counties Open
				Regular	Youth	
1933	10, 11, 17, 18, 25, 28 Nov	6 days in all/ parts of 11 counties	1200-1700	3/6		30
		4 days in all/ part of 25 counties (6 counties were in both zones)	1200-1700	3/6		
1934	24, 27, 28 Nov	3	1200-1700	3/6		27
1935	20-26 Nov	7	1200-1700	3 (1 hen)/6 (2 hens)		38
1936	No Season					
1937	No Season					
1938	12-14 Nov	3	1200-1700	3/6		42
1939	12-14 Nov	3	1200-1700	3/6		42
1940	12-18 Nov	7	1200-1700	3/6		46
1941	12-18 Nov	7	1200-1700	3/6		53
1942	12 Nov-2 Dec	21 in 39 counties	1200-1700	3/6		59
	12-18 Nov	7 in 20 counties	1200-1700	3/6		
1943	15-22 Mar	8	0900-1700	5 (2 hens)/10 (4 hens)		11 (Spring)
	28 Oct-3 Dec	37 in 38 counties	0900-1700	6 (1 hen)/12 (2 hens)		65 (Fall)
	28 Oct-7 Nov	11 in 27 counties	0900-1700	3/12		
1944	28 Oct-8 Dec	42 in 37 counties	0900-1700	6/18		64
	28 Oct-6 Nov	10 in 27 counties	0900-1700	3/18		
1945	28 Oct-30 Nov	34 in 36 counties	0900-1700	4/8		66
	28 Oct-6 Nov	10 in 30 counties	0900-1700	4/8		
1946	28 Oct-17 Nov	21	1000-1600	3/6		59
1947	11 Nov-20 Nov	10	1200-1600	2/2		64
1948	11 Nov-30 Nov	20	1200-1600	2/4		68
	11 Nov-5 Dec	25	1200-1630	2/4		68
1949	11 Nov-17 Nov	7	1200-1630	2/4		11
1950	11 Nov-5 Dec	25	1200-1630	3/3		70
	11 Nov-20 Nov	10	1200-1630	3/3		13
1951	11 Nov-5 Dec	25	1200-1630	3/3		65
	11 Nov-22 Nov	12	1200-1630	3/3		27
1952	18 Nov-12 Dec	25	1200-1630	3/3		65
	18 Nov-29 Nov	12	1200-1630	3/3		27
1953	11 Nov-5 Dec	25	1200-1630	3/3		69
	11 Nov-22 Nov	12	1200-1630	3/3		23
1954	11 Nov-5 Dec	25	1200-1630	3/3		70
	11 Nov-22 Nov	12	1200-1630	3/3		22
1955	12 Nov-5 Dec	24	1200-1630	3/3		70
	12 Nov-24 Nov	13	1200-1630	3/3		22
1956	10 Nov-3 Dec	24	1200-1630	3/3		70
	10 Nov-22 Nov	13	1200-1630	3/3		22
1957	9 Nov-2 Dec	24	1200-1630	3/3		70
	9 Nov-21 Nov	13	1200-1630	3/3		22
1958	8 Nov-1 Dec	24	1000-1630	3/6		70

Year	Dates Regular/Youth	Season Length (days)	Shooting Hours	Limit Bag/Poss.		# Counties Open
				Regular	Youth	
	8 Nov-23 Nov	16	1000-1630	3/6		22
1959	14 Nov-7 Dec	24	0900-1630	3/6		70
	14 Nov-29 Nov	16	0900-1630	3/6		22
1960	5 Nov-28 Nov	24	0900-1630	3/6		92
1961	11 Nov-15 Dec	35	0900-1630	3/6		92
1962	10 Nov-14 Dec	35	0900-1630	3/6		92
1963-64	9 Nov-1 Jan	54	0830-1700	3/9		92
1964-65	7 Nov-3 Jan	58	0830-1700	3/9		92
1965-66	13 Nov-2 Jan	51	0830-1600	2/6		92
1966-67	12 Nov-2 Jan	52	0800-1630	3/6		92
1967-68	11 Nov-1 Jan	52	0800-1630	3/6		94
1968-69	9 Nov-31 Dec	53	0800-1630	3/6		94
1969-70	8 Nov-31 Dec	54	0800-1630	3/6		94
1970-71	14 Nov-3 Jan	51	0800-1630	3/6		94
1971-72	13 Nov-2 Jan	51	0800-1630	3/6		96
1972-73	11 Nov-1 Jan	52	0800-1630	3/12		96
1973-74	10 Nov-6 Jan	58	0800-1630	3/12		96
1974-75	9 Nov-5 Jan	58	Sunrise-Sunset	3/12		97
1975-76	8 Nov-4 Jan	58	0800-1630	3/6		97
1976-77	6 Nov-2 Jan	58	0800-1630	3/6		Statewide
1977-78	5 Nov-1 Jan	58	0800-1630	3/6		Statewide
1978-79	4 Nov-1 Jan	60	0800-1630	3/6		Statewide
1979-80	3 Nov-6 Jan	65	0800-1630	3/6		Statewide
1980-81	1 Nov-4 Jan	65	0800-1630	3/6		Statewide
1981-82	7 Nov-3 Jan	58	0800-1630	3/6		Statewide
1982-83	6 Nov-2 Jan	58	0800-1630	3/6		Statewide
1983-84	5 Nov-1 Jan	58	0800-1630	3/6		Statewide
1984-85	3 Nov-1 Jan	60	↓	3/6		↓
1985-86	2 Nov-5 Jan	65		3/9		
1986-87	1 Nov-4 Jan	65		3/9		
1987-88	31 Oct-3 Jan	65		3/12		
1988-89	29 Oct-8 Jan	72		↓		
1989-90	28 Oct-10 Jan	75				
1990-91	27 Oct-10 Jan	76				
1991-92	26 Oct-10 Jan	77				
1992-93	31 Oct-10 Jan	72				
1993-94	30 Oct-10 Jan	72				
1994-95	29 Oct-10 Jan	74				
1995-96	28 Oct-10 Jan	75				
1996-97	26 Oct-10 Jan	77				
1997-98[1]	26 Oct-10 Jan/18-19 Oct	77/2			1/2	
1998-99	31 Oct-10 Jan/23-24 Oct	72/2			↓	
1999-00	30 Oct-10 Jan/22-23 Oct	73/2				

Year	Dates Regular/Youth	Season Length (days)	Shooting Hours	Limit Bag/Poss.		# Counties Open
				Regular	Youth	
2000-01	28 Oct-10 Jan/21-22 Oct	75/2				
2001-02	27 Oct-10 Jan/20-21 Oct	76/2				
2002-03	26 Oct-10 Jan/19-20 Oct	77/2				
2003-04	25 Oct-10 Jan/18-19 Oct	78/2				
2004-05	30 Oct-10 Jan/23-24 Oct	73/2				
2005-06	29 Oct-10 Jan/22-23 Oct	74/2				
2006-07	28 Oct-10 Jan/21-22 Oct	75/2				
2007-08	27 Oct-10 Jan/21-22 Oct	76/2				
2008-09	25 Oct-10 Jan/18-19 Oct	78/2				
2009-10	31 Oct-10 Jan/24-25 Oct	72/2				
2010-11	30 Oct-10 Jan/23-24 Oct	73/2				
2011-12	29 Oct-10 Jan/22-23 Oct	74/2				
2012-13	27 Oct-10 Jan/20-21 Oct	76/2				
2013-14	26 Oct-10 Jan/19-20 Oct	77/2				
2014-15	25 Oct-10 Jan/18-19 Oct	78/2				
2015-16	31 Oct-10 Jan/24-25 Oct	72/2				
2016-17	29 Oct-10 Jan/22-23 Oct	74/2				
2017-18	28 Oct-10 Jan/21-22 Oct	75/2				
2018-19	27 Oct-10 Jan/20-21 Oct	76/2				
2019-20	26 Oct-10 Jan/19-20 Oct	77/2				
2020-21	31 Oct-10 Jan/24-25 Oct	77/2				

[1]Iowa's first youth pheasant season, open to resident hunters 15 years or younger.

Table 5.11 Iowa's Bobwhite quail hunting seasons

Year	Dates	Season Length	Shooting Hours	Limit Bag/Poss	Area Open
1963-64	2 Nov-1 Jan	61	0830-1700	6/12	Statewide
1964-65	31 Oct-3 Jan	65	0830-1700	8/16	↓
1965-66	6 Nov-31 Jan	86	0830-1600	8/16	
1966-67	22 Oct-31 Jan	102	0800-1630	8/16	
1967-68	21 Oct-28 Jan	103	0800-1630	8/16	
1968-69	26 Oct-31 Jan	98	0800-1630	8/16	
1969-70	25 Oct-31 Jan	99	0800-1630	8/16	
1970-71	24 Oct-31 Jan	100	0800-1630	8/16	
1971-72	23 Oct-31 Jan	101	0800-1630	8/16	
1972-73	28 Oct-31 Jan	96	0800-1630	8/16	
1973-74	27 Oct-31 Jan	97	0800-1630	8/16	
1974-75	26 Oct-31 Jan	98	Sunrise-Sunset	8/16	
1975-76	25 Oct-31 Jan	99	0800-1630	8/16	
1976-77	6 Nov-31 Jan	86	↓	8/16	
1977-78	5 Nov-31 Jan	87		8/16	
1978-79	4 Nov-31 Jan	88		8/16	
1979-80	3 Nov-6 Jan	64		6/12	

Year	Dates	Season Length	Shooting Hours	Limit Bag/Poss	Area Open
1980-81	1 Nov-31 Jan	92		8/16	
1981-82	7 Nov-31 Jan	86		↓	
1982-83	6 Nov-31 Jan	87			
1983-84	5 Nov-31 Jan	88			
1984-85	3 Nov-31 Jan	90			
1985-86	2 Nov-31 Jan	91			
1986-87	1 Nov-31 Jan	92			
1987-88	31 Oct-31 Jan	93			
1988-89	29 Oct-31 Jan	95			
1989-90	28 Oct-31 Jan	96			
1990-91	27 Oct-31 Jan	97			
1991-92	26 Oct-31 Jan	98			
1992-93	31 Oct-31 Jan	93			
1993-94	30 Oct-31 Jan	93			
1994-95	29 Oct-31 Jan	95			
1995-96	28 Oct-31 Jan	96			
1996-97	26 Oct-31 Jan	98			
1997-98	25 Oct-31 Jan	99			
1998-99	31 Oct-31 Jan	93			
1999-00	30 Oct-31 Jan	94			
2000-01	28 Oct-31 Jan	96			
2001-02	27 Oct-31 Jan	97			
2002-03	26 Oct-31 Jan	98			
2003-04	25 Oct-31 Jan	99			
2004-05	30 Oct-31 Jan	94			
2005-06	29 Oct-31 Jan	95			
2006-07	28 Oct-31 Jan	96			
2007-08	27 Oct-31 Jan	97			
2008-09	25 Oct-31 Jan	99			
2009-10	31 Oct-31 Jan	93			
2010-11	30 Oct-31 Jan	94			
2011-12	29 Oct-31 Jan	95			
2012-13	27 Oct-31 Jan	97			
2013-14	26 Oct-31 Jan	98			
2014-15	25 Oct-31 Jan	99			
2015-16	31 Oct-31 Jan	93			
2016-17	29 Oct-31 Jan	95			
2017-18	28 Oct-31 Jan	96			
2018-19	27 Oct-31 Jan	97			
2019-20	26 Oct-31 Jan	98			
2020-21	31 Oct-31 Jan	93			

Table 5.12 Iowa's Hungarian partridge hunting seasons

Year	Dates	Season Length	Shooting Hours	Limit Bag/Poss	Area Open
1963-64	9 Nov-1 Jan	54	0830-1700	2/4	16 NW Counties
1964-65	7 Nov-3 Jan	58	0830-1700	2/4	W US 65, N US 20
1965-66	13 Nov-2 Jan	51	0830-1600	2/4	W US 65, N US 20
1966-67	12 Nov-2 Jan	52	0800-1630	2/4	W US 65, N US 20
1967-68	11 Nov-1 Jan	52	0800-1630	2/4	W US 65, N US 20
1968-69	9 Nov-31 Dec	53	0800-1630	4-Feb	?
1969-70	8 Nov-31 Dec	54	0800-1630	2/4	?
1970-71	14 Nov-3 Jan	51	0800-1630	2/4	W. US 65; N. US 30, I29, STATE 141
1971-72	13 Nov-2 Jan	51	0800-1630	2/4	W. US 65; N. US 30, I29, STATE 141
1972-73	11 Nov-1 Jan	52	0800-1630	4/8	W. US 65; N. US 30, I29, STATE 141
1973-74	10 Nov-6 Jan	58	0800-1630	4/8	N. US 30
1974-75	9 Nov-5 Jan	58	Sunrise-Sunset	4/8	N. US 30
1975-76	8 Nov-4 Jan	58	0800-1630	4/8	N. US 30
1976-77	6 Nov-2 Jan	58	↓	4/8	N. US 30
1977-78	5 Nov-1 Jan	58		6/12	N. US 30
1978-79	4 Nov-1 Jan	60		6/12	N. US 30
1979-80	3 Nov-6 Jan	65		6/12	N. US 30
1980-81	1 Nov-31 Jan	92		6/12	N. I-80
1981-82	7 Nov-31 Jan	86		6/12	N. I-80
1982-83	6 Nov-31 Jan	87		6/12	N. I-80
1983-84	5 Nov-31 Jan	88		6/12	N. I-80
1984-85	3 Nov-31 Jan	90		6/12	N. I-80
1985-86	2 Nov-31 Jan	91		6/12	N. I-80
1986-87	1 Nov-31 Jan	92		6/12	STATEWIDE
1987-88	31 Oct-31 Jan	93		8/16	↓
1988-89	29 Oct-31 Jan	94		↓	
1989-90	7 Oct-31 Jan	117			
1990-91	6 Oct-31 Jan	118			
1991-92	5 Oct-31 Jan	119			
1992-93	10 Oct-31 Jan	114			
1993-94	9 Oct-31 Jan	115			
1994-95	8 Oct-31 Jan	116			
1995-96	14 Oct-31 Jan	109			
1996-97	12 Oct-31 Jan	112			
1997-98	11 Oct-31 Jan	113			
1998-99	10 Oct-31 Jan	114			
1999-00	9 Oct-31 Jan	115			
2000-01	14 Oct-31 Jan	110			
2001-02	13 Oct-31 Jan	111			
2002-03	12 Oct-31 Jan	112			

Year	Dates	Season Length	Shooting Hours	Limit Bag/Poss	Area Open
2003-04	11 Oct-31 Jan	113			
2004-05	9 Oct-31 Jan	115			
2005-06	8 Oct-31 Jan	116			
2006-07	7 Oct-31 Jan	117			
2007-08	13 Oct-31 Jan	111			
2008-09	11 Oct-31 Jan	113			
2009-10	10 Oct-31 Jan	114			
2010-11	9 Oct-31 Jan	115			
2011-12	8 Oct-31 Jan	116			
2012-13	13 Oct-31 Jan	111			
2013-14	12 Oct-31 Jan	112			
2014-15	11 Oct-31 Jan	113			
2015-16	10 Oct-31 Jan	114			
2016-17	8 Oct-31 Jan	116			
2017-18	14 Oct-31 Jan	110			
2018-19	13 Oct-31 Jan	111			
2019-20	12 Oct-31 Jan	112			
2020-21	10 Oct-31 Jan	114			

Table 5.13 Iowa's cottontail and jackrabbit seasons

Year	Dates Cottontail/Jackrabbit	Season Length	Shooting Hours	Limit-Bag/Poss		Area Open
				Cottontail	Jackrabbit	
1963-64	14 Sep-23 Feb	163	0600-1800	Aggregate	10/None	Statewide
1964-65	12 Sep-21 Feb	163	0600-1800	Aggregate	10/None	↓
1965-66	12 Sep-21 Feb	163	0600-1800	Aggregate	10/None	
1966-67	10 Sep-19 Feb	163	0600-1800	Aggregate	10/None	
1967-68	15 Sep-17 Feb	163	0600-1800	Aggregate	10/None	
1968-69	14 Sep-16 Feb	163	0600-1800	Aggregate	10/None	
1969-70	13 Sep-15 Feb	163	0600-1800	Aggregate	10/None	
1970-71	12 Sep-28 Feb	170	0600-1800	Aggregate	10/None	
1971-72	11 Sep-29 Feb	171	0600-1800	Aggregate	10/None	
1972-73	9 Sep-28 Feb	173	0600-1800	Aggregate	10/None	
1973-74	8 Sep-28 Feb	174	0600-1800	Aggregate	10/None	
1974-75	7 Sep-28 Feb	175	Sunrise-Sunset	Aggregate	10/None	
1975-76	6 Sep-28 Feb	176	↓	Aggregate	10/None	
1976-77	11 Sep-28 Feb	171		Aggregate	10/None	
1977-78	3 Sep-28 Feb	179		Aggregate	10/None	
1978-79	2 Sep-28 Feb/4 Nov-7 Jan	180/65		10/None	3/6	
1979-80	1 Sep-29 Feb/3 Nov-6 Jan	182/65		10/20	3/6	
1980-81	6 Sep-28 Feb/1 Nov-4 Jan	176/65		↓	3/6	
1981-82	5 Sep-28 Feb/7 Nov-3 Jan	177/58			3/6	
1982-83	4 Sep-28 Feb/6 Nov-2 Jan	178/58			3/6	
1983-84	3 Sep-29 Feb/5 Nov-18 Dec	180/44			3/6	

Year	Dates Cottontail/Jackrabbit	Season Length	Shooting Hours	Limit-Bag/Poss		Area Open
				Cottontail	Jackrabbit	
1984-85	1 Sep-28 Feb/3 Nov-16 Dec	181/44			3/6	
1985-86	31 Aug-28 Feb/2 Nov-15 Dec	182/44			3/6	
1986-87	30 Aug-28 Feb/1 Nov-14 Dec	183/44			3/6	
1987-88	5 Sep-29 Feb/31 Oct-13 Dec	178/44			3/6	
1988-89	3 Sep-28 Feb/28 Oct-10 Dec	179/44			3/6	
1989-90	2 Sep-28 Feb/29 Oct-11 Dec	180/44			3/6	
1990-91	1 Sep-28 Feb/27 Oct-9 Dec	181/44			3/6	
1991-92	31 Aug-29 Feb/26 Oct-8 Dec	183/44			3/6	
1992-93	5 Sep-28 Feb/31 Oct-6 Dec	177/37			3/6	
1993-94	4 Sep-28 Feb/30 Oct-5 Dec	176/37			2/4	
1994-95	3 Sep-28 Feb/29 Oct-4 Dec	177/37			2/4	
1995-96	2 Sep-28 Feb/28 Oct-1 Dec	178/35			2/4	
1996-97	7 Sep-28 Feb/26 Oct-1 Dec	174/37			2/4	
1997-98	1 Sep-28 Feb/25 Oct-1 Dec	181/38			2/4	
1998-99	1 Sep-28 Feb/31 Oct-1 Dec	181/32			2/4	
1999-00	1 Sep-28 Feb/30 Oct-1 Dec	181/33			2/4	
2000-01	1 Sep-28 Feb/28 Oct-1 Dec	181/35			2/4	
2001-02	1 Sep-28 Feb/27 Oct-1 Dec	181/36			2/4	
2002-03	1 Sep-28 Feb/26 Oct-1 Dec	181/37			2/4	
2003-04	1 Sep-28 Feb/25 Oct-1 Dec	181/38			2/4	
2004-05	1 Sep-28 Feb/30 Oct-1 Dec	181/33			2/4	
2005-06	1 Sep-28 Feb/29 Oct-1 Dec	181/34			2/4	
2006-07	1 Sep-28 Feb/28 Oct-1 Dec	181/35			1/2	
2007-08	1 Sep-28 Feb/27 Oct-1 Dec[a]	181/36			1/2	
2008-09	30 Aug-28 Feb/25 Oct-1 Dec	182/38			1/2	
2009-10	5 Sep-28 Feb/31 Oct-1 Dec	177/32			1/2	
2010-11	4 Sep-28 Feb/30 Oct-1 Dec	178/33			1/2	
2011-12	3 Sep-28 Feb/Closed	179/Closed			Closed	
2012-13	1 Sep-28 Feb/Closed	181/Closed			↓	
2013-14	31 Aug-28 Feb/Closed	182/Closed				
2014-15	30 Aug-28 Feb/Closed	183/Closed				
2015-16	5 Sep-28 Feb/Closed	177/Closed				
2016-17	3 Sep-28 Feb/Closed	179/Closed				
2017-18	2 Sep-28 Feb/Closed	189/Closed				
2018-19	1 Sep-28 Feb/Closed	181/Closed				
2019-20	31 Aug-28 Feb/Closed	182/Closed				
2020-21	5 Sep-28 Feb/Closed	177/Closed				

1963-1977 Seasons and limits are an aggregate of Cottontails and Jackrabbits.

[a]Cottontail opener changed from 1 Sep to Saturday before Labor Day.

Table 5.14 Iowa's dove seasons[a]

Year	Dates	Season Length	Shooting Hours	Limit Bag/Poss	Area Open
2011-12	1 Sep-9 Nov	70	½ hr before Sunrise-Sunset	15/30	Statewide
2012-13	1 Sep-9 Nov	↓	↓	↓	↓
2013-14	1 Sep-9 Nov				
2014-15	1 Sep-9 Nov				
2015-16	1 Sep-9 Nov				
2016-17	1 Sep-9 Nov				
2017-18	1 Sep-29 Nov	90			
2018-19	1 Sep-29 Nov	↓			
2019-20	1 Sep-29 Nov				
2020-21	2 Sep-29 Nov				

[a]Governor signed SF464 giving the DNR authority to establish the state's first mourning dove season in 2011.

Dove species in Iowa include mourning, Eurasian collared, and white winged.

WILDLIFE RESTORATION 2019-2020 ACTIVITIES

Greater Prairie Chicken Restoration

Historical Review

Greater prairie chickens (*Tympanuchus cupido pinnatus*) commonly nested throughout Iowa from the time of European settlement in the mid-nineteenth century until about 1900. Numbers peaked about 1880 when most of Iowa was a mosaic of small grain fields, hayfields, pasture, and native prairie, which provided ideal habitat conditions (Ehresman 1996). During the late nineteenth century, prairie chickens were the most abundant gamebird on Iowa prairies. Hunting and trapping them for food and market were very important to settlers. Bags of 25 to 50 a day were common, and some hunters took up to 200 per day.

By 1878, Iowa lawmakers were concerned that prairie chickens were being over- harvested. The Iowa Legislature passed a law that year limiting the daily bag of prairie chickens to 25 birds per person. This is believed to be the first time that bag limits were used as a tool to regulate the harvest of game in the United States. Additional restrictions followed, and the last open season for prairie chickens in Iowa was held in 1915 (Stempel and Rodgers 1960).

As agricultural land use intensified, populations of prairie chickens started to decline. By the 1930's, most prairie chickens found in the northwestern part of the state were migrant winter flocks. By the 1950's, the only known nesting prairie chickens were in Appanoose, Wayne, and Ringgold Counties in southern Iowa. The last verified nesting prior to reintroduction attempts was in Appanoose County in 1952 (Stempel and Rodgers 1960).

Restoration

First Reintroduction

In the early 1980's, the Iowa Conservation Commission, now the Iowa Department of Natural Resources (DNR), attempted to restore prairie chickens to west central Iowa. The DNR negotiated with the Kansas Fish and Game Commission (KFGC), now Kansas Department of Wildlife and Parks (KDWP), to trade wild turkeys for 100 prairie chickens (Table 6.1). The release site was located in the Loess Hills east of Onawa, Monona County (Figure 6.1). This is an area of steep to moderately rolling bluffs and hills bordering the Missouri River valley. These hills have large expanses of grassland interspersed with brush and small crop fields.

Fifty-three prairie chickens were released in 1980. Results from the first release were generally poor. No spring leks were located in the 2 years following the release, and no reproduction was reported.

In 1982, KFGC personnel decided to attempt a different trapping approach, using rocket- nets to trap chickens on the lek sites. This resulted in 48 more chickens being transported to Iowa for release at the same area in the Loess Hills. A greater effort to acclimatize the birds was made in the 1982 release. The birds were banded and put in a large holding pen with separate cells for each sex. They were kept in pens overnight for the males and a day longer for the females. It was hoped that males would be stimulated to remain near the release site by holding the females a day longer. Taped lek calls were also played through speakers located near the pen about 45 minutes prior to releasing males. This was an attempt to induce chickens to establish a lek in the area.

Two prairie chicken broods were reported near the release site in 1982, and up to six adults were observed near the Missouri River bottom the same year. Two leks consisting of only a few displaying males were located in 1983 and 1984. Most sightings were in the heavily agricultural Missouri River valley instead of the hills where they were released. Suitable grassland habitat was lacking in the valley. Only an occasional sighting has been reported in this region since 1984, leading to the conclusion that this reintroduction effort failed (Ron Munkel, DNR, *pers. comm.*).

Second Reintroduction Attempt

1987-1989 Stockings: In 1987, the DNR made a second restoration attempt at Ringgold Wildlife Area located two miles north of the Missouri border in Ringgold County (Figure 6.1). Wildlife personnel considered this region to be the best potential prairie chicken habitat in Iowa. In addition, the immediate vicinity was one of the last strongholds of prairie chickens in southern Iowa and northern Missouri (Christisen 1985, Stempel and Rodgers 1960). The surrounding portions of Ringgold County and adjacent Harrison County, Missouri, are cattle country, with 60% or more of the land in permanent grass.

Donald Christisen (1985) concluded that the demise of prairie chickens in this area was due to heavy utilization of grasslands by livestock, resulting in poor quality habitat. Recent years had brought some positive changes in the grasslands of the area including the restoration of around 200 ha of prairie on the Ringgold Wildlife Area.

Birds were again obtained from Kansas through a three-way trade in which DNR supplied wild turkeys to the Michigan Department of Natural Resources (MDNR) while a MDNR crew trapped prairie chickens in Kansas for translocation to Iowa. Prairie chickens were captured in the spring with funnel traps set on booming grounds in the Flint Hills region of Kansas. Every few days the captured birds were transported to Iowa and released the next morning utilizing a soft release box and artificial lek technique, which had been successfully used in Kansas to reintroduce sharptail grouse (Rodgers 1987). A total of 254 prairie chickens were translocated to the Ringgold Wildlife Area from Kansas during 1987, 1988, and 1989 (Table 6.1).

By the spring of 1988, leks had been established at the release site and a site 15 km south in Missouri. The Missouri site was on the Dunn Ranch, a cattle ranch operated by Forrest and Maury Meadows of Bethany, Missouri. The ranch included about 500 ha of well- managed native prairie pasture in addition to several hundred hectares of cool season pasture. This ranch contained a major lek before the disappearance of prairie chickens in the 1960's. The lek established in 1988 was on the same site as the historic lek, and the birds using it were verified as Iowa release birds by the bands on their legs (Maury Meadows, *pers. comm.*).

During 1990 and 1991 reproductive conditions for gallinaceous birds were poor in this area; however, brood sightings were made each year. By 1991, prairie chickens appeared to be firmly established on Dunn Ranch, but only one lek of six males could be located in Iowa that year. The success of the reintroduction of prairie chickens to the Dunn Ranch was the bright spot of the project thus far. It was evident that reintroductions in this region could succeed.

1992-94 Stockings: An agreement with KDWP once again allowed DNR crews to trap and translocate 100 prairie chickens a year. Instead of releasing all of the birds at one site, it was decided to release significant numbers on large grassland tracts in the region, while releasing a smaller number at the original Ringgold Wildlife Area. Birds were translocated to two new sites in 1992, Mount Ayr and Kellerton, respectively 28 and 24 km north of Ringgold (Figure 6.1). Sites continued to shift in subsequent years and the Orient site (Adair County) was added in 1993. All of the sites contained high quality grasslands and open landscapes. Predominant land use at all three sites was a mixture of pasture, hay, and CRP.

A total of 304 prairie chickens were released in this three-year period (Table 6.1).

Subsequent Stocking: No additional stockings were anticipated following releases in 1994. However, in 2001, South Dakota Game Fish and Parks (SDGFP) employees incidentally trapped three prairie chickens and offered them to DNR. One male and two female chickens were released at the Kellerton lek in April 2001. This additional release results in a total of 561 prairie chickens translocated to Iowa since 1987.

Missouri Reintroduction: The Missouri Department of Conservation (MDC) were also reintroducing prairie chickens in north central Missouri from 1993 to 2000. Approximately 100 birds were released each year through 1997 and again in 2000. They have released birds at eight sites located 60 to 100 km southeast of the Ringgold Wildlife Area and 10 to 40 km south of the Iowa border (Larry Mechlin, MDC, *pers. comm.*). Some of these birds were spotted in Iowa over the years.

Continued Restoration

Current Restoration Attempts: In 2012 the Iowa DNR assembled an Iowa Management Plan for Greater Prairie Chickens. The plan includes a relatively detailed analysis of habitat in Ringgold County, Iowa and recommendations for managing that habitat for prairie chickens. A portion of the plan also proposes a translocation effort to bolster the diminishing population of birds.

In the short-term, the plan suggested trapping and releasing roughly 350 birds between 2012 and 2015. This goal was accomplished with 328 birds, half male and half female, trapped and released over this four-year period.The trapped birds were split in 2013- 2015 with roughly 60% of the birds being released near Kellerton, IA and 40% released at Dunn Ranch (TNC) in Harrison County, MO. The birds were documented moving between Dunn Ranch and Kellerton using transmitters.

In 2016 and 2017, the Missouri Department of Conservation extended the trapping and translocation project, successfully releasing 195 more birds from Nebraska across the two years. The ratio of released birds was reversed with 40% of the birds (50/50 male/female split) in IA at Kellerton WA and 60% in MO at Dunn Ranch. This cooperative work between Iowa DNR, Missouri Department of Conservation and The Nature Conservancy all takes place in the roughly 140,000-acre Grand River Grasslands focal area that straddles the state line.

A complete list of the numbers of birds and where they were released can be found in Table 6.1.

Booming Ground Survey

Methods

Attempts have been made each spring by DNR personnel and volunteers to locate leks and count booming males. Counts of known leks are made on sunny mornings with winds <10 mph throughout the last part of March and through the month of April. In the past, lek sites were glassed or flushed to determine the number of booming males and new leks were located by driving gravel roads and stopping periodically to listen for booming. A more formalized survey was started in 2009, using a prairie chicken habitat suitability model to establish 10 Survey Areas across 8 southern Iowa counties. The area surveyed has been adjusted a few times to accommodate staff time and reasonable effort and as of 2020 covers all or parts of 4 counties (not including two counties in Missouri) and 35 survey sites. All 35 sites were surveyed at least twice and up to three times between March 20th and late April (Figure 6.2). Also, since 2016, a blitz-type survey has been performed which involves multiple staff going out on a designated single morning and spending 30 minutes at each of 13 sites. These sites were chosen based on a recent (last 15 years) and consistent history of holding an active Lek or because they were the site of a prairie chicken sighting during the current spring. Similar counts were done on and around the Dunn Ranch in Missouri. It is possible that some booming grounds have not been located.

Results (Current and Previous 10 Years)

2010: The 2010 lek survey recorded 3 established lek sites in Ringgold County. The well-established Kellerton lek had a high of only 8 males however a high of 7 was collected on another satellite lek site and an additional 4 were observed on the final lek site, north of Kellerton (Table 6.2). Outside of the lek survey an additional 6 females were observed on one of the satellite lek sites. The average number of males observed per lek was the highest it has been in the previous 10 years at 6.33. While this number should be somewhat encouraging it really seems to reflect the concentration of birds on fewer lek sites.

No prairie chicken nests or broods were located in the Kellerton area during 2010. However, two broods were flushed in two different fields at TNC's Dunn Ranch in northern Missouri. Other sightings in the Kellerton area include 2 observations of a winter flock containing 24-25 individual birds.

2011: Prairie Chickens were detected at 6 locations representing 3 lek sites. One of these areas, in Adams County, was previously unreported but despite additional visits with more intensive searching it was never confirmed as a lek site. It is presented here with the caveat that it is unconfirmed. A maximum of 6 males were detected at the lek on the Kellerton Wildlife Area. A maximum of 7 males were detected on the lek on private land northwest of the Kellerton Wildlife Area. The data for the lek in Adams County listed only "more than 1" bird heard. No females were detected during the survey though up to 2 were seen at other times on the private lek.

Flushing brood surveys at the Kellerton Wildlife Area on August 1 turned up 5 adult prairie chickens, 3 of which were female, but no broods.

2012: The 2012 lek survey covered a 25-mile radius around the two active lek/release sites and 47 sites were surveyed. All survey sites had been surveyed using the same methodology in 2011. Twenty-five sites were historically known lek sites and 22 were random survey points. Each site was visited around sunrise twice between April 1 and 25. Prairie chickens were detected on 4 different sites all on or within 1.5 miles of a currently active lek. A count of 14 birds was recorded on April 2nd before the translocation began and 17 birds were detected on April 18th including one bird seen on one new site. A survey of one active lek from a blind on April 17th counted 8 males and 2 females present with one of the birds wearing a leg band from the translocation.

Two broods have also been detected through opportunistic observations. One was located on the Kellerton Wildlife Area and one on private ground about 2 miles northwest of the Kellerton Lek. A total of 10 young were counted.

2013: The 2013 lek survey covered a 25-mile radius around the two active lek/release sites and 47 sites were surveyed. All survey sites had been surveyed using the same methodology since 2009. Twenty-five sites were historically known lek sites and 22 were random survey points. Each site was visited around sunrise twice between April 1 and 25. Prairie chickens were detected on 4 different sites all on or within 1.5 miles of a currently active lek. Post-release average counts of birds increased by an average of 1.23 birds from pre-release counts. The average maximum birds across the four active leks was seven. The maximum number of birds seen on one morning during the booming season was 24 birds. Outside of the formal lek survey (and normal booming season) prairie chicken booming was heard on a historic lek to the north of Kellerton on June 6.

Ten of the hens that were translocated in 2013 were fitted with satellite GPS transmitters. Only one of the hens remains under surveillance as of September 2013 and she was located in Southwest Union County, IA. Up to that time she had traveled over 1000 miles in large loops through Southern IA and Northern Missouri. Seven of the ten hens were confirmed mortalities with the other two having an unknown fate.

Two broods have been opportunistically observed on Kellerton WA: one with six young on June 26 and one with four young on August 9th. No broods were observed on a pilot roadside brood survey conducted in mid-July.

2014: In 2014, two additional lek survey routes were added in Iowa based on the dispersal data from birds released in 2013. This expanded the area covered to include two additional counties and a total of 6 routes and 71 survey sites. Two routes were also surveyed across the border in Missouri. Each site was surveyed 6 times between March 21st and May 8th. Prairie chickens were observed booming on two lek sites with a maximum of 21 birds counted in one survey.

Twelve of the translocated birds were fitted with GPS transmitters: 2 males and 10 females. As of August 26th, four out of the twelve birds are still being tracked (1 male and 3 hens) along with 1 hen from the 2013 release. Of the losses, seven are suspected mortalities and one slipped its transmitter. Two of the surviving hens successfully nested, one on the Kellerton Wildlife Area and the other at Pawnee Prairie in Missouri. The third is suspected to have nested on Dunn Ranch based on behavior but a nest was never located.

A formal roadside brood survey conducted in July did not pick up any prairie chicken broods however a number of broods were identified opportunistically throughout the nesting season. Brood sightings began being reported on the 17th of June and by July 15th there had been 13 confirmed sightings of chicken broods, some with collared hens and others not. These 13 sightings probably translate into an estimate of 11-13 separate broods, four in Missouri and 7-9 in

Iowa. A total of 85 young were reported from these sightings, ranging from 3-13 with an average brood size of 7.27.

2015: A total of 6 routes and 73 survey sites were surveyed in Iowa along with two routes across the border in Missouri. Each site was surveyed 4 times between March 20th and April 20th. Prairie chickens were observed booming on four lek sites with a maximum of 46 males counted booming in one survey at the two main leks and a total of 2, 2 and 5 birds reported at three new outlying lek sites.

Three of the translocated hens were fitted with GPS transmitters. As of August 21st, none of the three birds are still being tracked, 2 were mortalities and one was likely a malfunctioning transmitter. Two hens fitted with transmitters in 2014 were also still being followed up until July of 2015. Both birds appeared to nest successfully, one on Kellerton WA and one on Pawnee Prairie in Missouri but it is unknown if they were able to care for their broods through fledging.

No formal roadside brood survey was conducted in 2015 and only one brood with one young was identified opportunistically in Iowa on June 29th. There was at least one known nest on Kellerton WA located within 1 mile of the main lek. On the Missouri side of the Grand River Grasslands brood sightings were more abundant in the Dunn Ranch/Pawnee Prairie area.

2016: A total of 6 routes and 74 sites were surveyed in Iowa along with two routes across the border in Missouri. Each site was surveyed 1-4 times between March 20th and April 20th. Prairie chickens were observed booming on six lek sites though only two had five or more displaying males counted. A maximum of 44 birds were counted at the two main leks and a maximum of 1, 3, 3 and 4 birds reported at the outlying lek sites. Two of these outlying sites were newly detected this year.

The Blitz survey was performed on April 7, 2016 in Iowa and 54 total birds were counted on 4 of the 22 sites (Figure 6.2). Missouri could not do their Blitz survey on the same day but completed it on April 12, 2016. They surveyed 24 sites and observed a total of 47 birds on 7 of those sites.

Thirty of this year's translocated birds were fitted with radio transmitters by MDC, all of which were released in Missouri. Six of these birds attempted nests including one on Kellerton WA. The nest on Kellerton was depredated before hatching. Only one of the six monitored nests hatched successfully with a brood of 10 chicks on Dunn Ranch in Missouri. Another brood of 5 young was opportunistically spotted on Pawnee Prairie in MO and a brood of 14 pigeon-sized young was observed near the lek on Kellerton WA in early July. There have been a few other sightings in August of groups numbering 10-12 birds but it was difficult to say if they were young of the year.

The only other counts of birds available were informal reports of winter flocks. Iowa had three areas where flocks were seen: around the private lek site just north of Kellerton, around the private lek site near Tingly and on the Kellerton WA. A maximum of 19 birds was counted in the flock near Tingly, 42 on Kellerton WA and 26 near the private lek north of Kellerton. Birds from these flocks, especially the latter two, likely interchange and the counts were not made on the same days so it is impossible to provide a total for the whole area but these numbers provide an idea of the minimum number of birds in the area. There were at least 42 birds, and likely more, wintering in Ringgold County, IA.

2017: A total of 6 routes and 74 sites were surveyed in Iowa along with two routes across the border in Missouri. Each site was surveyed 1-4 times between March 20th and April 21st. Prairie chickens were observed booming on five lek sites though only three had five or more displaying males counted. A maximum of 36 birds were counted at the three main leks and a maximum of 1 bird reported at the other two outlying sites (Figure 6.2).

The Blitz survey was performed on April 6, 2017 in Iowa and Missouri. A total of 39 birds were counted on 5 of the 17 sites in Iowa (Figure 6.2). Missouri counted 64 birds on 9 sites out of a total of 30 sites surveyed.

There are no reports of nests or broods at this time.

The only other counts of birds available are informal reports of winter flocks. Iowa had three areas where flocks were seen: north of Kellerton WA, around the private lek site near Tingly and on the Kellerton WA. A maximum of 10 birds

were reported in the flock near Tingly, 32 on Kellerton WA and 9 north of Kellerton. Between the three flocks, there were at least 52 birds, wintering in Ringgold County, IA.

2018: During late March and April, 35 sites were surveyed at least twice for active prairie-chicken lekking. The blitz survey was performed on 13 sites on April 5, 2018.

Between these two surveys, Prairie-chickens were detected lekking on seven sites in Iowa though only two had five or more birds in attendance. The maximum number of birds counted in a single morning was 49 birds with the two main lek sites hosting 36 birds and 13 more birds counted on other lek sites. Missouri counted 33 birds on five lek sites during the blitz survey which was their maximum count on a single morning.

There are no reports of nests or broods at this time.

The only winter flock report was from a new location in SW Decatur County where a dozen birds were seen and 26 birds which were counted on Dunn Ranch in Missouri.

2019: Between March 20 and April 20th several lek-based surveys were performed in Iowa and Missouri. The blitz survey (all sites on IA and MO side surveyed on the same morning) was accomplished on April 5th, 2019.

Between these two surveys, Prairie-chickens were detected lekking on 3 sites in Iowa and 5 sites in Missouri which was a decline in active sites since 2018. A maximum number of 31 birds were detected on Iowa leks (Table 6.2 and Figure 6.2) and 23 on Missouri leks for a maximum total of 54 birds. This number represents the minimum number of birds known to exist in the Grand River Grassland greater landscape.

New this year, DNR staff tested survey protocols to count winter flocks of prairie chickens. Roads were driven after snow in a 6.4-kilometer radius around the Kellerton, Tingley, and Lamoni leks, and any Prairie-chicken flocks were mapped and counted (Svedarsky et.al, 2003). No birds were seen on the Lamoni survey, an average of 33.6 and maximum of 40 were counted in the Kellerton area and an average of 1.5 and maximum of 6 birds were seen on the Tingley (Figure 6.2). No decision has been made about whether to continue this survey in 2020.

2020: Repeated route lek surveys were performed on 35 sites between March 20 and April 20 and the blitz lek survey was conducted on April 6th, 2020.

Using the results of these two surveys a total of 4 active leks were detected in Iowa, 3 in Ringgold County and 1 in Decatur. A maximum total of 28 birds were counted on these 4 leks across the duration of the survey month, and 25 birds were counted on the morning of the blitz. One notable result was that one fairly stable satellite lek moved into different section and was not located until the second survey was performed.

On the Missouri side of the Grand River Grasslands, a maximum total of 35 birds were counted on the morning of the blitz. The results suggest that there is a minimum of between 60 to 63 males in the Grand River Grasslands landscape which would translate to a total minimum population of approximately 120 birds if sex ratios are equal.

This total was a slight increase from 2019 overall after two years of a declining trend. It indicates that the population is able to maintain itself and even perhaps slightly rebound after two unfavorable years. With favorable conditions during the brood season in 2020 and the winter of 2020-2021, another increase would be predicted if this is the case.

Discussion

Prairie chicken reintroduction efforts have resulted in a small population of prairie chickens in a concentrated area of southern Iowa and northern Missouri. Despite translocation efforts between 2012-2017, the population fell sharply from a high of 103 mostly males counted in 2017 to 54 counted in 2019. 2020's total of 60 birds indicates a slight rebound that will hopefully continue in 2021.

One other noticeable trend in 2020, was that the total birds counted in Iowa decreased while the birds in Missouri

increased. Whether this trend is a result of emigration/immigration or survival/reproduction is unknown.

Pasture and hay are still primary land uses in this region which benefits the chickens. The Iowa Prairie Chicken Management Plan sets objectives for not only prairie chicken population numbers but also for enhancing this landscape to increase the amount of native grass and provide more habitat for chickens and other grassland dependent wildlife. The Iowa DNR and many outside partners (The Nature Conservancy, The Missouri Department of Conservation, and The Iowa Natural Heritage Foundation) are implementing many actions to make progress on those objectives.

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Figures

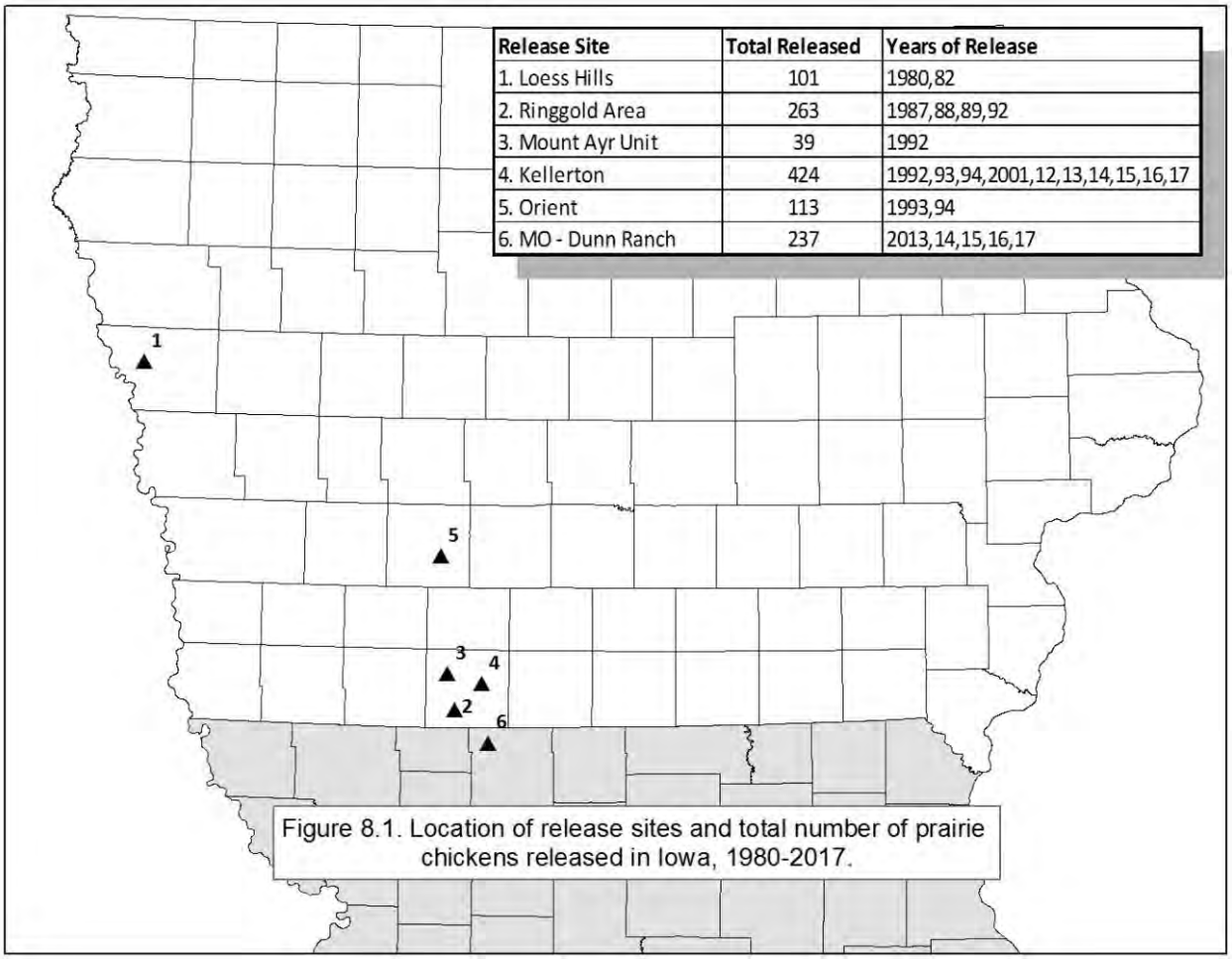

Figure 6.1 Location of release sites and total number of prairie chickens released in Iowa (1980-2017).

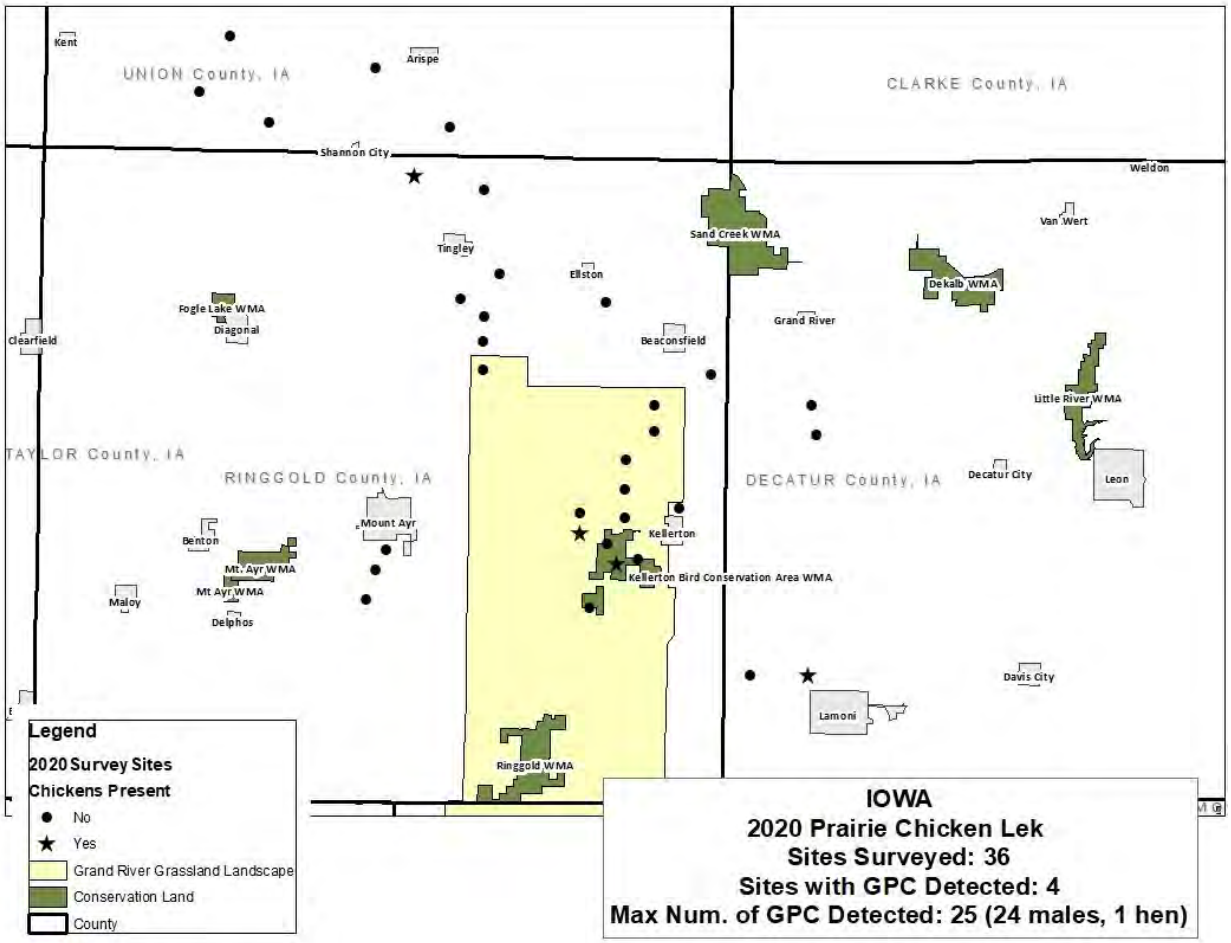

Figure 6.2 Location of sites surveyed and sites where chickens were detected during the 2020 Prairie-chicken lek surveys both routes based and blitz combined.

Tables

Table 6.1 Dates, numbers, and locations of greater prairie chicken releases in Iowa, 1980-2015.

Gamma (Γ) = male, Epsilon (E) = female. * KFGC = Kansas fish and Game Commission, KDWP = Kansas Department of Wildlife and Parks, SDGFP = South Dakota Game Fish and Parks Department, DNR = Iowa Department of Natural Resources, NGP = Nebraska Game and Parks, MDC = Missouri Department of Conservation. [1-5] Release sites indicated on county map (Figure 6.1)

Release Date	No. Released	Source*	Release Location
February 1980	29Γ, 24E	KFGC	Loess Hills Wildlife Area, Monona Co.1
April 1982	31Γ, 18E	KFGC	Loess Hills Wildlife Area, Monona Co.
April 1987	20Γ, 9E	KFGC	Ringgold Wildlife Area, Ringgold Co.2
April 1988	48Γ, 75E	KFGC	Ringgold Wildlife Area, Ringgold Co.
April 1989	40Γ, 62E	KFGC	Ringgold Wildlife Area, Ringgold Co.
April 1992	18Γ, 21E	KDWP (DNR trapping)	Mount Ayr, Ringgold Co., Price Twp., Sec. 13.3
April 1992	31Γ, 20E	KDWP (DNR trapping)	Kellerton, Ringgold Co., Athens Twp., Sec. 8.4
April 1992	9Γ, 9E	KDWP (DNR trapping)	Ringgold Wildlife Area, Ringgold Co., Lotts Creek Twp., Sec. 24.2
April 1993	13Γ, 33E	KDWP (DNR trapping)	Kellerton, Ringgold Co., Athens Twp., Sec. 8. 2
April 1993	24Γ, 24E	KDWP (DNR trapping)	Orient, Adair Co., Lee Twp., Sec. 36.5
April 1994	10Γ, 17E	KDWP (DNR trapping)	Kellerton, Ringgold Co., Athens Twp., Sec. 8.4
April 1994	31Γ, 34E	KDWP (DNR trapping)	Orient, Adair Co., Lee Twp., Sec. 36.5

Release Date	No. Released	Source*	Release Location
April 2001	1Γ, 2E	SDGFP	Kellerton, Ringgold Co., Athens Twp., Sec. 16.4
April, 2012	12Γ, 8E	NGP (DNR Trapping)	Kellerton, Ringgold Co., Athens Twp., Sec. 16.4
April, 2012	10Γ, 17E	NGP (DNR Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 6
April 2013	16Γ, 10E	NGP (DNR Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 164
April 2013	5Γ, 9E	NGP (DNR Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 6
April 2013	17Γ, 16E	NGP (DNR Trapping)	Dunn Ranch, Harrison Co., Missouri
April 2014	26Γ, 31E	NGP (DNR Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 164
April 2014	25Γ, 20E	NGP (DNR Trapping)	Dunn Ranch, Harrison Co., Missouri
April 2014	6Γ, 1E	NGP (DNR Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 6
April 2015	13Γ, 25E	NGP (DNR Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 164
April 2015	13Γ, 5E	NGP (DNR Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 6
April 2015	4Γ	NGP (DNR Trapping)	Kellerton, Ringgold Co., Monroe TWP., Sec. 14
April 2015	19Γ, 20E	NGP (DNR Trapping)	Dunn Ranch, Harrison Co., Missouri
April 2016	20Γ, 20E	NGP (MDC Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 164
April 2016	29Γ, 30E	NGP (MDC Trapping)	Dunn Ranch, Harrison Co., Missouri
April 2017	19Γ, 17E	NGP (MDC Trapping)	Kellerton, Ringgold Co., Athens TWP., Sec. 164
April 2017	28Γ, 33E	NGP (MDC Trapping)	Dunn Ranch, Harrison Co., Missouri

Table 6.2 Location and number of greater prairie chickens observed on active leks in Iowa, 2010-2020

County	Township	Legal Description			2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
		Twp.	Rge.	Sec.											
Adams	Douglas	72N	35W	26											
Adams	Prescott	72N	33W	4		2[a]									
Decatur	Grand River	69N	27W	16											
Decatur	Grand River	68N	27W	33											
Decatur	Garden Grove	70N	24W	36											
Ringgold	Athens	68N	28W	4	7										
Ringgold	Athens	68N	28W	16NE	8	6	2	9	17	35	28	17	24	18	16
Ringgold	Athens	68N	28W	16SW				9							
Ringgold	Athens	68N	28W	8				1							
Ringgold	Athens	68N	28W	17					1						
Ringgold	Athens	68N	28W	20			1								
Ringgold	Athens	68N	28W	7											6
Ringgold	Athens	68N	28W	6	4	7	9	9	4	11	16	11	12	8	
Ringgold	Athens	68N	28W	5			5								
Ringgold	Rice	68N	30W	24							4	1			
Ringgold	Monroe	69N	28W	28											
Ringgold	Monroe	69N	28W	12									4		
Ringgold	Monroe	69N	28W	15							3				
Ringgold	Monroe	69N	28W	22						2					
Ringgold	Tingley	70N	29W	10						5[c]	3	6	4	5	4
Ringgold	Liberty	69N	29W	3									1		
Ringgold	Tingley	70N	29W	34											
Wayne	Jackson	68N	21W	18											
Total Chickens[b]		mean=		31.73	19	13	17	24	22	55	55	36	49	31	28
Total Active Sites		mean=		4.182	3	2	4	4	3	5	6	5	7	3	4
Total Chickens/Sites[b]					6.33	6.50	4.25	6	7.3	11	9.2	7.2	7	10.3	7

[a] Not confirmed and number of birds heard listed as "more than 1"

[b] before 2009 = only males, maximum number of chickens counted on one morning, may not equal lek counts

[c] Not part of formal lek survey. Reported by others.

Trumpeter Swans

Trumpeter Swan Restoration

Prior to the settlement of Iowa, trumpeter swans nested throughout the state. However, wetland drainage and unregulated harvest of trumpeters together caused their demise. Prior to restoration, the last pair of wild nesting trumpeter swans in Iowa occurred in 1883 on the Twin Lakes Wildlife Area southwest of Belmond, Iowa in Hancock County. Trumpeter swans were first given nationwide protection in 1918 when the United States, Canada, and Mexico signed the International Migratory Bird Treaty. A nationwide survey in the early 1930's indicated that only 69 trumpeters existed in the continental United States with all of those occurring in Red Rock Lakes National Wildlife Refuge in southwest Montana. The Red Rock Lakes became the nation's first National Wildlife Refuge because of the presence of these trumpeter swans.

Trumpeter Swan Restoration Program

Beginning in 1993, the Iowa Department of Natural Resources developed a plan to restore trumpeter swans to the state. The first objective of the plan was to restore a self-sustaining, migratory population of trumpeter swans to its former nesting range in Iowa and the second objective was to "Trumpet the Cause for Wetlands".

After 115 years of absence, the first modern day hatch of three wild trumpeter swan cygnets occurred in 1998 in Dubuque County. In 2000, a second pair nested on a Winnebago County Conservation Board wetland (Russ Tract at Thorpe Park) 8 miles west of Forest City. Additional nest attempts and successful broods have continued to occur and increase throughout Iowa since. The reintroduction efforts have taken time, but have been a wonderful success.

There have been over 368 swan releases conducted by DNR staff with the public and media in attendance. With each swan release involving the public, the many positive values of wetlands have been presented. The swans serve as wonderful ambassadors for conservation and have garnered lots of attention and interest from the public, media, and landowners. DNR staff have used these opportunities to educate the public on the value of healthy wetlands to support "charismatic mega-fauna" such as Trumpeter Swans.

Swans used for the restoration project in Iowa have been obtained from 26 different states, including zoos, private propagators and other state swan restoration programs. A total of 132 sources and partnerships have been used to date. Once in Iowa, flightless breeder pairs are established at appropriate sites, the young of which are removed and later released for free flight across the state. There are currently sixteen active partnership breeding pair sites in the state. Funding to help support the DNR with this restoration program has come from a wide variety of swan enthusiasts, conservation groups, and charities. Considerable soft match/in-kind contributions have been made and are conservatively estimated at over 1.75 million dollars. These funds have been used to help cover the costs of feed, vet care, nesting site preparations, equipment, and the purchase of swans.

Additional Outreach-Upcoming Film

The Iowa DNR is partnering with the Trumpeter Swan Society and Steve Harryman (filmmaker) to assist in the production of an upcoming film: *Return of Trumpeters* (film trailer https://vimeo.com/56795018), due out in 2022.

Marked Swans and Reported Observations

Through the summer of 2008 nearly all trumpeter swans released in Iowa were marked with plastic green or red neck collars and leg bands, along with U.S. Fish and Wildlife Service metal leg bands. The plastic neck collars and leg bands are marked with alpha letters C, F, H, J, K, P, T, M, and two numbers, 00 through 99. Several of our marked swans have lost both plastic neck collars and the soft aluminum metal USFWS leg bands within 1-4 years. Neck collar losses create problems analyzing both movements and mortality of Iowa Trumpeter Swans. In 2004, we began using stainless steel

lock-on 9C FWS leg bands and we are not aware of any leg band losses since. Throughout the last 5 years, we have neck collared less than 5% of released swans.

Iowa has the largest trumpeter swan observation database with over 4,500 observations of neck collared swans. As of 2020, Iowa marked swans have been reported in 17 states, as far west as Colorado, east to Virginia and north into three Canadian provinces (Figure 6.4). After 20 years of migration observations, the largest concentrations of migrating Iowa swans are wintering in northeast and east-central Kansas and northwest and west-central Missouri. Iowa swans also winter near Heber Springs, Arkansas and the River Lands Bluffs area in SW Illinois. During the winter of 2002-2003, 2 swans released at Hottes Lake near Spirit Lake, Iowa migrated to Lubbock, Texas. These are possibly the first known, or at least the first of very few interior swans to migrate to Texas since the 1880's. Migration movements "out of that norm" included 3 swans released at Union Slough NWR that migrated to and wintered in southeast Colorado near Ft Lyon. Two of these birds were observed at Monticello, Minnesota in the spring of 1997. The straight-line round-trip mileage for these birds was over 1,300 miles.

"Traditional" swan wintering sites are developing in Iowa. Sites include Bill Beemer's Pond, a private partner site near Webster City, Schilberg quarry at Atlantic in southwest Iowa, Laurie Severe's Pond near Nora Springs, Dale Maffitt Reservoir southwest of Des Moines and a rock quarry near Fertile, IA. Many areas of the state are now seeing swans throughout the year. This is another indication of the success of DNR restoration efforts.

Trumpeter Swan Research

The Iowa DNR is partnering with Iowa State University (ISU) to capture and GSM/GPS collar trumpeter swan cygnets. Goals of the project include: 1) evaluate breeding locations, migratory movements and wintering areas of trumpeter swans. 2) provide the opportunity for ISU ornithology students to collect and analyze ornithological data. 3) provide information to the public on trumpeter swan ecology, movements and the value of wetlands via a website https://www.nrem.iastate.edu/track-trumpeter which provides location updates on marked swans. A cygnet that was captured and GPS collared in Tama county was later reported in Arkansas.

In 2020 the IA DNR is partnering with a multi-state research project lead by the University of Minnesota which is focused on understanding the movement ecology of Interior Population Trumpeter Swans. The IA DNR hopes to deploy 10 GPS/GSM collars on adult Trumpeter Swans across Iowa. More information on this collaborative research project at: https://trumpeterswan.netlify.com/locations.html IA DNR is also conducting a cygnet winter survival study by placing green neck collars and matching leg bands on the cygnets of the 10 GPS/GSM collared adults. We will be following the movements of the family groups and recording survival through collar re-sighting from September 2020 to April 2021.

Trumpeter Swan Mortality Factors

Lead poisoning, power line collisions, illegal shootings and disease are the leading mortality factors for Trumpeter Swans in Iowa. Nearly 75% of the released Trumpeter Swans perish before they reach their breeding age (4-6 years old). This high mortality rate is a concern due to negative impacts on trumpeter swan recruitment. We hope illegal shootings will decrease with increased publicity, additional enforcement efforts, and public scrutiny. There have been 13 confirmed shootings of Iowa swans that occurred out-of-state, (1 in Wisconsin, 5 in Missouri, 5 in Texas). A $17,000 fine was charged to four men in connection with the family group of 5 Iowa swans shot in Texas.

Five hundred twenty-eight known mortalities have occurred to date: 205 died due to lead poisoning, 178 died due to power line collisions, 80 were poached by violators, 52 died of diseases and 13 died due to apparent malnutrition. A total of 55 lead poisoned swans were recorded in Iowa in the fall/winter of 2017-18. 34 mortalities were documented at one wetland site in western Clinton County. Low water levels appear to be a contributing factor. Several other mortalities have likely occurred from unknown and unreported causes. Mortality rates are higher than anticipated and slow trumpeter swan restoration efforts. Shooting a trumpeter swan can result in a citation of $1500, liquidated damages, court costs, and possible hunting license revocation.

Current Status of the Trumpeter Swan Restoration Program

Trumpeter Swans are nearing sustainable numbers in north central and east central Iowa. As a result of the program's success, the Iowa DNR has significantly reduced their direct hands-on efforts of handling and transporting swans over

the past five years. Instead, time is now more focused on coordinating swan restoration efforts with partners such as county conservation boards and private landowners with suitable nesting and release sites. A trumpeter swan management plan is currently being drafted and will determine the future course of action in Iowa. The southern half of Iowa has been the current priority area for restoration work and cygnet releases due to very low trumpeter swan nesting densities and the fact that trumpeters very rarely pioneer their nesting efforts south. An objective of self-sustaining numbers across south Iowa is desired with a goal of eight nesting pairs south of Interstate 80 by 2022.

Due to the COVID-19 pandemic, public swan releases were canceled and no swans were released in 2020. Twenty trumpeter swans were released in Iowa in 2019 (Table 6.3). A total of 1,218 trumpeters have been released to date. A total of 71 wild free flying Trumpeter swans have been captured, banded and released in Iowa since 1997 (Table 6.4). There were 55 nests reported in 2019, and 54 nests reported in 2018 and 2017 (Figure 6.3). In 2020, additional survey effort was put into documenting swan nests. At least 119 trumpeter swan nest attempts were tallied in Iowa this year!

Since 1998, 814 known trumpeter swan nests have occurred in Iowa (Table 6.5). Spring flash flooding accounts for 5-10% of annual nest loss. Cygnet survival was near normal in 2019. Higher cygnet mortality was recorded in previous years with dry wetland conditions in the fall and increased cases of lead poisoning. Due to dry wetland conditions, we expect higher cygnet mortality in the fall of 2020. Also of note, several pairs of swans released in Iowa are now nesting in Southern Minnesota and Wisconsin.

A total of 3,918 trumpeters were tallied in 51 out of 99 counties during the mid-winter waterfowl survey in January 2020.
Up from 2,470 trumpeters tallied in January 2019 (Table 6.6). It appears the colder temps and harsher winter weather in MN and WI may have forced additional swans south into Iowa. If swans can find open water and food, many of them will remain in Iowa throughout the winter. These “winter” sites have provided many people with viewing opportunities of these “charismatic-mega fauna.”

The DNR and many Iowans are very excited about the future of trumpeter swans in the state and hope their numbers remain strong and they expand their breeding range.

Figures

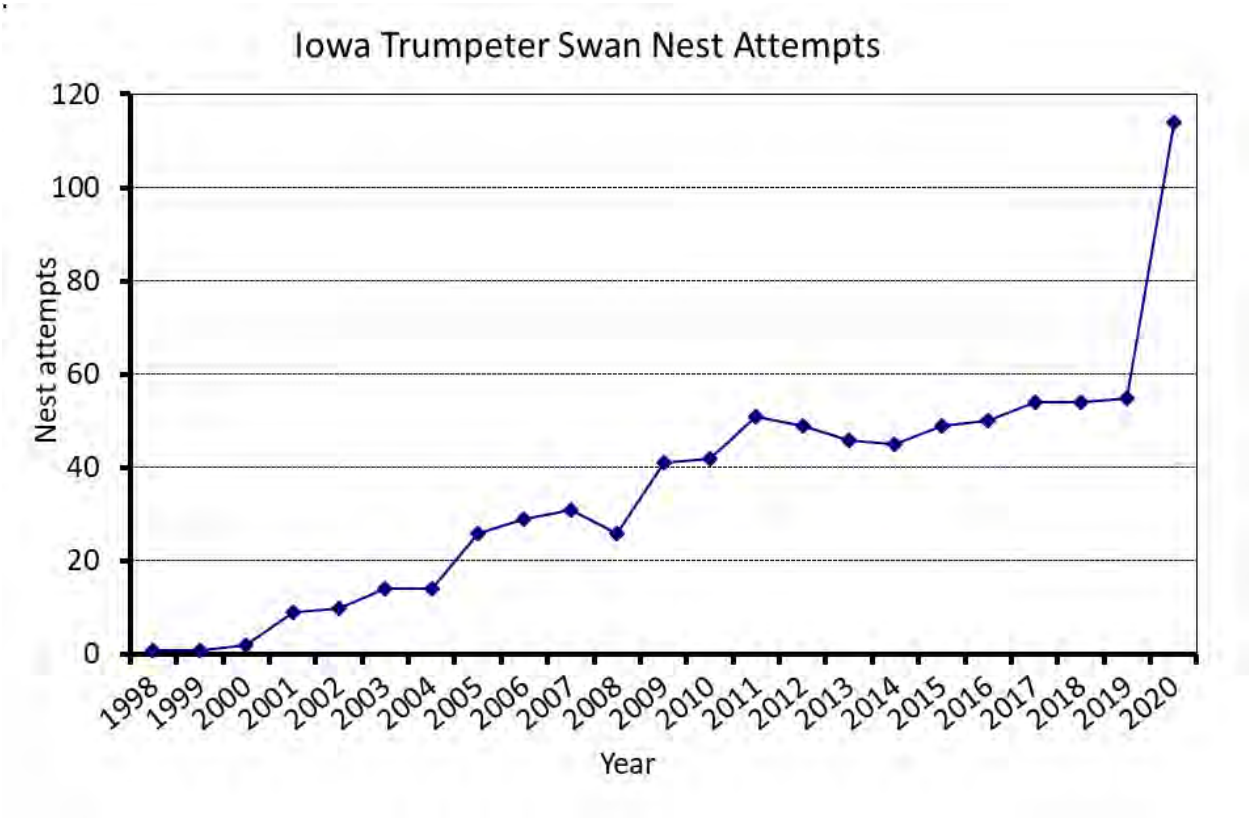

Figure 6.3 Iowa Trumpeter Swan Nests Attempts.

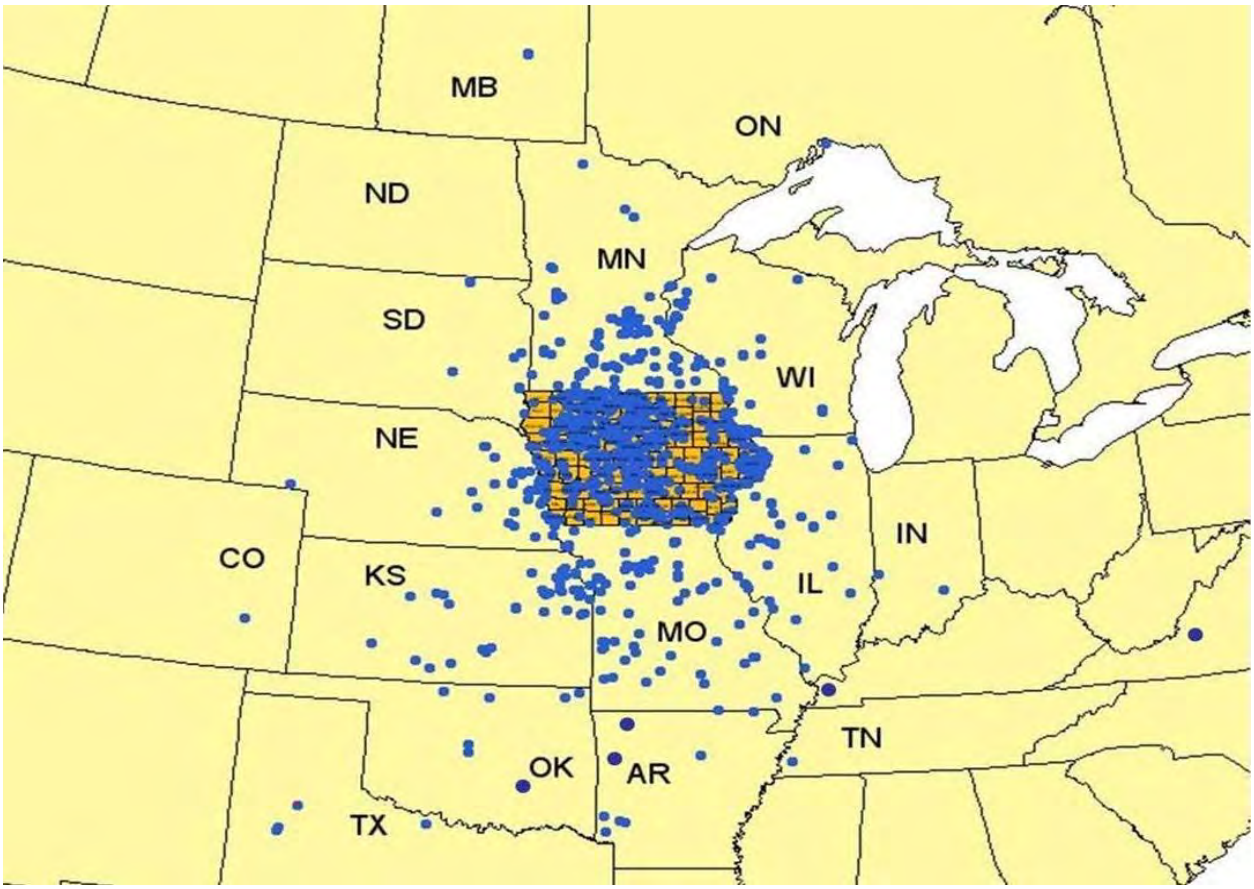

Figure 6.4 Observation reports of Iowa-collared/banded Trumpeter Swans (1995-2020).

Tables

Table 6.3 Trumpeter Swans released in Iowa 2019

Year	Release Site	County	Males	Females	Total
2019	Lake Anita	Cass	5	3	8
	Lake Icaria	Adams	7	3	10
	Viking Lake	Montgomery	0	2	2
				Total	20
2020					0
				Grand Total	1218

Table 6.4 Wild free flying Trumpeter Swans banded and released in Iowa, 1997-2019

Year	Area	County	Males	Females	Total
1997	Miller's Quarry	Black Hawk	0	1	3
1998	Holzer's Pond	Dubuque	2	1	5
1999	Mason City	Cerro Gordo	3	2	3
2000	Holzer's Pond	Dubuque	2	1	4
2000	Mason City	Cerro Gordo	2	2	2
2000	Stark/Nessa Quarry	Hamilton	2	0	1
2001	Dunbar Slough	Greene	1	0	2
2001	Kennedy's Pond	Dubuque	1	1	4
2002	Holzer's Pond	Dubuque	3	1	5
2002	Schildberg Gravel Quarry	Cass	1	4	2
2002	East Twin Lake	Hancock	2	0	4
2003	Schildberg Gravel Quarry	Cass	2	2	12
2004	Schildberg Gravel Quarry	Cass	5	7	8
2004	Beener's Pond	Hamilton	3	5	5
2005	Stark/Nessa Quarry	Hamilton	5	0	6
2006	Beemer's Pond	Hamilton	4	2	1
2006	Schildberg Gravel Quarry	Cass	0	1	2
2007	Ventura Marsh	Cerro Gordo	0	2	1
2008	Ventura Marsh	Cerro Gordo	0	1	1
				Total	71

Table 6.5 Wild free flying Trumpeter Swans nest attempts and total number of released swans, 1997-2019

Year	Nest Attempts	# of Broods	# Hatched	Mean brood	~# Fledged	Adult Total	Captive Released	Mid-Winter	% Winter	Estimated Population
1994	0	0	0		0		4			
1995	0	0	0		0		14			
1996	0	0	0		0		31			
1997	0	0	0		0		35			
1998	1	1	3	3.0	3		57			
1999	1	1	5	5.0	0		42			
2000	2	2	5	2.5	3		91			

Year	Nest Attempts	# of Broods	# Hatched	Mean brood	~# Fledged	Adult Total	Captive Released	Mid-Winter	% Winter	Estimated Population
2001	9	7	26	3.7	19		83			
2002	10	8	37	4.6	27		63			
2003	14	12	53	4.4	36		82			
2004	14	9	44	4.9	36		75			
2005	26	19	87	4.6	67	86	113			total= 266 (Pop Survey Estimate)
2006	29	22	80	3.6	52		85			
2007	31	27	103	3.8	60		73			
2008	26	22	91	4.1	55		65			
2009	41	37	120	3.2	80		71			
2010	42	*27-39	112	4.4	84	156	57			total= 297 (Pop Survey Estimate)
2011	51	50	230	4.6	161		51			
2012	49	43	170	3.9	119		20			
2013	46	37	114	4.7	94		20	458		
2014	45	38	122	4.4	90		18	582	21.3	
2015	49	46	185	4.0	136		18	1121	48.1	total= 339 (Pop Survey Estimate)
2016	50	47	188	4.0	138		4	1823	38.5	
2017	54	49	196	4.0	149		13	1219	-49.5	
2018	54	48	192	4.0	145		13	2470	50.6	
2019	55	50	200	4.0	152		20	3918	37.0	
2020	115	90	392	4.5	288		0			
Total	814	655	2755	4.8	1994		1218			

Table 6.6 Wintering Trumpeters in Iowa

Year	Beemers*	Atlantic*	Boock*	Severe*	Mason City*	Fertile Quarry	Cedar Rapids	Ames	Est Total # in state
1997	5								
1998	4								
1999	4								
2000	4								
2001	25								
2002	25	26							75
2003	35	22							100
2004	61	24	15						100
2005	74	24	15		13				
2006	75	33							200
2007	84	37							
2008	100	50	12	35					
2009	150	50							
2010	100	32	25	36	0				193
2011	300	60	33	44	0				437
2012	160	45		65 in Nov, 0 on 1/9/13		52	23		747 Midwinter survey

Year	Beemers*	Atlantic*	Boock*	Severe*	Mason City*	Fertile Quarry	Cedar Rapids	Ames	Est Total # in state
2013	160	39	20	55 but all left		20			458 Midwinter survey
2014	286	40		40	11			40-61	582 Midwinter survey
2015	155	60							1121 Midwinter survey
2016	360	135							1823 Midwinter survey
2017	350	76		22	12	13			1219 Midwinter survey
2018	110	140		55	124			129	2470 Midwinter survey
2019	180	191		40	60	140		199	3918 Midwinter survey

*Beemer's Pond, 5 miles W of Webster City, IA, Hamilton County
*Atlantic Quarry, 1-mile MW of Atlantic, IA, Cass County
*Boock's Wetland, 4 miles N of Wheatland, IA, Clinton County
*Laurie Severe Pond, 2 miles S of Nora Springs, IA, Floyd County
*Mason City, 1 miles S of Mason City, IA, Cerro Gordo County

2020 Trumpeter Swan Nest Survey

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ABSTRACT

Natural resource professionals and private citizens reported observations of trumpeter swan nest attempts during May-August, 2020. A total of 119 nest attempts were reported across 37 counties. This is more than a two-fold increase over the 49 nest attempts recorded in 2015 and indicates the breeding population of trumpeter swans in Iowa is increasing in density and expanding in distribution.

INTRODUCTION

Trumpeter swans were historically native to Iowa but were extirpated during the late 1800s. A trumpeter swan restoration program was initiated in 1995 and has successfully re-established the species in Iowa. The population has been monitored at five-year intervals in coordination with a continental effort. The continental portion of the survey was discontinued in 2020, but the Iowa DNR continued an increased effort to monitor nest attempts to evaluate Iowa's breeding population.

STUDY AREA

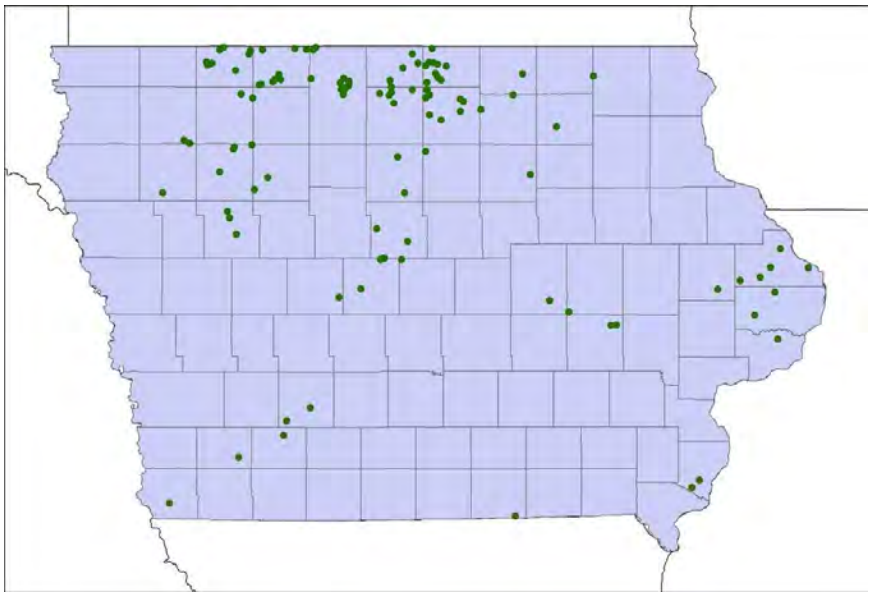

Figure 6.5 The distribution of reported trumpeter swan nests in Iowa, 2020.

METHODS

Iowa Department of Natural Resources (DNR) wildlife management units were contacted in May requesting observations of trumpeter swan nest attempts from May-July. Wildlife units were asked to coordinate with partners to compile the locations of nest attempts within each county. Information on the location of each nest was required. Additional information on nest success, number of cygnets hatched, and number fledged was recorded when available. D. Hoffman compiled additional nest reports through a network of swan enthusiasts and partner agencies such as County Conservation Boards (CCBs). Responses were accepted until early August. Reports were evaluated to eliminate duplicates.

RESULTS

A total of 119 trumpeter swan nests were reported in 2020, this is a 142% increase over the 49 nest attempts reported in 2015. Similarly, the distribution of nest attempts across 37 counties is a 46% increase over the 24 counties reported in 2015. The 2010 survey reported 42 nest attempts in 19 counties and the 2005 survey reported 26 nest attempts in 18 counties.

Nest attempts were reported from 37 counties. Kossuth county had the highest number of nest attempts (18), followed by Worth (10), Cerro Gordo (9), Dickinson (9), and Emmet (8). The remaining 33 counties had five or fewer nest attempts each. Twelve counties that did not report a nest in 2015 reported at least one nest in 2020. Nests were reported in four counties that had never reported nests prior to 2020: Benton, Jones, Montgomery, and Winneshiek.

Ninety-seven nests were reported as successful, 7 were unsuccessful, and 15 had unknown success. The average number of cygnets hatched per successful nest was 4.4 (standard deviation of 1.65).

A map of all reported nests is provided in Figure 6.5. Appendix A provides a complete list of nests by county.

DISCUSSION

The results of the 2020 survey indicate that the breeding population of trumpeter swans in Iowa is increasing in density and expanding in spatial extent. The population more than doubled in a period of five years. This rapid increase was unanticipated and indicates that juveniles are reaching reproductive maturity and are recruiting into the breeding population. If this growth rate is sustained, trumpeter swans will become much more common throughout the state in a short period of time. Similar growth rates and population expansions have been observed in neighboring states such as Minnesota and Wisconsin. These states have much more wetland habitat suitable for trumpeter swans than Iowa, therefore it is uncertain whether Iowa's population growth will follow a similar trend.

Nearly all of the counties with new nesting records since 2015 are outside the Prairie Pothole Region of Iowa, primarily in southern and eastern Iowa. The expansion of nesting attempts outside of the Prairie Pothole Region has been encouraged by releasing captive reared juveniles. But the role of restoration versus natural colonization is not clear. Given that the population is expanding at a rapid rate it may be appropriate to re-evaluate whether further releases are necessary.

The 4.4 cygnets per successful nest in 2020 was similar to 2015 (4.02) and 2010 (4.43). This indicates that productivity is relatively stable. If this level of production is driving the rapid increase in nest attempts it seems likely that strong population growth will continue into the future.

We attempted to follow methods similar to previous efforts, but there may have been minor differences. This was not a census or a statistically-designed survey where population level estimates can be determined. We do not have information on detection rates or density estimates across differing landscapes. Therefore, these results should be interpreted as a 5-year index of nesting attempts. While we are confident the 2020 results represent a significant increase in Iowa's trumpeter swan population, we do not know how many nest attempts went undetected and whether that rate is constant over time.

MANAGEMENT IMPLICATIONS

It is important that the trumpeter swan population continue to be monitored at frequent intervals in the future. With the population expansion documented in 2020 it may be appropriate to consider a more frequent and widespread systematic survey. As the population increases the number of unreported nests will likely increase, which may render the current methodology increasingly ineffective.

There may no longer be a need to supplement the population through the release of captive reared sub-adults. Future releases should be carefully evaluated in conjunction with the desired distribution of trumpeter swans in Iowa. Managers should anticipate potential conflicts that may arise with a rapidly growing population such as agriculture depredation or competition with other species.

The Iowa DNR Trumpeter Swan Management Plan is currently under revision. The information in this report, along with additional information gathered from ongoing research, will provide the basis for a revised management plan. The plan should provide guidance on future monitoring efforts for trumpeter swans in Iowa and begin to establish policies to address potential conflict if the population continues to grow.

ACKNOWLEDGEMENTS

We thank the many DNR, CCB, and USFWS staff who reported swan nests within their respective work areas. We also thank the private citizens who contributed sightings of trumpeter swans. Vince Evelsizer provided a valuable review of a previous draft.

LITERATURE CITED

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APPENDIX A: 2020 TRUMPETER SWAN NEST ATTEMPTS BY COUNTY.

County	Nest Attempts	County	Nest Attempts
Adair	2	Hamilton	5
Adams	1	Hancock	5
Appanoose	1	Iowa	2
Benton	1	Jackson	5
Boone	2	Jones	1
Buena Vista	4	Kossuth	18

County	Nest Attempts	County	Nest Attempts
Butler	1	Mitchell	1
Cerro Gordo	9	Montgomery	1
Cherokee	1	O'Brien	2
Chickasaw	1	Pocahontas	2
Clay	3	Sac	3
Clinton	2	Scott	1
Des Moines	2	Story	1
Dickinson	9	Tama	2
Emmet	8	Winnebago	5
Floyd	2	Winneshiek	1
Franklin	1	Worth	10
Fremont	1	Wright	2
Greene	1	Total	119

Bald Eagle (*Halieetus leucocephalus*) status in Iowa, 2019

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Abstract

The Iowa DNR coordinates two different surveys used to monitor Bald Eagles in the state. The Bald Eagle Nest Monitoring Survey employs volunteer citizen scientist monitors to annually observe at least 25% of the nests in Iowa excluding those found on the Upper Mississippi Wildlife Refuge. The Bald Eagle Midwinter Survey occurs in January along most of the major rivers in Iowa. These two surveys together provide a dataset that can be used to evaluate the Bald Eagle population in Iowa. After the 2019 nesting season, Iowa had 431 active Bald Eagle territories. 66% of the 262 nests surveyed were successful and on average 1.40 young were produced per nest. A total of 2,924 Bald Eagles were counted on the Bald Eagle Midwinter survey, averaging 1.89 birds observed per mile of river surveyed. The results of both surveys suggest that the Bald Eagles that nest and/or winter in Iowa have stable or increasing numbers.

Introduction

In the last 25 years, Iowa has witnessed a dramatic increase in the number of nesting and wintering Bald Eagles. Nationally, the Bald Eagle has recovered enough from the dangerously low numbers of the 1960's and 1970's that the U.S. Fish and Wildlife Service removed it from the Threatened and Endangered species list (T&E list) in 2007 (Removing the Bald Eagle, 2007). Iowa followed suit by upgrading the eagle from a status of Threatened to a status of Special Concern on the state T&E list in 2009. Despite the Bald Eagle population's apparent good health, challenges to their conservation still exist. Strategic monitoring of eagle activity in the state remains a priority.

The Iowa DNR uses two different surveys to monitor Bald Eagle Populations in Iowa. One survey focuses on monitoring Eagle nesting activity and success and the other surveys the population of wintering eagles along Iowa's rivers.

The goal in monitoring Bald Eagle nesting data is to measure reproductive success as well as providing a robust, though not comprehensive, database of eagle nest locations. For monitored nests, data is collected on annual activity and the number of young successfully produced and these data can then be used as indices of the resident Bald Eagle population's health.

The second survey, called the Bald Eagle Midwinter Survey, focuses on Eagles that use Iowa's rivers as winter foraging habitat. This survey is national in scope and is coordinated at that scale by the U.S. Army Corps of Engineers. Iowa's rivers hold some of the largest congregations of wintering Eagles in the lower 48 states. The same segments of river have been surveyed since the early 1990s and the survey provides a long-term trend which when combined with data from other states is a helpful index of eagle population trends at a larger scale.

This report summarizes data collected on Bald Eagles during the 2019 winter and nesting season as well as data from previous years.

Study Area

The Iowa DNR's formal nest monitoring program focuses on monitoring nests statewide, excluding nests located on the Upper Mississippi Wildlife Refuge (Figure 6.6). Opportunistic reports of new nests or existing nest activity from various sources are accepted and this overall nest dataset does include U.S. Fish and Wildlife Service data collected on the refuge. However, for most summary and analysis, monitoring data collected by trained volunteers and staff are used. In 2019, standardized data was collected on 262 Bald Eagle territories in 77 Iowa counties spaced across the state (Figure 6.6).

In 2010, a random selection was done of 50% of the known active nests in the inland part of the state (i.e. not in the Upper Mississippi Wildlife Refuge) and stratified by landform. The result is a total of 140 bald eagle breeding sites established as sentinel territories. The goal is to have at least half of these sentinel nests monitored reliably on an annual basis in addition to the non-random nests monitored by trained volunteers (Figure 6.7). Please note that Iowa's

Bald Eagle nest database is not comprehensive so it does not track all eagle nests in the state, just the portion that have been reported to the Iowa DNR.

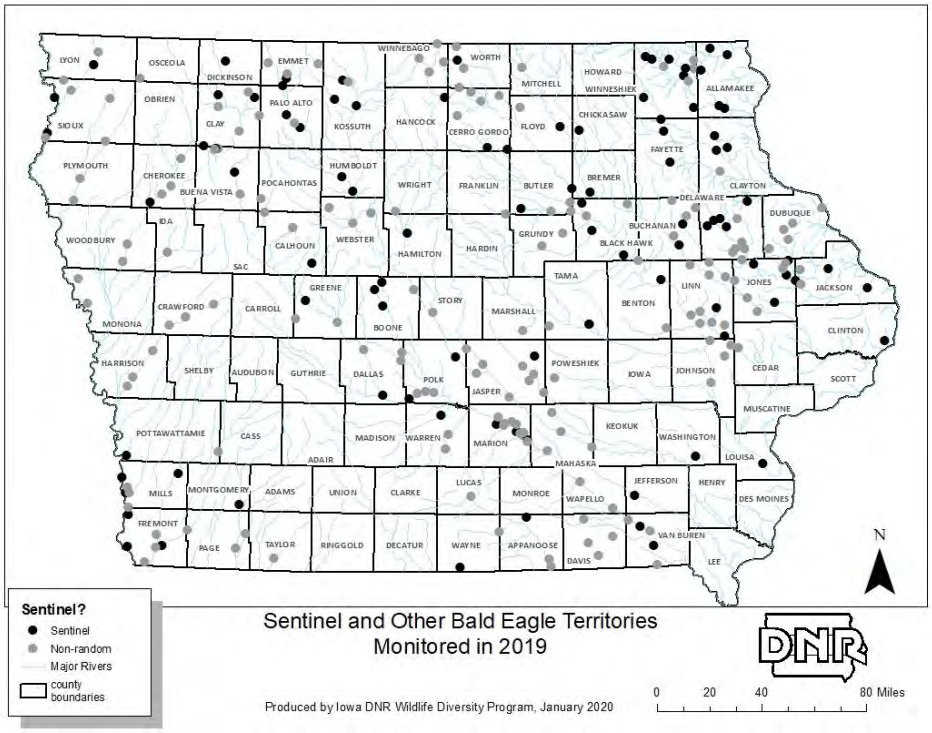

Figure 6.6 Data was collected on 262 nests in 77 Iowa Counties in 2019. Sentinel Nests were randomly selected, other nests were non-random.

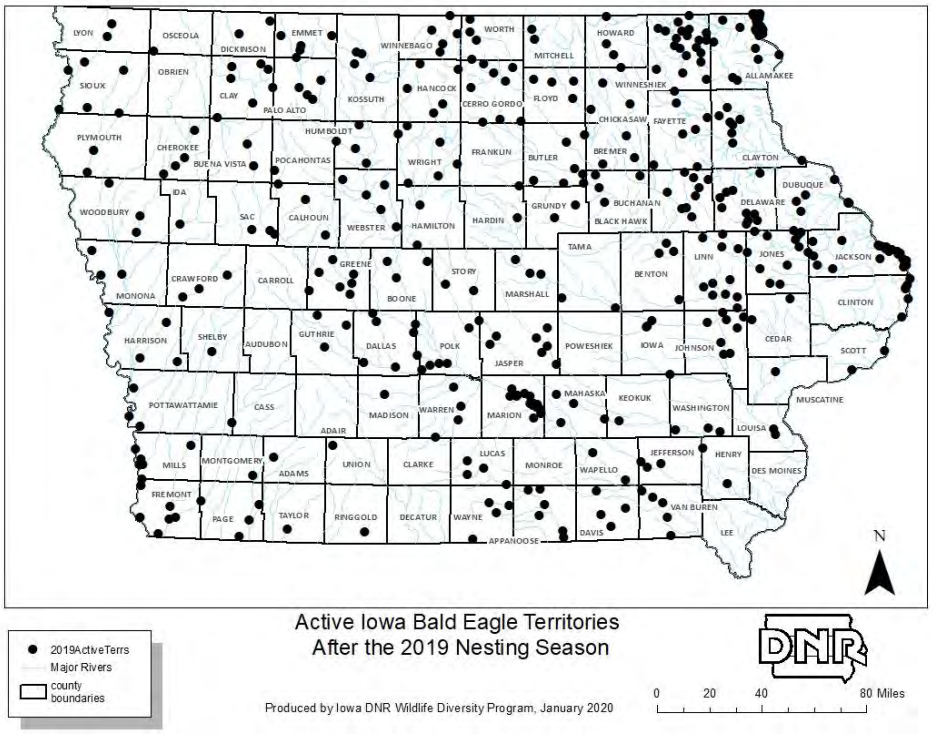

Figure 6.7 Active Bald Eagle Nests in Iowa after 2019 nesting season (431 nests).

The Bald Eagle Midwinter Survey also has statewide coverage and includes survey routes along the following rivers in Iowa: Mississippi, Des Moines, Skunk, Maquoketa, Missouri, Wapsipinicon, Chariton, Iowa, Cedar, Little Sioux, South

Maquoketa, Turkey, Nodaway, as well as Lakes Saylorville, Red Rock, and Rathbun and a few other smaller waterbodies. Routes were not randomly mapped but were intentionally designed to cover primary Bald Eagle habitat. In 2019, 1,546 miles of river or lakeshore were surveyed on 45 standardized routes (Figure 6.8). This survey is part of a larger nationwide survey currently being coordinated by the U.S. Army Corps of Engineers. As of 2010, 44 states participated in the nationwide survey.

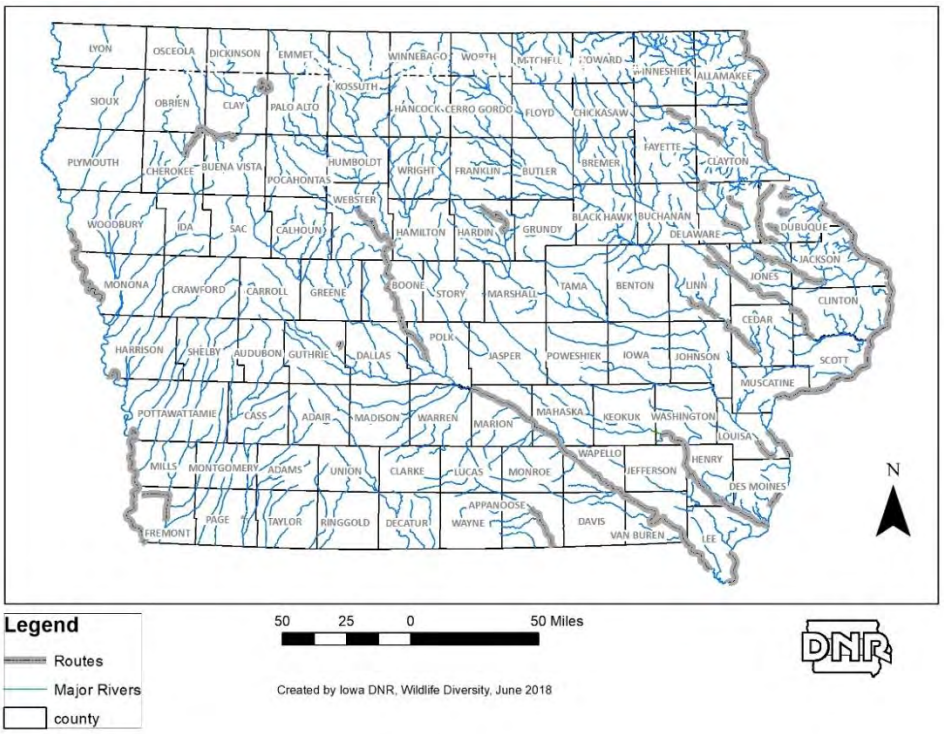

Figure 6.8 Bald Eagle Midwinter Routes in Iowa.

Methods

Bald Eagle Nest Monitoring

Since eagles returned to nest in Iowa in the late 1970's, the DNR has engaged in opportunistic data collection on eagle nesting territories. Opportunistic data collection includes casual monitoring of some eagle nests by DNR personnel as well as reports of nest locations and activity from Iowa citizens. These data are not systematically collected so the data available for each breeding territory varies. Additionally, territories reported on may not be representative (i.e. people may be more likely to report an active nest versus an inactive nest). Since 2017, these types of reports have been entered into the dataset at a lower rate than in the past.

Since 2010, to complement the opportunistic reports received, the Iowa Department of Natural Resources (DNR) has had a program to collect data on bald eagle nesting territories in a more systematic manner. This data collection method relies heavily on trained citizen volunteers who monitor a sample of randomly selected nesting territories called "sentinel" sites as well as some non-randomly selected nest sites. As many of the sentinel nest sites as possible are monitored by assigned volunteers and many additional non-sentinel sites are also monitored by trained volunteers. Summaries and analysis are done on all nests monitored by volunteers, both random (sentinel) and non-random. To make sure non-random territories do not skew the data, the two sets of nests were first analyzed separately and then together and no significant differences were detected in the results.

The training for volunteers is available as a video online: www.iowadnr.gov/vwmp/ or is completed during in-person workshops which are held in March or April in various locations across the state. After training, volunteers are assigned to one or several nests in their area to monitor with sentinel nests being given priority.

Volunteer monitors are instructed to visit their assigned nest site at least 3 times during the nesting season and collect data on whether the nest is active or inactive, how many young hatch and then how many young fledge. Nests are observed using optics from a distance in order to avoid disturbing the nesting birds and as such, not all of the required

data can be collected on each site; the number of young hatched is particularly challenging to collect. Volunteers monitor the same nests annually and are instructed to continue to monitor an inactive nest for 3 years of inactivity before that nest is retired from monitoring and is designated as an inactive breeding territory.

Monitoring focuses on Bald Eagle breeding territories and not necessarily individual nests. Eagles are known to rebuild downed nests in close vicinity to the original nest and sometimes even build alternate nest sites when the original nest appears in good condition. The monitoring focuses on this pair of birds and not on one of the potentially multiple nest sites that could be a part of their territory in time and space. We can't be sure that we are watching the exact same pair of birds as the previous year but what we are focused on is the combination of a defended area of breeding habitat and a pair of eagles. Our working definition of a breeding territory based on evidence from the dataset and other literature (Buehler 2000): *"A habitat area up to 1 mile in radius (though sometimes smaller in good habitat) that is defended by a pair of eagles and used for breeding. Meets all breeding habitat needs including appropriate trees (or very occasionally other structures) to build nests and a nearby food source. A territory may hold more than 1 nest but may not house more than 1 pair of eagles within the same breeding season. The pair of eagles need not be the same pair across years."*

The metrics used to assess the relative health of the nesting Bald Eagle population are the proportion of nests that fail to produce young versus successful nests and the average number of young fledged per nest. If the percent of failed versus successful nests moves closer together or the average number of fledged young per nest drops below 1 for three years in a row this would trigger some additional actions to evaluate the health of the nesting eagle population.

Bald Eagle Midwinter

The Bald Eagle Midwinter survey is conducted each year during the first two weeks of January. There are two dates in the middle of the two-week period that are designated as target dates, and surveyors are encouraged to run the survey on those dates if possible, but the survey can be run on any day during the two-week period. The survey is designed so that surveyors can also run their standardized route at the same time as conducting another national survey, the Midwinter Waterfowl Survey, which is usually scheduled on one day during the first week of January. The survey is meant to ideally be run on clear sunny days with no fog or precipitation impairing visibility. In 2019, the dates for the survey were January 2-16th with target dates of the 11th and 12th.

There are 52 active standard routes in Iowa, of varying lengths and this includes two fixed point routes (routes that only cover 1 mile of habitat, usually a roost site). To conduct the survey, volunteers and staff move along their assigned route at a moderate pace and count all adult and immature eagles that are spotted. All of the routes in Iowa (that aren't fixed point) are driven by car or truck (Figure 6.9). Data is also collected on the amount of time spent surveying, the weather conditions and the percentage of ice coverage along the route. The habitat covered and route driven should be the same each year though detours are sometimes required because of winter road conditions or other road maintenance issues.

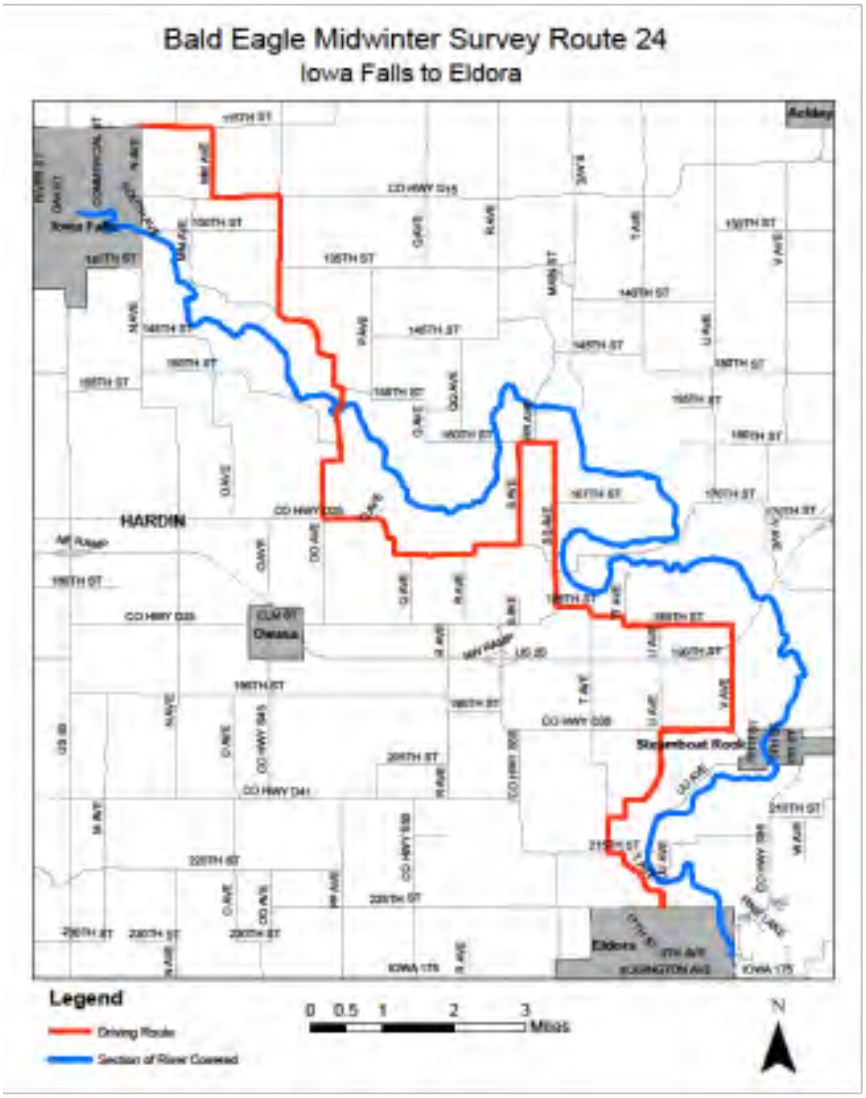

Figure 6.9 Example of a Midwinter Survey Route (in red) - Route 24 - The portion of river (eagle habitat covered) and the driving route.

Results

Bald Eagle Nest Monitoring

Since 1977, approximately 947 bald eagle territories have been reported to the Iowa DNR. In 2015, the state hit the milestone of having had at least one eagle nest reported in all of Iowa's 99 counties (Figure 6.10). Allamakee County, with 145, has the highest number of nests reported, followed by Clayton County with 71 (Figure 6.10). Following the 2019 nesting season, 431 territories have an overall designation of active (371 "inland", 60 Upper Miss. Refuge), 234 are designated inactive, and 282 have an unknown status (this usually means they have not been reported on >3 years but the nest was active at last report). A territory is considered active if it has had some activity in at least one of the last three nesting seasons.

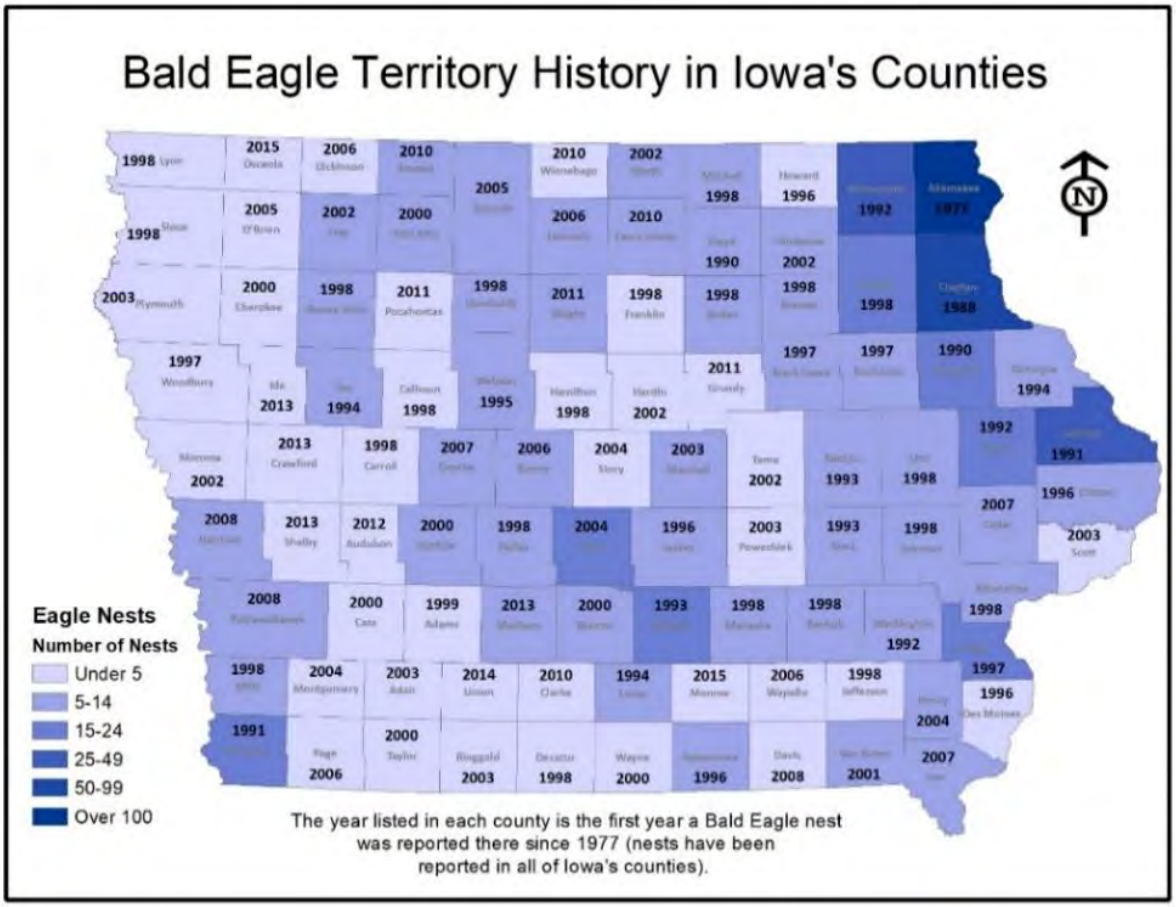

Figure 6.10 Number of eagle nests and first year reported for each county in Iowa.

In 2019 a total of 262 nests were monitored, 97 of which were sentinel territories and 165 which were non-random. Of these territories 135 have been reported on for 3 consecutive years, 95 for 5 consecutive years and 9 consistently for all 10 years.

Within the 262 territories monitored, 227 were active (87%), 28 were inactive (11%) and seven were reported as activity unknown (Table 6.7). The outcome of the nesting season for the 227 active territories broke down as follows: 149 nests successful, 26 failed and 52 unknown (Table 6.7, Figure 6.11). Failed nests usually had birds at the nest early but they either abandoned or did not produce young, except 2 nests that were taken over by owls and 1 nest that blew down.

Out of the 172 territories which had reliable reports of the nest's outcome in producing young, 240 young were produced: 25 nests fledged no young, 63 nests fledged 1 young, 75 nests fledged 2 young and 9 nests fledged 3 young. The estimated number of young produced per nest was 1.40 (Table 6.7).

For 110 territories, monitors were able to collect data on the number of chicks and the number of fledglings. Fifteen young were lost before fledging. From these data it appears that eaglet survival to fledging was high; 92% of the chicks observed in these nests reached fledging (191 total young counted, 176 fledged). Accurately counting the number of young in the nest, right after hatching, is difficult to impossible from the ground so the accuracy of this analysis is probably low. Their survival after fledging is not tracked.

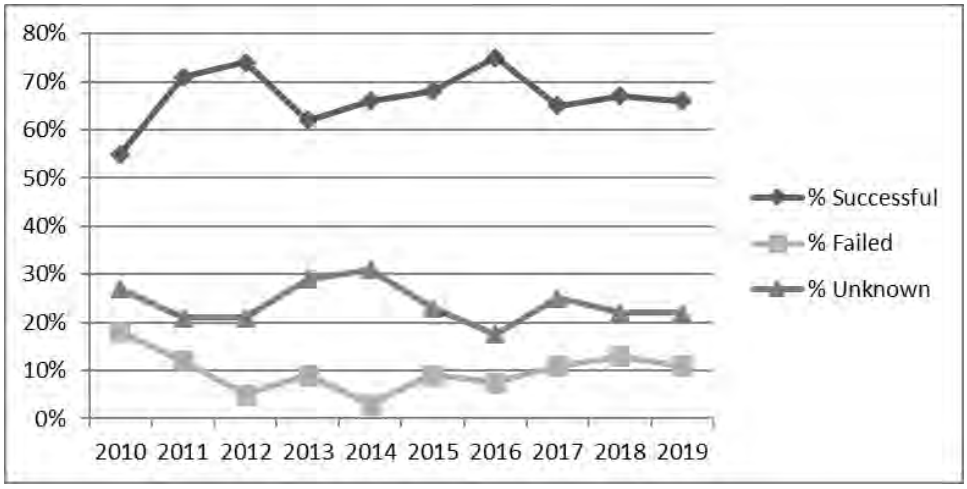

Figure 6.11 Percent of monitored Eagle nests that were successful versus failed (2010-present).

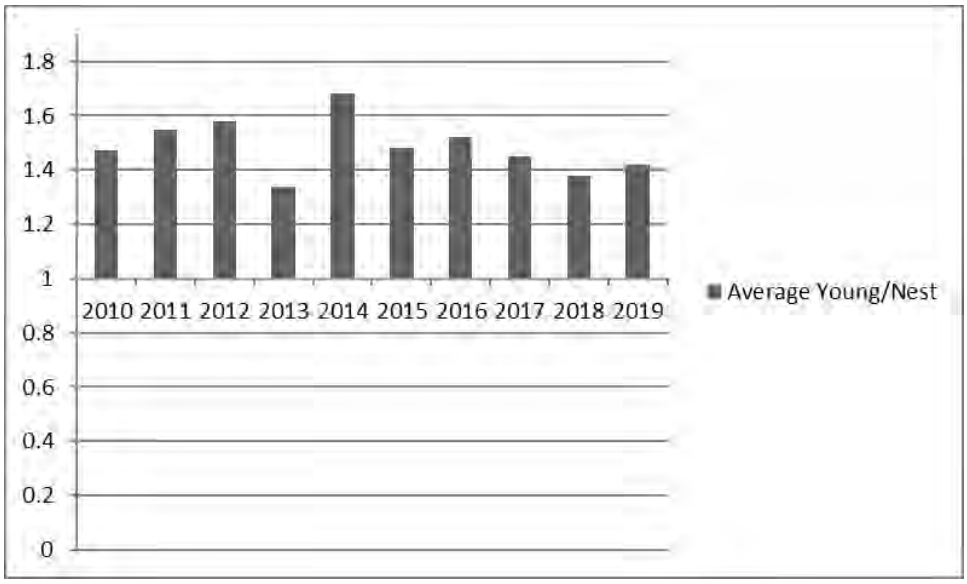

Figure 6.12 Average number of young produced by monitored Bald Eagle nests.

Table 6.7 Summary of data collected by volunteer monitors on Bald eagle nests, 2011 to 2018

	2012	2013	2014	2015	2016	2017	2018	2019
# of Territories with Data Collected	77	80	76	85	84	172	182	262
Active Territories	61	65	62	78	80	160	165	227
Successful	*45(74%)*	*40(62%)*	*41(66%)*	*53(68%)*	*60(75%)*	*104(65%)*	*111(67%)*	*149(66%)*
Failed	*3 (5%)*	*6 (9%)*	*2(3%)*	*7(9%)*	*6(7.5%)*	*17(11%)*	*17(13%)*	*26(11%)*
Outcome Unknown	*13(21%)*	*19(29%)*	*19(31%)*	*18(23%)*	*14(17.5%)*	*40(25%)*	*37(22%)*	*52(23%)*
Number of Young	*71*	*72*	*72*	*88*	*107*	*175*	*170*	*240*
Avg. # of Young/ Nest	*1.58*	*1.34*	*1.68*	*1.48*	*1.52*	*1.45*	*1.38*	*1.40*
Inactive Territories	14	12	13	7	4	11	15	28
Unknown Territories	3	3	1	0	0	1	2	7

Bald Eagle Midwinter Survey

In 2019, 45 routes were completed, covering 1,546 miles of habitat. A number of routes could not be completed because of the federal government shut-down in January 2019. Nineteen (42%) of the 45 surveys were conducted on

the target dates of January 11-12th and the average survey took 160 minutes to complete. Weather conditions during the survey were relatively mild with an average temperature at 25° Fahrenheit. The weather last winter did not become harsh until the second half of January. As a consequence, the mild weather lead to a very low average percentage of ice cover, 18%, on the waterways surveyed.

A total of 2,924 Bald Eagles were counted during the 2019 Bald Eagle Midwinter Count, which is about 1,000 birds lower than 2018's very high count (Figure 6.13) and puts it more in line with the ten-year (2008-2017) average of 3,083. The average number of birds counted per route was 64.9 or 1.89 eagles per mile surveyed (Figure 6.14). A total of 1,893 of the birds counted, or 65%, were adults and 953 (32.6%) were immatures (Figure 6.15). The remaining 78 birds counted could not be aged. One adult Golden Eagle was counted on a route this year.

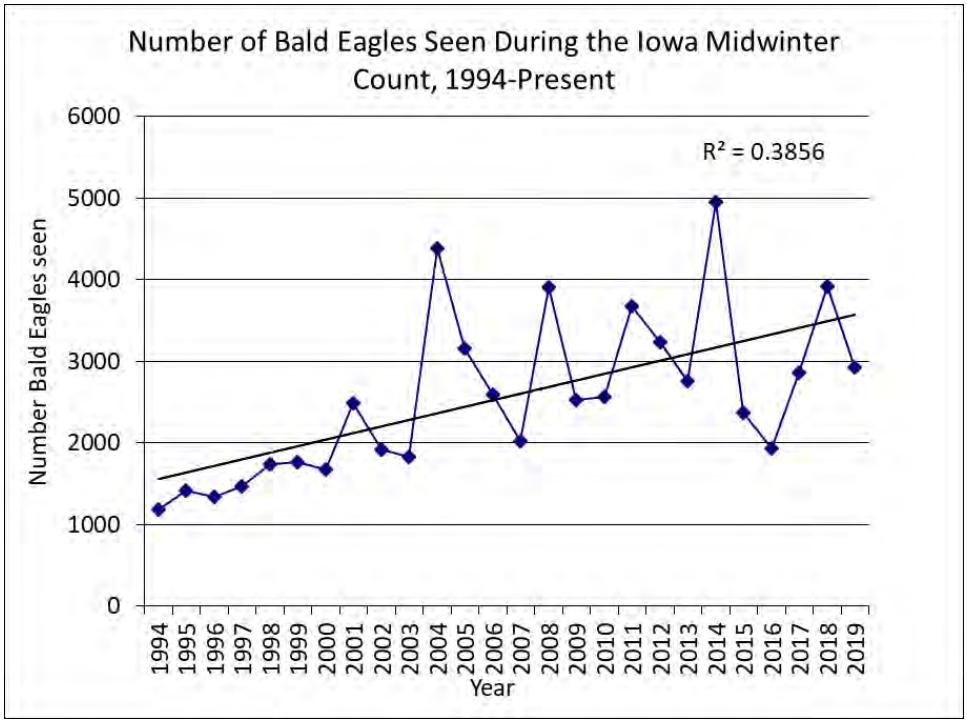

Figure 6.13 Total Bald Eagles counted during the Bald Eagle Midwinter survey (1994-present).

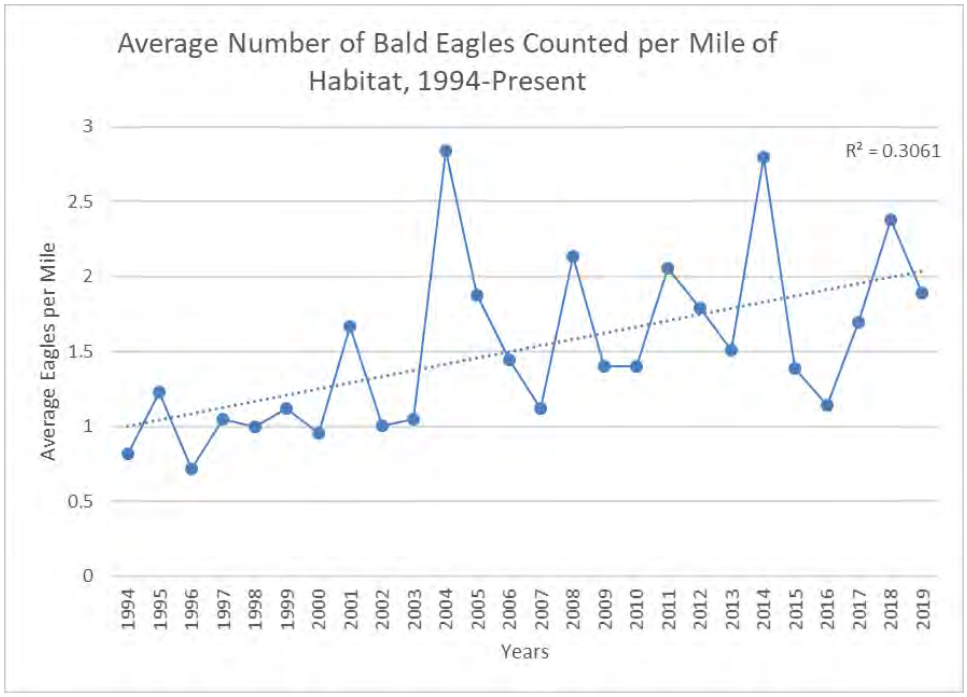

Figure 6.14 Average number of Bald Eagles per survey mile counted during the Bald Eagle Midwinter survey (1994-present).

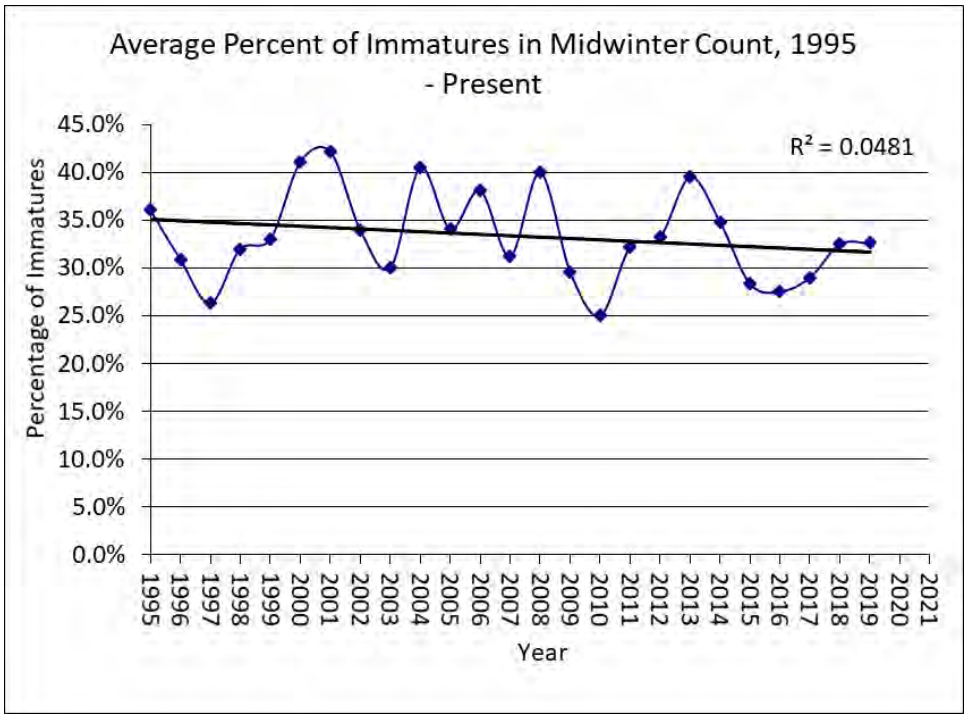

Figure 6.15. Percentage of immature bald eagles counted during the Bald Eagle Midwinter survey (1995-present).

Table 6.8 Summary of data collected during the 2019 Bald Eagle Midwinter Survey by waterbody, listed in descending order from most eagles per mile to least.

Water Body*	% of Total BE	2019 Midwinter Bald Eagle Survey Results for Iowa							
		Total BE	Adult BE	Imm BE	Unk Age BE	Total GE	Un-ID Eagle	Miles Surveyed	Average Bald Eagles Per Mile
State Total	**100%**	**2,924**	**1,893**	**953**	**78**	**1**	**0**	**1,546**	**1.89**
Mississippi River	23%	671	465	199	7	0	0	182.5	3.7
Des Moines River	37%	1,072	723	327	22	0	0	320.5	3.34
Iowa River	6.5%	191	137	39	15	0	15	68	2.81
Missouri River	17%	498	232	266	0	1	0	182	2.74
Nodaway River	0.06%	2	1	1	0	0	0	1	2
Maquoketa	4.2%	123	95	21	7	0	0	96	1.28
Lake Rathbun	3.5%	101	44	35	22	0	0	85	1.19
Turkey River	0.44%	13	8	5	0	0	0	15	0.87
Cedar River	1.6%	48	33	13	2	0	0	68	0.71
Wapsipinicon River	1.9%	57	48	8	1	0	0	106	0.54
Little Sioux River	1.1%	32	24	7	1	0	0	65	0.49
Skunk River	1.1%	32	23	8	1	0	0	72	0.44
Chariton River	0.62%	18	10	8	0	0	0	45	0.40
Unknown	1.6%	46	36	10	0	0	0	170	0.34
S. Maquoketa River	2.3%	66	20	14	6	0	0	105	0.19
Age Composition		100%	65%	32.6%	2.6%	NA			NA
2019 Weather Averages									
Temp (F)	25								

Water Body*	% of Total BE	2019 Midwinter Bald Eagle Survey Results for Iowa							
		Total BE	Adult BE	Imm BE	Unk Age BE	Total GE	Un-ID Eagle	Miles Surveyed	Average Bald Eagles Per Mile
Percent Ice Cover	17%								
Past Weather (1-5)	3.4								
Past Ice (1-5)	4.1								
***Survey Time** (Avg. min)*	160								

Past Weather: 1- very mild; 2- mild; 3- normal; 4- harsh; 5- very harsh
Past Ice: 1-much less than normal; 2-less than normal; 3-normal; 4-more than normal; 5-much more than normal

The most highly surveyed rivers, which also usually host the highest numbers of eagles are the Mississippi and the Des Moines. The Mississippi has traditionally held the most birds but the Des Moines has been more highly used in recent years. In 2019, the total number of birds counted was highest on the Des Moines but the Mississippi River had more birds per mile surveyed (Table 6.8). The second highest water body in eagles counted per mile was the Des Moines with the Iowa and Missouri rivers almost tied for third. In general, the birds were more highly distributed across rivers than they were in 2018 when a vast majority of the birds counted were on the Mississippi.

Discussion

Bald Eagle Nesting

The original Northern States Bald Eagle Recovery Plan (Grier et al., 1983) set recovery goals at 1200 nesting pairs across 16 states with an average of 1.0 young produced per nest. With roughly 400-500 nesting pairs in Iowa alone and an average young/nest consistently between 1 and 2, Iowa is definitely contributing to the regional Bald Eagle population and is supporting a stable breeding population. In fact, Iowa far surpassed the state-specific goal identified in the regional plan of 10 pairs by the year 2000 (over 100 nesting pairs were recorded by that time).

While Iowa does not have a comprehensive dataset of Eagle nests in the state throughout the entire recovery, the trend in Iowa has roughly reflected the well-studied Virginia population (Watts et al. 2008). The addition of nesting territories in the 1980s was slow, growing from 1 to 14 nest pairs from 1977-1989, sped up in the 1990s, growing to 100 pairs in 1998 and then has seen huge growth since 2000. However, the Volunteer Wildlife Monitoring Survey is not designed to measure the growth in breeding pairs; it instead shifts the focus towards measuring reproductive success of a sample of nests in the state.

The conservatively estimated nest success rate of 66% is roughly equal to the previous 7-year average of 67% and suggests stability in nesting success. This rate is somewhat lower than that cited for the Chesapeake Bay area (>80%) (Watts 2008) but our rate was calculated using the total number of nests surveyed, including those with an unknown outcome and if those nests are removed, nest success rate jumps to 86%. Considering that the Chesapeake Bay is one of the more productive eagle breeding areas in the country (Grier 1983, Watts 2008) the success rates in Iowa are comparable.

If 87% of the currently 431 active territories in the state were occupied in 2019 (375 nests), and 66% of those were successful (247.5 nests), then using the average of 1.40 chicks per nest, an estimate of 347 total young were produced by nests in Iowa. With 431 territories classified as active in Iowa, the adult population of breeding Bald Eagles at a minimum numbers 862. The Bald Eagle population is four times the original goal set for Iowa in the early recovery plan (Grier et al., 1983) and successful reproduction rates suggest the population is currently stable or growing.

The number of nests monitored and reported on in 2019 was the highest it has been since this program started in 2010. Two well-attended training workshops were held for volunteers in 2019, one in Mahaska County and one in Sioux County which added 17 new volunteers. A total of 82 volunteer monitors collected data on these 262 nests!

Bald Eagle Midwinter

The long-term Midwinter Survey results suggest that the number of eagles that winter in Iowa, particularly since 2003, fluctuates widely from year to year. The 2014 survey saw the highest number of eagles ever counted, while 2015 represented the lowest since 2007 and 2016 was the lowest since 2003. In 2019 the count was very close to the overall average of the last 10-year period. Unfortunately, the survey does not do a good job of clearing up what might be driving these fluctuations. The obvious culprit is weather if only because harsher winters with more ice should drive more birds south from northern stronghold states (Minnesota, Wisconsin) and also create ideal conditions for counting by concentrating birds at limited areas of open water. However, only a very weak correlation exists between more birds and more ice and there is virtually no correlation with temperature. This doesn't necessarily mean that weather doesn't have an effect but the survey design may not be appropriate for picking it up. The availability of food is the most obvious root motivation for Bald Eagles to move across the landscape for which weather just may not be a strong enough predictor. Other factors that are not collected, including the availability of food, could explain the huge fluctuations.

Despite the increasingly large fluctuations, the overall trend across the survey since 1994, is upwards. This upward trajectory is settling into a flatter trend in recent years which is to be expected as eagles may be getting close to carrying capacity, at least in the states to Iowa's north which host over 1,000 nesting pairs each year. This state trend mirrors the results of a recent national analysis of the first 25 years of the survey which suggests that Bald Eagle population trends may be flattening as the bird's numbers reach a level that can be supported by the existing habitat available (Eakle et al. 2015). If this is the case we would expect to see the trend to continue to become more level in future years. Regardless, Iowa provides important wintering habitat and resources for the Bald Eagle population in the U.S. and we will continue to monitor their numbers.

In 2019, a mix of 81 volunteers and natural resources professionals spent over 120 collective hours surveying 1,546 miles of waterbody shoreline.

Management Implications

Based on nesting and wintering data, the Bald Eagle population in Iowa, despite annual variability, is stable so there are no immediate actions that need to be taken on behalf of the species. However, there are still a number of challenges to eagles and the DNR will continue to protect nests and nesting habitat as well as monitoring the species to facilitate early detection of any changes to the stable status.

Acknowledgements

Monitoring the eagle population in Iowa is not a small task and it would not be possible without the help of an army of caring citizens who volunteer their time. A huge thanks goes out to all the volunteers who generously make such important yearly contributions of time and energy and to the knowledge of this species! You are invaluable and we cannot appreciate you enough! Thanks also goes out to DNR, U.S. Fish and Wildlife Service, and Army Corps of Engineers staff which help with both these surveys.

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STATUS OF SELECTED OTHER SPECIES IN IOWA - LARGE CARNIVORES

Mountain Lion/Cougar Status in Iowa 1995-2019

The mountain lion/cougar (or puma, panther, and various other names) is the largest of the three wildcats historically documented in Iowa. The lynx and the bobcat are the other two. The mountain lion/cougar probably occurred throughout most of the state originally, but nowhere in great numbers. The lynx has been extirpated and the bobcat is established in Iowa again after nearly being extirpated. The last historical record of a mountain lion/cougar in Iowa was one that was shot in 1867 in Appanoose County near the town of Cincinnati, Iowa.

Since the mid-1990's, the DNR has received several reports of large "cat" like sightings which led some to believe that a few "free ranging" mountain lions/cougars may again be occurring in some portions of the state. These "free ranging" mountain lions/cougars could be either escapees, or released animals, privately owned, (grandfathered in before July 1, 2007 legislation to curtail the ownership of certain "dangerous wild animals") or they are fully wild animals dispersing from western and southwestern states. Eastern South Dakota, eastern Nebraska, northeast Kansas, Missouri, as well as Minnesota, Wisconsin, and Illinois, have reported increased mountain lion/cougar sightings during the past 15 years.

Confirmed Mountain Lions in Iowa

Figure 7.1 is a map showing mountain lion sightings reported to the DNR that were confirmed or highly probable confirmations (1995-2019). Tracks and/or sightings reported to us throughout the year are documented as confirmed, highly probable or unconfirmed after investigating the evidence. In 2017 two confirmed mountain lions were females. These were the first females documented for Iowa since the 1800s. Both were shot and killed, one by a gun deer hunter (Plymouth Co) and one by DNR staff (Ida Co) due to human safety concerns. The Plymouth Co female was wearing a GPS neck collar from Nebraska GF&P. The Ida Co female had DNA that matched cats in Wyoming. In 2018, the Iowa DNR had at least 2 confirmed mountain lion reports and 1 probable report, (Table 7.1). For 2019, there were 6 confirmed reports of mountain lions in Iowa. However, we have multiple unconfirmed reports especially in the Polk County area of Iowa. For 2020, there have been no confirmed reports so far. Table 7.2 shows the number of confirmed mountain lions in Iowa by year. The following methods have been used to confirm the presence of mountain lions in Iowa to date: roadkills, shot and killed, verified camera pictures, verified tracks, and sightings (Table 7.3).

It is important to note that an average of 2 to 4 sightings per week are reported to us in the Clear Lake office from locations all over the state. This does not count all of the reports other DNR staff receive in their regions throughout the state as well. Over 2,000 mountain lion sightings have been reported since 2010. However, strong evidence in the form of legitimate tracks, photos, video or other evidence is necessary before we can officially place them on our map as "confirmed".

It is very likely that we have the occasional mountain lion wandering through or staying in our state for a period of time, however we have not documented a self-sustaining breeding population of mountain lions in Iowa at this time. **THE IOWA DNR HAS NOT 'STOCKED' OR INTRODUCED MOUNTAIN LIONS INTO THE STATE, NOR IS THERE ANY CONSIDERATION OF DOING SO.**

With the methods of deer hunting that take place in Iowa, one would expect to get more reports of mountain lions during that time. Overall however, the 150,000+ deer hunters seldom report a sighting of a mountain lion during their hunting activities. We actually receive more reports of mountain lion sightings during the summer when wildlife cover is at its maximum than we do in the winter when it is at its minimum. It is an interesting trend and not exactly sure why.

DNA testing is used to determine the origin of mountain lions that are killed in Iowa whenever possible. The origins of the 6 dead mountain lions have been completed and results indicate that they are of North American origin, except one that was of unknown origin. Results from that testing have shown strong indications that it matched DNA common to cats from the Black Hills region of South Dakota and parts of Nebraska and recently, Wyoming. There are some indications the only legal source of captive mountain lions/cougars should be of South American origin, although more study is necessary before that theory can be substantiated or discounted.

Currently the mountain lion has no legal status in the Iowa Code, thus they are not given any sort of protection by

Iowa Law. Although the DNR does not advocate the indiscriminate killing of mountain lions, the few mountain lions that do wander into Iowa are often shot. The DNR requested that the 2002 legislative session consider legislation to designate the mountain lion and the black bear as furbearers, thus allowing the DNR to properly manage these species, should their numbers increase. The DNR also requested that indiscriminate killing of these animals not be allowed unless they are about to cause damage or injury to property or persons. The legislation did not pass. Afterward, the Governor's office asked the DNR to not pursue mountain lion/cougar and black bear furbearer status in the Iowa Code in 2006, 2007, and 2008.

Depredation: This past year, we had some cases of livestock damage/depredation but none were positively confirmed as mountain lion. In almost all cases, it was from dogs or self-inflicted injuries on fences or gates around the stock pens or pastures. We also had a few unconfirmed reports of deer kills by mountain lions. Whenever possible, DNR staff made an effort to examine the evidence left at the scene before trying to say for sure what the predator might have been. Most depredation cases in Iowa are from canines (dogs or coyotes). It is possible for a mountain lion to attack/ depredate livestock, however again, we did not have any documented cases in Iowa in 2019 where we could determine for sure whether a mountain lion caused livestock damage. However, mountain lion research shows that white-tailed deer and other wild animals, especially mammals, are the preferred prey. Even so, predators are generally opportunists and if hungry they will take what is readily available.

In 2013 we had at least 3 reports (1 in Jasper, 1 in Allamakee, and 1 in Palo Alto County) from people who believe that they had seen mountain lion kittens. At this point DNR personnel have not documented kittens in Iowa.

In 2019, we didn't have any reports of mountain lion kittens. All mountain lions that have been killed in Iowa in recent years have all been reproductively immature 1-2 year old males, except for one mature male (4 yrs old), and two females shot in 2017. To date, we do not have a documented breeding population of mountain lions in Iowa. Credible mountain lion sightings and tracks are important to the Iowa DNR. Two excellent websites to help with mountain track identification are http://www.bear-racker.com/cougar.html and http://www.geocities.com/Yosemite/9152/cougar.html. It is important to remember that all cat tracks are round in shape; with 4 toes and a heel pad that has 3 posterior lobes and a less than prominent M shape on the forepart of the heel pad (Figure 7.2). Adult mountain lion/cougar tracks are 4 inches or larger in diameter, whereas bobcat tracks are nearer to the 2 ½ to 3-inch range in diameter. All cats have retractable claws, thus the tracks they leave often show no claw marks except in unusual circumstances. When possible, good plaster casts or cell phone photos of suspected tracks will aid greatly in their identification. We will continue to monitor and map reliable sightings, but because there are still many mountain lion/cougar sightings that are reported with poor quality photos or video and so few tracks found, they are difficult to substantiate.

Safety Issues

The good news is that lions generally avoid humans. People are more apt to be killed by a dog or struck by lightning than attacked by a mountain lion/cougar.

Some safety do's and don'ts can be found at the Mountain Lion Foundation website, www.mountainlion.org. Also, the Eastern Cougar Network is a source of Mountain lion/cougar information. Their website is mdowling@courgarnet.org.

Here are some suggestions on what to do in the remote chance you have a mountain lion/cougar encounter:

(1) Spread your jacket, coat or shirt above you head attempt to look larger.
(2) Hold your ground, wave, shout and don't run, as running stimulates the predator reflex (just like dogs) to pursue anything that runs away.
(3) Maintain eye contact if you sight a lion. Lions prefer to attack from ambush and count on the element of surprise
(4) If small children are present, or if there are several people in your group, gather everyone very close together. Mountain lions are not predators of large groups.

In the past 110 years 65-75 people have been attacked by mountain lions/cougars, resulting in 63 injuries, 20 of which were fatal, and none occurred in Iowa.

Since the first modern reports of mountain lion/cougars sightings began to increase significantly in 2001, Ron Andrews (previous Iowa DNR Furbearer Biologist, now retired 2011) gave well over 250 public informational meetings statewide regarding the status of mountain lions/cougars in Iowa and the Midwest. This was done to educate the public about Mountain Lions and help with their concerns. Information about mountain lions can be found on the Iowa DNR's website at: http://www.iowadnr.gov/Conservation/Iowas-Wildlife/Occasional-Wildlife-Visitors.

Figures

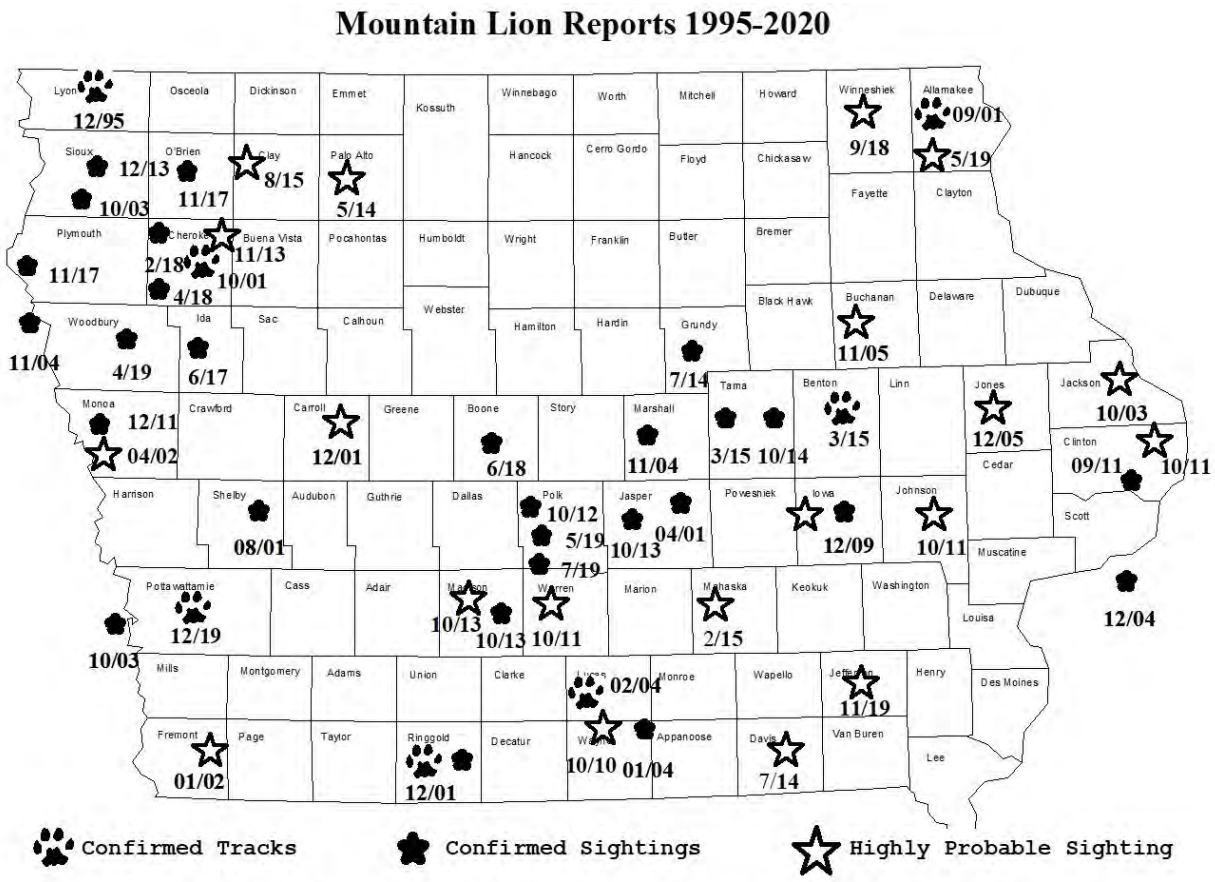

Figure 7.1 Confirmed locations of mountain lion reports in Iowa. Numerous additional sightings have been reported, but are not mapped if they were not confirmed.

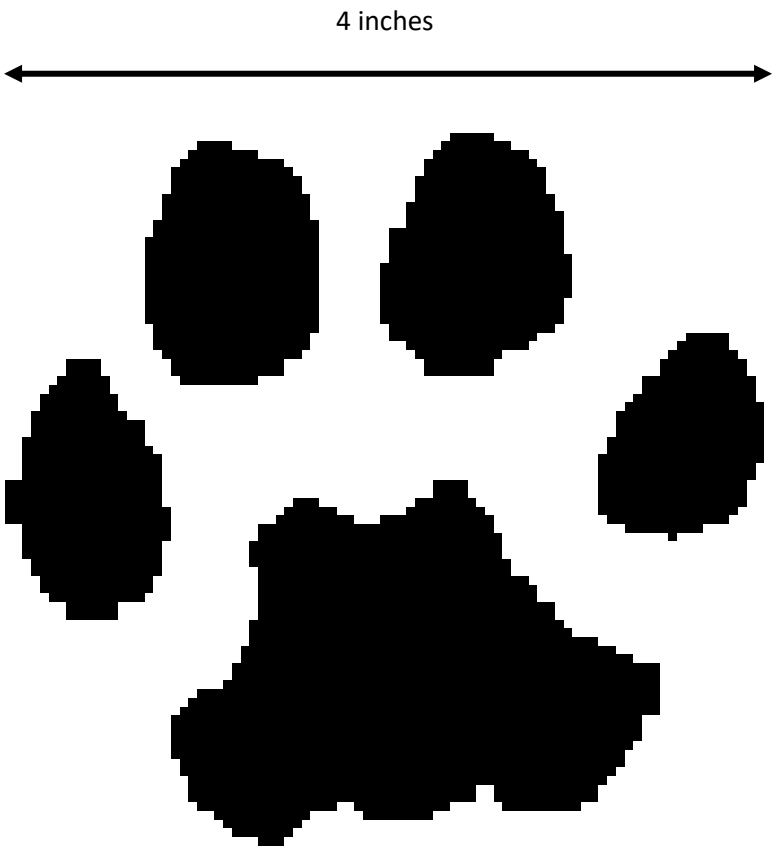

Figure 7.2 Typical Mountain Lion track

Tables

Table 7.1 Confirmed Mountain Lions in Iowa, 2001-2019

November	2004	Sighting	Woodbury
November	2004	Trail Camera Pictures	Marshall
December	2004	Sighting	Scott
December	2009	Shot	Iowa
September	2011	Trail Camera Pictures	Clinton
October	2012	Shot	Polk
October	2013	Trail Camera Pictures	Warren
December	2013	Shot	Sioux
July	2014	Tracks	Grundy
October	2014	Trail Camera Pictures	Tama
March	2015	Tracks	Benton
June	2017	Shot	Ida
August	2017	Trail Camera Pictures	Clay
August	2017	Trail Camera Pictures	Cherokee
December	2017	Shot	Plymouth
June	2018	Tracks	Boone
April	2018	Trail Camera Pictures	Cherokee
September	2018	Sighting	Winneshiek

April	2019	Vehicle Collision/no kill	Woodbury
May	2019	Videos/Sightings	Polk
July	2019	Sighting	Polk
May	2019	Sighting	Allamakee
November	2019	Sighting	Jefferson
December	2019	Tracks	Pottawattamie

Table 7.2 Confirmed and Probable Mountain Lions in Iowa by year, 2001-2019

1995	1
2001	5
2003	2
2004	5
2009	1
2011	1
2012	1
2013	2
2014	2
2015	1
2016	0
2017	4
2018	3
2019	6
2020	0
Total	**34**

Table 7.3 Method of confirmation for Mountain Lions in Iowa, 1995-2019

Confirmation Method	No. of Mountain Lions
Sightings	8
Tracks	9
Pictures	8
Shot	5
Roadkills/Collision	3
Video(s)	1
Total	**34**

Black Bear Status in Iowa (2001-Present)

Black bears were one of the most recognizable and noticeable mammals encountered by Europeans as they settled North America. As settlers moved west, they generally killed any bears they encountered. Thus, black bear numbers declined rapidly in many areas and disappeared from much of their former range. Most present-day Iowans probably associate black bears with some of our large national parks and do not realize they once occurred in Iowa. When the settlers reached Iowa, they found them widespread throughout the state but higher numbers occurred where there were more woodlands. Bears were killed because they would damage crops, harass and kill livestock, and because they were valuable both as food and for their hides. Several black bear stories of the exploits of early-day "Davy Crockett's" in Iowa have been recorded in journals and diaries.

There are pre-1900 records of black bears from 48 Iowa counties, two-thirds of them from counties in the eastern half of Iowa. The last recorded historical bear sighting in the 1800s was one killed near Spirit Lake in 1876. Although a Fish Commission had been established in 1873 nothing really happened in terms of Game/Wildlife legislation until after the last black bear had disappeared. Thus, they are not recognized as a designated wildlife species in the Iowa Code. In the 1960s, black bear reports began to occur in the state. Several of these reports were from captive bears that were either turned loose or were escapees. In the 1990s through the present, we began to field more reports of what appeared to be wild free ranging black bears in the state (Table 7.4). Currently, the nearest established wild populations of black bears are in Wisconsin, Minnesota, and central/southern Missouri. These populations are expanding their range towards Iowa from both the north and south. Figure 7.3 shows the locations by county of the most recent sightings of bears in Iowa - including those in 2019. Many of those confirmed reports are occurring in northeast/eastern Iowa.

In 2019, there were four confirmed bears reported in Iowa. Two separate bears in Winneshiek County, one of which was again north of Decorah. We believe this bear is a resident. The second bear was approximately 6 miles east of Decorah. One bear was again reported in Fayette County and could be a resident, the fourth bear was reported in Delaware County.

So far in 2020, there have been at least four confirmed bears in Iowa. Two were in Dubuque County, one in Chickasaw County, and one in Allamakee County. One of the bears in Dubuque County entered our state from Illinois after traveling south from Wisconsin. This bear was often visible during daylight hours while traveling in a general south to southwest direction, crossed major roadways and eventually travelled east back to Illinois. During this time a large social media following developed - even naming the bear 'Bruno'. This bear was eventually darted near St. Louis, and moved to a national forest in Missouri in early July.

Black bear sightings are usually more reliable than mountain lion/cougar sightings because they are very distinct in appearance and do not necessarily flee when sighted. Also bear tracks are very distinct, and they are not readily mistaken for other animals. Black bears, like mountain lions/cougars, have no legal status in Iowa. That means they aren't protected. The DNR continues to consider legislation to give both species legal furbearer status in the Iowa Code. The Governor's office has discouraged the DNR from pursuing legal status of the black bear and mountain lion/cougar because of bio-political conflicts between agriculture and these two wildlife species. The effort to give them furbearer status needs to be pursued in the future. This would allow appropriate wildlife management to occur which would include opportunities to handle nuisance black bear complaints. A lot of emotion is generated when one of these bears are killed. Where possible, we should discourage the indiscriminant killing of black bears unless there are concerns for human, pets, or livestock safety. Bears are omnivores, primarily vegetarians, foraging on seeds, fruits, berries and other plant material but they will feed upon animals as well. Human tolerance will be the deciding factor as to whether black bears would ever re-establish a breeding population again in Iowa. If they do, their numbers would likely remain quite small.

Figures

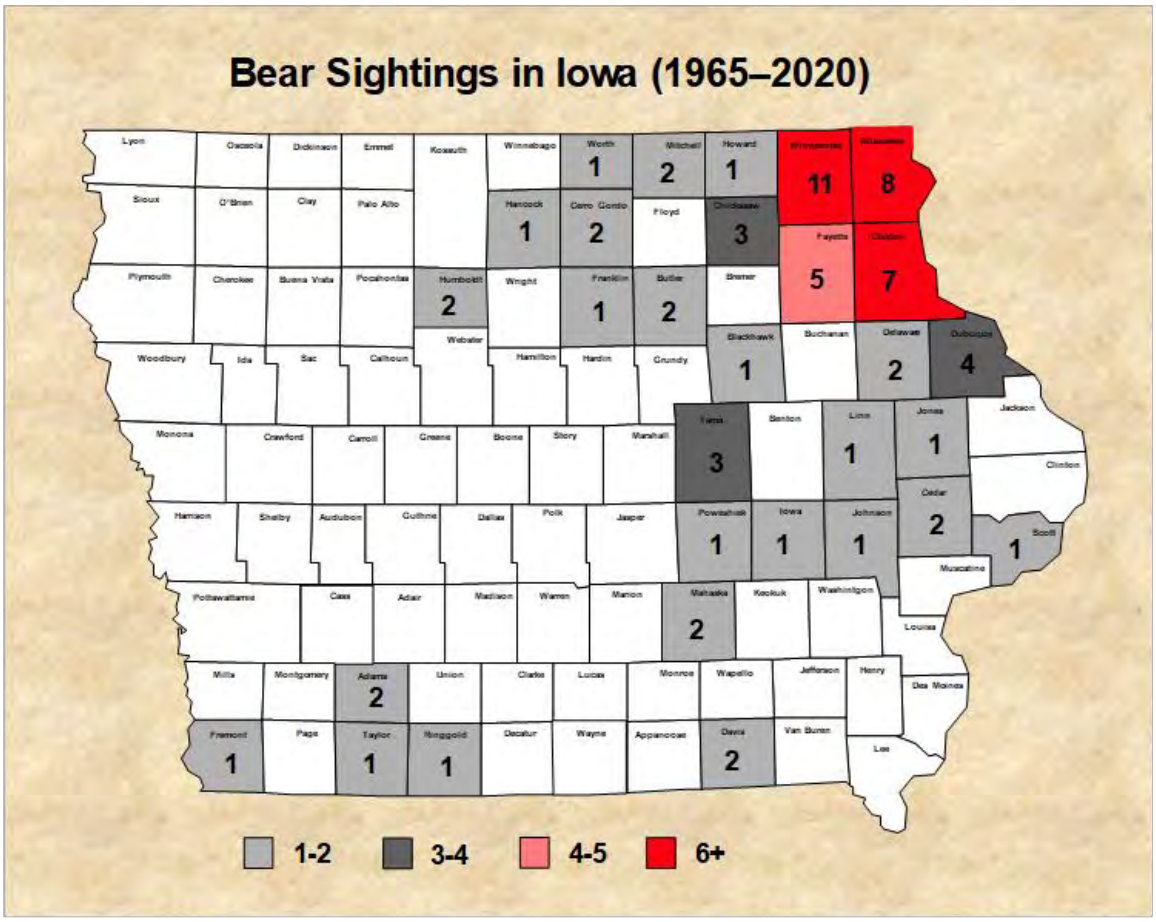

Figure 7.3 Confirmed locations of Black Bears in Iowa 1965-2020. (1876 Last Historical Sighting, Dickinson County) (8/05/19)

Tables

Table 7.4 The number of confirmed black bears in Iowa by year 2002-2019.

2002	5
2003	0
2004	0
2005	1
2006	0
2007	0
2008	5
2009	1
2010	3
2011	1
2012	1
2013	0
2014	3
2015	4
2016	3
2017	5
2018	2
2019	4
2020	4
Total	**42**

Gray Wolf (Timber Wolf) Status in Iowa (2001-2020)

Two large wolf-like mammals were frequently encountered by early settlers in Iowa. While Iowa was still part of the Louisiana Territory, in the early 1800s the very first piece of wildlife legislation was that to encourage killing wolves. Much of the legislation centered on bounties. There are no known specimens preserved in museums from the state. Historians usually did not distinguish between the gray (timber) wolf, *Canis lupus* and the coyote, *Canis latrans* often called the "prairie wolf." Both species were greatly persecuted and until very recently, only the coyote remains and thrives in the state.

Two different subspecies of gray wolf occurred in Iowa. The Great Plains wolf (a name that causes considerable confusion because the coyote which was often given a similar name, the prairie wolf), was found over the western two-thirds of the state. The Great Plains Wolf followed the bison herds, feeding on the stragglers from the herd as well as other prey (Dinsmore, 1994). The other subspecies was the gray (timber) wolf found primarily in eastern Iowa, especially in the wooded northeastern corner of the state. Gray wolves were likely extirpated by the late 1800s. Bowles (1971) regards the last valid wolf record to be from Butler County in the winter of 1884-85. A timber wolf taken in Shelby County in 1925 appeared to be wild, but it also could have escaped from captivity before being shot. Gray wolves often fed on the domestic animals that settlers brought to Iowa, and there are numerous reports of them killing chickens, pigs, calves, and sheep in Iowa. Gray wolves were fully protected in all the 48 states in August of 1974 under the Endangered Species Act (ESA) of 1973.

Great Lakes Population of Gray Wolves

In 1978, the Great Lakes population of wolves were reclassified (down-listed) from endangered to threatened under the ESA in Minnesota. The US Department of Interior's Fish and Wildlife Service administers the ESA. The Fish and Wildlife Service is working to allow more state rights' management of gray wolves and other resident species. Taking the gray wolf off the endangered/threatened list has continued to generate considerable controversy between wildlife professionals and animal rights' activists. Public review and input of this effort continues. Both Minnesota and Wisconsin were allowed to move forward with their first modern day wolf harvest season that took place in the Fall/Winter 2012. On Feb 20, 2015 the Great Lakes Gray Wolf population was again put back on the Endangered Species List due to a court order. Since then, attempts to appeal the decision along with continued debates within Minnesota and Wisconsin continue.

Rocky Mountain Population of Gray Wolves

The Rocky Mountain wolf population was delisted from threatened on July 18, 2008 which allowed them to be legally harvested with approved state management plans, however an injunction by animal rights activists placed them back on the Threatened List which in essence gave them protection again. Court disputes between activist groups, ranchers, and government agencies continued for the next few years. The Rocky Mountain population was officially delisted from Endangered and Threatened Status on March 6, 2009. The back and forth between federal protection or delisting has continued since. However, many western states now allow wolves to be readily killed if there is concern for the welfare of livestock. Numerous animals have, in fact, been taken since this occurred.

Gray Wolf Status in Iowa

Unlike the mountain lion and the black bear, the gray (timber) wolf is designated as a furbearer with state protected status under the Iowa Code. Gray wolves likely have protection status because they were not clearly separated from the coyote in early bounty legislation, while Mountain Lions and Black Bear had basically been extirpated by the late 1880s before any wildlife legislation occurred. Thus, wolves are listed as a furbearer under Iowa code and are protected by state law. We currently have a closed season but a gray wolf could be killed if it was causing livestock damage. With the Great Lakes population of gray wolves again listed as threatened and endangered by the US Fish and Wildlife Service, they also have federal protection status in Iowa.

Beginning in the mid-1990s, a few wolves were appearing in west-central Wisconsin and southeast Minnesota which is approximately 75 miles from the Iowa border. It's very likely major river corridors, especially the Mississippi River, in this tri- state region (MN, WI, IA) serve as travel corridors for wolves. Because the Driftless region is relatively rugged there is some habitat available that is conducive to wolves. It's not likely wolves will visit Iowa often, nor in high numbers, however it is entirely likely for the occasional wolf to come down into Iowa from Minnesota or Wisconsin (Figure 7.4).

In October of 2000, a radio collared wolf from Michigan was shot and killed near Kirksville, Missouri. This animal traveled over 600 miles (Straight line from where it was radio collared to where it was killed) and could have actually moved through a portion of Iowa before being killed in Missouri. Kirksville is located about 50 miles south of Bloomfield, IA.

On November 15, 2002, a wolf was shot in Houston County, Minnesota which is adjacent to Allamakee County, Iowa; the northeastern most county of Iowa. Two known wolf-like animals were taken in 2010 in Sioux and Guthrie County.

Wolves are very mobile animals and as they extend their range southward more will likely frequent Iowa. The distribution of gray wolves in Wisconsin and Minnesota's is being actively documented (Figure 7.5). Indications from both states, especially Wisconsin, are of some trends in wolves colonizing in a southward direction in recent years.

During 2009 through 2012, a few reports came from people seeing what they believed were gray wolves in Iowa on a more frequent basis. For example, one (unconfirmed) report was in Jefferson County in July 2012.

2013
There were no confirmed reports of wolves in Iowa for 2013. However, there were some additional reports to the Iowa DNR that weren't able to be confirmed. Missouri and Illinois both reported 2-4 documented wolves in their states in 2013.

2014
In 2014, the Iowa DNR was able to confirm that two female wolves were shot and killed. One was shot in February in Buchanan County, the second was shot in Jones County. Both weighed close to 70 pounds and neither showed indications that they had whelped. It is likely they were both 2-year olds based on tooth wear, body size, and other features. DNA evidence on one wolf indicated it matched somewhat with the Great Lakes population of wolves. It is likely both of these wolves travelled on their own into Iowa from MN, WI, or MI. Missouri also reported a female gray wolf was shot in the south eastern part of the state in January 2014.

2015
There were three separate, confirmed reports of gray wolves in Iowa. One wolf was confirmed in February via trail camera in Jackson County. A second gray wolf was shot by coyote hunters in December in Osceola County. This wolf was a male that weighed approximately 99 lbs and tooth aged at 1+ yrs old, meaning this wolf was about 18 mos old. The third wolf was shot in Van Buren County by a deer muzzleloader hunter. This wolf was a male that weighed approximately 103 lbs and tooth aged at 1+ yrs old also. It is likely all three wolves dispersed from the Great Lakes states of MN, WI, or MI. However, DNA testing could not confirm this for sure.

2016
During 2016, we had 9 unconfirmed reports and 0 confirmed reports of gray wolves in Iowa (Table 7.5).

2017
In 2017, there 4 unconfirmed reports of gray wolves seen in Iowa, with 1 possible confirmed report in Allamakee County. With this animal, camera footage was recorded by deer hunters on a public hunting area. However, the DNR hasn't been able to view this footage to verify this animal as a wolf, so it will be recorded as an unconfirmed wolf report.

2018
In 2018, there were 4 reports of wolves, but none of those were able to be confirmed.

2019
In 2019, there were no confirmed reports of wolves. However, we continue to have an occasional dog with a high-content of wolf genetics in it sighted, killed, or reported in various areas of the state.

It is possible that we may continue to have a roving wolf move into or through our state on rare occasion, but it's important to understand that we don't have a breeding population at this time. Time will tell whether or not a breeding

population of gray wolves will become established in Iowa. Because gray wolves, at a distance can be readily mistaken for coyotes or in some cases dogs, many reports will likely be cases of mistaken identity. Modern day coyote hunters should take extra care to identify their target before shooting because it's now possible (although the chances are small), that it could be a gray wolf.

Figures

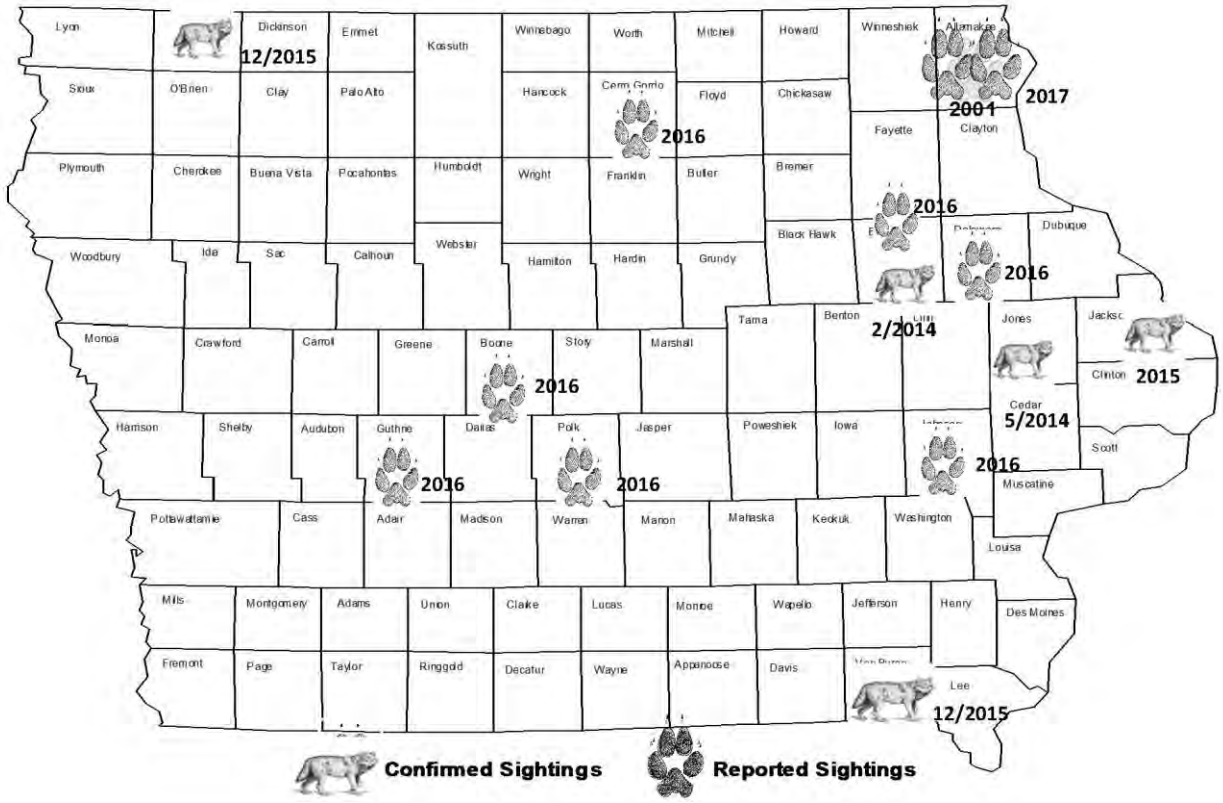

Figure 7.4 Gray (Timber) Wolf Sightings in Iowa (8/29/19)

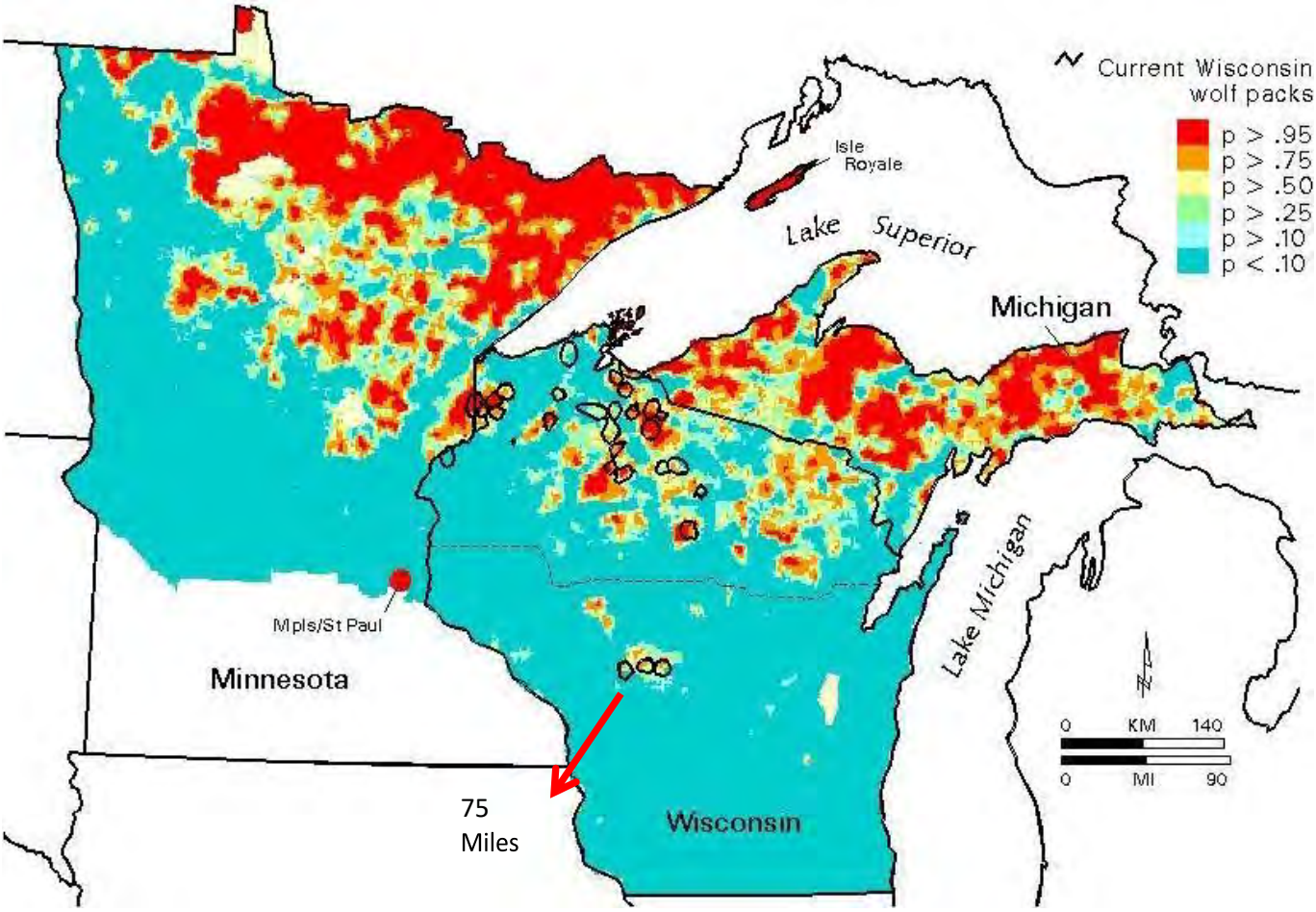

Figure 7.5 Favorable Gray Wolf habitat and pack locations in the Northern Great Lakes Region
Source: http://www.timberwolfinformation.org/info/wolves/prob1.jpg

Tables

Table 7.5 Public reports of wolf sightings in Iowa by year (2012-2019).

Year	Confirmed Wolf Sightings	Unconfirmed Wolf Sightings
2012	0	2
2013	0	1
2014	2	4
2015	3	1
2016	0	4
2017	0	5
2018	0	4
2019	0	0
Total	5	21

A few unconfirmed wolves were reported for the years (1938-2009). Unconfirmed wolf sightings began being documented better in 2012 as shown in the table above.

IOWA BOW HUNTER OBSERVATION SURVEY: 2019 SUMMARY

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Abstract
Each year, the Iowa Department of Natural Resources (DNR) solicits responses from bow hunters as part of the Bow Hunter Observation Survey conducted from 1 October to 6 December. The primary objectives of this survey are to 1) collect observations of white-tailed deer which serve as an independent index of regional deer populations across the state, 2) supplement other deer data collected by the DNR, and 3) collect observations of other select species to monitor long-term population trends of these species. The DNR selects survey participants each year using a two-stage, stratified-random sampling design in which a sample of 9,000 individual bow hunters are selected from the list of all hunters who purchased an archery hunting license in each of the preceding three years. Each participant receives a diary for recording the number of hours hunted during each hunting trip, as well as the number of deer, wild turkey, and select furbearer species seen during each trip. To standardize observations, the mean number of animals seen per 1,000 hours hunted (95% confidence interval) is estimated statewide and by survey region for 12 species. In 2019, we collected responses from 2,549 bow hunters (29% response rate) consisting of 25,681 hunting trips and 84,951 hours of total observation time (3.28 ± 0.028 hours/trip). With the exception of northwest Iowa, the total number of deer observations decreased between 2018 and 2019. However, the 10-year trend for total deer is increasing in all regions except southwest Iowa. Wild turkey observations increased in northwest, north-central, and central Iowa between 2018 and 2019 but decreased in all other regions. According to 10-year trends, bobcat and opossum observations continue to increase while striped skunk observations are decreasing statewide. Observations for badger, raccoon, and red fox are stable to slightly decreasing across the state, and coyote observations are increasing in all regions except northwest and southeast Iowa. Data from this survey are extremely valuable in monitoring population trends for harvested species such as white-tailed deer and raccoon and serve as the only index for monitoring population trends for uncommon species such as gray fox.

Introduction
Reliable long-term indices of wildlife population trends are critical for making informed decisions on management of harvested species such as white-tailed deer (*Odocoileus virginianus*) and bobcat (*Lynx rufus*) and for monitoring the population status of rare species or species of conservation concern such as gray fox (*Urocyon cinereoargenteus*). Data to generate such indices, however, can be logistically challenging to collect at a statewide scale. Hunter observation surveys have been implemented by several natural resource agencies throughout the U.S. as a means for collecting data to successfully monitor population trends for a variety of species including white-tailed deer (Winchcombe and Ostfeld 2001, Haskell 2011), moose (*Alces alces*; Ericsson and Wallin 1999, Crum et al. 2017), and gray wolf (*Canis lupus*; Rich et al. 2013). These citizen-science surveys provide a wealth of information at broad spatial scales for a small cost relative to other standardized surveys using paid staff. Therefore, hunter observation surveys are an extremely cost-effective approach for obtaining quality data to guide management decisions for both harvested species and species of conservation concern.

In 2004, the Iowa Department of Natural Resources (DNR) implemented the annual Iowa Bow Hunter Observation Survey. Designed in cooperation with Iowa State University, the survey had two primary objectives: 1) to collect observations of white-tailed deer to serve as an independent supplement to other deer indices used by the DNR, and 2) to develop a database of long-term observations for other select species to monitor trends in relative abundance. Since the development of the Iowa survey, several other Midwest states have implemented similar surveys including Illinois (Bluett 2013), Indiana, Missouri, Minnesota (Norton et al. 2017), Ohio (Ohio DNR 2015), and Wisconsin (Rees Lohr 2017). Bow hunters are ideal for collecting wildlife observational data because they typically employ stationary hunting methods (e.g., camouflage, scent masks, etc.) from a ground blind or tree stand which is conducive to observing wildlife in an undisturbed state and because they have access to privately- owned lands that may not be accessible by paid staff,

therefore increasing the coverage area of the survey.

Furthermore, the archery season in Iowa (October 1 to early December and mid-December to January 10) is longer than any other deer hunting season and, as a result, bow hunters often spend more time in the field than other types of hunters. This allows for collection of repeated observations that can be used for a variety of purposes related to monitoring both short- and long-term wildlife population trends.

The purpose of this report is to summarize results from the 2019 survey and relative abundance trends of surveyed species for the past 10 years.

Study Area

The Iowa Bow Hunter Observation Survey was conducted statewide and administered to participants in each of nine regions in Iowa (Figure 8.1).

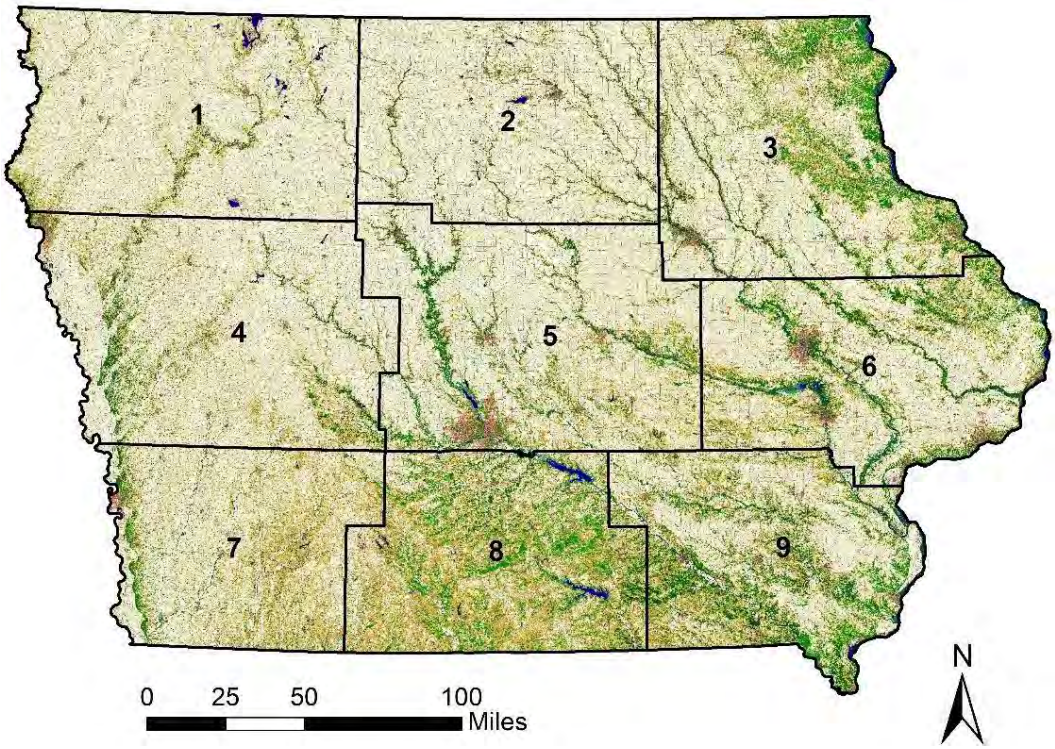

Figure 8.1 Survey regions in Iowa used for distributing the Iowa Bow Hunter Observation Survey, 2019.

Methods

Survey participants were selected using a two-stage, stratified random sampling design (Figure 8.2). The first stage of the sampling process involved selecting a list of bow hunters that 1) indicated interest in participating on a pre-survey sent to all avid Iowa bow hunters in 2019 (i.e., individuals who purchased an archery hunting license in Iowa for each of the past three years) or 2) responded to the survey in one of the last two years ("core" sample; Figure 8.2). The core sample is refreshed every three years to maintain a consistent response rate and was refreshed prior to the 2019 survey. For the second sampling stage, we selected individuals from a list of bow hunters who were not on either of the aforementioned lists as the "supplemental" sample (Figure 8.2). We selected a total of 999 individuals from the combined core and supplemental samples for each of the nine climate regions in Iowa (Figure 8.1) which resulted in approximately 91 survey participants selected for each of Iowa's 99 counties. Our final statewide sample size was 8,992, which is approximately 15% of the population of all archery hunters in recent years (N = ~60,000 individual hunters annually).

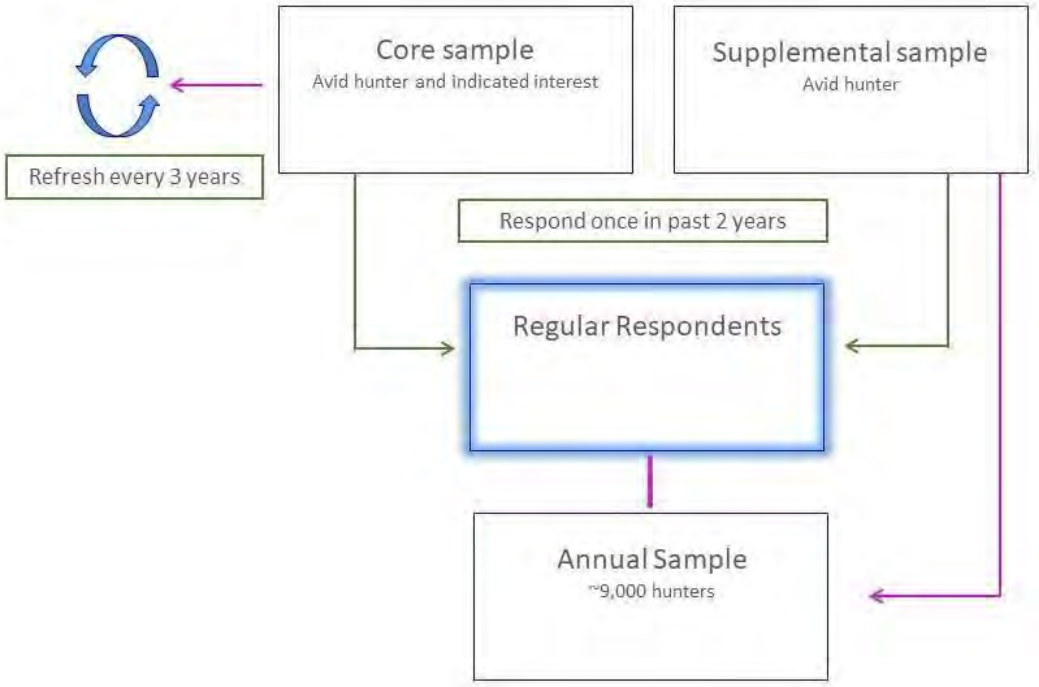

Figure 8.2. Sampling process schematic for Iowa Bow Hunter Observation Survey, 2019.

The survey consisted of a two-page diary in which hunters were asked to record the four counties in which they most frequently hunted, and subsequently the date, county (one of the four already listed above), number of hours spent hunting, and the number of individuals of 12 different species observed during each hunting trip (see Appendix for species surveyed). For white-tailed deer, hunters were asked to record the number of antlered (i.e., buck) and antlerless (i.e., doe or fawn) deer observed during each hunting trip, as well as the number of deer in which sex could not be determined (i.e., unknown). We mailed surveys, along with a cover letter explaining the purpose of the survey, to hunters prior to the start of the Iowa archery season on October 1 each year. Reminder postcards were mailed to hunters who had yet to return their survey by November 15. Hunters were asked to return their survey by December 6 or when they were finished hunting, whichever came first.

We standardized observations for each species by 1,000 hours hunted to account for differences in the number of hunting trips taken and number of hours per hunting trip by region of the state. We reported the mean observations per 1,000 hours hunted and 95% confidence intervals (CI) for each species and summarized 10-year trends for each species.

Results

A total of 134 surveys were returned as undeliverable in 2019. Therefore, the realized sample size in 2019 was 8,858. We obtained responses from 2,549 bow hunters statewide for a response rate of 29%. Statewide, participants spent a total of 84,951 hours hunting on 25,681 trips for an average of 3.28 (95% CI = 3.12, 3.44) hours per trip. Participants reported a median of 12 trips during the 67-day hunting season. The number of trips and hours hunted varied by region and ranged from 1,696 trips (5,245 total hours) in northwest Iowa (Region 1) to 3,768 trips (13,380 total hours) in south-central Iowa (Region 8; Appendix).

White-tailed deer was the most frequently observed species on the survey with a total of 15,433 (95% CI = 13,644, 17,223) observed per 1,000 hours hunted statewide, which includes a statewide total of 4,514 (95% CI = 4,035, 4,992) antlered deer and 9,921 (95% CI = 8,598, 11,244) antlerless deer observed per 1,000 hours hunted. Total deer observed per 1,000 hours hunted ranged from a low of 1,487 (95% CI = 1,314, 1,661) in northeast Iowa (Region 3) to a high of 2,026 (95% CI = 1,747, 2,306) in northwest Iowa (Region 1). The 10-year trend for both antlered and total deer observations is increasing in all regions except southwest Iowa (decreasing; Region 7; Appendix), while the 10-year trend for antlerless deer is increasing in all regions except west-central (stable; Region 4) and southwest Iowa (decreasing; Region 7; Appendix). Despite increasing trends in most regions for both total deer and antlerless deer, observations for both dropped between 2018 and 2019 in all regions except northwest Iowa (Region 1; Appendix).

Wild turkey (*Meleagris gallopavo*) continue to be the second-most frequently observed species on the survey with a total of 3,675 birds (95% CI = 2,747, 4,603) observed per 1,000 hours hunted statewide. Wild turkey observations ranged from a low of 218 birds (95% CI = 173, 263) per 1,000 hours hunted in southeast Iowa (Region 9) to a high of 620 birds (95% CI = 389, 852) per 1,000 hours hunted in northwest Iowa (Region 1). Between 2018 and 2019, wild turkey observations decreased in six of nine regions and the 10-year trend shows long-term decreases in wild turkey observations in six of nine regions, mostly in southern and eastern Iowa (Appendix).

Bobcat (*Lynx rufus*) observations are increasing statewide according to the 10-year trend with the most pronounced increases occurring in northwest, central, and east-central Iowa (Regions 1, 5, 6, respectively; Appendix). Statewide, a total of 44 bobcats (95% CI = 25, 63) were observed per 1,000 hours hunted in 2019, an increase of nearly 50% since the survey was initiated in 2004. Observations of badger (*Taxidea taxus*) are mostly stable statewide according to the 10-year trend with the exception of a sharply declining trend in southwest Iowa (Region 7; Appendix). River otter (*Lontra canadensis*) observations increased drastically between 2018 and 2019 across the northern third of the state (Regions 1-3; Appendix). The 10-year trend across all regions shows a mostly statewide decline in observations of raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), and striped skunk (*Mephitis mephitis*), whereas trends in observations of both coyote (*Canis latrans*) and opossum (*Didelphis virgiana*) are stable to slightly increasing statewide.

Discussion

Our survey response rate of 29% in 2019 was approximately 5% higher than last year, likely due to refreshing the core sample, and is the highest realized response rate for the survey in the last 10 years. Not surprisingly, both the total number of trips and total hours hunted statewide increased from 20,907 to 25,681 and 67,202 to 84,951, respectively, from 2018 to 2019. Additionally, the average hours per trip increased slightly from 3.18 (95% CI = 3.02, 3.36) in 2018 to 3.28 (95% CI = 3.12, 3.45) in 2019. While the increase in total number of trips and total hours hunted could be an artifact of the increased response rate realized in 2019, one can't ignore the fact that hunting conditions were improved this year compared to last year. The fall of 2018 was the third wettest on record in Iowa with statewide precipitation averaging 6.48 inches above normal (Glisan 2018). This not only reduced the total

number of favorable days for hunters during the 63-day hunting season but also resulted in delayed crop harvest and considerable flooding of bottomland hardwood forests statewide which likely impacted deer behavior and hunters' ability to effectively pattern deer. In 2019, precipitation averaged 4.41 inches above normal making it the seventh wettest on record in Iowa and again resulting in delayed crop harvest across much of the state (Glisan 2019). Despite the potentially unfavorable weather throughout much of the hunting season in 2019, reported harvest for the 2019 archery season increased by 5% compared to last year, which was the lowest reported harvest for the archery season since 2013.

Total white-tailed deer observations decreased in all regions except northwest Iowa (Region 1; Appendix) between 2018 and 2019 with the most significant decreases observed in northeast and south-central Iowa (Regions 3 and 8, respectively; Appendix). A significant outbreak of Epizootic Hemorrhagic Disease (EHD) was documented throughout much of the state in the late summer and early fall of 2019 with EHD-suspected mortality in deer reported in 60 counties, mostly in the southern and eastern two-thirds of the state. Of the 1,927 total reported deer mortalities, approximately 78% came from south-central Iowa (Region 8; Appendix). This outbreak, which is the second-largest outbreak of EHD recorded in Iowa, was likely the reason for the decreased number of deer observations reported by bow hunters across much of the state. The decrease in deer observations coincided with a 13% decrease in total deer harvest statewide between the 2018-2019 and 2019-2020 hunting seasons, therefore suggesting that EHD negatively impacted the fall deer population this year. However, the 10-year trend shows total deer observations are increasing mostly statewide despite the observed decrease in 2019, which suggests the population should recover quickly.

Trends in wild turkey observations are increasing in northern and central Iowa but are decreasing across the southern portion of the state (Appendix). Similar patterns are currently being observed in neighboring states. Both Minnesota and Wisconsin reported growth and expansion of wild turkey populations in recent years, whereas Missouri populations have been declining slightly since 2007 largely due to low poult production (Isabelle 2017). Low poult production has also been cited as a reason for earlier turkey population declines in Wisconsin, and researchers there suggested an

annual fecundity rate of 2.6 poults per hen was needed to stabilize a declining population in the southwestern part of the state (Rolley et al. 1998). In Iowa, fecundity has ranged from an average of 1.7 poults per hen in southwest Iowa to 2.3 poults per hen in northwest, northeast, and east-central Iowa the past five years (Iowa DNR, unpublished data). In 2019, fecundity dropped to a low of 0.8 poults per hen in southeast Iowa and 0.9 poults per hen in east-central Iowa (Iowa DNR, unpublished data). This suggests, therefore, that declining fecundity across much of the state could be a driving factor of the declining turkey observations. However, further investigation into the mechanisms driving declines in turkey populations are needed, and continued monitoring of turkeys in Iowa will help guide future management decisions and research efforts to address these concerns.

Bobcat observations continue to increase statewide according to 10-year trends in each region (Appendix). These increases are especially pronounced in northwest Iowa as bobcats expand north along the Des Moines, Little and Big Sioux, and other major river systems, and in southeast Iowa as bobcats continue to thrive in suitable habitat. Bobcat harvest has intentionally been kept conservative to allow for continued growth and expansion of the population which has occurred in a south to north direction in Iowa. The first modern-day bobcat harvest season began in 2007 in the southern two tiers of counties in Iowa during which a conservative harvest quota was implemented to allow for continued growth and expansion of the population. As the bobcat population expanded northward, additional counties were added to the bobcat harvest zone to include the southernmost four tiers of counties as well as counties adjacent to the Missouri River in western Iowa. Bobcat harvest has increased annually since the implementation of the harvest season in 2007 and survey data continues to show growth and expansion of the bobcat population in Iowa.

River otter observations nearly doubled statewide between 2018 and 2019, with the most significant increases occurring in the northern three regions of the state. This, combined with increased reports of river otters made to DNR staff in the southern half of the state, suggests the population is still increasing throughout the state, particularly within the Mississippi River watershed of Iowa, following reintroduction to the state in 1985. Farm pond nuisance complaints related to otters has increased over the past two years across eastern and southern Iowa. Other Midwest states are also experiencing significant increases in river otters following reintroduction including Illinois (Bluett et al. 2004), Missouri (Mowry et al. 2014), and Ohio (Ellington et al. 2018). Although this survey wasn't originally designed to detect river otters, it remains as one of the only indices (in addition to annual harvest data) available for monitoring population trends of this species statewide.

Raccoon observations increased by 29% statewide between 2018 and 2019 despite the 10-year trends showing declines in all regions except south central Iowa. Observations of raccoons on the annual spring spotlight survey also increased between 2018 and 2019, although it's unknown whether this increase is an artifact of survey conditions or driven by a decrease in harvest due to low pelt prices (Kaminski et al. 2019). Although striped skunk observations increased slightly between 2018 and 2019, 10-year trends for this species continue to indicate a statewide decline. In contrast, striped skunk observations have increased in recent years on the spotlight survey, although observations on that survey fluctuate among years (Kaminski et al. 2019). Opossum observations decreased by 13% from 2018 to 2019, a pattern also observed on the spotlight survey that could be the result of harsh winter conditions in 2019 decreasing annual survival of this species (Kaminski et al. 2019).

Management Implications

Effective management of wildlife populations must be based on sound science. This survey provides a consistent, long-term data set for monitoring trends and spatial distribution of Iowa wildlife populations and allows for future modeling and analysis that provide robust metrics to guide harvest management and conservation decisions for some of Iowa's most charismatic species.

Acknowledgements

We are extremely grateful for the effort and time of the many Iowa bow hunters who assisted this year with collecting valuable observations to guide wildlife management in Iowa. Thanks also to S Roberts and WR Clark for their thoughtful design of this survey. The survey would not be possible without the help of J Swanson and P Fritzell, who assisted with survey distribution, and J. Ford, who spent countless hours entering survey data.

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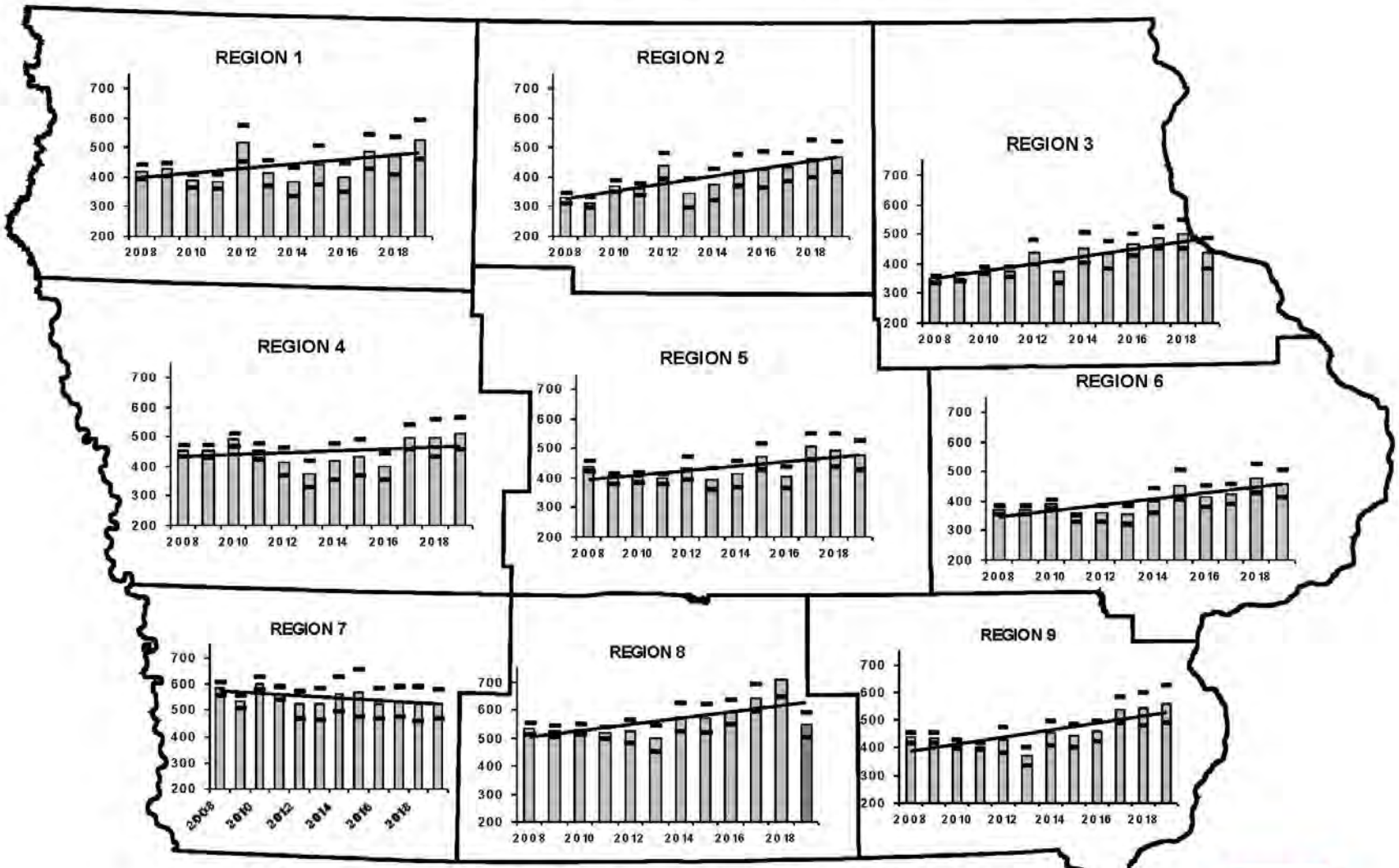
Appendix

Summary of trips, hours hunted, hours per trip, and species observations per 1,000 hours hunted (95% confidence interval) by region from the Iowa Bow Hunter Observation Survey, 2019.

Antlered Deer Observations Per 1,000 Hours Hunted

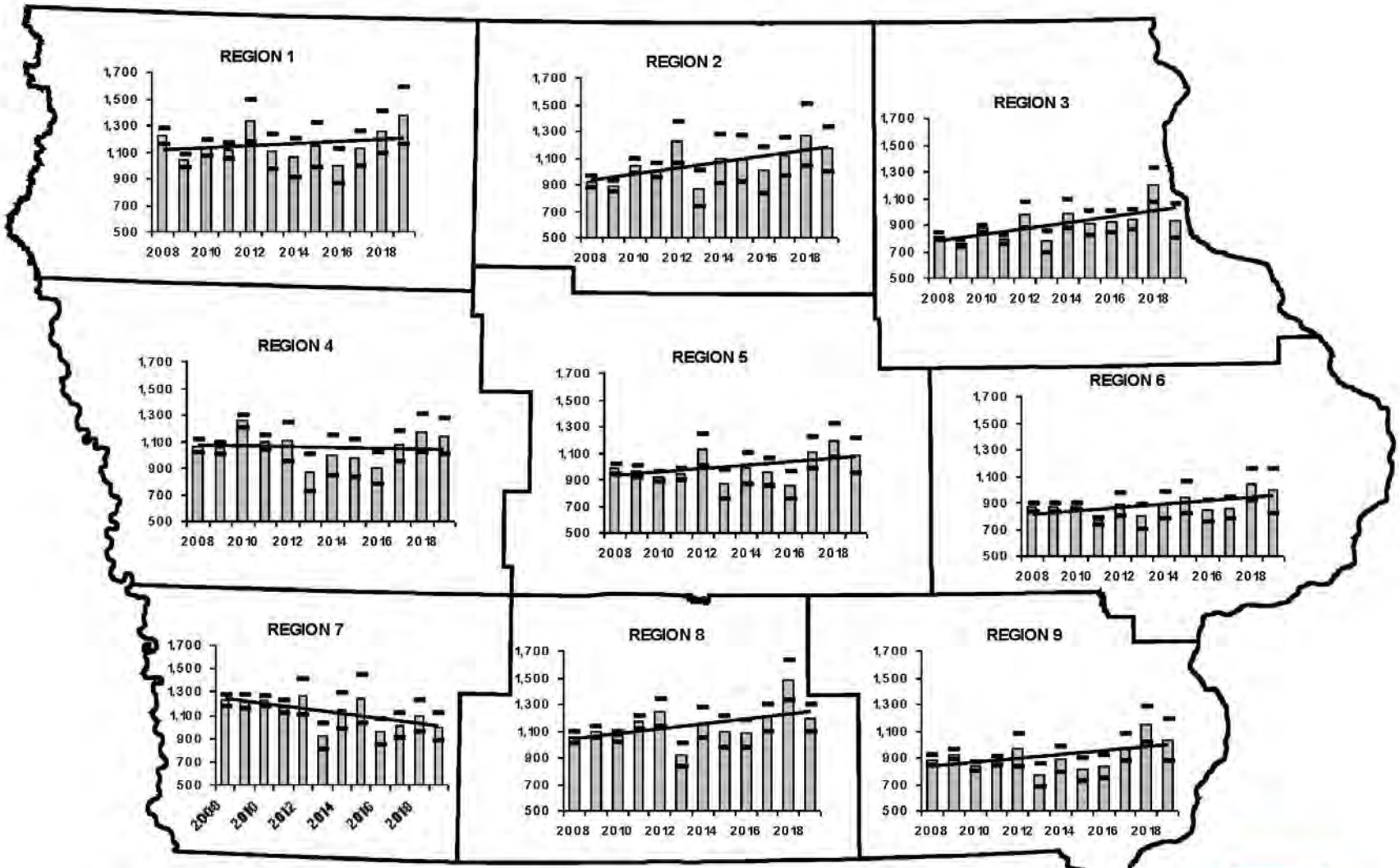
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Antlerless Deer Observations Per 1,000 Hours Hunted

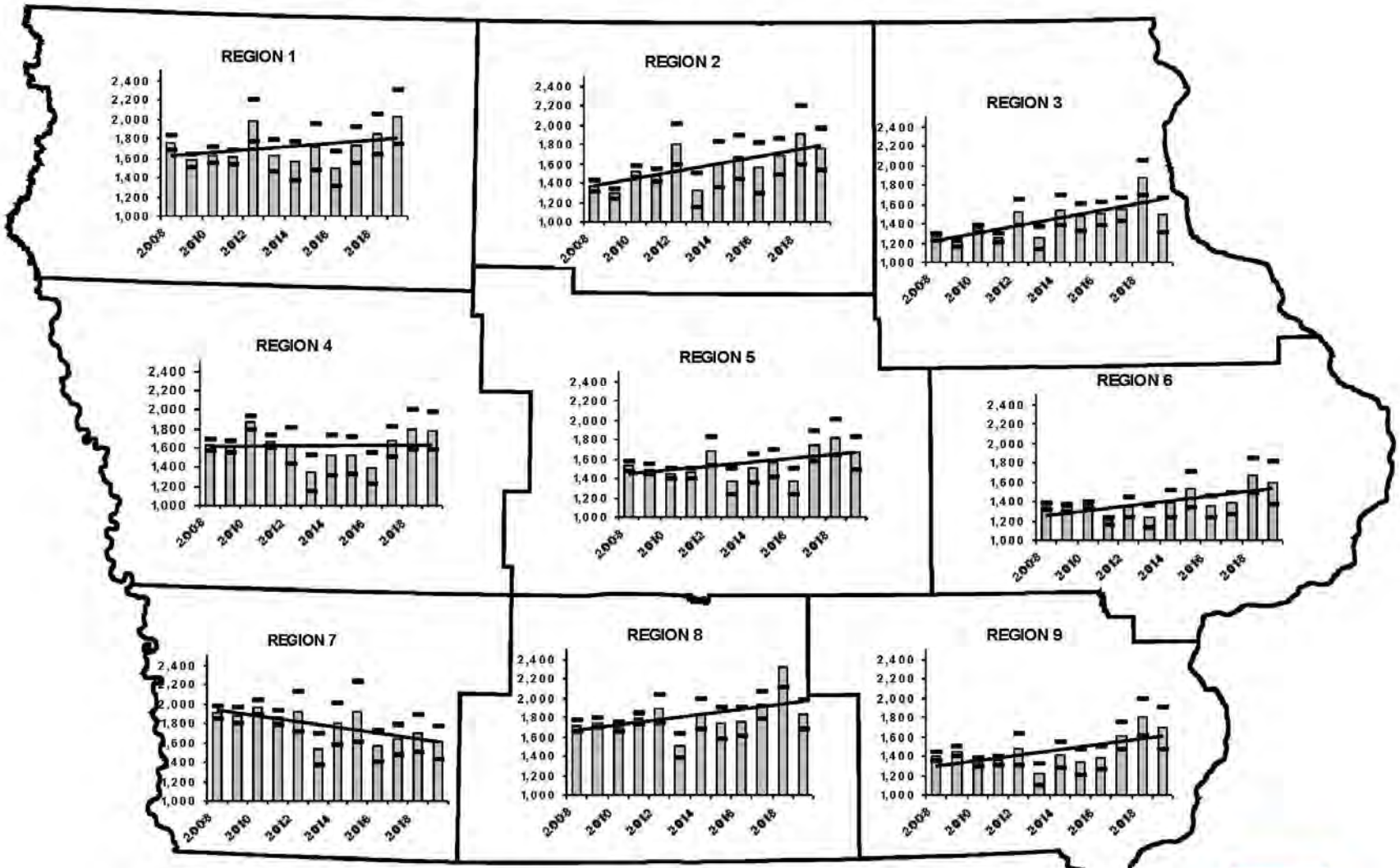
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Total Deer Observations Per 1,000 Hours Hunted

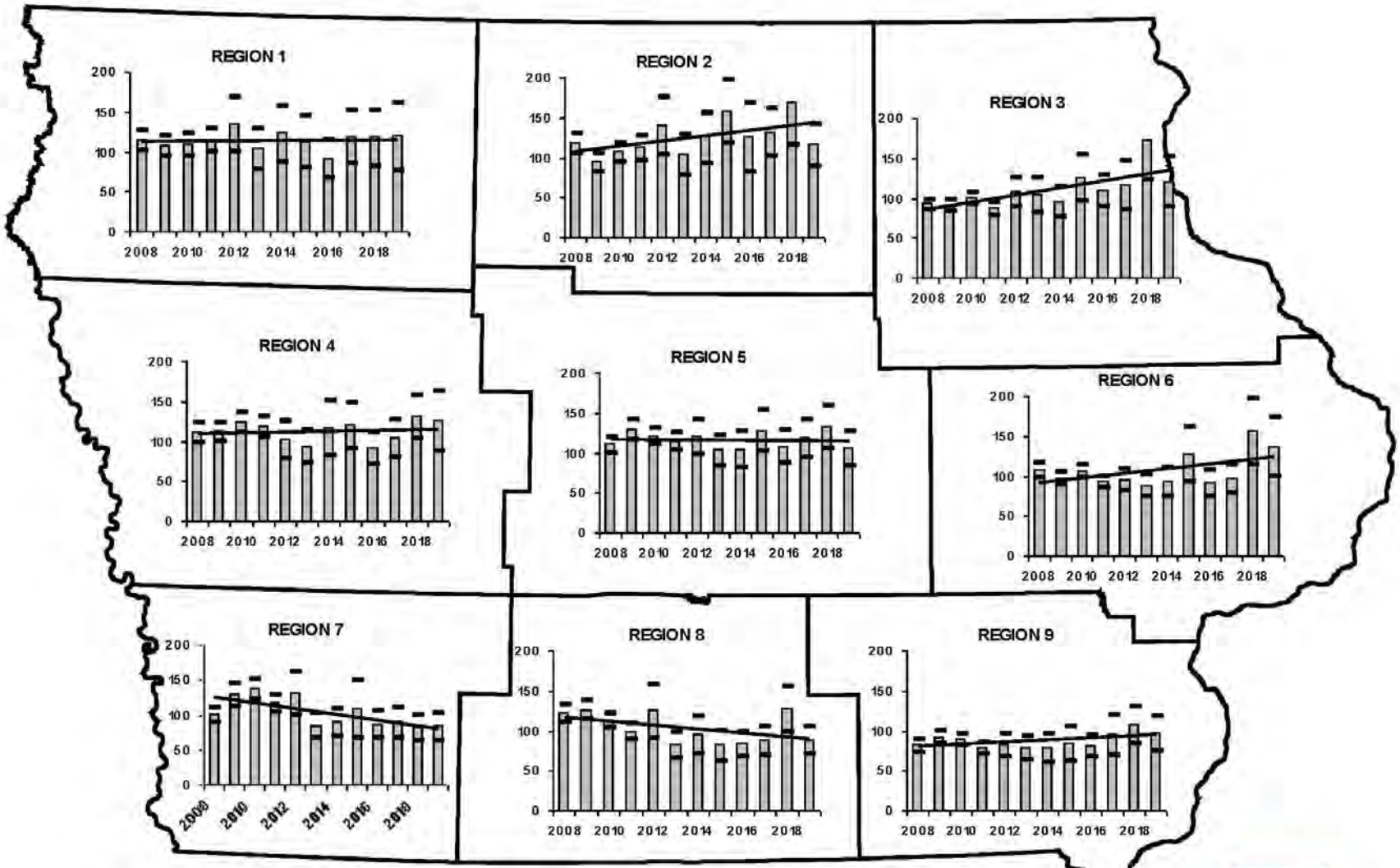
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Unknown Deer Observations Per 1,000 Hours Hunted

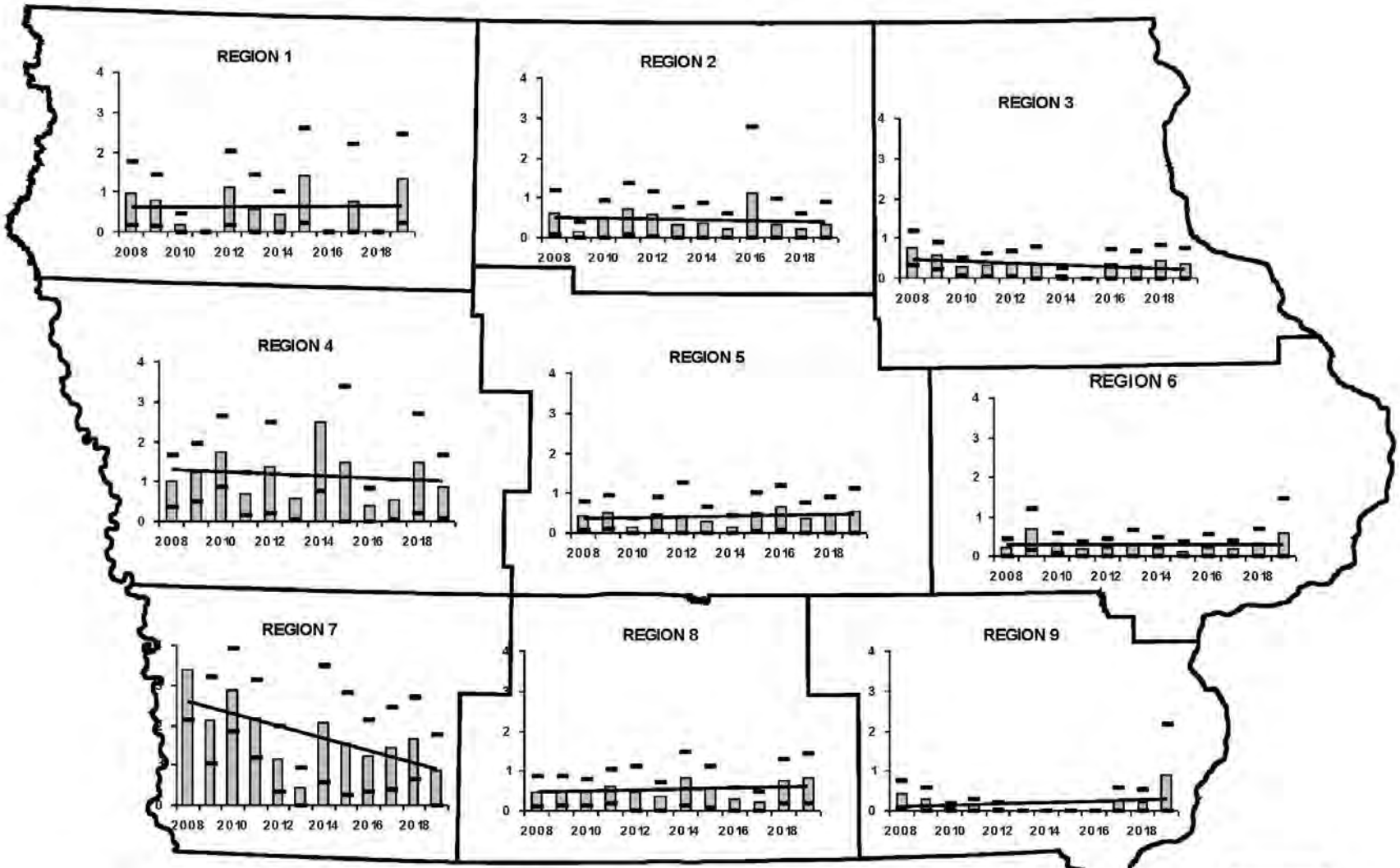
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Badger Observations Per 1,000 Hours Hunted

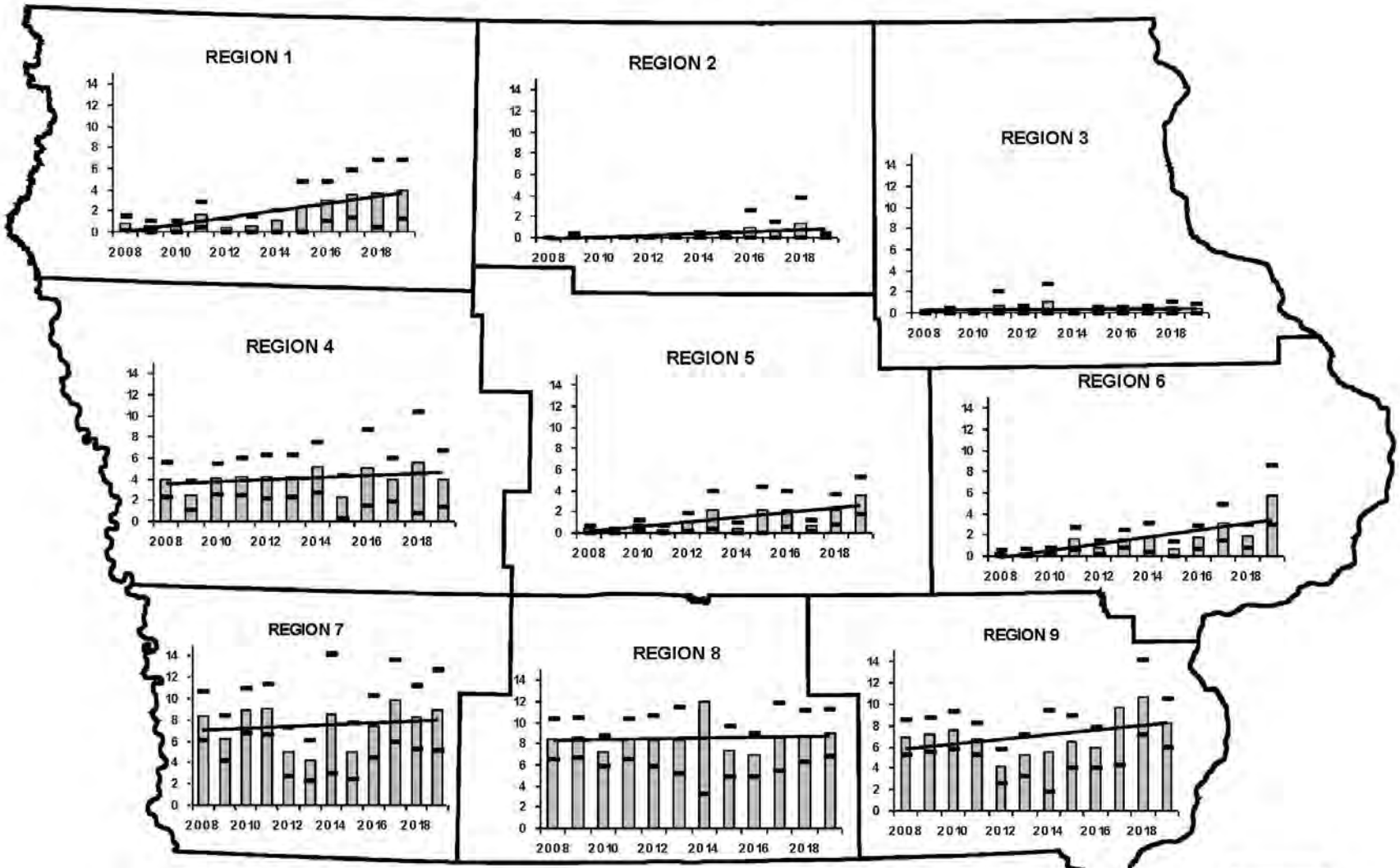
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Bobcat Observations Per 1,000 Hours Hunted

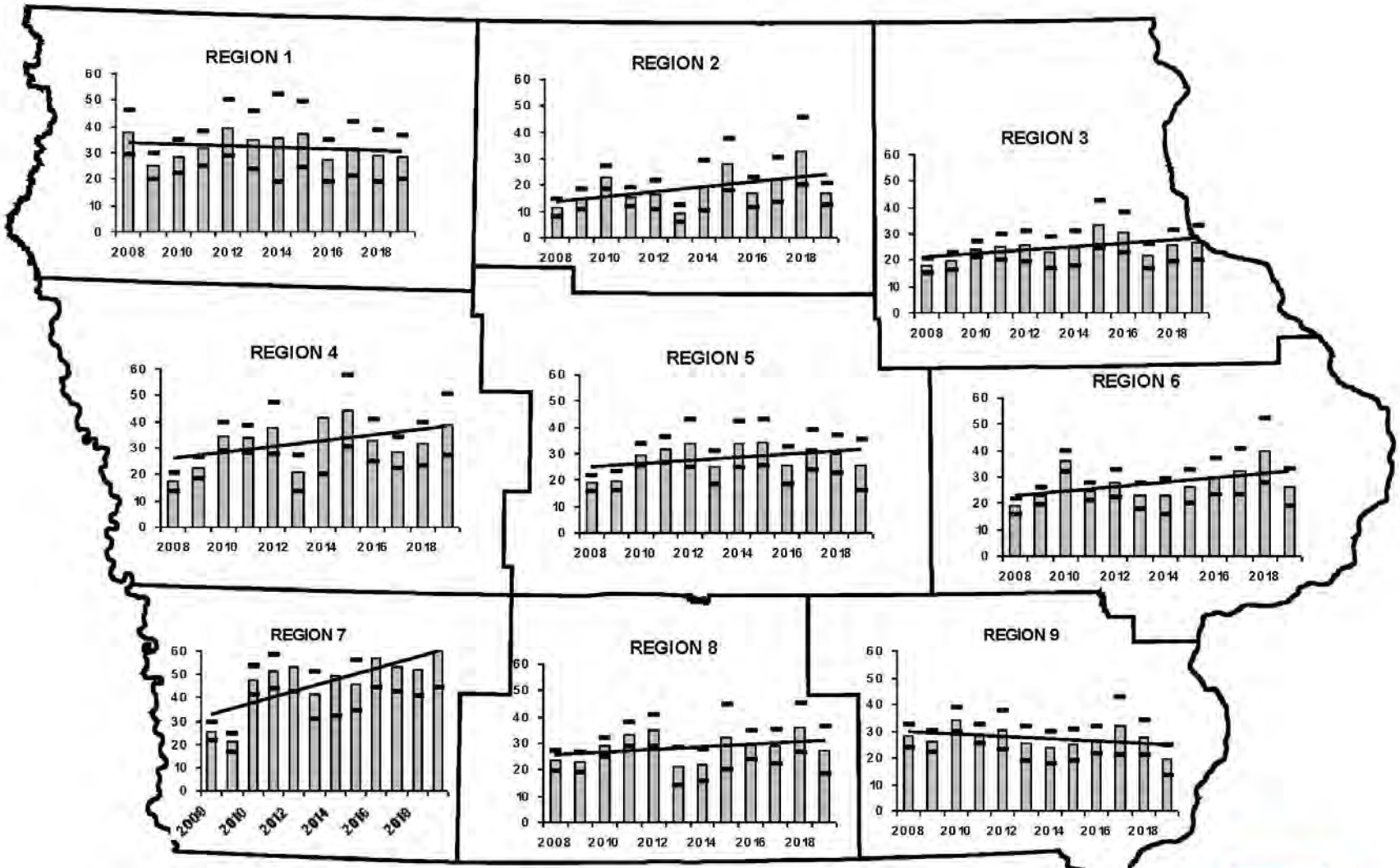
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Coyote Observations Per 1,000 Hours Hunted

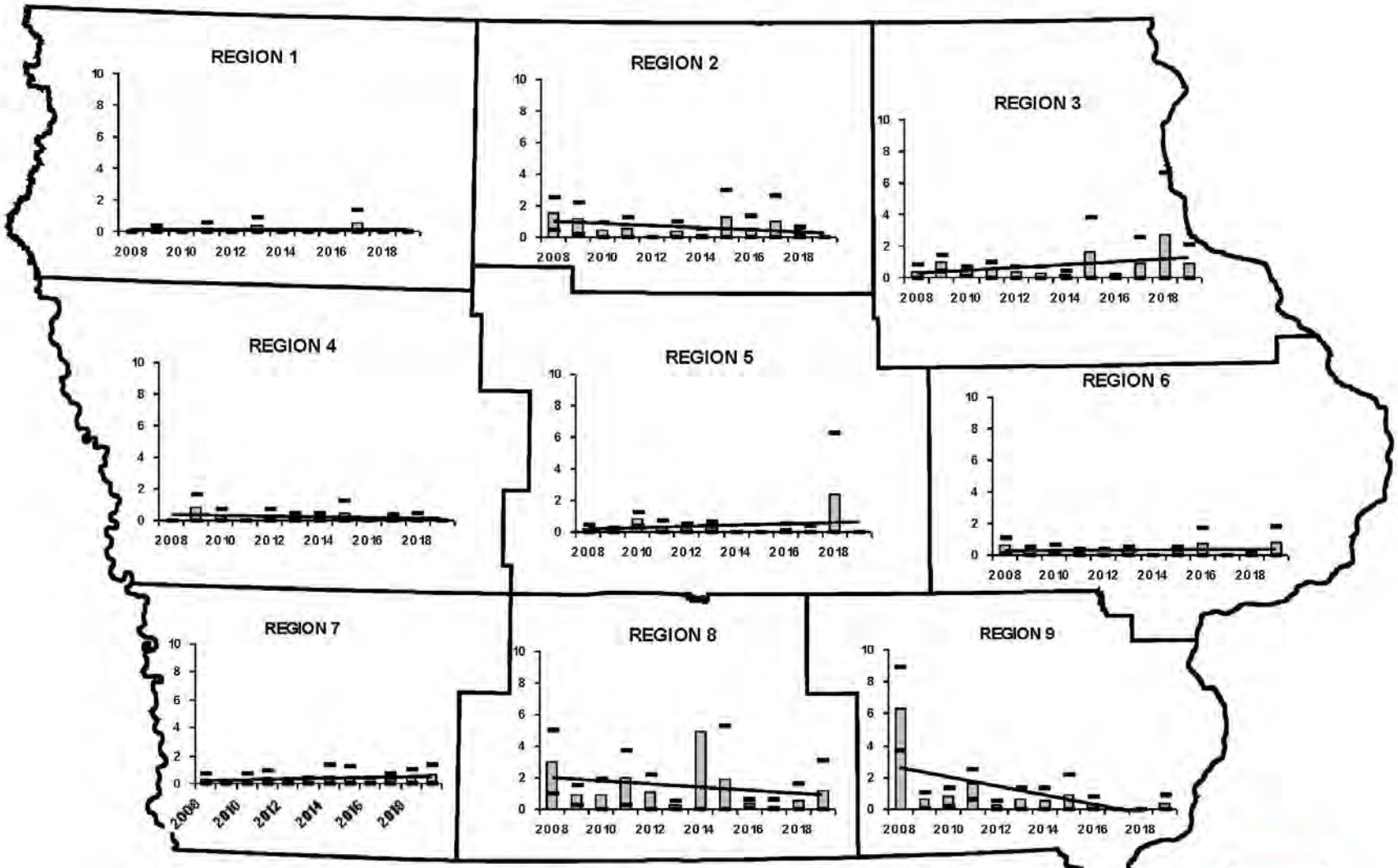
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Gray Fox Observations Per 1,000 Hours Hunted

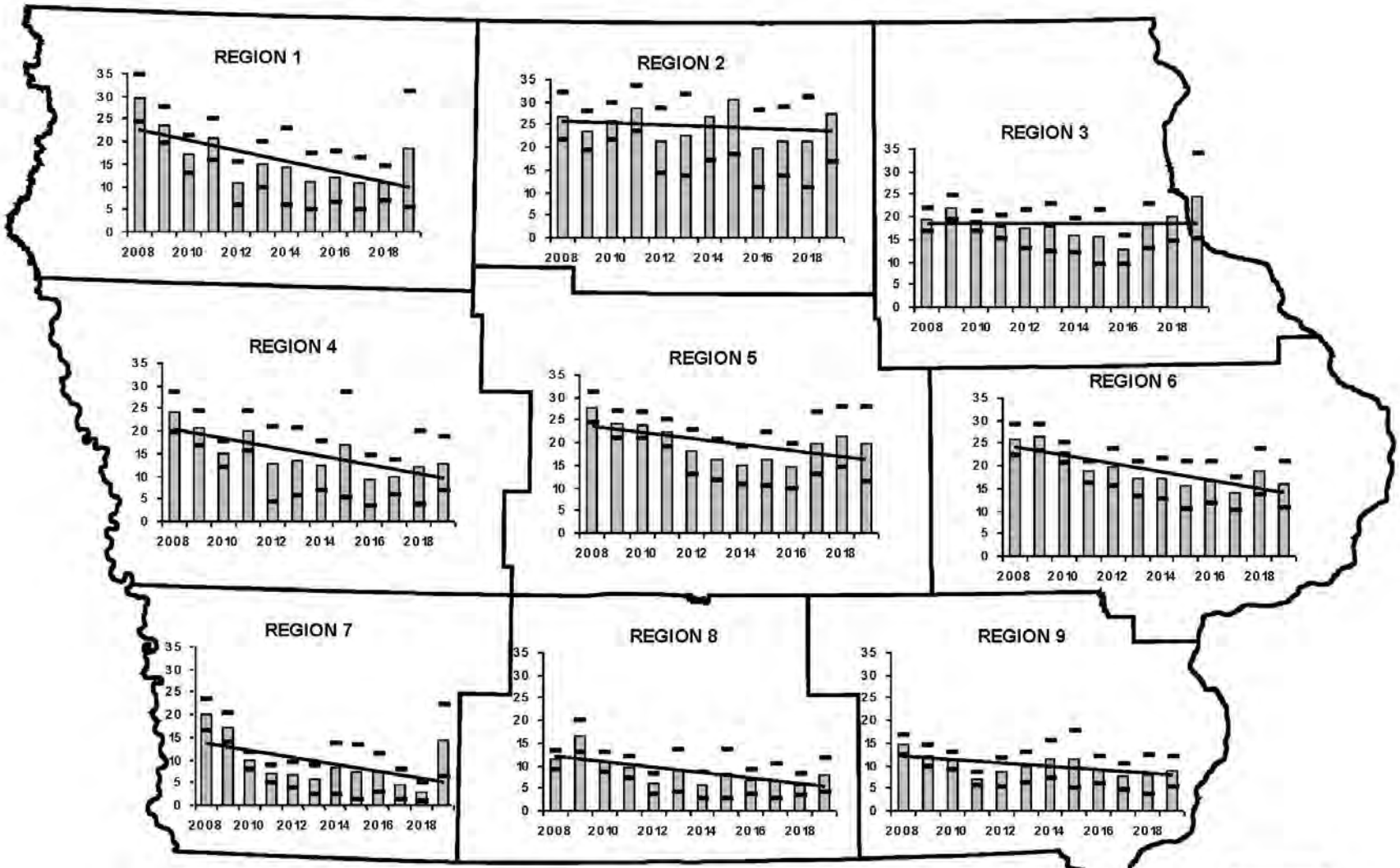
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

House Cat Observations Per 1,000 Hours Hunted

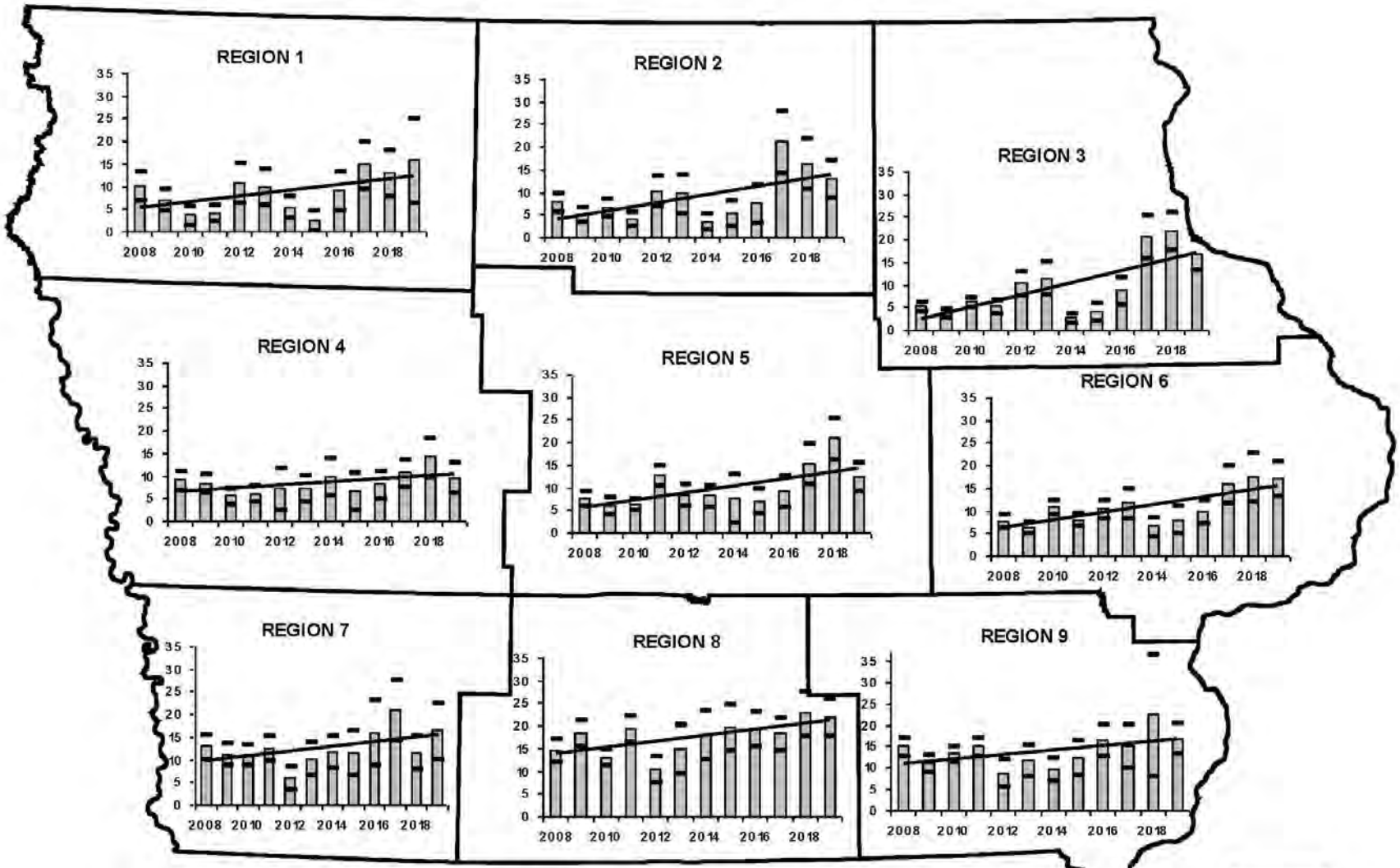
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Opossum Observations Per 1,000 Hours Hunted

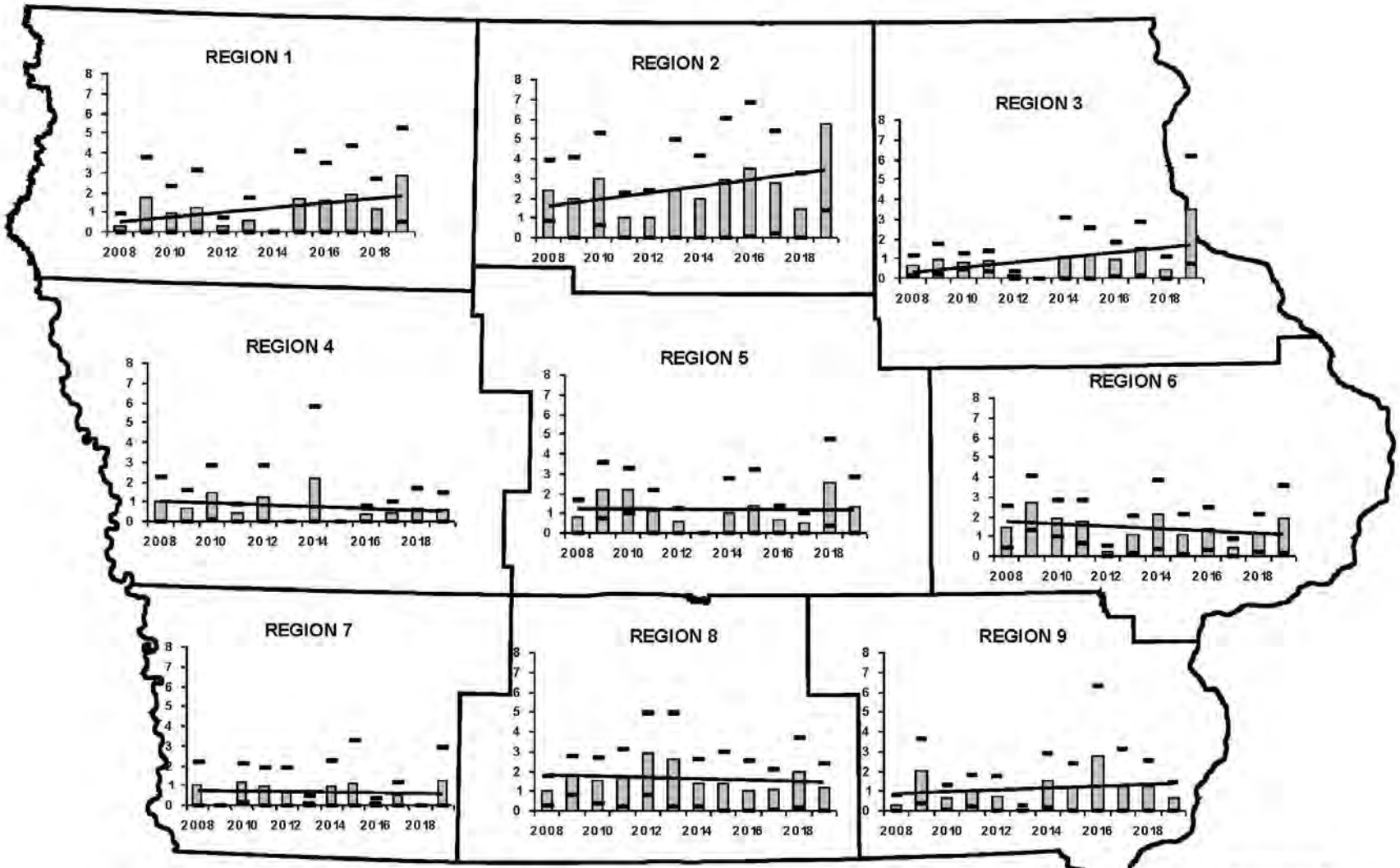
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

River Otter Observations Per 1,000 Hours Hunted

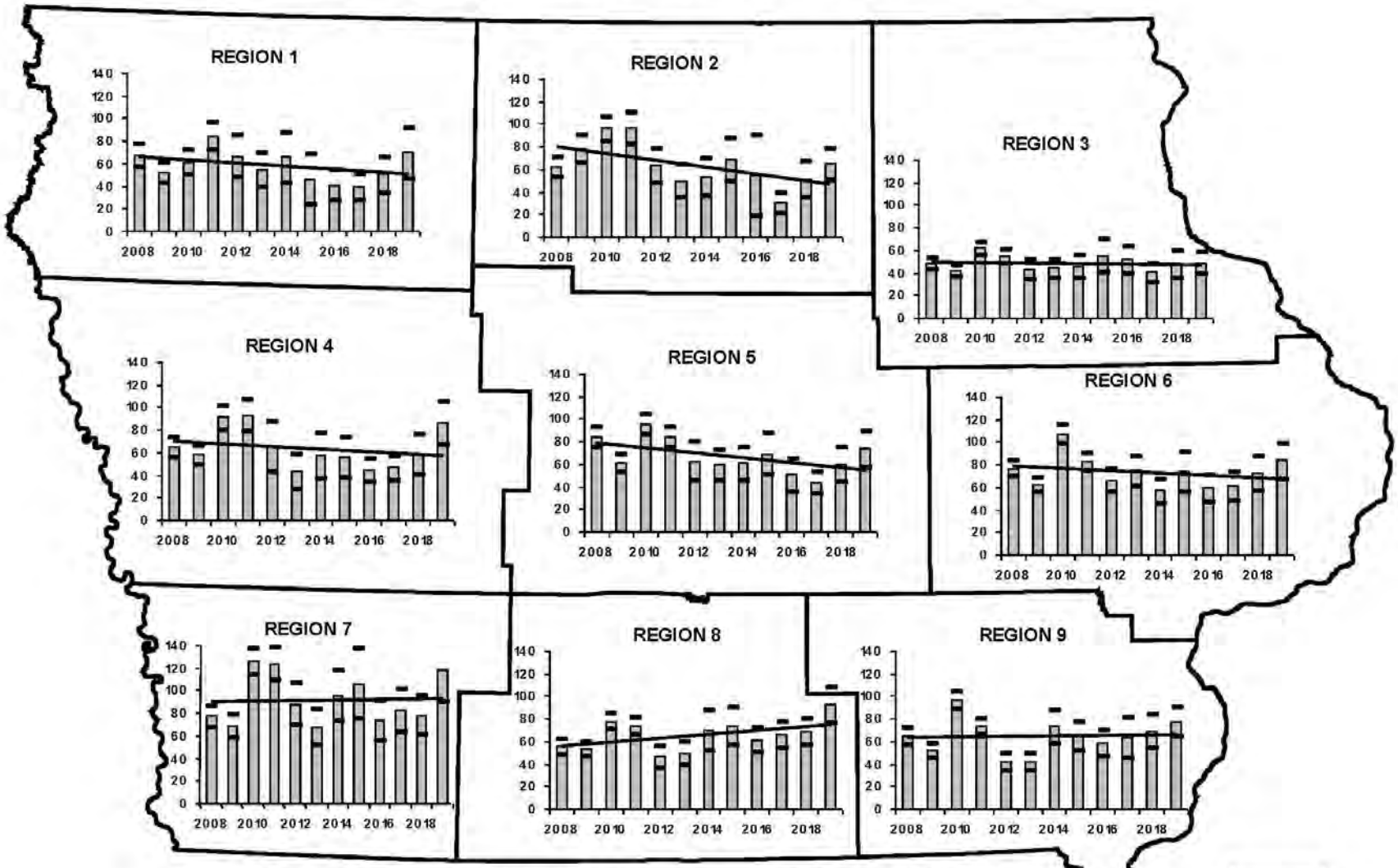
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Raccoon Observations Per 1,000 Hours Hunted

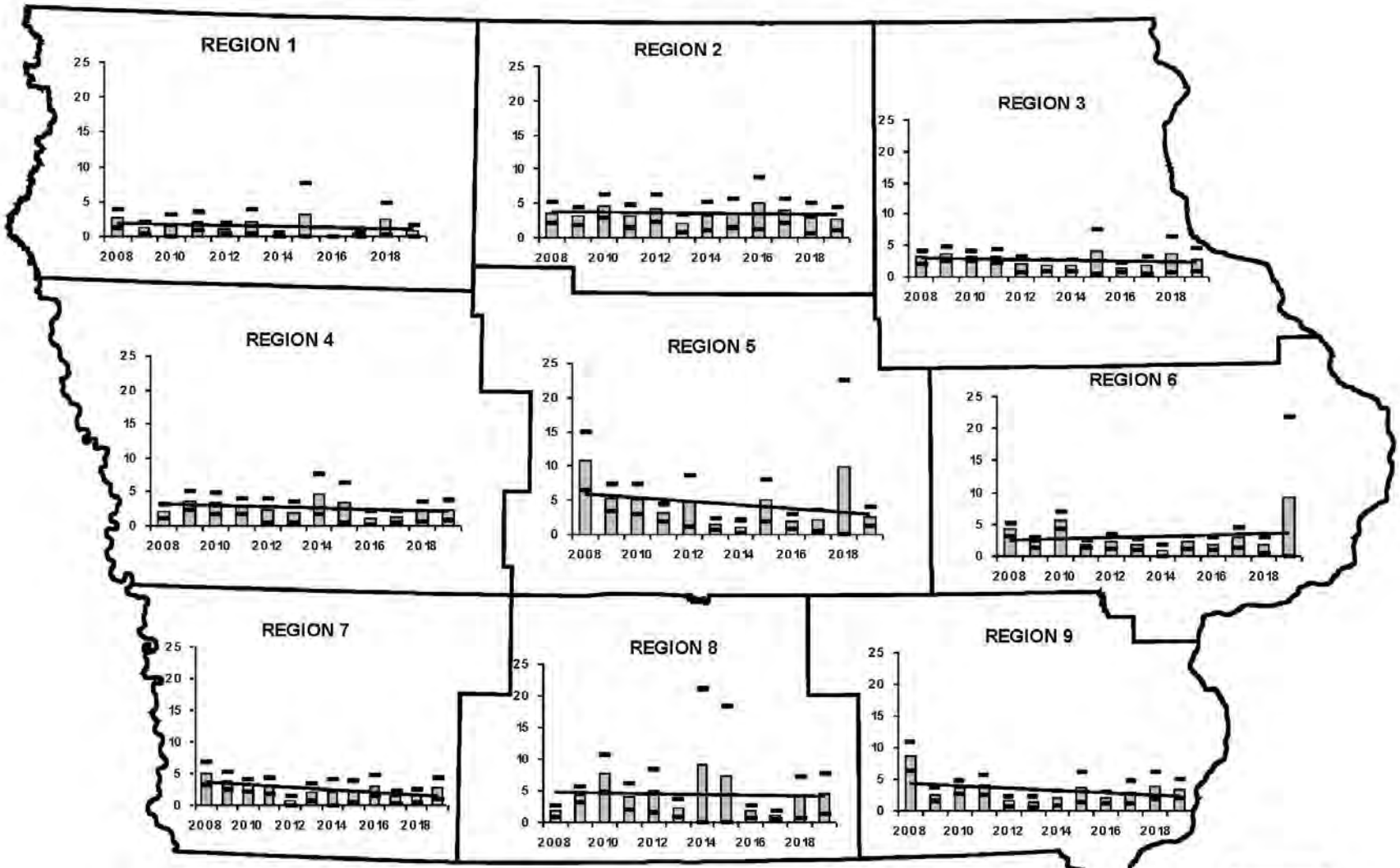
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Red Fox Observations Per 1,000 Hours Hunted

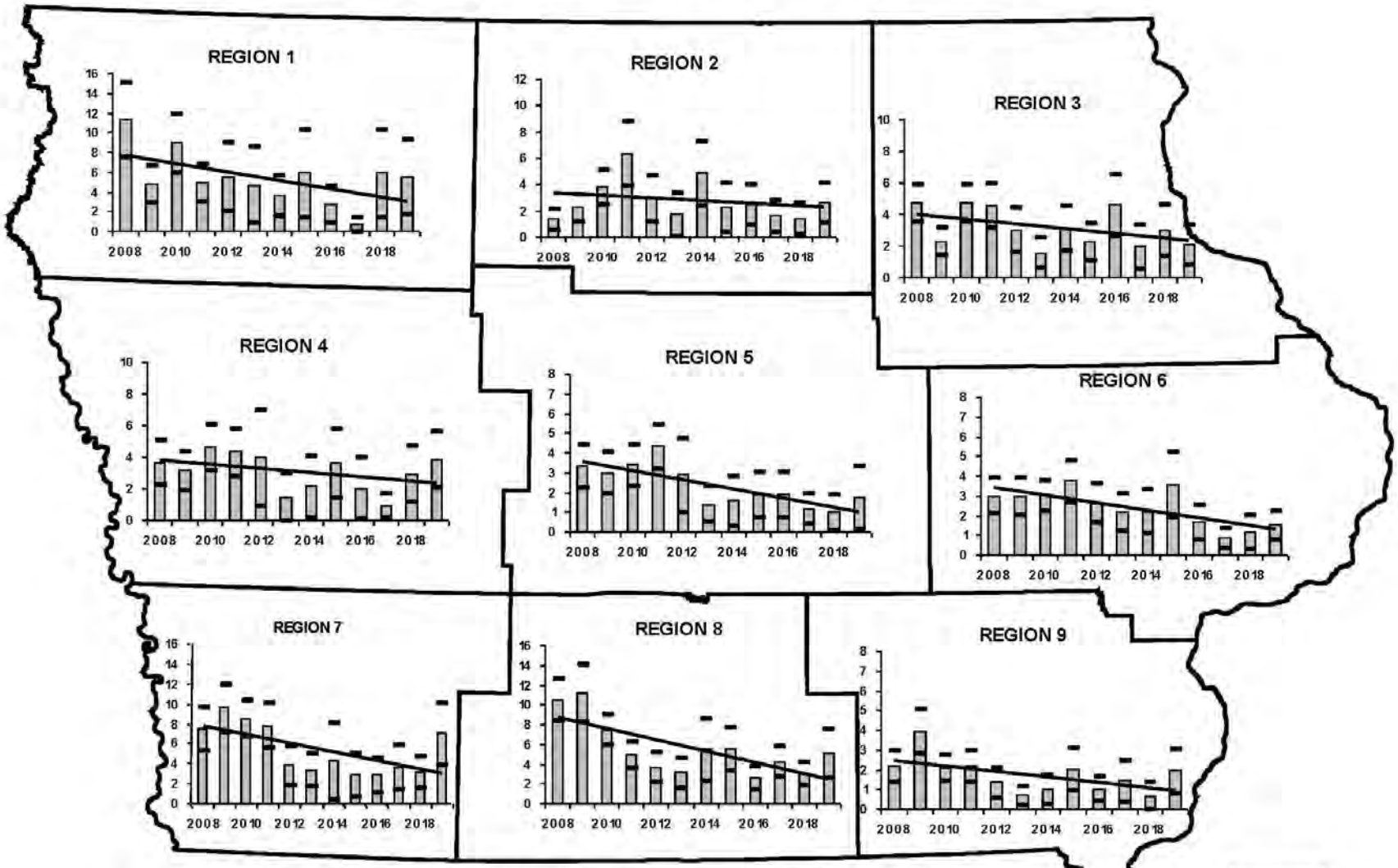
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Striped Skunk Observations Per 1,000 Hours Hunted

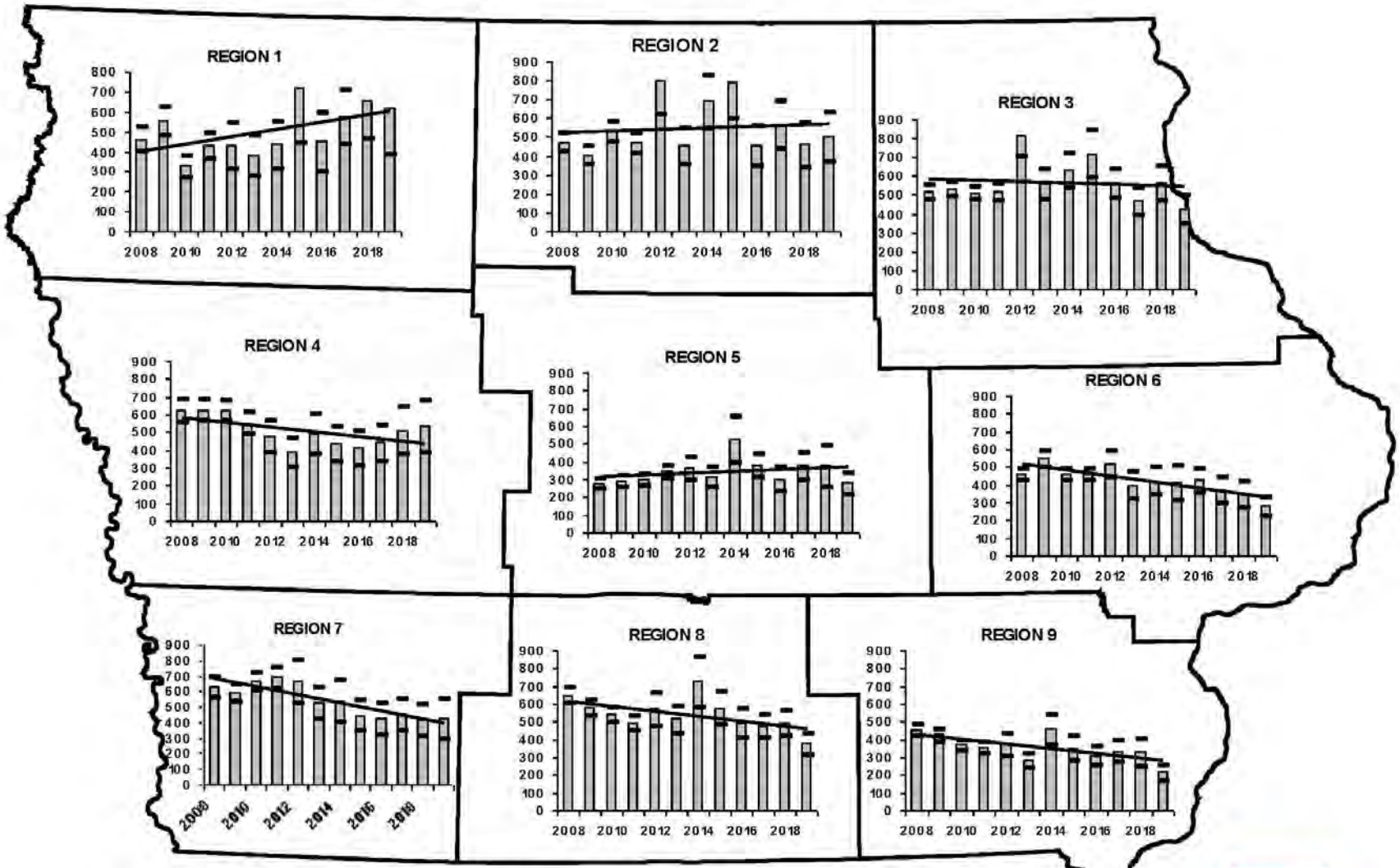
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

Wild Turkey Observations Per 1,000 Hours Hunted

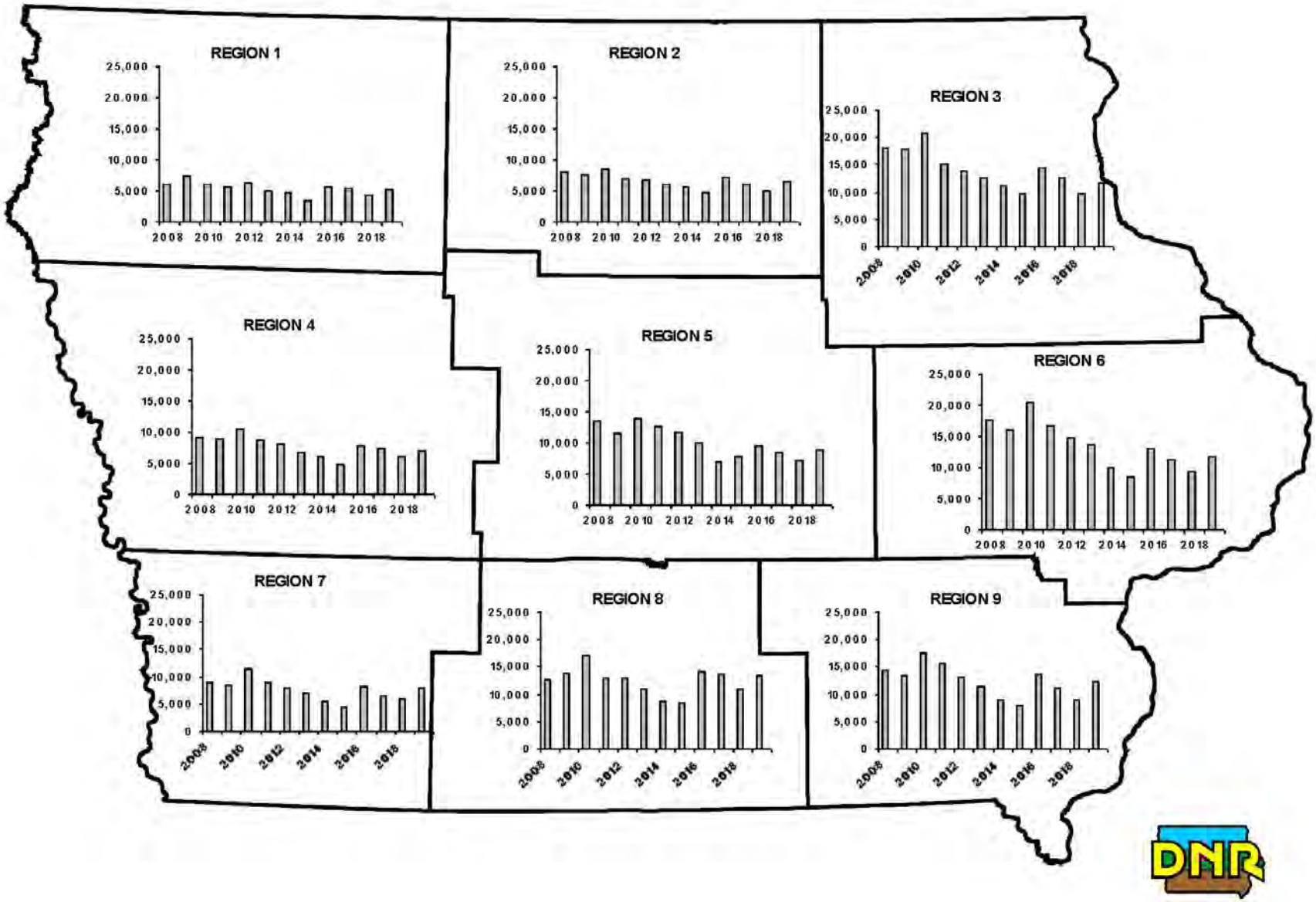
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.

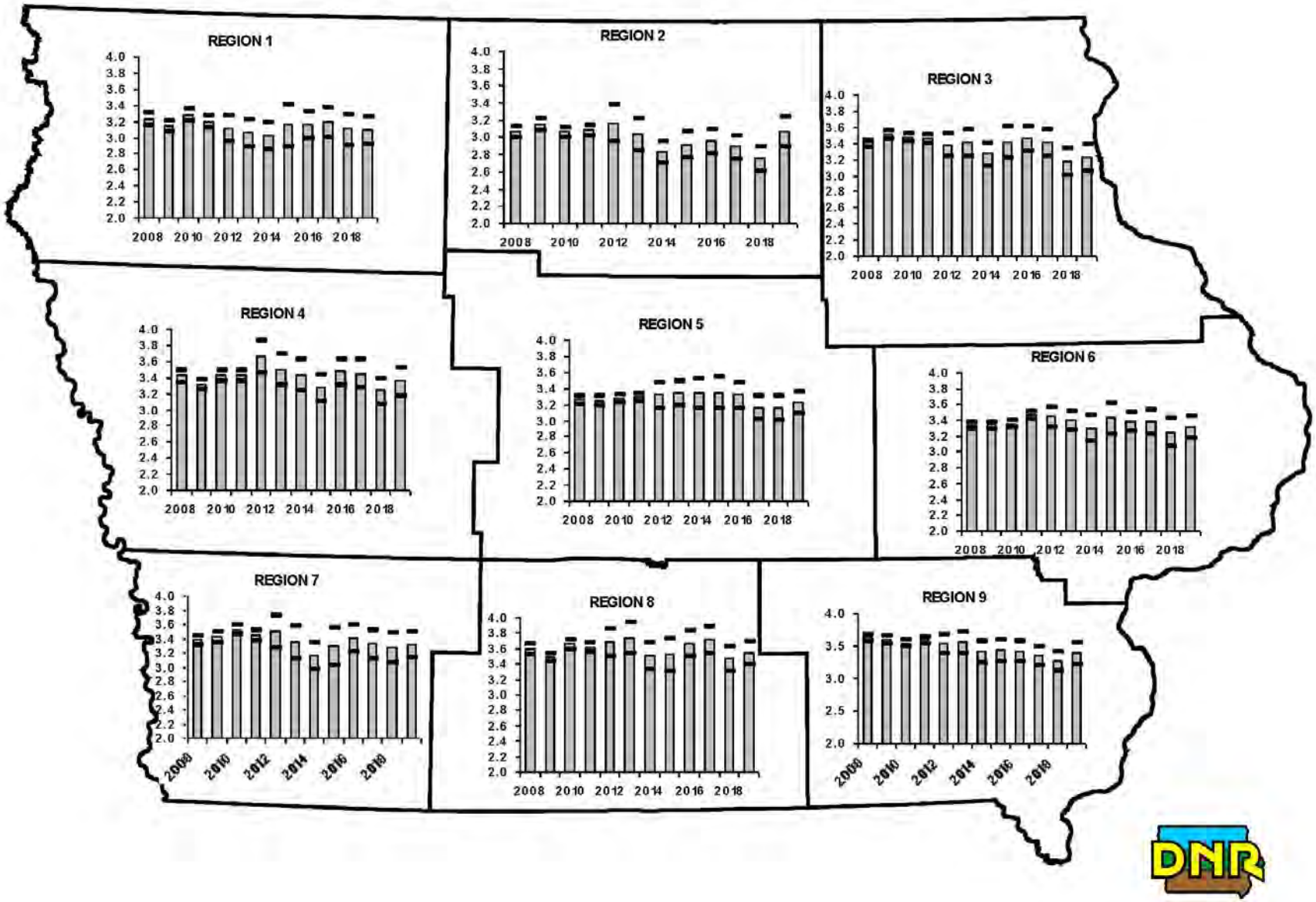
Hours Hunted by Survey Participants

Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



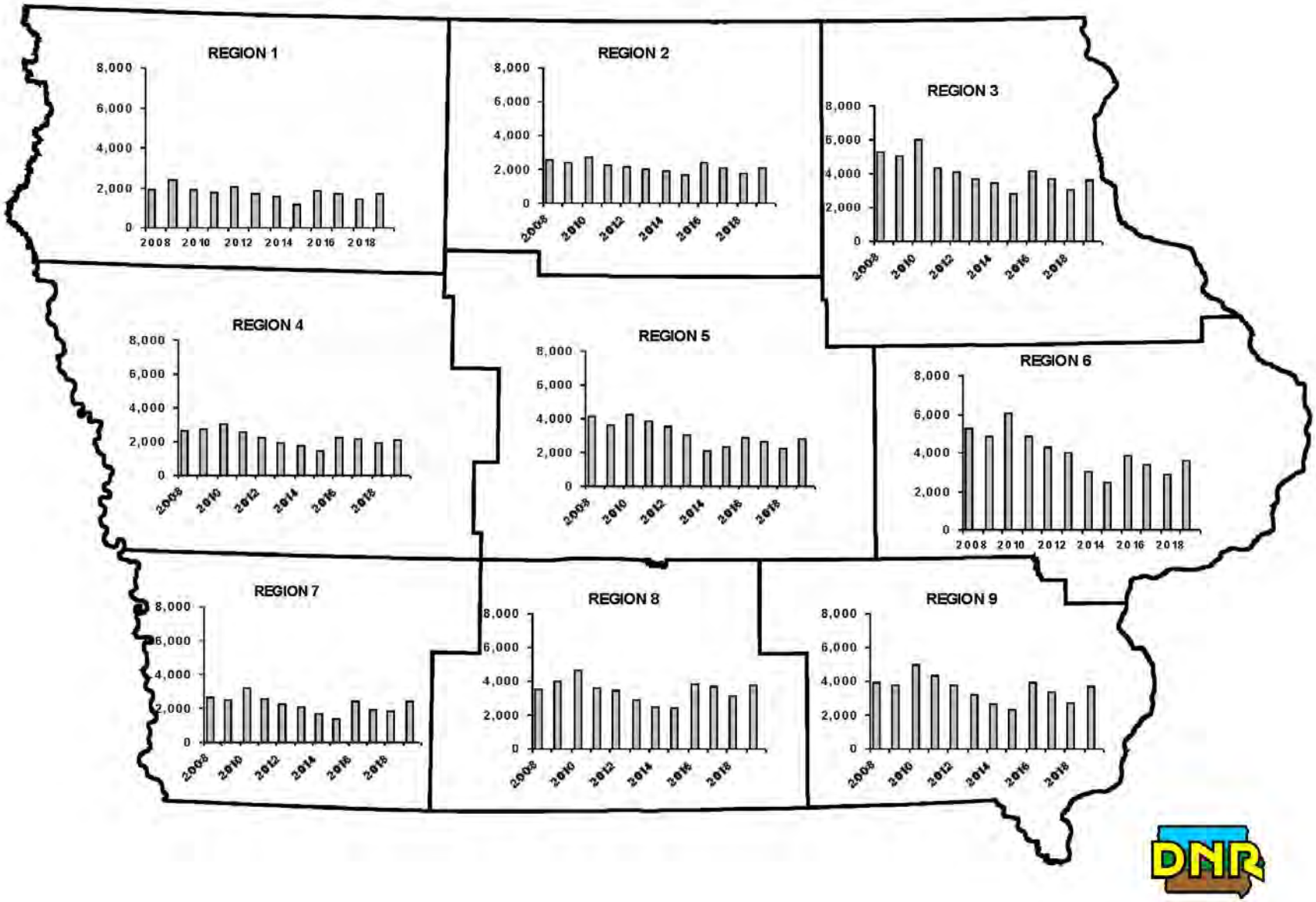
Average Hours Hunted/Bowhunting Trip

Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



Bowhunting Trips by Survey Participants

Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



BOWHUNTER OBERVATION RECORD 2019

IOWA DEPARTMENT OF NATURAL RESOURCES

Thank you for participating in the 2019 Bowhunter Observation Survey. Please return this original form (no photocopies) when you have finished bowhunting or by December 6, 2019, whichever comes first. When finished, fold the form into thirds, place it in the postage paid envelope, and return to: Iowa DNR; Wildlife Research Station, 1436 255th St., Boone, IA 50036. For questions, please call (515) 777-5378.

EXTREMELY IMPORTANT: This is a computerized form. Do not make any marks on this form other than to respond in the specified areas. Do not enter zeroes for animals that you did not see, and do not provide observations for species that are not listed. Thank you.

Please PRINT neatly and use BLUE OR BLACK BALLPOINT pens only.

Correct ● A Incorrect ⊘ ⊗ A

STEP 1: YOUR INFORMATION

What is your DNR number?

(Your 4-9 digit DNR # can be found on any of your DNR Licenses or Tags)

STEP 2: COUNTIES HUNTED

INSTRUCTIONS: Please record the name of each Iowa county where you will bowhunt. When you record observations in STEP 3, you will use the county # (1, 2, 3, or 4) to fill the appropriate bubble indicating which county you hunted.

County #	County (first 6 letters)	County #	County (first 6 letters)	County #	County (first 6 letters)	County #	County (first 6 letters)
1		2		3		4	

STEP 3: YOUR OBSERVATIONS

INSTRUCTIONS: Record observations made **ONLY WHILE BOWHUNTING**. For each bowhunting trip, record the date, fill the appropriate bubble to indicate the county where you hunted, record the number of hours in your bowstand, and record the number of each species seen **(IF ZERO, LEAVE BLANK)**. If you did not see any of the species listed, you must still record the date, county number, and the number of hours. **DO NOT PROVIDE OBSERVATIONS OF SPECIES THAT ARE NOT LISTED**. Keep this form neat and clean... do not take it into the field.

Month	Day	County # (see STEP 2) MARK ONE 1 2 3 4	# Hours in Stand (rounded to nearest 1/2 hr.)	DEER OBSERVED: Antlered	Antlerless	Not Sure	OTHER SPECIES OBSERVED: Wild Turkeys	Bobcat	Coyote	Red Fox	Gray Fox	Raccoon	Opossum	Striped Skunk	Badger	House Cat	River Otter
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USE BLUE OR BLACK BALLPOINT PENS ONLY - PLEASE PRINT NEATLY & STAY WITHIN THE WHITE AREAS

BOWHUNTER OBSERVATION RECORD 2019

IOWA DEPARTMENT OF NATURAL RESOURCES

7 425273 396170

STEP 3: YOUR OBSERVATIONS (Continued)

				DEER OBSERVED			OTHER SPECIES OBSERVED										
Month	Day	County # (see STEP 2) MARK ONE 1 2 3 4	# Hours in Stand (rounded to nearest 1/2 hr.)	Antlered	Antlerless	Not Sure	Wild Turkeys	Bobcat	Coyote	Red Fox	Gray Fox	Raccoon	Opossum	Striped Skunk	Badger	House Cat	River Otter
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RESPOND ONLY IN THE SPACES PROVIDED, RETURN ORIGINAL FORM (NO PHOTOCOPIES) BY DECEMBER 6, 2019