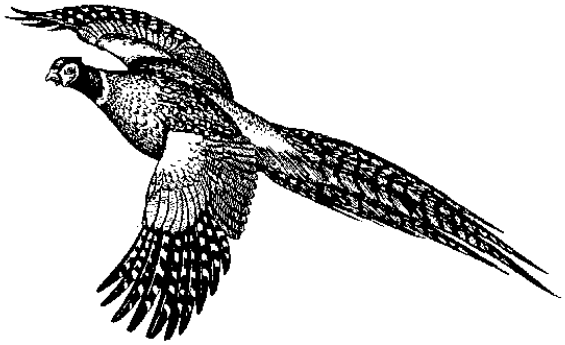
TRENDS IN IOWA WILDLIFE POPULATIONS AND HARVEST 2021-2022



Iowa Department of Natural Resources
Kayla Lyon, Director
September 2022

TRENDS IN IOWA WILDLIFE POPULATIONS AND HARVEST 2021-2022

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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 (50-80% of bucks, 5-20% of does) 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.

2020-2021 Hunting Season Results

Iowa deer hunters harvested a total of 102,800 deer during the 2021-2022 season (Table 1.1), which is approximately 6% lower than in the 2020-2021 season (Table 1.2). Deer license sales decreased by 1% from the 2020-2021 to 2021-2022 hunting season.

Antlerless deer (i.e., does) represented 47% of the total harvest during the 2021-2022 season, which was the same in the 2020-2021 season (Table 1.1). Antlered deer comprised 45% of the total harvest in 2021-2022 (shed-antlered bucks are included in this statistic). There were 743 shed-antlered bucks reported in the harvest.

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.

From 2014-2020, hunters were restricted to harvesting only antlered deer during the early muzzleloader 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. This restriction was removed in these 27 counties for the early muzzleloader season in 2020 as we see populations slowly recover to goal levels in these counties. The buck-only restriction during the first shotgun season was also removed in 7 counties in 2020, and 3 counties in 2021, in north-central Iowa. 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-seven counties had additional antlerless licenses available. A total of 78,600 antlerless licenses were available statewide during the 2021-2022 season, an increase of 1,250 antlerless licenses available compared to 2020-2021. 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 2,234 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 2,486 deer (Table 1.1).

Clayton was again the top county for total reported harvest with 3,924 deer reported in the 2021-2022 season (Table 1.4). Osceola County had the lowest harvest with a reported 133 deer.

Shotgun Season

Total harvest for the first and second shotgun seasons was 3% and 6% lower, respectively, in 2021-2022 compared to 2020-2021. Overall, the total reported harvest during the entirety of the shotgun season was about 4.5% lower than that reported in 2020-2021 and license sales about 3% lower than in 2020-2021. (Table 1.2).

Antlered bucks comprised 41% of the total harvest during the shotgun seasons, while 48% of the reported harvest was does. Button bucks made up 10% of the reported harvest and shed-antlered bucks accounted for about 1% (Table 1.1).

Similar to 2020-2021, 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 21,257 deer including the deer killed on the senior cross bow license, a 10% decrease from 2020-2021.

Antlered deer comprised 61% of the total reported archery harvest (includes shed-antlered bucks, Table 1.1 and Table 1.9).

Muzzleloader
The reported harvest during the early muzzleloader season was 3,473, a 15% decrease from 2020-2021 (Table 1.1 and Table 1.2). License sales during the early muzzleloader season decreased 8% compared to 2020-2021 (Table 1.1 and Table 1.2). The total reported harvest included 54% antlered bucks and 40% does.

Hunters reported harvesting 8,407 deer during the 2021-2022 late muzzleloader season (Table 1.1 and Table 1.2), a 11% decrease in harvest compared to 2020-2021. Forty percent of the deer harvested during the late muzzleloader season were bucks (includes shed-antlered bucks).

Nonresidents
Nonresidents were issued 6,054 any-deer licenses for the 2021-2022 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 46% and 25%, respectively (Table 1.1). In total, nonresidents reported harvesting 2,871 antlered bucks (including shed-antlered bucks) and 1,972 antlerless deer in 2021-2022.

Special Youth/Disabled Hunter Season
The total number of youth season licenses issued (12,858) was 2% higher than in 2020-2021 (Table 1.1 and Table 1.2), continuing an upward trend in youth licenses issued. Disabled hunters were issued 422 licenses, which was essentially the same number of licenses issued in 2020-2021 (412). Youth season hunters who did not take a deer during the youth deer hunting season were able to use the unfilled 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 4,520 deer reported. Fifty-nine percent of the deer reported were antlered bucks (including shed-antlered bucks). The success rate for disabled licenses was 29% with 124 deer reported. Thirty-seven percent of the deer reported were antlered bucks (Table 1.1). Reported harvest by youth hunters decreased 14% compared to 2020-2021 while reported harvest by hunters using a disabled license decreased 11%.

Special Deer Management Zones
Special management hunts were conducted at 75 locations in 2021-2022 during which the total reported harvest was 2,234 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 reaching population goals in these localized areas.

An additional 4,522 licenses and permits were issued to hunters/landowners in depredation situations which resulted in a reported harvest of 2,486 deer. This is a 4% decrease in the depredation harvest from 2020-2021 (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.

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 increased by 24% in 2021 (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. Total deer observations per 1,000 hours hunted decreased by 8% in 2021.

The estimated harvest from 2006-2021 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 2022

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 2021-2022 season restrict the harvest to antlered deer during the first shotgun season in 17 northwest counties. Populations in this area are slowly increasing to goal levels, therefore allowing us to remove the antlered-deer-only restriction in a subset of counties each of the past 2 years.

Adjustments were made to the county-specific antlerless quotas in 17 counties for the 2022-2023 hunting season, largely in response to local population changes and management needs. Specifically, quotas are being increased in 8 counties and decreased in 9 counties resulting in a net decrease of 225 county-specific antlerless licenses available statewide.

The January antlerless-deer-only season will be conditionally reinstated in 6 counties in south-central and northeast Iowa for the 2022-2023 hunting season. This season will occur on a county-by-county basis if and only if the number of county-specific antlerless-only licenses remaining unsold in the respective county exceeds 100 after the third Monday in December. This change accomplishes two objectives for deer population and disease management: (1) it maintains a stable level of antlerless-deer harvest earlier during the hunting season when deer are still within their breeding home range, thus slowing the spread of chronic wasting disease among deer family groups, and (2) it allows opportunities for additional antlerless-deer harvest later in the hunting season to help with population management. In addition, a special excess-tag January antlerless-deer-only season will be implemented in any county with county-specific antlerless-only licenses remaining unsold after January 10.

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 93,000 wild deer and more than 5,000 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, 163 wild deer have tested positive for CWD statewide, 52 of which were detected in 2021. Greene and Fremont counties were added to the list of counties within which CWD was detected in free-ranging deer in 2021, bringing the total number of counties in which the disease was detected to 12 (Figure 1.6).

Special deer management hunts across the state continue to offer additional opportunity for hunters to harvest antlerless deer while simultaneously helping achieve local population management objectives. For the 2022-2023 hunting season, three of these hunts will occur in areas with high densities of CWD-positive deer detected to assist with disease management. These hunts will utilize an incentivized harvest framework within which hunters certified to participate will quality for an additional any-deer license during the season of their choice for the subsequent hunting season if they harvest and check 3 or more antlerless (doe only) deer. These hunts will be combined with local landowner engagement efforts to encourage a cooperative approach to CWD management.

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 2021, we received 441 reports of deer suspected of dying from EHD. Reports were received from 48 counties, with a majority of the reports coming from western and east-central Iowa

Figures

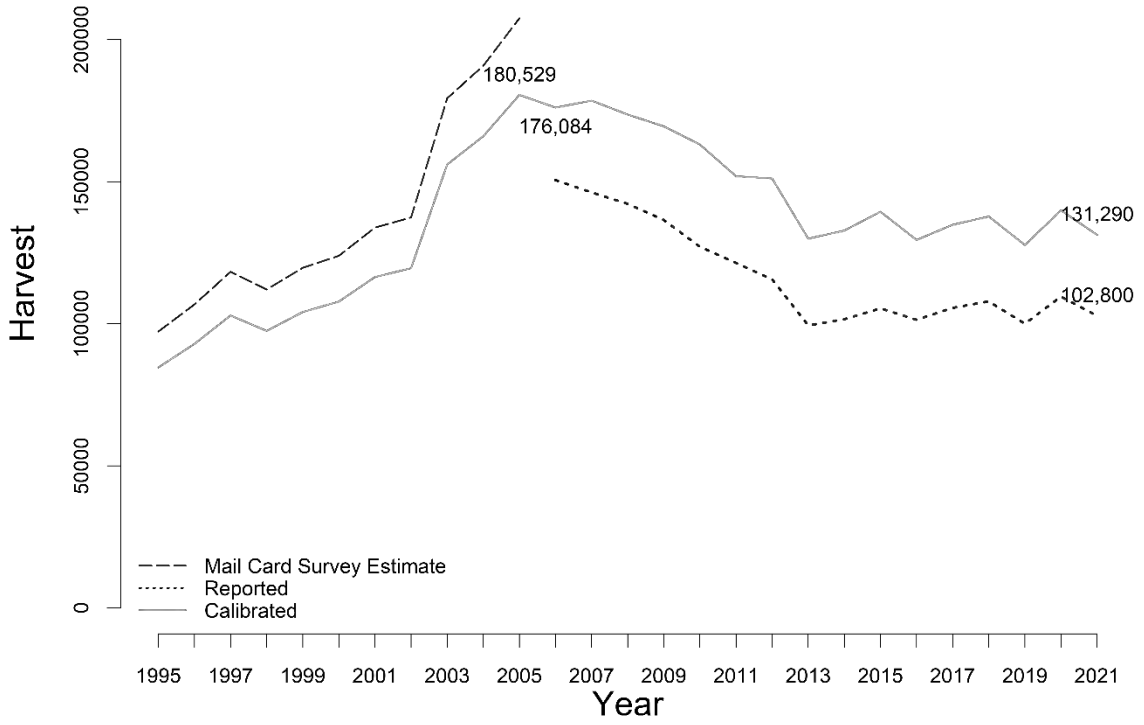


Figure 1.1 Post-season reported harvest and estimates from 1995-1996 to 2021-2022.

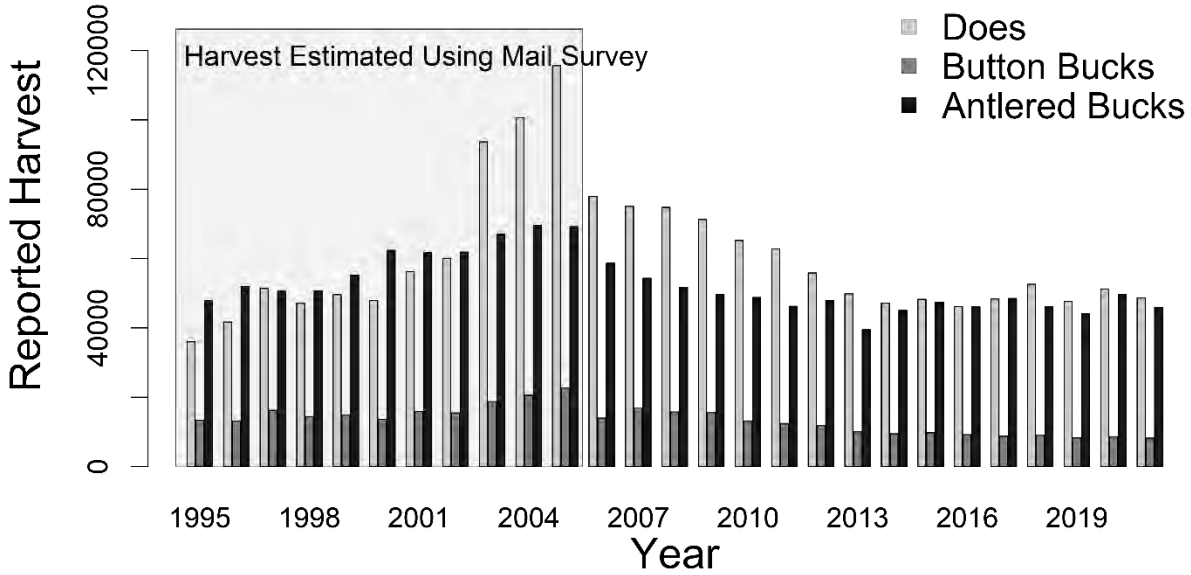


Figure 1.2 Number of does, button bucks, and antlered bucks harvested from 1995-1996 to 2021-2022. Since 2006, harvest was reported and is not directly comparable to previous estimates from mail card survey.

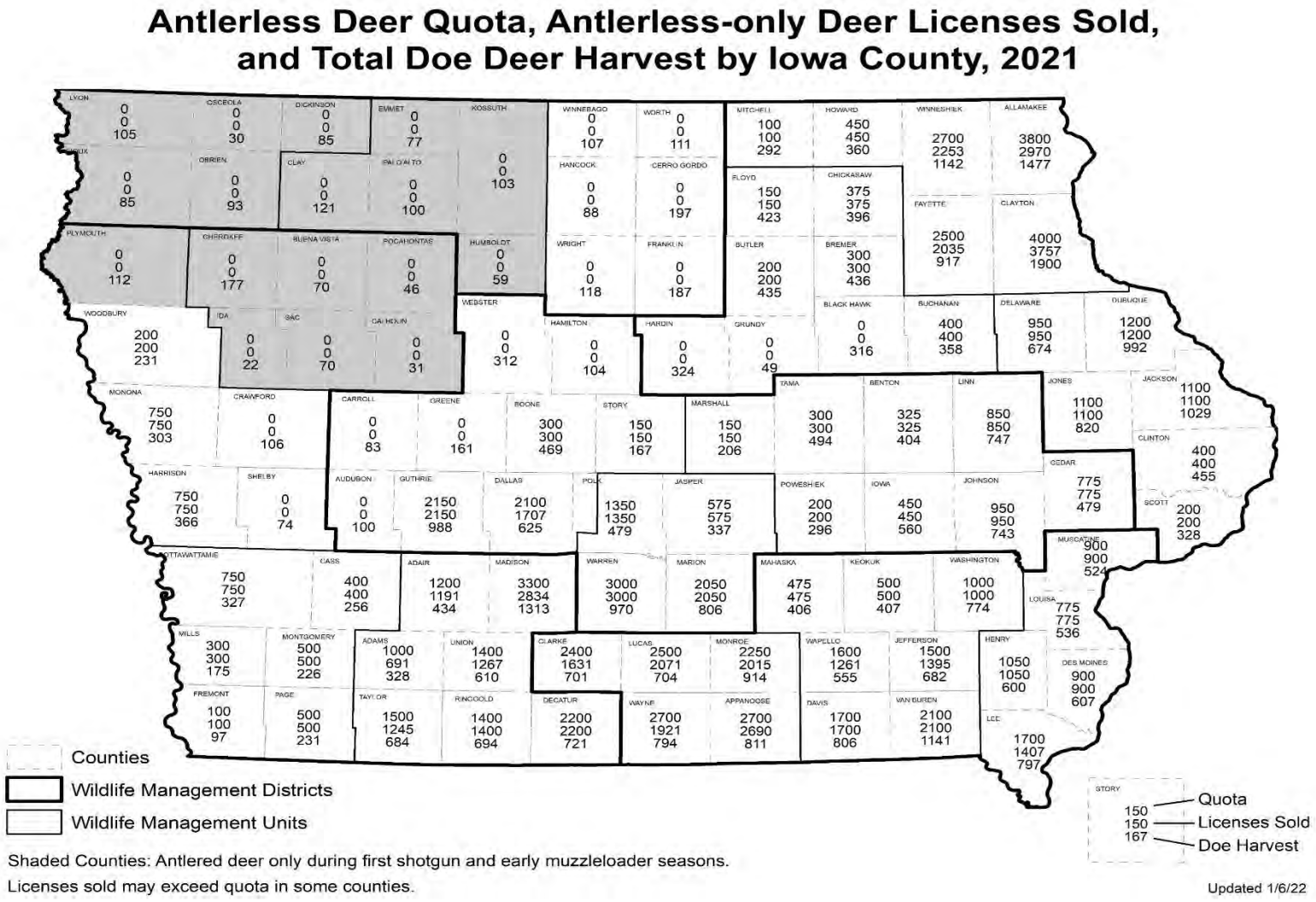


Figure 1.3 Resident antlerless-only deer quota, resident antlerless-only deer licenses sold, and total doe harvest in each county 2021-2022. Doe harvest may exceed licenses sold because antlerless deer could be harvested using either-sex, depredation, or special deer management unit tags.

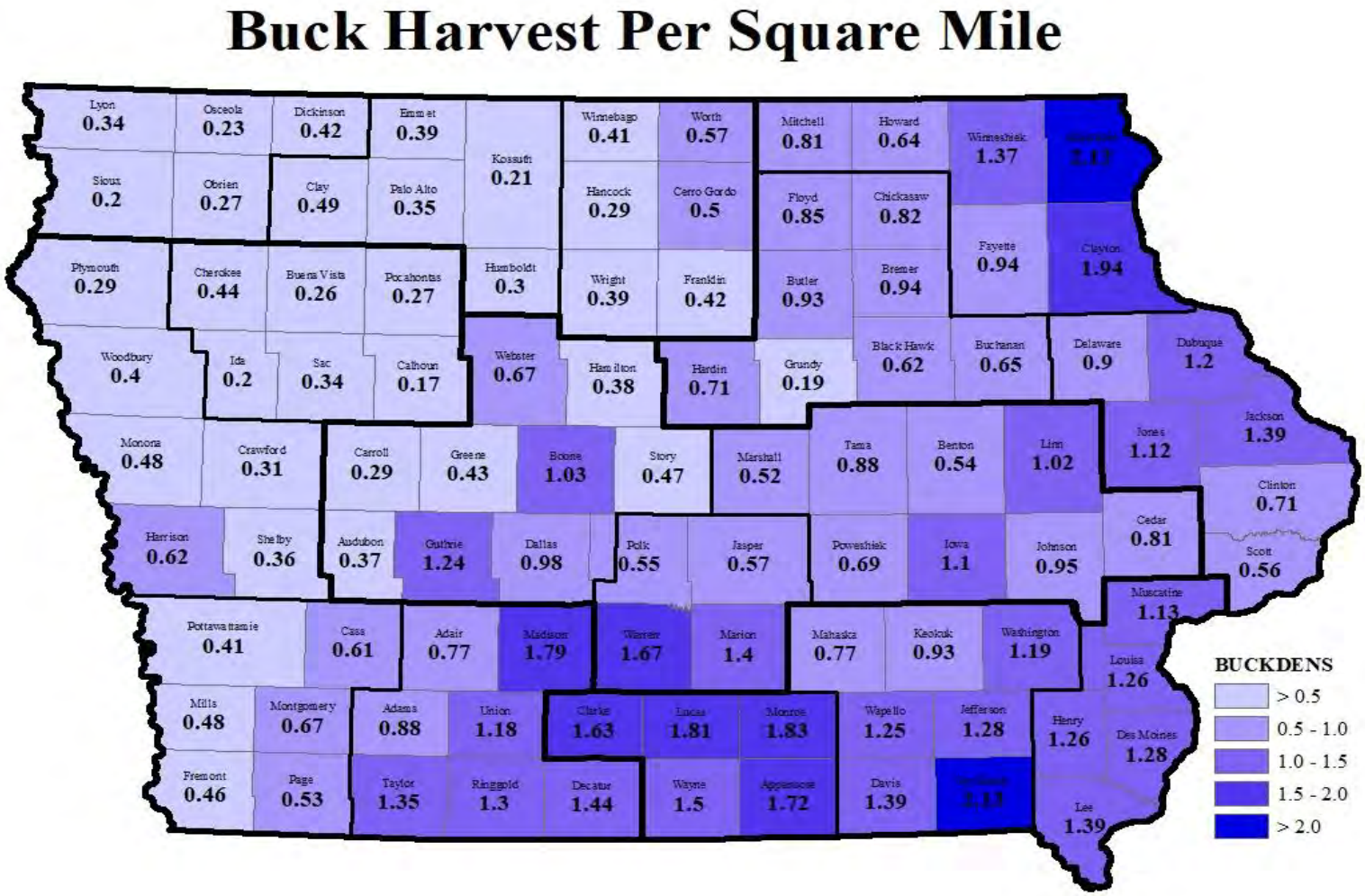
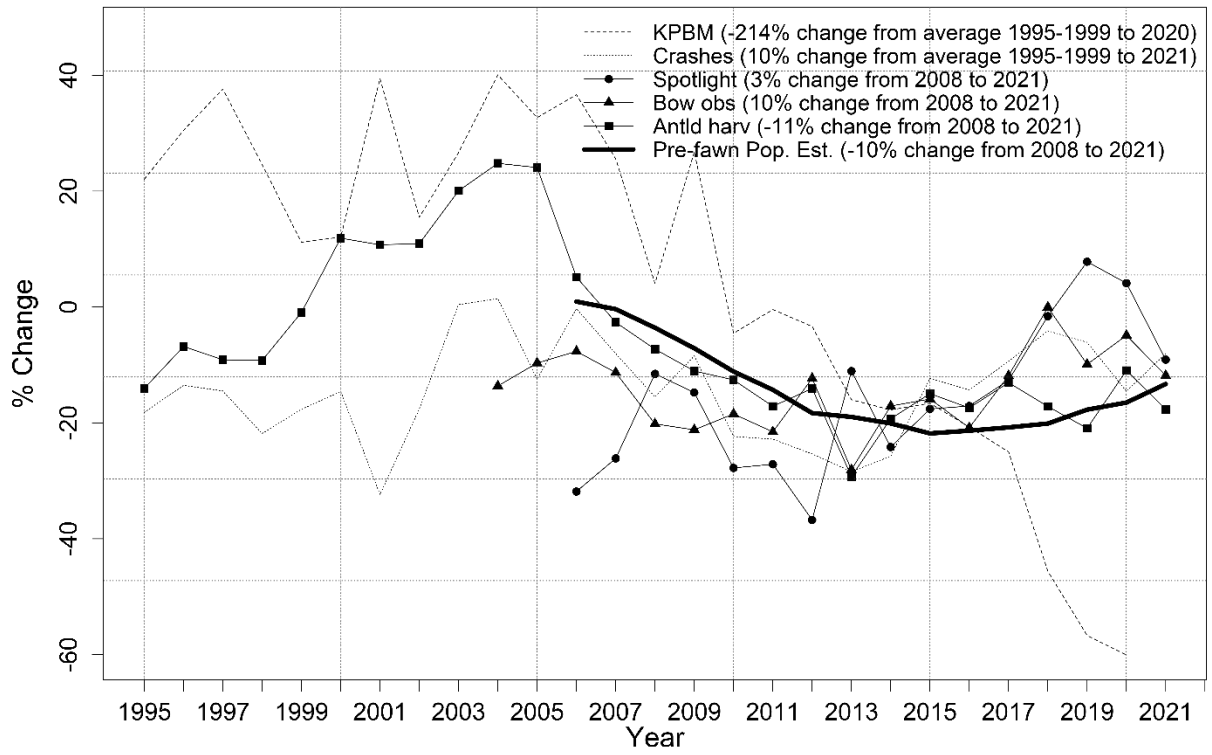


Figure 1.4 Average reported antlered deer harvest/mi^2 in each county during 2021-2022.



* 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, 1995-2021.

Figure 1.6 Locations of deer that tested positive for Chronic Wasting Disease (CWD) in Iowa, 2013-2021.

Tables

Table 1.1 A summary of the number of licenses issued, hunters, reported harvest and success rates from the 2021-2022 season.

Season	Group[1]	Type	Licenses	Hunters	Reported Harvest					Success Rate[2]	Percent Does
					Does	Antlered	Buttons	Sheds	Total		
Youth	Paid	Either-sex	11,878	11,877	1,270	2,619	255	20	4,164	35%	30%
		Antlerless	882	742	290	2	30	1	323	37%	90%
	LOT	Either-Sex	58	58	6	12	2	0	20	34%	30%
		Antlerless	40	38	11	NA	2	NA	13	33%	85%
		Total	**12,858**	**11,958**	**1,577**	**2,633**	**289**	**21**	**4,520**	**35%**	**35%**
Disabled	Paid	Either-sex	347	321	45	44	10	NA	99	29%	45%
		Antlerless	51	41	15	NA	4	NA	19	37%	79%
	LOT	Either-Sex	13	13	2	2	NA	NA	4	31%	50%
		Antlerless	11	10	2	NA	NA	NA	2	18%	100%
		Total	**422**	**340**	**64**	**46**	**14**	**0**	**124**	**29%**	**52%**
Early Muzzleloader	Paid	Either-sex	6,799	6,799	614	1,654	98	16	2,382	35%	26%
		Antlerless	1,536	1,186	488	9	77	NA	574	37%	85%
	LOT	Either-Sex	1,083	1,083	68	210	8	2	288	27%	24%
		Antlerless	867	816	205	6	18	NA	229	26%	90%
		Total	**10,285**	**8,336**	**1,375**	**1,879**	**201**	**18**	**3,473**	**34%**	**40%**
Shotgun 1	Paid	Either-sex	44,625	44,617	4,276	10,694	1,148	103	16,221	36%	26%
		Antlerless	17,252	11,017	6,580	52	1,014	22	7,668	44%	86%
Shotgun 2	Paid	Either-sex	46,675	46,604	4,399	7,418	1,241	118	13,176	28%	33%
		Antlerless	19,019	11,304	6,004	39	948	44	7,035	37%	85%
Shotgun 1 & 2	LOT	Either-Sex	22,261	22,252	1,285	3,338	282	47	4,952	22%	26%
		Antlerless	18,465	15,082	4,426	85	721	19	5,251	28%	84%
		Total	**168,297**	**48,148**	**26,970**	**21,626**	**5,354**	**353**	**54,303**	**32%**	**50%**
Late Muzzleloader	Paid	Either-sex	20,229	20,228	1,423	2,974	199	64	4,660	23%	31%
		Antlerless	10,526	7,155	2,281	12	333	51	2,677	25%	85%
	LOT	Either-Sex	2,282	2,279	130	233	8	7	378	17%	34%
		Antlerless	3,647	3,301	609	6	61	16	692	19%	88%
		Total	**36,684**	**26,588**	**4,443**	**3,225**	**601**	**138**	**8,407**	**23%**	**53%**

Season	Group[1]	Type	Licenses	Hunters	Reported Harvest					Success Rate[2]	Percent Does
					Does	Antlered	Buttons	Sheds	Total		
Archery	Paid	Either-sex	54,217	54,205	1,073	11,513	221	72	12,879	24%	8%
		Antlerless	22,615	15,770	5,097	42	688	8	5,835	26%	87%
	LOT	Either-Sex	5,174	5,172	152	1,202	22	15	1,391	27%	11%
		Antlerless	5,258	4,572	1,044	17	89	2	1,152	22%	91%
		Total	**87,264**	**57,587**	**7,366**	**12,774**	**1,020**	**97**	**21,257**	**24%**	**35%**
Senior Crossbow	Paid	Antlerless	771	754	149	4	21	1	175	23%	85%
Special Hunts		Antlerless	2,958	1,230	1,216	3	144	6	1,369	46%	89%
Depredation		Antlerless	4,522	1,807	2,265	12	192	17	2,486	55%	91%
January Antlerless	Paid	Antlerless	3,811	1,935	1,257	NA	128	63	1,448	38%	87%
Nonresidents[3]	Paid	Either-sex	6,054	6,052	55	2,705	19	9	2,788	46%	2%
		Antlerless	9,150	9,133	1,917	150	192	16	2,275	25%	84%
Total			**344,727**	**166,153**	**48,707**	**45,181**	**8,179**	**743**	**102,800**	**30%**	**47%**

[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	2020-2021				% Change	
	Licenses	Harvest	Licenses	Harvest	Licenses	Harvest
Youth	12,645	5,231	12,858	4,520	2%	-14%
Disabled	412	139	422	124	2%	-11%
Archery	90,933	23,746	87,264	21,257	-4%	-10%
Early Muzzleloader	11,237	4,074	10,285	3,473	-8%	-15%
Shotgun 1 (Paid)[1]	63,585	24,683	61,877	23,889	-3%	-3%
Shotgun 2 (Paid)[2]	67,381	21,484	65,694	20,211	-3%	-6%
Shotgun LOT[3]	42,147	11,091	40,726	10,203	-3%	-8%
Late Muzzleloader	38,530	9,505	36,684	8,407	-5%	-11%
Special Hunts	3,054	1,471	2,958	1,369	-3%	-5%
Depredation	4,336	2,585	4,522	2,486	4%	-4%
January Antlerless	281	144	3,811	1,448		
Nonresidents4	14,877	5,278	15,204	5,063	2%	-4%
Total	**349,663**	**109,544**	**344,727**	**102,800**	**-1%**	**-6%**

[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-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
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

Year	Regular Gun			Muzzleloader			Archery	Grand Total*
	Paid	Landowner	Total	Early	Late	Total		
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
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
2020	46,167	11,091	57,258	4,074	9,505	13,579	23,746	109,544
2021	44,100	10,203	54,303	3,473	8,407	11,880	21,257	102,800

[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 2021-2022 deer season.

County	Antlered Bucks	Does	Button Bucks	Shed-antlered Bucks	Total	Percent of kill		Antld. Kill/ Sq. Mile
						Does	Antlered Bucks	
Adair	436	473	78	5	992	48	44	0.77
Adams	373	349	47	6	775	45	48	0.88
Allamakee	1351	1790	247	50	3438	52	39	2.12
Appanoose	898	1066	162	21	2147	50	42	1.72
Audubon	166	111	17	1	295	38	56	0.37
Benton	391	445	84	2	922	48	42	0.54
Black Hawk	355	333	53	6	747	45	48	0.62
Boone	590	501	75	7	1173	43	50	1.03
Bremer	413	467	72	2	954	49	43	0.94
Buchanan	370	380	94	4	848	45	44	0.65
Buena Vista	147	74	8	1	230	32	64	0.26
Butler	543	468	78	10	1099	43	49	0.93
Calhoun	97	39	9	1	146	27	66	0.17
Carroll	165	88	18	3	274	32	60	0.29
Cass	339	272	41	1	653	42	52	0.61
Cedar	474	512	79	11	1076	48	44	0.81
Cerro Gordo	289	213	44	2	548	39	53	0.5
Cherokee	253	196	31	3	483	41	52	0.44
Chickasaw	413	431	88	10	942	46	44	0.82
Clarke	701	788	110	5	1604	49	44	1.63
Clay	281	140	34	3	458	31	61	0.49
Clayton	1513	2045	329	37	3924	52	39	1.94
Clinton	493	485	129	10	1117	43	44	0.71
Crawford	219	107	38	1	365	29	60	0.31
Dallas	583	684	113	10	1390	49	42	0.98
Davis	705	899	145	16	1765	51	40	1.39
Decatur	764	1127	88	13	1992	57	38	1.44
Delaware	512	725	139	14	1390	52	37	0.9
Des Moines	524	651	127	6	1308	50	40	1.28
Dickinson	161	93	16	2	272	34	59	0.42
Dubuque	736	1021	210	16	1983	51	37	1.2
Emmet	152	78	14	1	245	32	62	0.39
Fayette	686	960	149	15	1810	53	38	0.94
Floyd	429	455	63	3	950	48	45	0.85
Franklin	244	200	40	3	487	41	50	0.42
Fremont	239	109	26	4	378	29	63	0.46
Greene	244	172	30	6	452	38	54	0.43
Grundy	94	50	10	1	155	32	61	0.19
Guthrie	739	1099	180	15	2033	54	36	1.24
Hamilton	218	117	23	4	362	32	60	0.38
Hancock	166	104	20	3	293	35	57	0.29

County	Antlered Bucks	Does	Button Bucks	Shed-antlered Bucks	Total	Percent of kill		Antld. Kill/ Sq. Mile
						Does	Antlered Bucks	
Hardin	410	361	53	5	829	44	49	0.71
Harrison	432	393	85	3	913	43	47	0.62
Henry	556	645	120	9	1330	48	42	1.26
Howard	301	387	56	5	749	52	40	0.64
Humboldt	131	63	11	2	207	30	63	0.3
Ida	88	26	7	0	121	21	73	0.2
Iowa	641	593	110	7	1351	44	47	1.1
Jackson	892	1078	263	14	2247	48	40	1.39
Jasper	420	367	67	4	858	43	49	0.57
Jefferson	558	724	120	13	1415	51	39	1.28
Johnson	589	797	139	8	1533	52	38	0.95
Jones	658	864	179	10	1711	50	38	1.12
Keokuk	537	445	90	8	1080	41	50	0.93
Kossuth	206	120	21	3	350	34	59	0.21
Lee	731	845	163	7	1746	48	42	1.39
Linn	731	828	166	17	1742	48	42	1.02
Louisa	506	577	118	13	1214	48	42	1.26
Lucas	784	789	131	8	1712	46	46	1.81
Lyon	197	121	22	4	344	35	57	0.34
Madison	1010	1460	188	17	2675	55	38	1.79
Mahaska	442	452	87	5	986	46	45	0.77
Marion	796	888	140	15	1839	48	43	1.4
Marshall	299	227	34	9	569	40	53	0.52
Mills	214	191	23	1	429	45	50	0.48
Mitchell	378	318	55	5	756	42	50	0.81
Monona	335	322	58	3	718	45	47	0.48
Monroe	798	1033	114	12	1957	53	41	1.83
Montgomery	283	238	37	2	560	42	51	0.67
Muscatine	502	554	142	9	1207	46	42	1.13
Obrien	156	106	15	2	279	38	56	0.27
Osceola	91	32	8	2	133	24	68	0.23
Page	285	248	36	3	572	43	50	0.53
Palo Alto	195	109	8	0	312	35	62	0.35
Plymouth	250	137	24	5	416	33	60	0.29
Pocahontas	155	48	11	0	214	22	72	0.27
Polk	326	520	90	9	945	55	34	0.55
Pottawattamie	395	354	59	7	815	43	48	0.41
Poweshiek	409	314	48	5	776	40	53	0.69
Ringgold	699	754	112	10	1575	48	44	1.3
Sac	197	85	20	2	304	28	65	0.34
Scott	252	348	61	6	667	52	38	0.56
Shelby	209	79	23	2	313	25	67	0.36

County	Antlered Bucks	Does	Button Bucks	Shed-antlered Bucks	Total	Percent of kill		Antld. Kill/ Sq. Mile
						Does	Antlered Bucks	
Sioux	152	92	20	0	264	35	58	0.2
Story	266	187	33	5	491	38	54	0.47
Tama	631	554	106	9	1300	43	49	0.88
Taylor	713	749	108	13	1583	47	45	1.35
Union	501	653	112	5	1271	51	39	1.18
Van Buren	1038	1272	209	10	2529	50	41	2.13
Wapello	546	619	89	6	1260	49	43	1.25
Warren	956	1054	170	11	2191	48	44	1.67
Washington	677	871	152	5	1705	51	40	1.19
Wayne	798	1214	139	34	2185	56	37	1.5
Webster	480	330	71	6	887	37	54	0.67
Winnebago	163	115	11	2	291	40	56	0.41
Winneshiek	943	1335	153	22	2453	54	38	1.37
Woodbury	349	245	74	4	672	36	52	0.4
Worth	228	127	30	2	387	33	59	0.57
Wright	226	127	30	4	387	33	58	0.39
Total	**45,177**	**48,701**	**8,179**	**743**	**102,800**	**42**	**48**	**0.68**

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
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

Year	Regular Gun			Muzzleloader			Archery	Grand Total
	Paid	Landowner	Total	Early	Late	Total		
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
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
2020	130,966	42,147	173,113	11,237	38,530	49,767	90,933	349,663
2021	127,571	40,726	168,297	10,285	36,684	46,969	88,035	343,564

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				
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	"				

Year	Zones	Shotgun Dates	Hours	Archery Dates	Hours	Muzzleloader Dates	Hours
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
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	"

Year	Zones	Shotgun Dates	Hours	Archery Dates	Hours	Muzzleloader Dates	Hours
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	"
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	"
2020	Statewide[j]	Dec 5-9	"	Dec 23-Jan 10	"	Dec 23-Jan 10	"
2020	Statewide	Dec 12-20	"	Dec 21-Jan 10	"	Dec 21-Jan 10	"
2021	Statewide[j]	Dec 4-8	"	Oct 1-Dec 3	"	Oct 16-24	"
2021	Statewide	Dec 11-19	"	Dec 20-Jan 10	"	Dec 20-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 2021-2022.

Area	Type	Licenses Available	Licenses Sold	Reported Harvest
Allamakee County CWD Perimeter	Archery & Firearm	900	55	12
Amana Colonies Zone	Archery & Firearm	250	123	42
Ames (City)	Archery	75	39	11
Ames (Perimeter)	Archery & Firearm	50	40	13
Backbone State Park	Archery	200	75	31
Bellevue State Park	Archery	50	12	3
Bettendorf & Riverdale (City)	Archery	125	64	37
Bobwhite State Park-WCCB	Archery	100	3	0
Burlington (City)	Archery	200	83	63
Cedar Rapids (City)	Archery & Firearm	400	165	70
Cedar Rapids Perimeter Zone	Archery & Firearm	500	214	67
Clayton County CWD Perimeter	Archery	1050	2	0
Clinton (City)	Archery	75	37	15
Coralville (City)	Archery & Firearm	200	106	37
Coralville Perimeter Zone	Archery & Firearm	600	450	123
Corydon CWD Incentive Zone	Archery	350	112	90
Council Bluffs (City)	Archery	300	112	43
Davenport (City)	Archery & Firearm	250	210	88
Decatur County CWD Perimeter	Archery & Firearm	500	144	114
Denison (City)	Archery	50	19	10
DeSoto NWR	Muzzleloader Oct. 22 - 23	50	18	0
DeSoto NWR	Muzzleloader Dec. 17 - 18	50	10	2
Dubuque (City)	Archery	225	191	96
Dubuque/Jackson/Jones CWD Perimeter	Archery & Firearm	700	281	88
Eldora (City)	Archery	50	11	4
Elkader CWD Incentive Zone	Archery & Firearm	450	74	40
Elk Rock State Park	Muzzleloader	25	25	17
Fayette County CWD Perimeter	Archery & Firearm	300	10	2
Green Valley State Park	Muzzleloader	35	26	12
Harpers Ferry CWD Incentive Zone	Archery & Firearm	300	91	69
Honey Creek State Park	Archery	75	24	4
Honey Creek State Park	Muzzleloader	75	30	11
IAAP	Archery & Firearm	1200	280	148
IAAP Any Deer Early Muzzleloader	Muzzleloader	40	7	0
Iowa City (City)	Archery	200	17	4
Iowa Falls (Perimeter)	Archery & Firearm	30	9	2
Iowa Falls (City)		80	46	21
Jefferson County Park	Archery	25	21	9
Kent Park	Archery	100	39	13
Keokuk	Archery	50	39	28
Knoxville (City)	Archery	25	0	0
Lake Aquahbi State Park	Archery	30	16	9

Area	Type	Licenses Available	Licenses Sold	Reported Harvest
Lake Darling State Park	Archery	100	68	33
Lake Iowa County Park	Archery	50	30	11
Lake Iowa County Park	Muzzleloader	75	9	4
Lake Mills (City)	Archery	50	5	1
Lake Three Fires State Park	Archery	40	26	9
Lake Wapello State Park	Archery	25	22	13
Ledges State Park	Archery	40	18	5
Maquoketa Caves State Park	Archery	30	22	8
Marshalltown (City)	Archery	60	22	5
Marshalltown (Perimeter)	Archery	40	18	4
Mason City	Archery & Firearm	175	97	37
Mount Pleasant (City)	Archery	50	4	1
Muscatine (City)	Archery	150	96	34
Oskaloosa (City)	Archery	100	39	11
Ottumwa (City)	Archery	175	149	74
Pike's Peak State Park / McGregor	Archery	100	58	35
Pine Lake State Park	Archery	30	20	10
Polk-Dallas Zone	Archery	1000	588	261
Polk-Dallas Rural Zone	Archery	75	14	1
Reichelt Area	Archery & Firearm	40	23	13
Scott County Park	Muzzleloader	50	22	9
Smith Wildlife Area	Archery	10	3	0
Smith Wildlife Area	Archery	3	0	0
Smith Wildlife Area	Firearm Dec. 3 - 7	3	3	0
Smith Wildlife Area	Firearm Dec. 10 - 18	3	0	0
Springbrook State Park	Firearm Dec. 19 - Jan 10.	20	6	3
Stone State Park	Archery	75	65	32
Wanatee Park	Archery	100	51	16
Waterloo & Cedar Falls Metro	Archery	290	248	103
Wayne County CWD Perimeter	Archery & Firearm	50	24	13
Wildcat Den State Park	Archery	50	28	6
Winneshiek County CWD Perimeter	Archery & Firearm	400	36	6
Woodbury County CWD Perimeter	Archery & Firearm	200	138	28
Totals		**13,999**	**5,282**	**2,234**

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	“				
2020	Oct 1-Dec 4 &	“	59	26	NA	Tags for antlerless deer available in 67 counties
	Dec 21-Jan 10	“				
2021	Oct 1-Dec 3	“	60	24	NA	Tags for antlerless deer available in 67 counties
	Dec 20-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	
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	

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
2000	Oct 14-22	“	60	53	4	7500 license quota, 16 counties modified buck only.
	Dec 18-Jan 10	“	50	47	7	Antlerless in 21 counties, no counties buck-only
2001	Oct 13-21	“	54	53	4	7500 license quota, no counties buck only. Antlerless in
	Dec 17-Jan 10	“	52	44	8	all counties, no counties buck-only
2002	Oct 12- Oct 20	“	65	56	4	7500 license quota, no counties buck only. Antlerless in
	Dec 23-Jan 10	“	41	46	6	all counties, no counties buck-only
2003	Oct 11- Oct 19	“	54	55	4	7500 license quota, no counties buck only. Antlerless in
	Dec 22-Jan 10	“	37	51	6	all counties, no counties buck-only
2004	Oct 16- Oct 24	“	55	58	5	7500 license quota, no counties buck only. Antlerless in
	Dec 20-Jan 10	“	37	48	6	all counties, no counties buck-only.
2005	Oct 15- Oct 23	“	53	58	4	7500 license quota, no counties buck only. Antlerless in
	Dec 19-Jan 10	“	32	54	6	all counties, no counties buck-only
2006	Oct 14-22	“	55	43[a]	NA	7500 license quota, no counties buck only. Antlerless in
	Dec 18-Jan 10	“	41	27	NA	79 counties, no counties buck-only
2007	Oct 13-21	“	55	35	NA	7500 license quota, no counties buck only. Antlerless in
	Dec 17-Jan 10	“	44	30	NA	77 counties, no counties buck-only
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

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
2016	Oct 15-Oct 23	“	59	30	NA	7500 license quota, 27 counties buck only. Antlerless in 65 counties, no counties buck-only
	Dec 19-Jan 10	“	48	24	NA	
2017	Oct 14-Oct 22	“	59	31	NA	7500 license quota, 27 counties buck only. Antlerless in 63 counties, no counties buck-only
	Dec 18-Jan 10	“	49	26	NA	
2018	Oct 13-Oct 21	“	57	34	NA	7500 license quota, 27 counties buck only. Antlerless in 64 counties, no counties buck-only
	Dec 17-Jan 10	“	45	25	NA	
2019	Oct 12-Oct 20	“	51	34	NA	7500 license quota, 27 counties buck only. Antlerless in 64 counties, no counties buck-only
	Dec 23-Jan 10	“	37	21	NA	
2020	Oct 17-Oct 25	“	54	36	NA	7500 license quota, no counties buck only. Antlerless in 67 counties, no counties buck only
	Dec 21-Jan 10	“	36	25	NA	
2021	Oct 16-Oct 24	“	54	34	NA	7500 license quota, no counties buck only Antlerless in 67 counties, no counties buck only
	Dec 20-Jan 10	“	40	23	NA	

[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[a]	Percent Change	Weighted Count[b]	Percent Change		Number	Percent Change	Number[d]	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	[c]	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[a]	Percent Change	Weighted Count[b]	Percent Change		Number	Percent Change	Number[d]	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%			4,628	229	-8%	1,788	6%
2021	73	-12%			**	**		15,026	-8%
2022	89	24%							

[a]Mean count represents average number counted per 25 miles of transect
[b]adjusted for missing counts
[c]change from 1986 to 1988
[d]Total number observed per 1,000 hours hunted
**Data missing at time of report

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 1900s due to habitat loss and partly because of uncontrolled subsistence market hunting (Little 1980).

Habitat: Only 2.6 million acres (1.1 million 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 1960s. Rio Grande and Merriam's subspecies were released at several sites during the 1960s 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 IDNR 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 2.3). Declines observed in spring hunter success rates during 1983 and 1984 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%).

2022: Iowa's 49th modern spring hunting season recorded 11,944 turkeys harvested, with 52,796 licenses issued (Table 2.1 and Table 2.8). This was the 34th year the entire state was open to spring turkey hunting. The 38-day season (8 April - 15 May, 2021) 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 44,252 resident shotgun/bow licenses issued, which was an increase of 522 from the 2021 season. In additional 6,324 resident archery-only licenses were issued in 2022 (6,550 in 2021). Archery-only licenses harvested 1,164 turkeys, resulting in a 18.8% success rate. Gun/Bow licenses had a 22.8% success rate for residents in 2022 (Table 2.4).

This was the 33rd spring that nonresidents were allowed to hunt turkeys in Iowa. Nonresident license sales held steady from the 2021 season. Of the 2,148 general licenses available 2,043 were issued. Zone 6 had unsold tags in seasons one and two. Zone 7 only season one was unfilled. Of the 150 muzzleloader tags available, 138 of these tags were issued as over the counter tags with only 12 applied for during the regular application process. The majority of these tags were assigned to zone 4 (124) with season 4 being the highest amount (68). Non-resident hunters harvested 995 turkeys (Table 2.1). Nonresidents reported a higher success rate for spring gobblers than did residents (44.1% versus 22% respectively) (Table 2.4), which continues to be stable for both groups.

Age of turkeys harvested resulted in jakes (spurs <½") harvested 19%, turkeys reported with spurs ½"-¾" were 24% of the total harvest. The majority (57%) of turkeys harvested in 2022 had spurs greater than ¾ of an inch in length.

Youth Turkey Season

Iowa's 18th youth spring turkey season was held April 8-10th. During the 3 day season, youth 15 and younger were allowed to participate with an accompanied licensed adult (adult with a turkey license 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 dipped slightly at 5,882 (5,948 in 2021) (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). A code change in 2014 allowed for unfilled youth season tags to be valid for any other spring turkey season until filled. Youth tags success rate was reported at 25% in 2022.

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. The number of fall licenses issued, hunter numbers and

harvest increased steadily from 1981-89 (Figure 2.7, Table 2.5, and 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/mi^2 of forest on the southern Iowa Stephens Forest study area and region-wide densities of at least 40-50/mi^2). 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-1980s. 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).

2021: Fall turkey hunter success rates remained constant at 7.6% in 2021 (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 IDNR'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) remained steady at 7,321 in 2021 (7,338- 2020). Bow-only season started October 1 and ran until January 10th 2022 with December 3rd-December 20th being closed for the shotgun deer season. Gun/bow season was 54 days from October 11th-December 3th (Table 2.12). Forty-five percent of the fall licenses were issued free to landowners. Estimated numbers of active hunters were undeterminable since there was no post card survey after the season (mandatory reporting eliminated the post card survey). Of all turkey license issued 9.1% reported harvesting a turkey, which was the highest percentage since 2008. (Table 2.8). Archery only licensed hunters reported a harvest of 123 turkeys in 2021 which was a 13% decrease from the 2020 season. The 4.6% success rate for 2021 archery only licenses was lower 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 IDNR 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/ mi^2 of forest as determined from empirical population data gathered from Stephens State Forest (IDNR, unpubl. data). In 1986, only 4 counties sustained >4 hunters/ mi^2 of forest, combined with turkey harvests of >2/mi^2 of forest. In 1987, with the large increase in licenses issued, 12 counties had both hunter densities >4, and turkey harvest >2/ mi^2 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/ mi^2 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 hunters 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 2021 a mixed mode sampling system combined the traditional mail survey with an internet based survey. A list of cooperators was established from IDNR 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 2008-2021 are summarized in Table 2.9 and Table 2.10.

The 2021 survey indicated generally good production across the state from the five-year average with a 50% calculated nest success rate. This is a 14% increase from 2020.The two biggest highlights were a 38% drop in WC Iowa and a 63% increase in EC Iowa. Production in NW Iowa was lower in number of poults per successful hen and number of hens successful. The number of successful nests was estimated to be higher in all regions except the NW and SE from 2020. Observers submitted 6,151 observations statewide up 46 % from 2020 but 64% above the five-year average. Wild turkey brood production in 2021 was up from 2020 per successful hen, as well as up with overall poults per hen statewide. Seven of nine regions showed an increase in productive hens with the east-central region showing the largest one-year change (63%). Overall statewide production was above the five-year average. Hen success was up 14%, with the number of poults per successful hen showing a 13% increase from 2020 (Figure 2.5).

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Figures

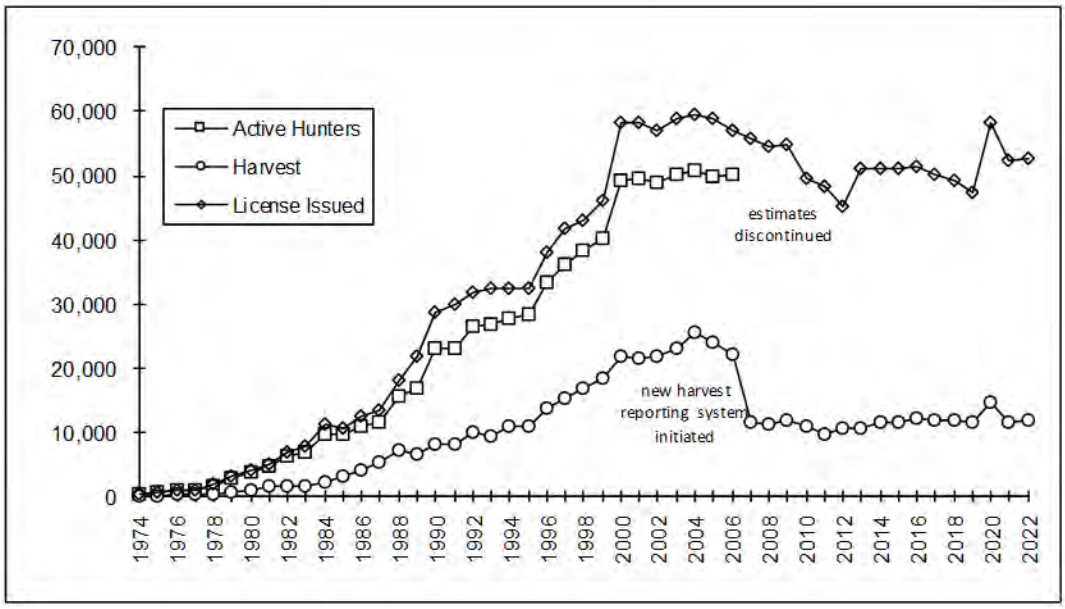


Figure 2.1 Iowa spring turkey hunting statewide estimates (1974-2022). (Active hunters unknown after 2006 due to survey changes. Harvest estimation methods changed from mail surveys to mandatory reporting beginning 2007.)

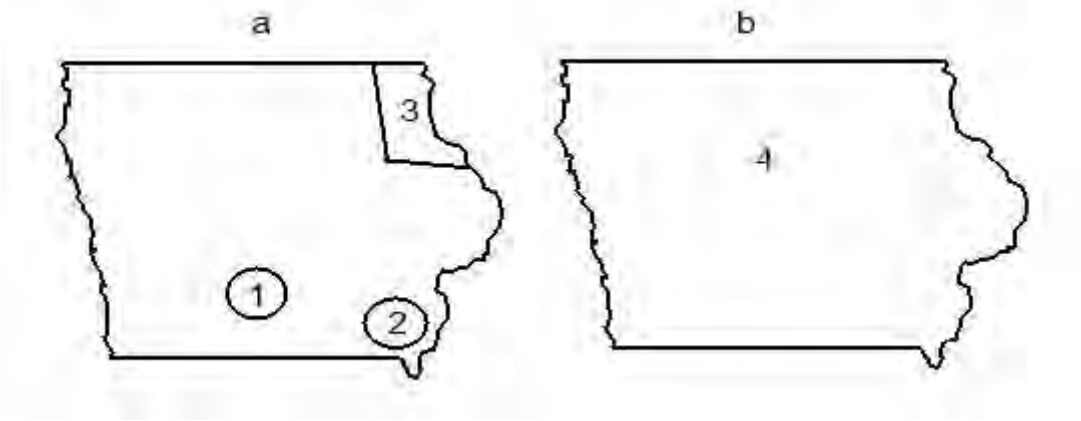


Figure 2.2 Spring Resident Turkey Hunting Zones, a. 1974 and b. 2021.

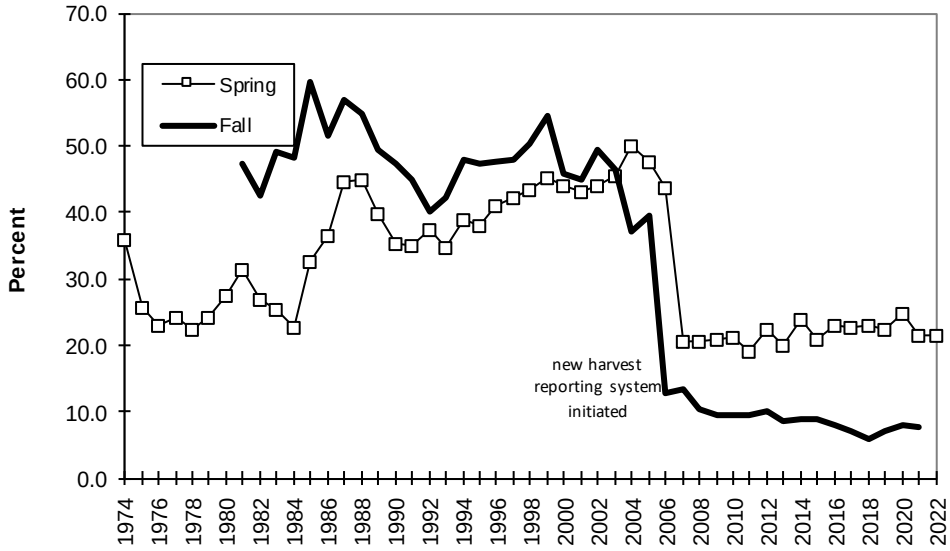


Figure 2.3 Iowa turkey harvest statewide success rates for residents (1974-2022). (Success estimation methods changed from mail surveys to mandatory reporting beginning Fall 2006.)

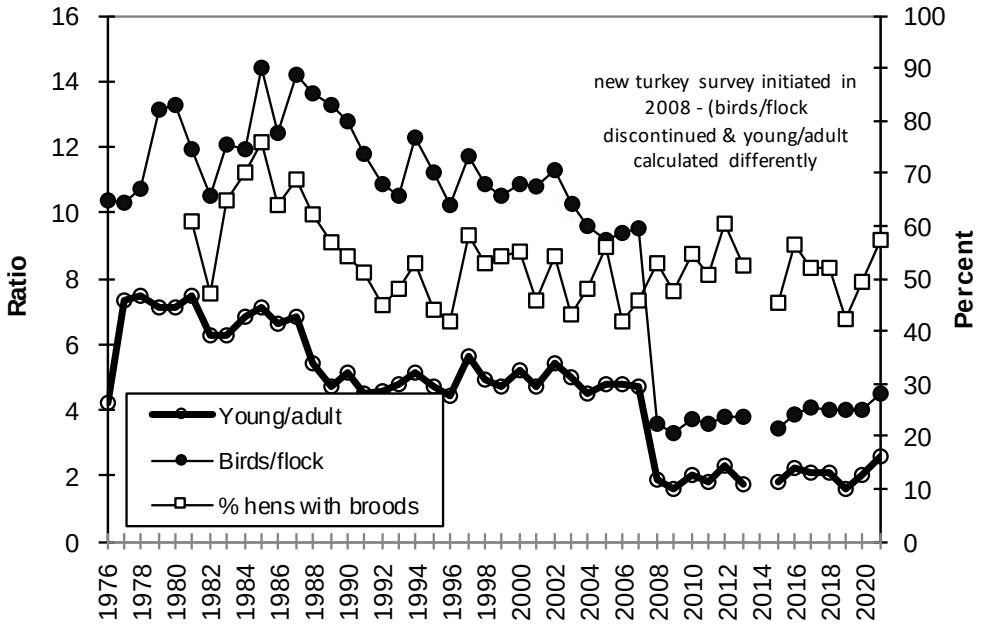
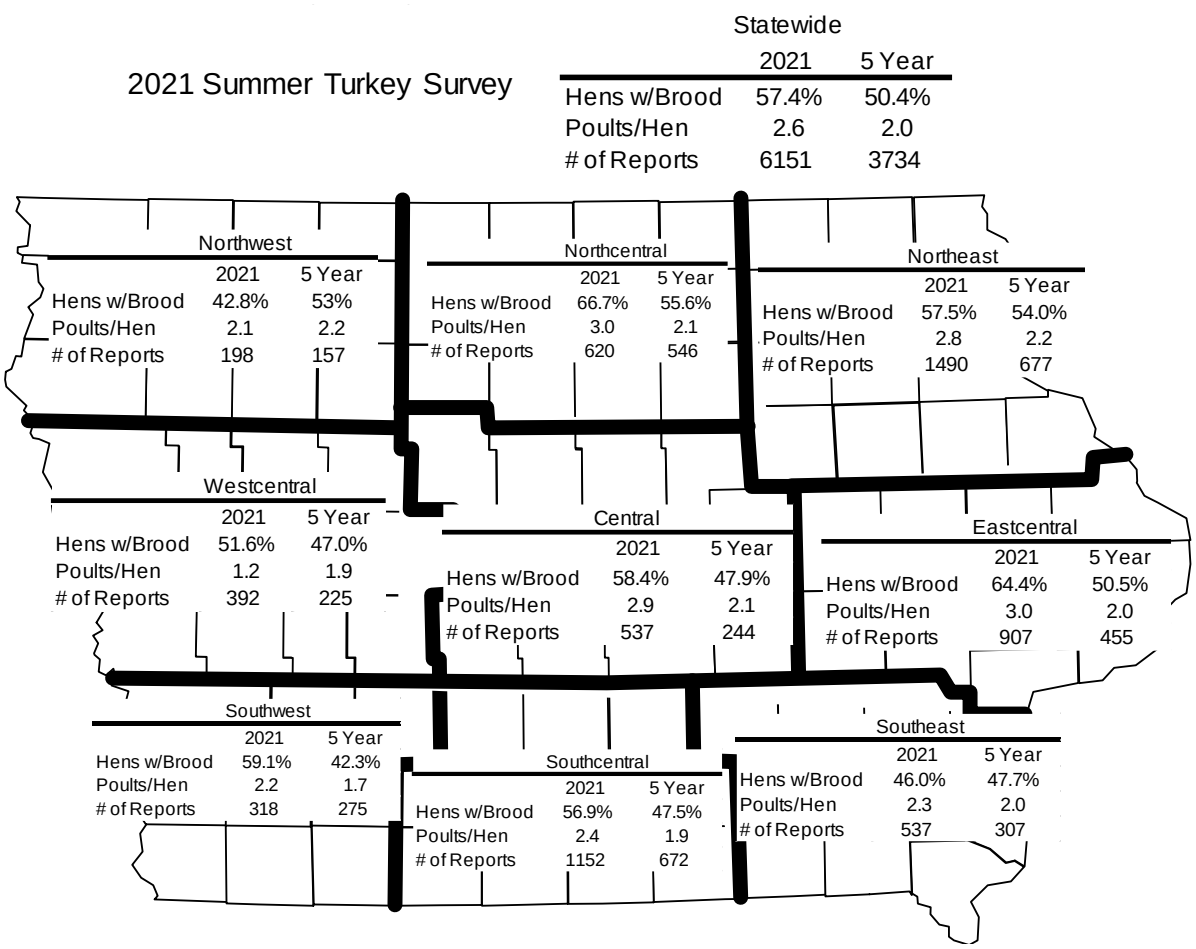


Figure 2.4 Iowa turkey brood survey statewide results (1976-2021).



Hens w/Brood = percent of successful hens observed with a brood.
Poults/Hen = number poults observed per all hens.
# of Reports = number times turkeys were observed by cooperators.

Figure 2.5 Iowa Summer Turkey Survey

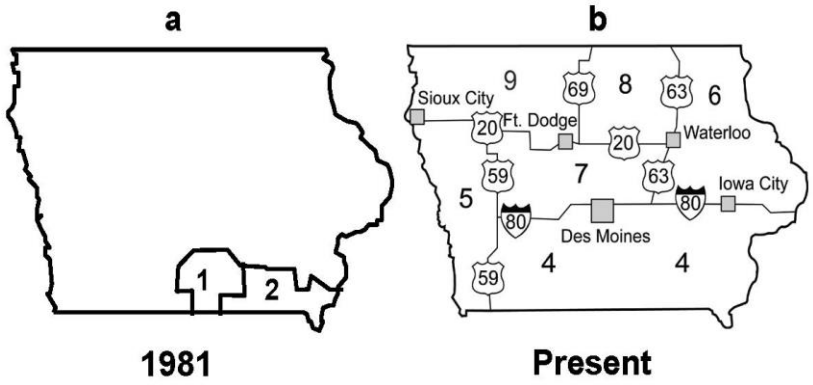


Figure 2.6 Fall turkey hunting zones, a. 1981 and b. present.

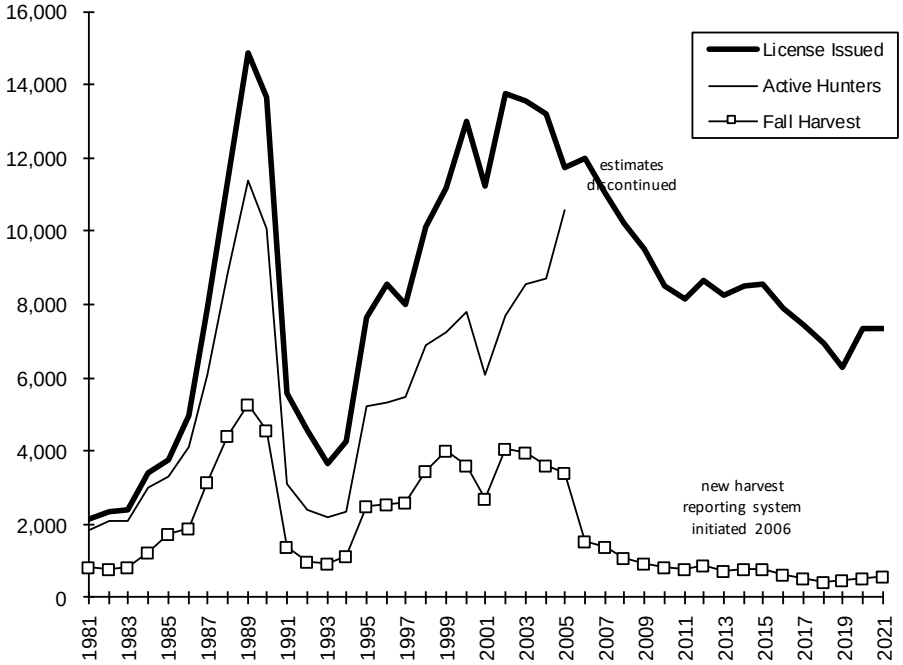


Figure 2.7 Iowa fall turkey hunting statewide estimates (1981-2021). (Active hunters unknown after 2005 due to survey changes. Success estimation methods changed from mail surveys to mandatory reporting beginning 2006.

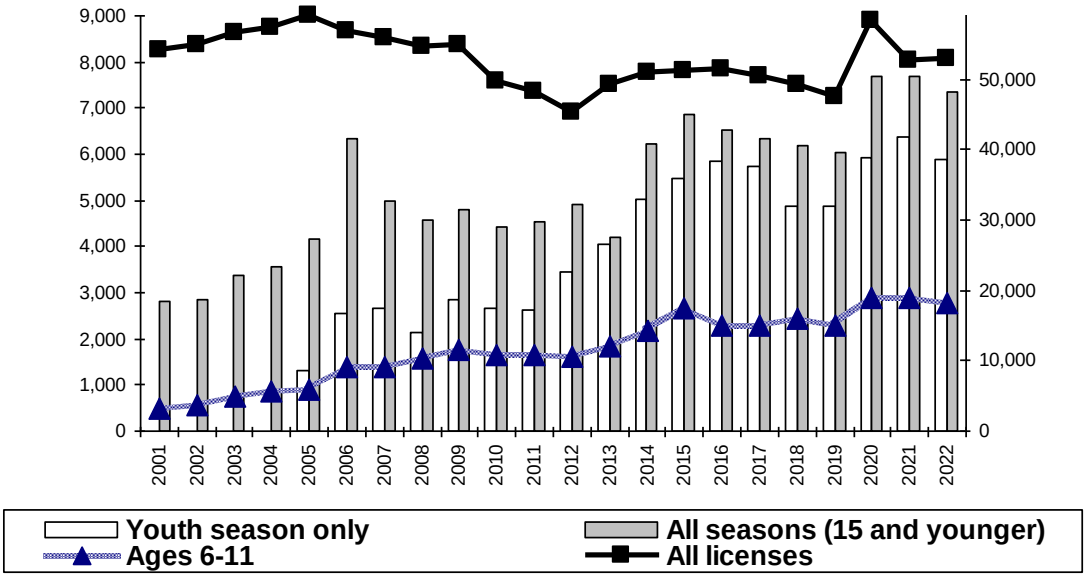


Figure 2.8 Iowa spring turkey license issue (2001-2022).

Tables

Table 2.1 Number of estimated spring turkeys harvested (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
2021	9,724	1,095	10,819	878	11,697
2022	9,785	1,164	10,949	995	11,944

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

Year	Zone					Resident Total	Non-Resident	Total Harvest
	1	2	3	4	5			
1992	200	351	213	24,321	919	26,004	418	26,422
1993	124	391	197	24,648	888	26,248	542	26,790
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 (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
2021	43,730	6,550	50,280	2,216	52,495
2022	44,252	6,324	50,576	2,220	52,796

Table 2.4 Estimated success rate of Iowa spring turkey hunters

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
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
2021	22.1	16.7	21.5	40.5
2022	22.8	18.8	21.5	44.1

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
2020	-	-	-	888	257	602	250	220	159	2,494	7,338	0
2021	-	-	-	808	265	646	250	200	162	2,626	7,321	0

Table 2.6 Number of estimated active turkey hunters in Iowa fall turkey seasons by zone (1981-2006).

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 (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

Year	Zone									Unk	Bow	Resident Total	Non-Resident
	1	2	3	4	5	6	7	8					
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
2020	-	-	-	103	30	71	27	35	18	248	140	532	0
2021	-	-	-	98	28	98	25	48	11	126	123	557	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
2020	11.6	11.7	11.8	10.8	17.5	11.3	5.6	7.2
2021	12.1	10.6	15.2	10.0	24.0	6.8	4.6	7.6

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
2020	3.50	1.3	3.90	2.20	4.20	2.10	3.80	1.90	4.60	2.50	3.60	1.80	4.20	1.40	3.90	1.90	4.70	2.60	4.00	2.00
2021	4.78	2.05	4.46	2.98	4.89	2.81	3.32	1.17	5.02	2.93	4.58	2.95	3.78	2.24	4.25	2.42	5.05	2.32	4.53	2.60

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
2020	171	36.9	549	56	874	49.6	238	48.1	287	52.8	528	51	320	33.7	863	49.1	364	55.9	4202	49.2
2021	198	42.8	620	66.7	1490	57.5	392	51.6	537	58.4	907	64.4	318	59.1	1152	56.9	537	46	6151	57.4

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	

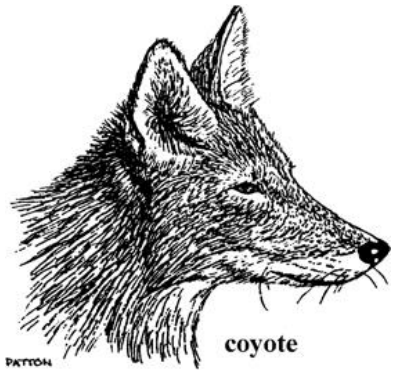
Year	Bag Limit	Poss Limit	Season					Splits	Season Length	# Zones	# Sq Miles	Major Rule Changes
			Youth	1	2	3	4					
1998	1	1/License		13 Apr-16 Apr	17 Apr-21 Apr	22 Apr-28 Apr	29 Apr-10 May		28	4	56,043	
1999	1	1/License		12 Apr-15 Apr	16 Apr-20 Apr	21 Apr-27 Apr	28 Apr-9 May		28	4	56,043	$22.50 fee, 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
2021	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	
2022	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	

Table 2.12 Iowa's Fall turkey gun hunting seasons (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
2020	1	1/License	12 Oct-4 Dec	54	6	56,043	Added 50 Tags Zone 8
2021		1/License	11 Oct-3 Dec	54	6	56,043	
2022		1/License	10 Oct-2 Dec	54	6	56,043	.410 and 28 gauge shot not smaller than size 10 added

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-kills, the bowhunter survey, and spring 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 Survey, 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.

Population trend data for furbearer species have also been gathered annually since 2004 from the Iowa Bowhunter Observation Survey. 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 so the harvest season had to be closed, 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.

During 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 that 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 five years (2017-2021), 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. For 2021-22, the total fur harvest was 58,940 (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 2021-22, the number of licensed furharvesters in Iowa increased again slightly (15,286) from the previous year 14,259. But remains down from the 10-year high of 20,818 in 2013-14 (Table 3.2). The increase in 2021 may be attributed to momentum from 2019 and 2020 in which more folks sought outdoor pursuits due to Covid-19.

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 2021-22, there were 31 registered fur dealers (resident); the same number as the previous year (31) in 2020-21 - consistent with the fur market trend (Table 3.2).

Current Fur Market in Iowa

For the upcoming 2022-23 season, the overall wild fur market outlook again looks fairly weak, but may trend upward slightly from the previous year in some categories of fur such as bobcats and muskrats. Yet, still a stark contrast to when the market was relatively strong from 2010-2013. Demand is still primarily from China and Russia, with several other smaller countries buying fur. Continued instability both politically and economically with China and Russia, plus 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 trended down sharply last year, and may remain that way this upcoming year. The market for raccoon pelts remains weak which is unfortunate because an increased effort to harvest raccoons in Iowa is needed. Prices for bobcat, muskrats, badger and otter are expected to remain somewhat decent for 2022-23. 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 2021-22, furbearer prices and number of pelts sold in Iowa followed current furbearer market trends. Average pelt prices did increase slightly from the previous year for all species except raccoons, muskrats, weasels, and coyotes. For these species, some only fetched 50% of their value from just three years ago. However, bobcat pelt prices increased sharply for 2021-22 (Table 3.3). The total value for all species of pelts sold in Iowa declined from the previous 2 year of $1,053,056 in 2019 to $601,327 in 2020 to $228,594 in 2021, respectively (Table 3.4). Mink, raccoon, and red fox prices were below the 5-year and long term pelt price averages in 2021-22. While muskrat prices in 2021-22 were about the same as the 5-year average of $2.62 at $2.60, and slightly above the long term average of $2.21 (Table 3.4).

2021-22 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 variables 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 2021-22 was somewhat similar to the previous year. In 2021, weather conditions were generally normal to mild heading into November, with a few cold fronts in late October. However cold weather moved into much of the state by mid to late November, but then intervals of above normal temperatures occurred well into December. Several regions in northern Iowa did not see snow until late December, whereas parts of southern Iowa did receive multiple snowfalls from late November through December. Moisture levels varied throughout Iowa, with many parts in the north half drier than normal, while parts of southern Iowa were variable. By late-November, many waterbodies in the state were frozen over already which can reduce water trapping efforts. In general, the weather was okay for water trapping furbearers throughout the state for much of November and early December, but ice conditions increased during late 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, overall furharvest effort was down considerably in 2021-22 with a lower overall harvest than the previous year (Table 3.1). The harvest effort for dry land trapping and predator hunting, especially for coyotes, was considerably lower than the previous year most likely due to the drop in coyote pelt values.

The reported gray fox harvest (1) in 2021-22 remained very low (again), down from the previous year's harvest of (5) (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 (78% and 22%), and fox (82% and 18%), however hunters again harvested more coyotes (56%) than did trappers (44%) in 2021-22 (Table 3.5). Bobcat harvest by hunter versus trapper is recorded but is not 100% complete because several animals are kept for taxidermy purposes. Bobcat trappers harvested 69% of the total harvest reported, whereas hunters harvested 30% (Table 3.5). The total number of coyotes harvested in 2021-22 decreased drastically to 3,724 from the previous year (15,087). An all-time high coyote harvest occurred in 2018 (18,676) since records began in 1930, and was three times above the long term average. Decent fur market prices, a rise in popularity in pursuing coyotes, and a good population were likely reasons for the high coyote harvest from 2017-2020 (Table 3.1).

The following sections cover 2021-22 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 Figure 3.3).

In 2021-22 the statewide harvest for raccoons was 34,529 which was another decrease in harvest from 2020 (49,622) (Table 3.1). A raccoon harvest this low hasn't been recorded since 1958 in Iowa. The raccoon trapping and hunting season was open from Nov 6, 2021 - Jan 31, 2022, with no daily bag limits nor possession limit (Table 3.6). The average raccoon pelt price in Iowa was $2.99, which was down from the 2020-21 average price ($3.58; Figure 3.4 and Table 3.3). Trapping accounted for 78% of the total harvest, up from the previous season, while hunting accounted for the remaining harvest (22%), (Table 3.5).

The 2021 Iowa Bowhunter Observation Survey indicated regional populations trended up from the previous year throughout southern regions of Iowa, but remained similar throughout the rest of the state (Figure 3.5). The overall statewide trend for the fall bowhunter observation survey for raccoons trended down slightly in 2021. However, raccoon population still remains high on average throughout the entire state (Figure 3.6). Results from the 2022 Spring Spotlight Survey indicated the overall statewide raccoon population increased again from the previous year with a long term upward trend (Figure 3.7). The relative distribution averaged over the past five years shows a similar trend with the southwest and east central Iowa regions holding the highest number of raccoons (Figure 3.8). Field reports of raccoon litters this spring and summer indicate the population may again trend upward in some regions for 2022-23. 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 on a more frequent basis than in the past.

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 otter, bobcat, and coyote (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 more consistently observed from the 1930s-1990s. Historic muskrat populations in Iowa fluctuated greatly following wet and dry periods during those decades consistent with other prairie/plains states. 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 2021-22, the muskrat harvest was 11,344 which was a decrease from the previous season (16,865, Table 3.3). In 2021-22, the average muskrat pelt price in Iowa was $2.60, which was down slightly from the previous year ($2.80; Figure 3.10; Table 3.3). The average muskrat pelt price over the past 10 years is $3.93, however the long term average is $2.21 (Figure 3.10, Table 3.4).

Trapping season length (6 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in previous years (Table 3.6). Variable habitat and dry conditions were experienced across much of the state in the spring and fall of 2021, 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 or anthropogenic 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 (5,263) (Figure 3.11). Then from 2009 to 2020, the annual harvest 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). The harvest for 2018-19 was nearly twice as high as the harvest in 2016-17 (9,283).

For 2021-22, the harvest declined significantly to 3,724. The trapping and hunting season length (trapping: 6 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 2021-22 was $10.35, which was only half of the average in 2020-21 ($20.53; Table 3.3). Coyote pelts had held their value during the recent fur market decline, however it may continue to decrease in the next few years due to market demand changes. Trapping accounted for a lower proportion of the harvest (44%) than hunting (56%) (Table 3.5). Ideal hunting conditions mainly occurred in January and February with significant snowfall to portions of the state. Good pelt prices, changes in the technology of the equipment used for coyote hunting, tv shows, videos, etc. had all contributed to an overall popularity surge in coyote trapping and hunting efforts up until last winter.

The Iowa Bowhunter Observation Survey conducted during last Fall (2021) indicated the statewide population trend for coyotes slightly from the previous year (Figure 3.13). Regionally, there was a downward trend in 2021 throughout the southwest, and west central regions of the state, but remained similar to 2020 for all other regions (Figure 3.12). Overall statewide, coyote population trends from 2012 to 2020 appear to be fairly stable in all regions and remain quite high for many regions of the state, especially the southwest. The 2022 Spring Spotlight Survey results trended up slightly overall for the number of coyotes seen from the previous year statewide (Figure 3.14). 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, but coyotes are present throughout the state (Figure 3.15). In 2021, there were a similar number of reports as in 2020 from towns and cities in Iowa that coyotes were living within urban areas - especially the Des Moines area.

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, they've remained well below the current long-term average of 9,695 (Table 3.1; Figure 3.16).

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 2021-22, the red fox harvest was 650, which was down slightly from the previous season (999), below the 5-year average, and only 6% of the long-term average (Table 3.1). Trapping and hunting season length (6 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained the same to previous years (Table 3.6). For 2021-22, the average red fox pelt price in Iowa was $8.59, which was up from the 2020-21 price ($5.82; 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 3.17). Trapping accounted for 82% of the total harvest (red and gray fox), which was up from the previous season (Table 3.5). Hunting accounted for 18% of the total harvest (red and gray fox).

The 2021 Iowa Bowhunter Observation Survey conducted in the Fall indicated that regional population trended upward in northcentral and northeast Iowa, but remained similar or down slightly in all other regions of the state (Figure 3.18). The overall statewide population trend for red fox as indicated from the bowhunter survey showed a slight decrease from the previous year (Figure 3.19). The 2022 Spring Spotlight Survey showed no change from the previous year (Figure 3.20). That survey also shows the 5-year average of highest distribution of red fox relative to other counties occurs in Butler, Bremer, Black Hawk, and Grundy counties of Iowa, plus counties in east central Iowa, and remains lowest in northwestern Iowa (Figure 3.21). Field reports during the spring and summer of 2022 indicate an increase in red fox litters locally, but remain quite variable in other regions of the state. 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 3.22). Since 1996-97, gray fox harvests have remained well below their current long-term average of 774.

In 2021-22, the reported gray fox harvest was again at an all-time low of just 1 in Iowa (Table 3.1). In 2020-21, the gray fox harvest was only 5, well below the recent and long-term averages (Table 3.1). Trapping and hunting season length (6 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 $15.03, which was up slightly from the 2020-21 average price ($14.83; Table 3.3). Trapping accounted for 82% of the total harvest (red and gray fox), which was lower than the previous season (Table 3.5). Hunting accounted for 18% of the total harvest (red and gray fox).

The 2021 Iowa Bowhunter Observation Survey conducted during the Fall indicated a low number of observations across most regions of the state (Figure 3.23). The overall statewide population trended downward slightly from the previous year (Figure 3.24). 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 (6,944) from 2014 to 2021 (Figure 3.25).

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 2021-22 was 4,223 down slightly from 2020-21 (5,031). Trapping season length (6 Nov-15 April), daily bag (no limit), and possession (no limit) limits have remained the same since the season was extended from April 1st-April 15th in the spring of 2012 (Table 3.6).

The 2020-21 average beaver pelt price in Iowa was $5.73, which was up slightly from an already low average price in 2020-21 ($5.04; Table 3.3). Field reports, observations, and nuisance complaints actually indicate the beaver population is trending upward despite the low harvest in 2021-22. 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 3.26). 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 3.27).

The 2021-22 mink harvest was 973 which is the lowest harvest ever recorded for Iowa since 1930 (Table 3.1). The 2021-22 harvest was also below the 5- and 10-year averages, and well below long- term average (18,618) (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 (6 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 $3.93in 2021-22, similar to the 2020-21 price ($3.37; Table 3.3).

Opossum

During the 1933-34 harvest season, the opossum harvest reached a current, all-time high of 83,625 (Figure 3.28). 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 (13,158) from the 1990s to present.

The 2021-22 opossum harvest was 623, which decreased slightly from the previous season (658) below the 5-year, 10-year and long-term averages (Table 3.1). Trapping season length (6 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 $0.93 which was slightly higher than the 2020-21 price ($0.73; Table 3.3).

The 2021 Iowa Bowhunter Observation Survey conducted in the Fall indicated the population trended downward in almost all regions of Iowa (Figure 3.29). The Bowhunter Observation Survey also showed a decrease from the previous year in the overall statewide population trend in 2021 (Figure 3.30). The 2022 Spring Spotlight Survey showed overall statewide observations trended upward slightly from the previous spring's survey (Figure 3.31). The five year average distribution of opossum is highest in southwest Iowa and lower in northern and southeast regions of the state (Figure 3.32).

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 dropped 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 3.33, Table 3.1).

In 2021-22, the badger harvest was 174 which was a decrease from the previous year (504, Table 3.1), below the 5-year harvest average (451) and below the long-term average (663) for Iowa. Trapping season length (6 Nov-31 Jan), daily bag (no limit), and possession limits (no limit) remained the same as previous years (Table 3.6). For 2021-22, the average badger pelt price in Iowa was $13.39, which was higher than the 2020-21 price ($8.38; Table 3.3).

The 2021 Iowa Bowhunter Observation Survey, conducted in the Fall, indicated that populations were variable by region with fewer observations overall than other furbearer species on average (Figure 3.34). A downward trend was observed in the overall population for the second year in a row. Overall though, this survey shows the statewide population trend for badgers in Iowa is mainly stable (Figure 3.35). The 2022 Spring Spotlight Survey showed the overall population is similar to the previous year (Figure 3.36). 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 3.37). 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 3.38). 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 2021, 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 3.39).

In 2021-22, the striped skunk harvest was 906, which was down from the previous season (1051), but still above the 5-year average (766) and 20-year average (775, Table 3.1). Trapping season length (6 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 2021-22 for Iowa was $4.77, which was down slightly from the 2020-21 price ($5.32; Table 3.3).

The 2021 Iowa Bowhunter Observation Survey, conducted in the Fall, indicated regional populations trended downward in all regions except the central region from the previous year (Figure 3.40). This survey also showed an overall statewide population did trend downward after the two previous years had trended upward (Figure 3.41). The Spring Spotlight Survey has shown relatively stable upward and downward cycles in the overall population trend of striped skunks (Figure 3.42). Populations of striped skunks 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 2022 Spring Spotlight Survey showed total striped skunk observations for the entire state increased from the previous spring 2020 (Figure 3.42). The 5-year average of relative distribution compared among counties is highest in the southwest region of Iowa, but also fairly evenly distributed across the rest of the state except in southeast Iowa where distribution was lower (Figure 3.43).

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 population trends indicated from these surveys will continue to be monitored.

Weasel

Weasel harvests during the 1930s and 1940s were characterized by dramatic fluctuations (Figure 3.44). 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. For example, 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 2021-22, the reported weasel harvest was 1 animal (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 (6 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 2021-22 for Iowa was $3.33, which was slightly lower than the 2020-21 price, ($4.00; Table 3.3).

Low harvest numbers may indicate that statewide populations have not recovered that much since the 1970s. However, it is more likely that trappers haven't targeted the weasel 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 2021-22 season was 822 animals, down slightly from the previous year (853). County by county harvest is documented through CITES tag harvest reports which shows the highest otter harvests again occurred in eastern Iowa (Figure 3.45).

The average otter pelt price in 2021-22 was $17.63, which was higher than the 2020-21 average price ($14.64; Table 3.3).

Since the trapping season was established in 2006, the sex ratio of harvested otters has remained relatively even. For 2021-22, the proportion of males to females harvested was 48% and 44% (Figure 3.46). Foothold traps, conibear traps, and snares were the most common harvest method in the state (Figure 3.47 and Table 3.9). The number of furharvesters intentionally targeting otters (43%) is slowly increasing, but incidental captures appear to be the most common cause for capture in Iowa at this time (52%) (Figure 3.48 and Figure 3.49).

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 2021 bowhunter survey indicated the population trended downward slightly all regions of Iowa except the south-central region, but overall remains fairly similar to previous years in most of the regions (Figure 3.50).

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 2021-22 season, the harvest was similar to recent previous years - still below the 1,000 mark. This is likely due to lower trapper effort 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 otters, trapping is an especially effective population management tool because otters 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. 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 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 harvest during the 2021-22 season was 970 bobcats. The average bobcat pelt price in Iowa for 2021-21 was $69.44, which was much higher than the 2020-21 price ($23.50) 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 3.52).

In 2021-22, bobcat harvest occurred more evenly throughout the entire season. More so than previous years when bobcat harvest was mainly in November and decreased in December and January. This is likely because it coincides with

pelt primeness in which December and January pelts are fully prime. The most harvest occurred on weekends and holidays (Figure 3.53). There were 51 bobcats harvested by gun deer hunters in 2021, which is slightly more than the previous year (46). Archers harvested 40 bobcats in 2021, less than the previous year (56) (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 3.54). Snares, conibear traps, and foothold traps were the most common trapping method and calling the most common hunting method in the state (Figure 3.55 and Table 3.11). The number of bobcats intentionally harvested (51%) has been slowly increasing but remained similar to incidental harvest (40%) in 2021-22 (Figure 3.56 and Figure 3.57).

The 2021 Iowa Bowhunter Observation Survey indicated that since regulated bobcat trapping began in 2007, populations have remained fairly stable to increasing throughout the state. For 2021, bobcat observations trended slightly downward in most regions except the northeast (Figure 3.58). Regional population trends show the highest number of observations occurred in the western and southern regions of Iowa in 2021. 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 and western 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 remained the same as it was for the 2019-20 season (7 Nov-31 Jan). For the 2021-22 season, two more eastern Iowa counties were added into the bobcat harvest zone (Delaware and Jones). For the upcoming 2022-23 bobcat harvest season, no changes were made.

Figures

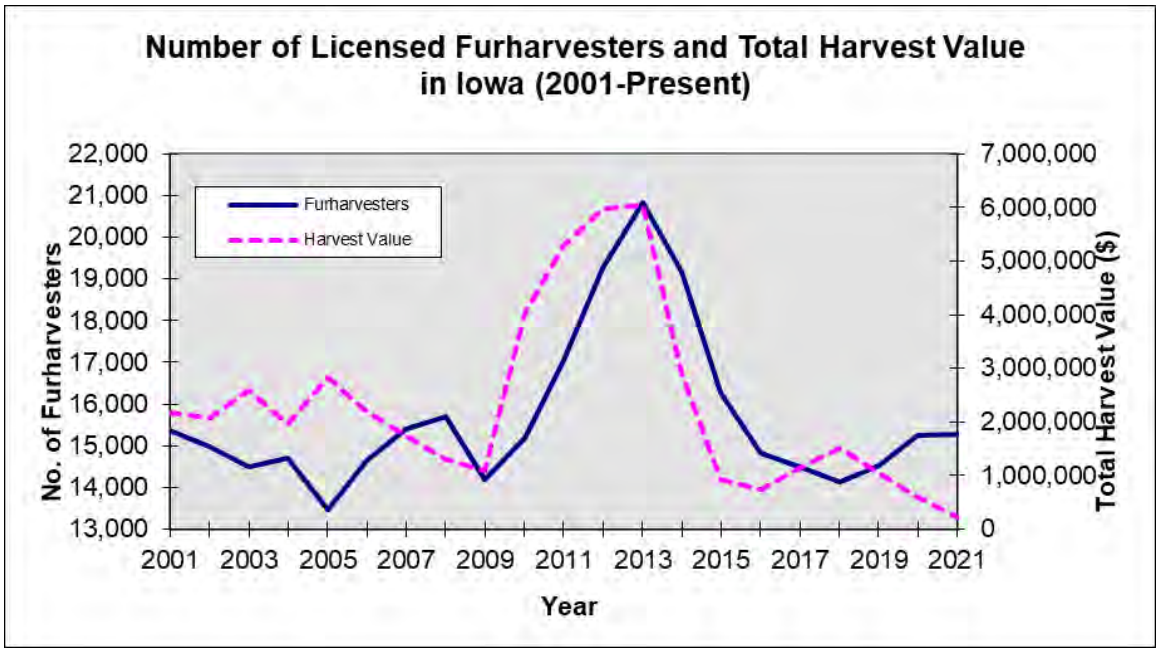


Figure 3.1 Number of licensed Iowa furharvesters and total harvest value in Iowa (2001-present).

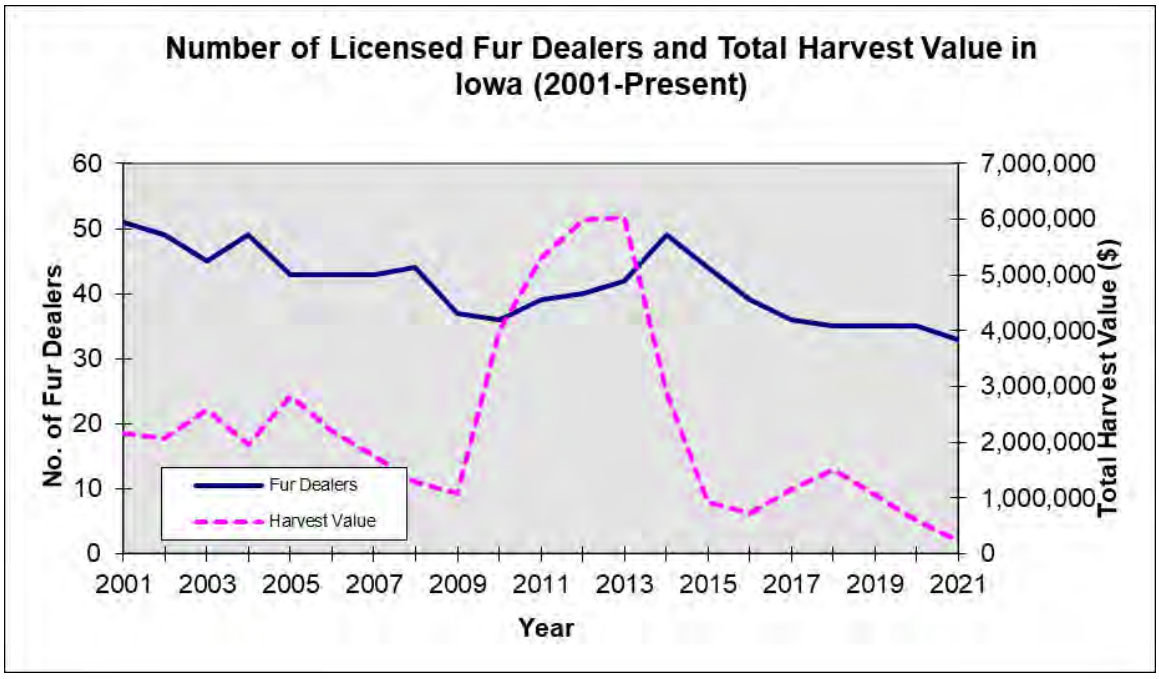


Figure 3.2 Number of licensed Iowa fur dealers and total harvest value in Iowa (2001-present).

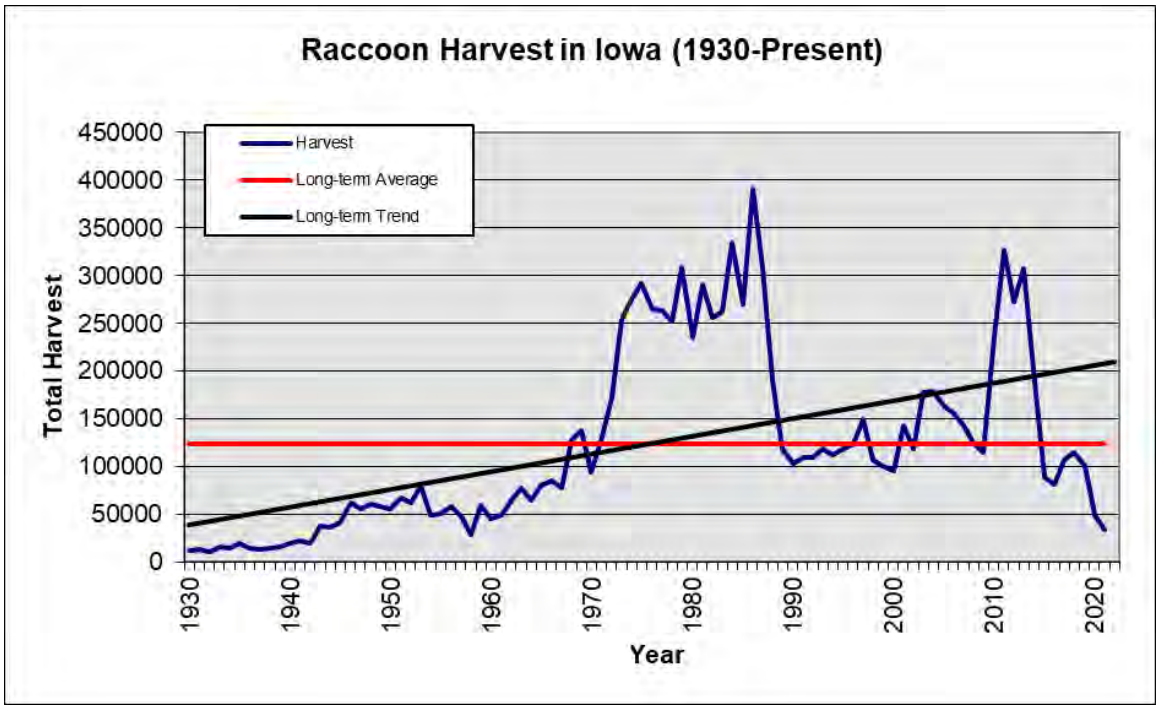


Figure 3.3 Annual raccoon harvests reported by licensed fur dealers in Iowa (1930-present).

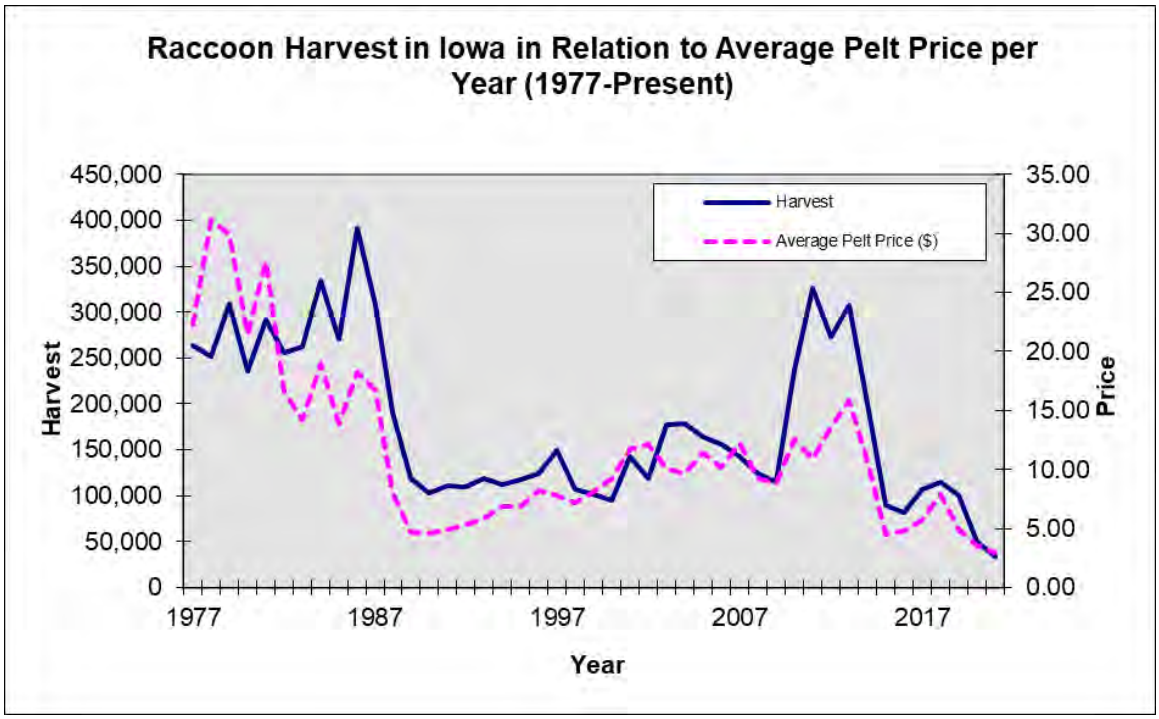


Figure 3.4 Raccoon harvest in Iowa and average pelt price paid by fur dealers (1977-present).

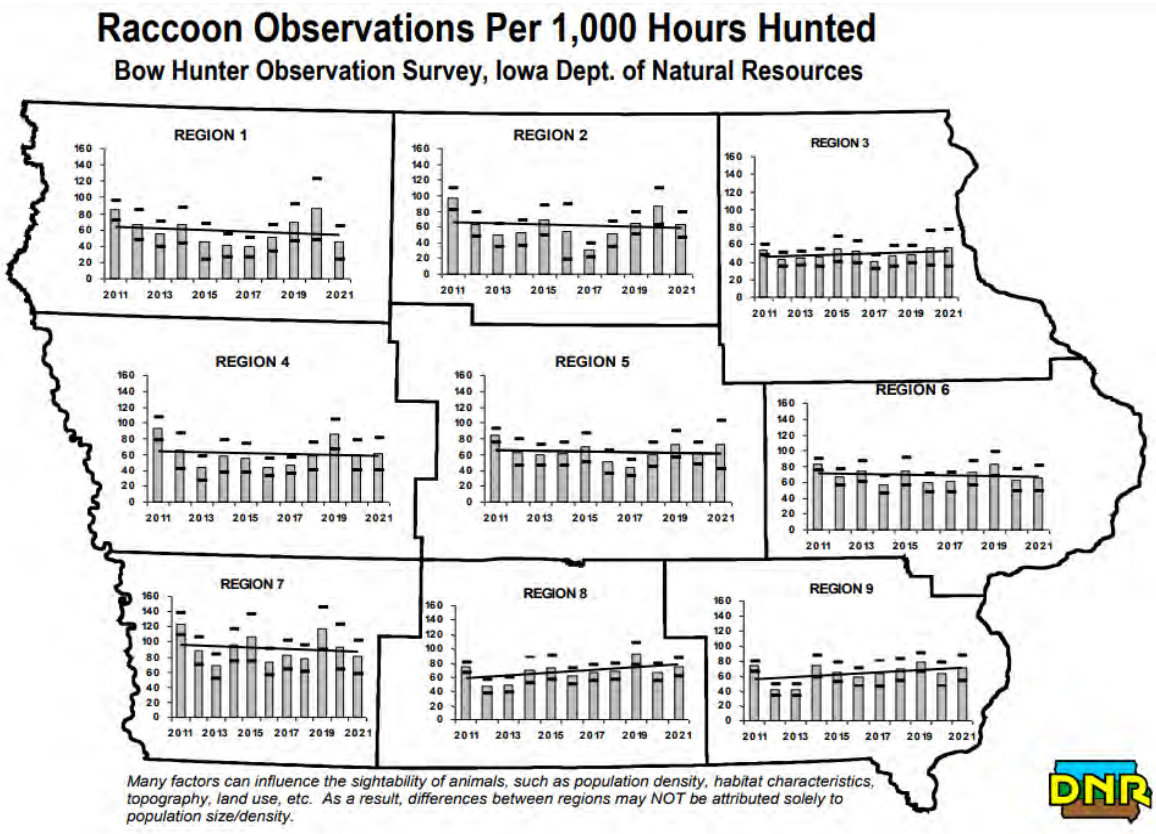


Figure 3.5 Bowhunter Observation Survey regional results for raccoons in Iowa (2011-present).

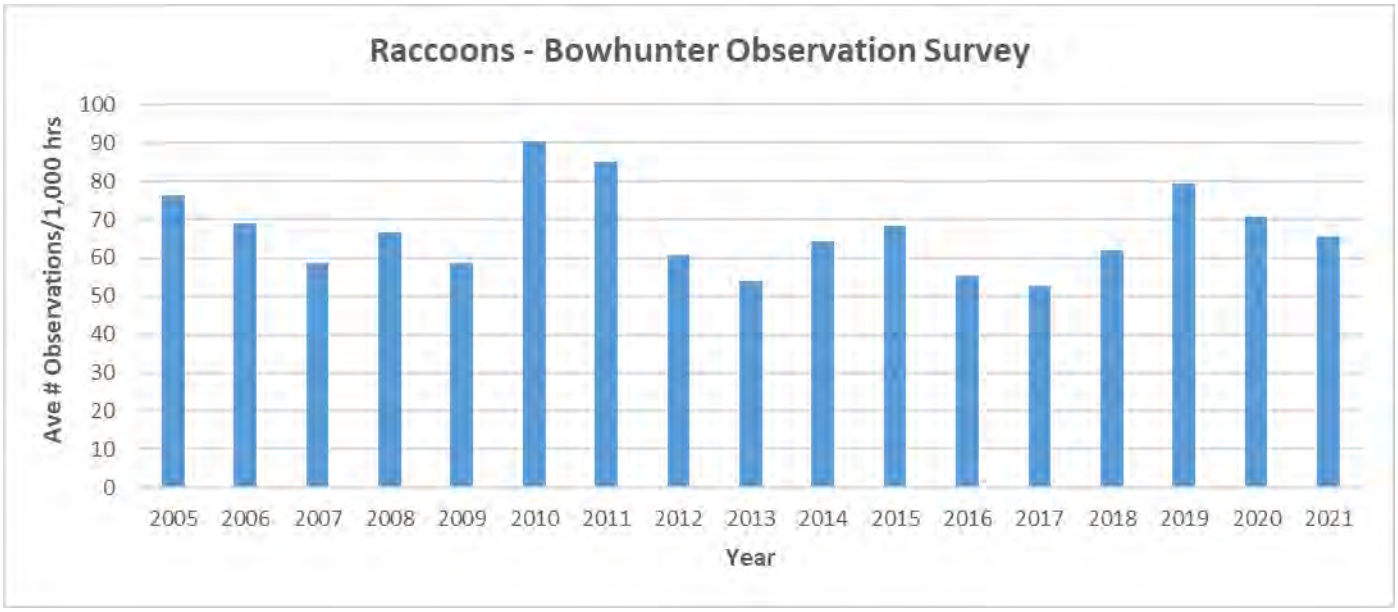


Figure 3.6 Bowhunter Observation Survey overall statewide trend of average observations for raccoons in Iowa (2005-present).

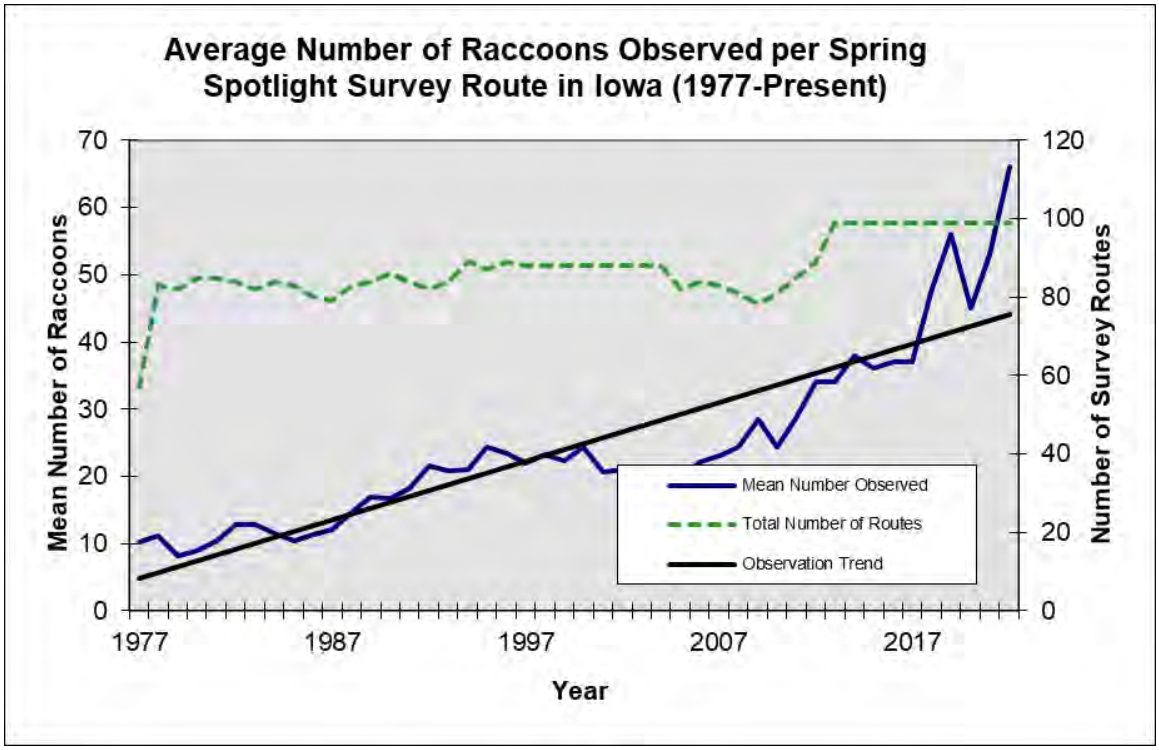


Figure 3.7 Results of April raccoon spotlight surveys in Iowa (1977-present).

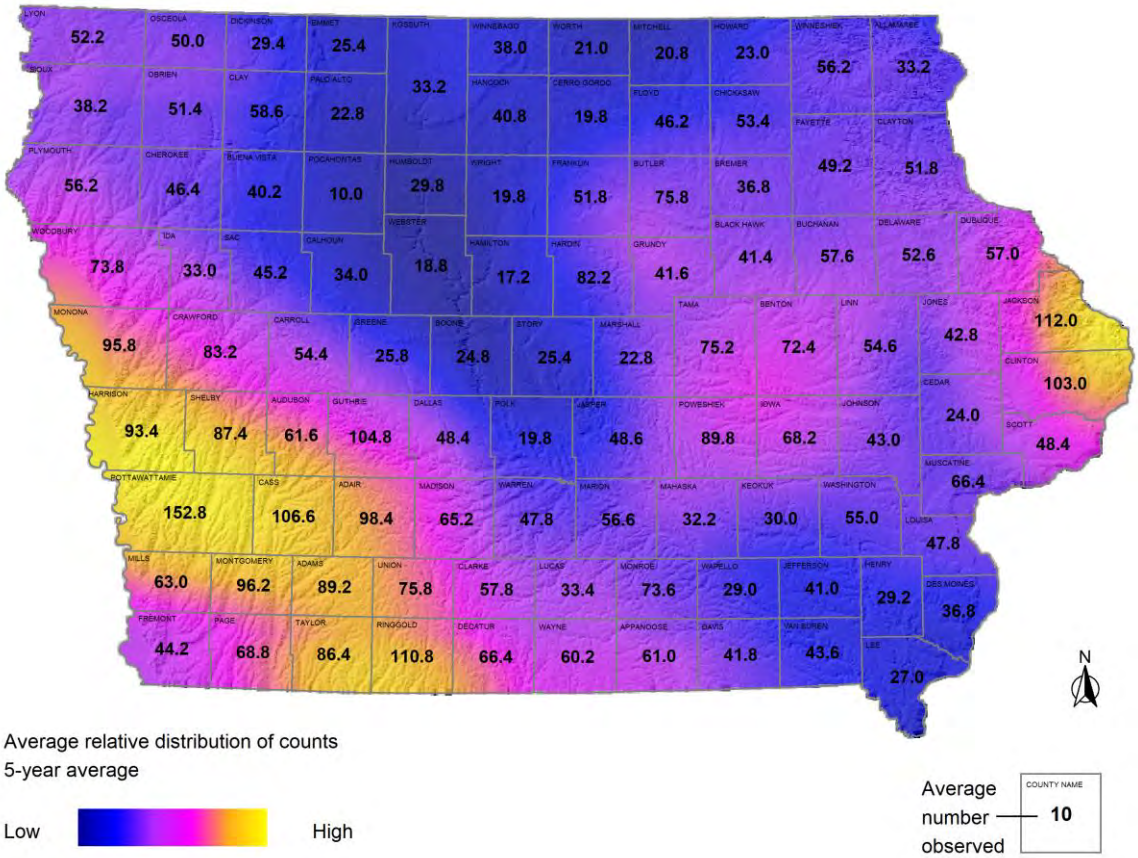


Figure 3.8 Relative distribution of average spring spotlight observations for raccoon during the past 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of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

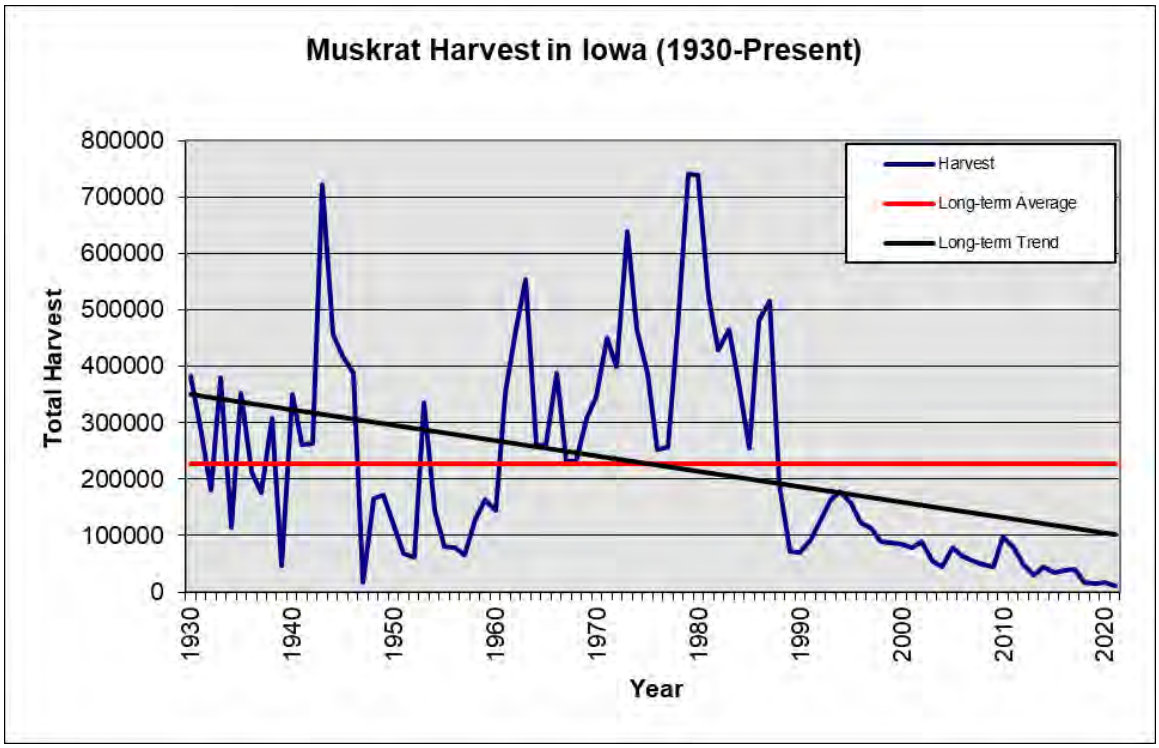


Figure 3.9 Annual muskrat harvests reported by licensed fur dealers in Iowa (1930-present).

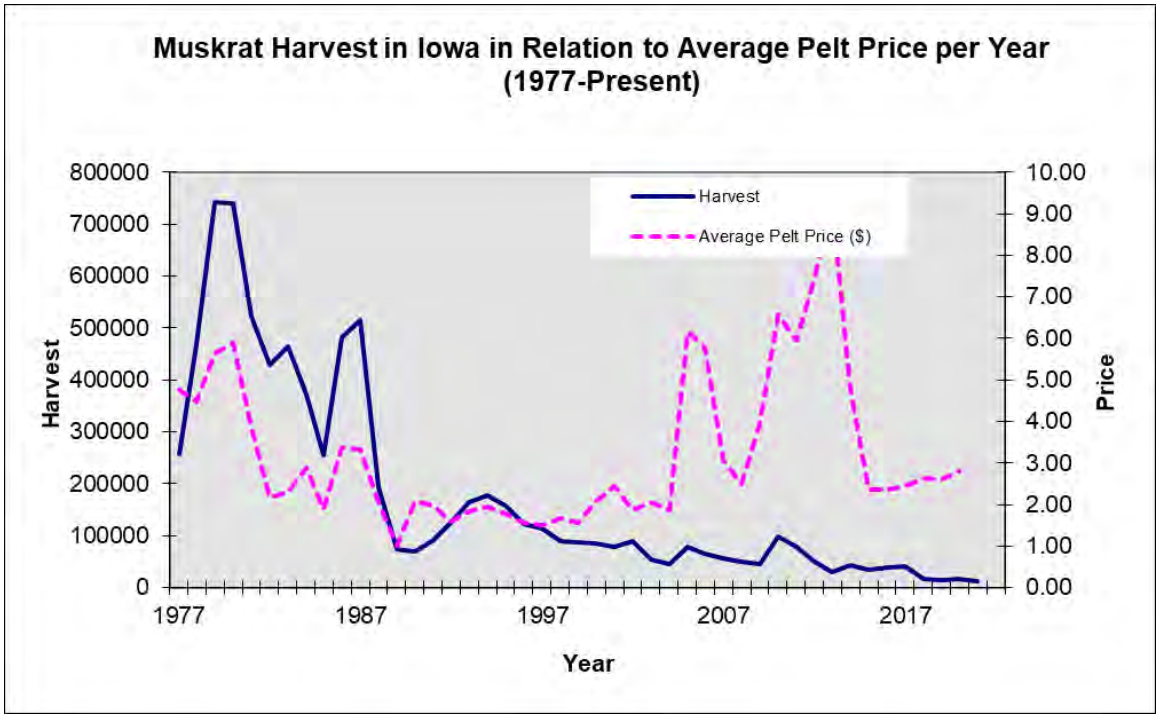


Figure 3.10 Muskrat harvest in Iowa and average pelt price paid by fur dealers (1977-present).

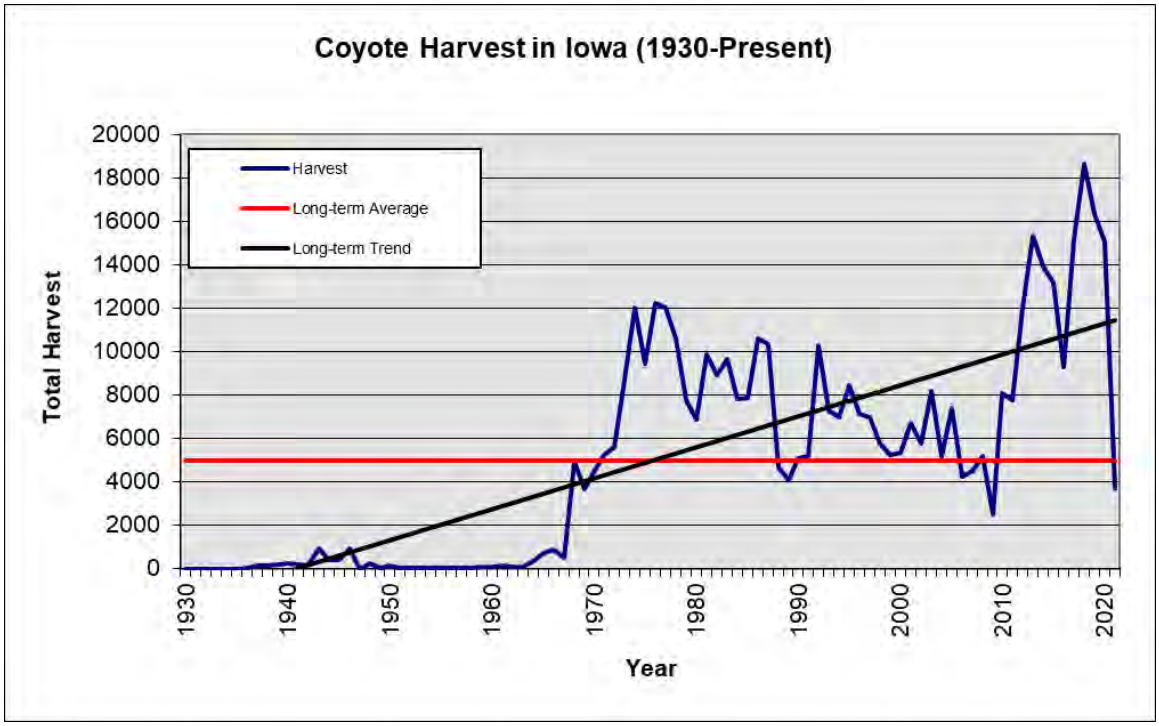


Figure 3.11 Annual coyote harvests reported by licensed fur dealers in Iowa (1930-present).

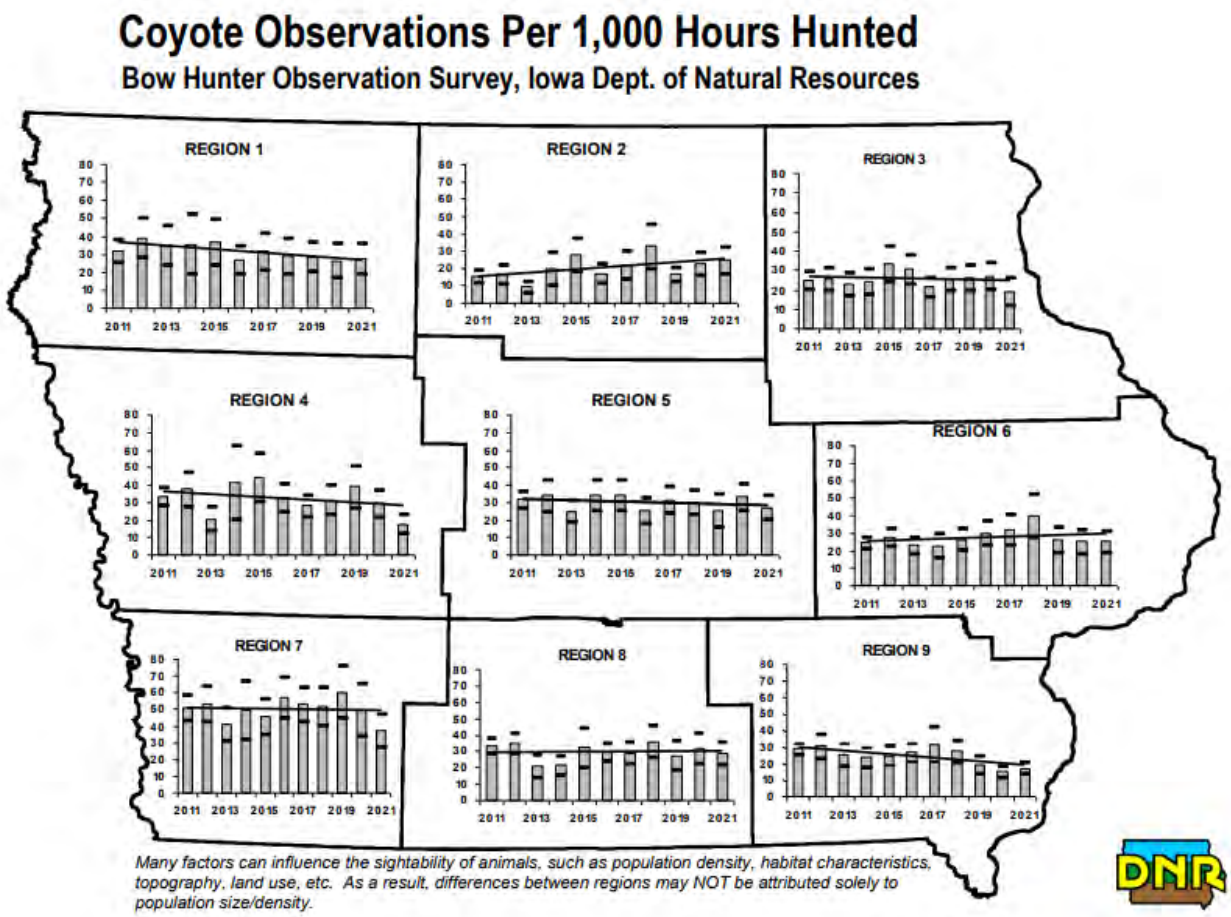


Figure 3.12 Regional results of coyote Bowhunter Observation Survey in Iowa (2011-present).

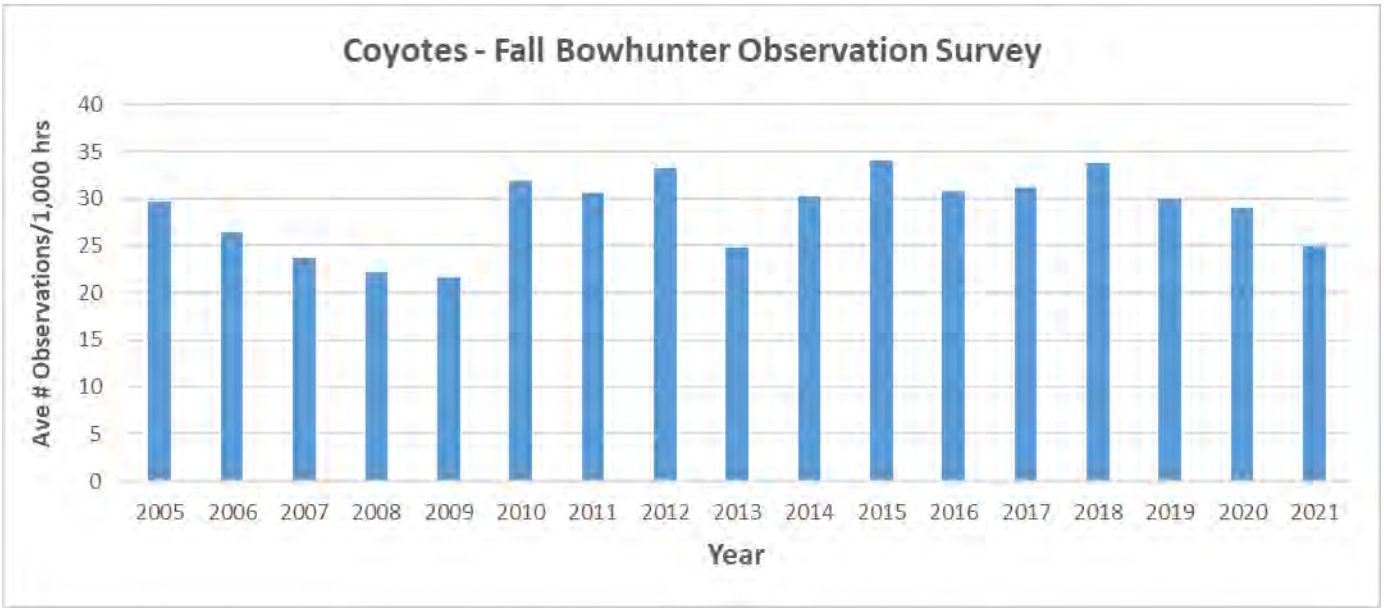


Figure 3.13 Bowhunter Observation Survey overall statewide trend of average observations for coyotes in Iowa (2005-present).

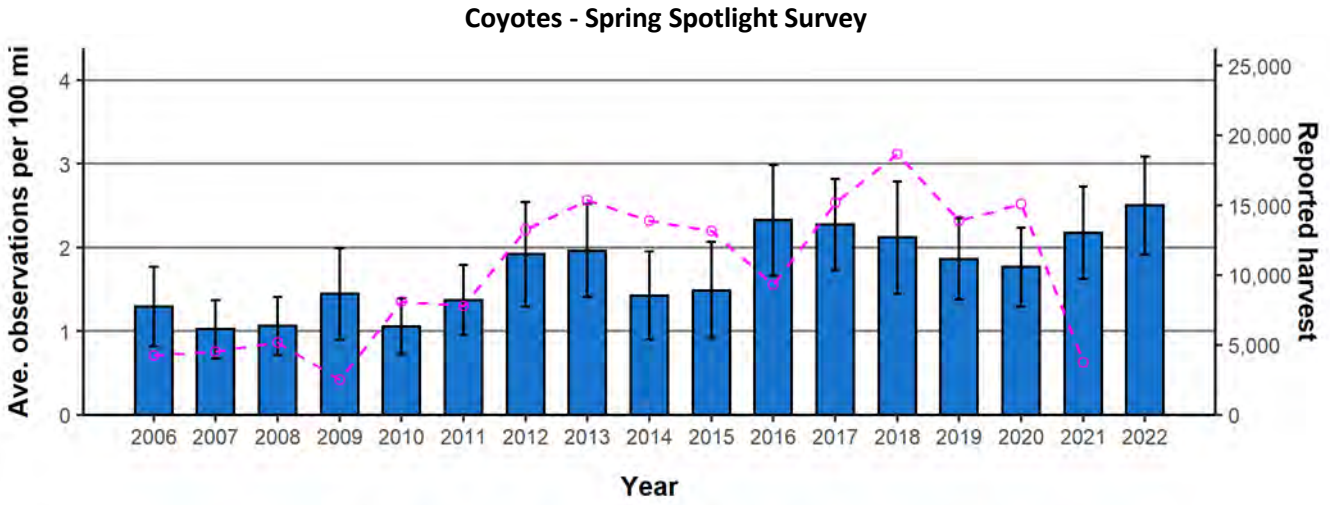


Figure 3.14 Total coyote observations by year during the Iowa Spring Spotlight Survey (2006-present).

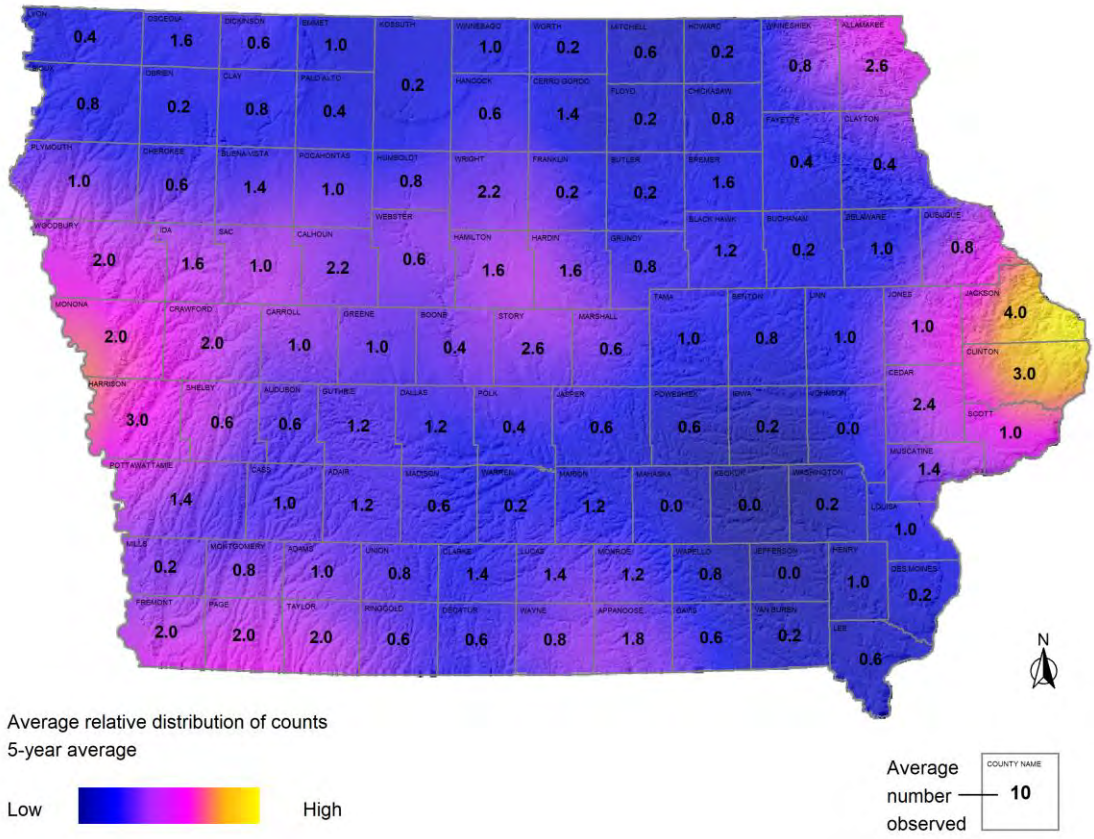


Figure 3.15 Relative distribution of average spring spotlight observations for coyote during the past 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

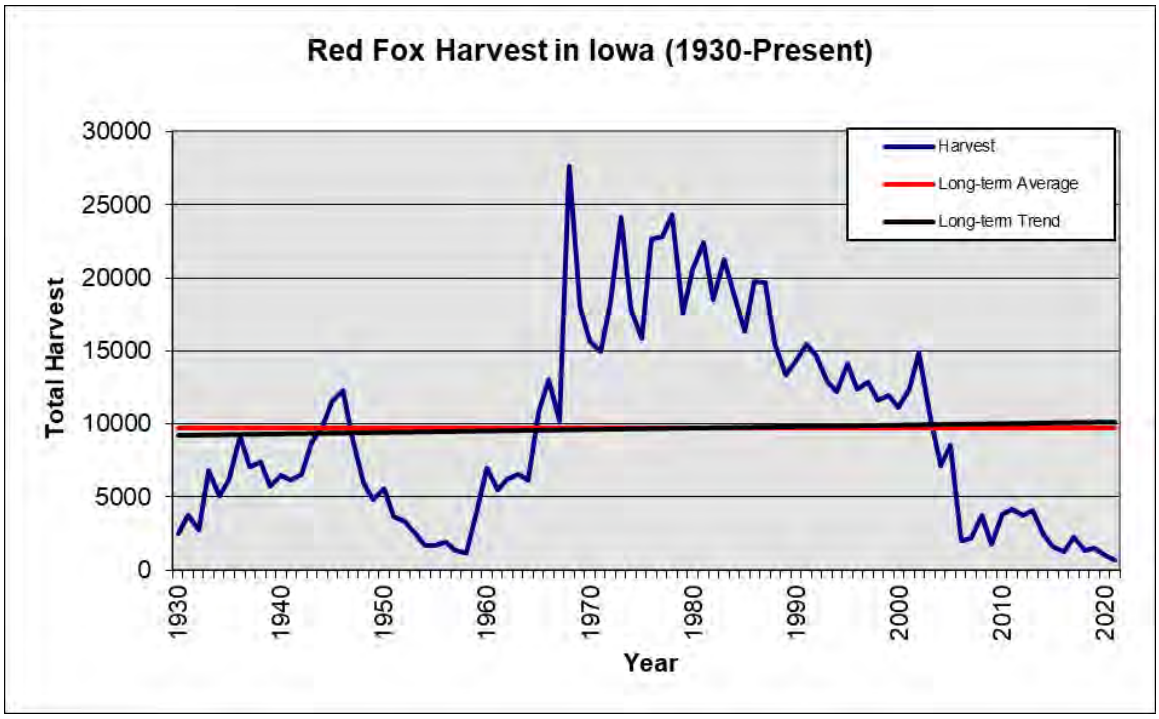


Figure 3.16 Annual red fox harvests reported by licensed fur dealers in Iowa (1930-present).

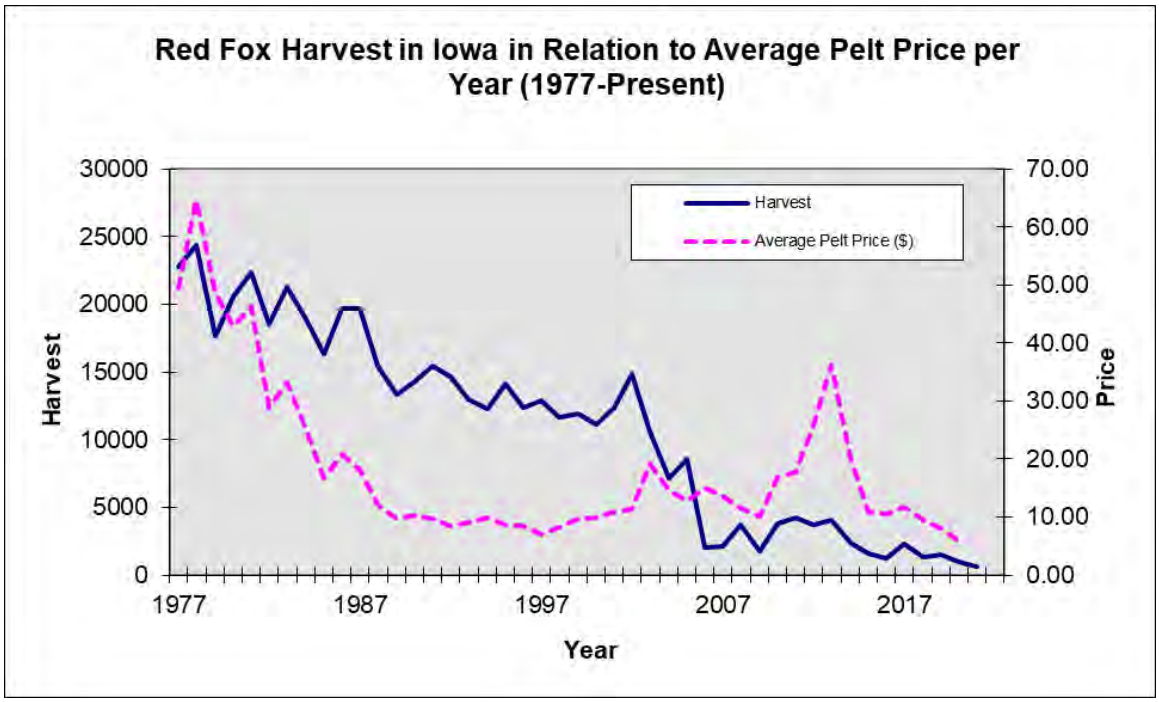


Figure 3.17 Red fox harvest in Iowa and average pelt price paid by fur dealers (1977-present).

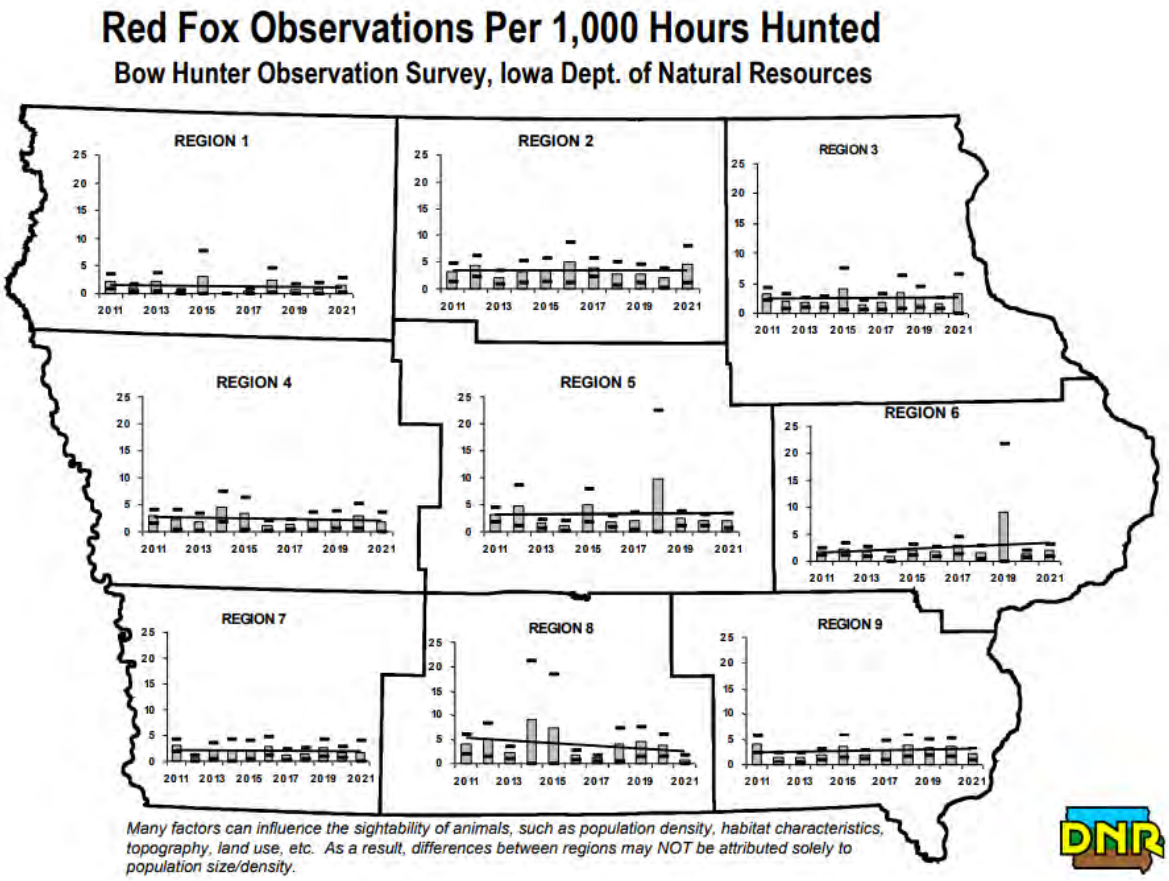


Figure 3.18 Regional results of red fox Bowhunter Observation Survey in Iowa (2011-present).

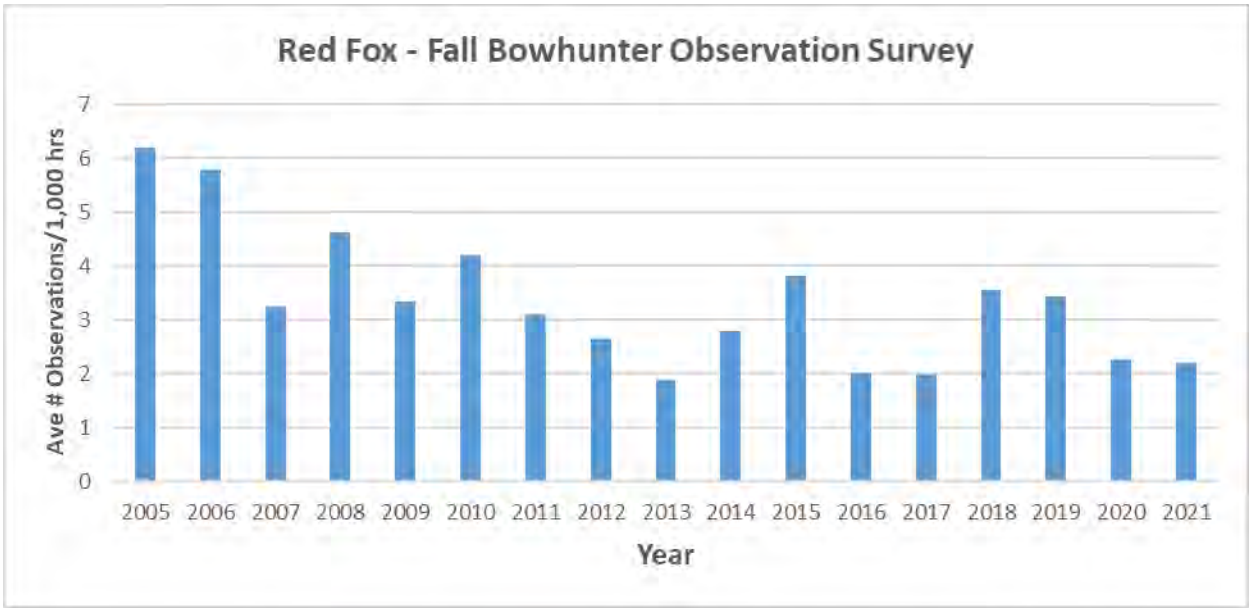


Figure 3.19 Bowhunter Observation Survey overall statewide trend of average observations for red fox in Iowa (2005-present).

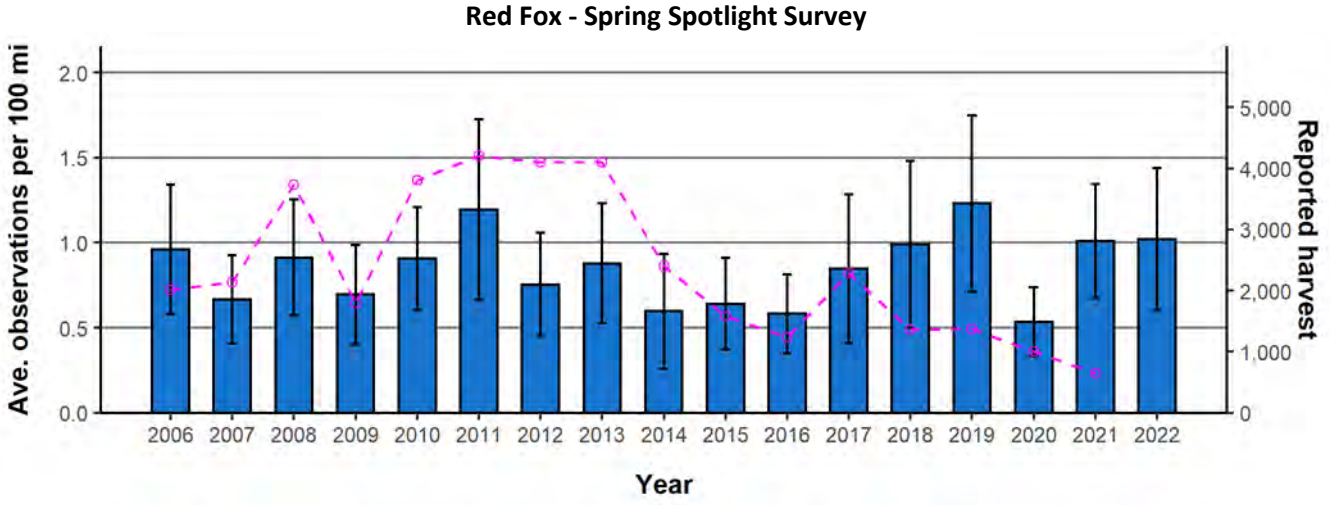


Figure 3.20 Average red fox observations by year during the Iowa Spring Spotlight Survey, 2006-present.

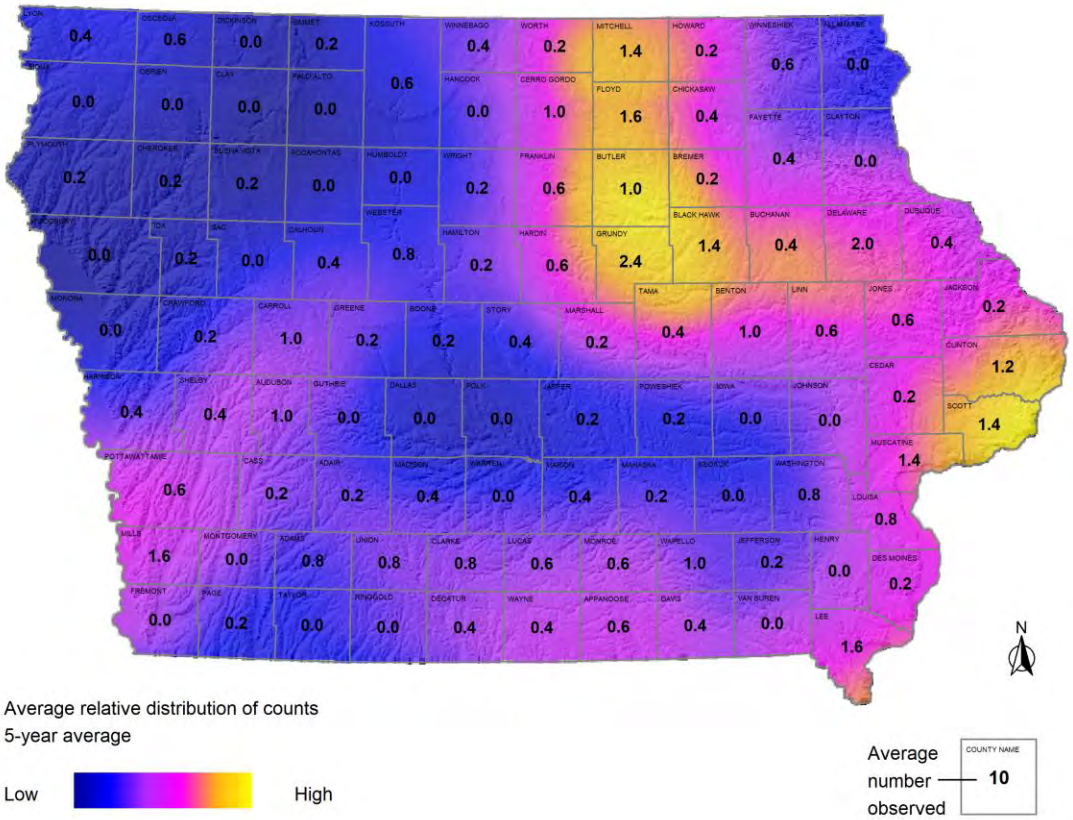


Figure 3.21 Relative distribution of average spring spotlight observations for red fox during the past 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

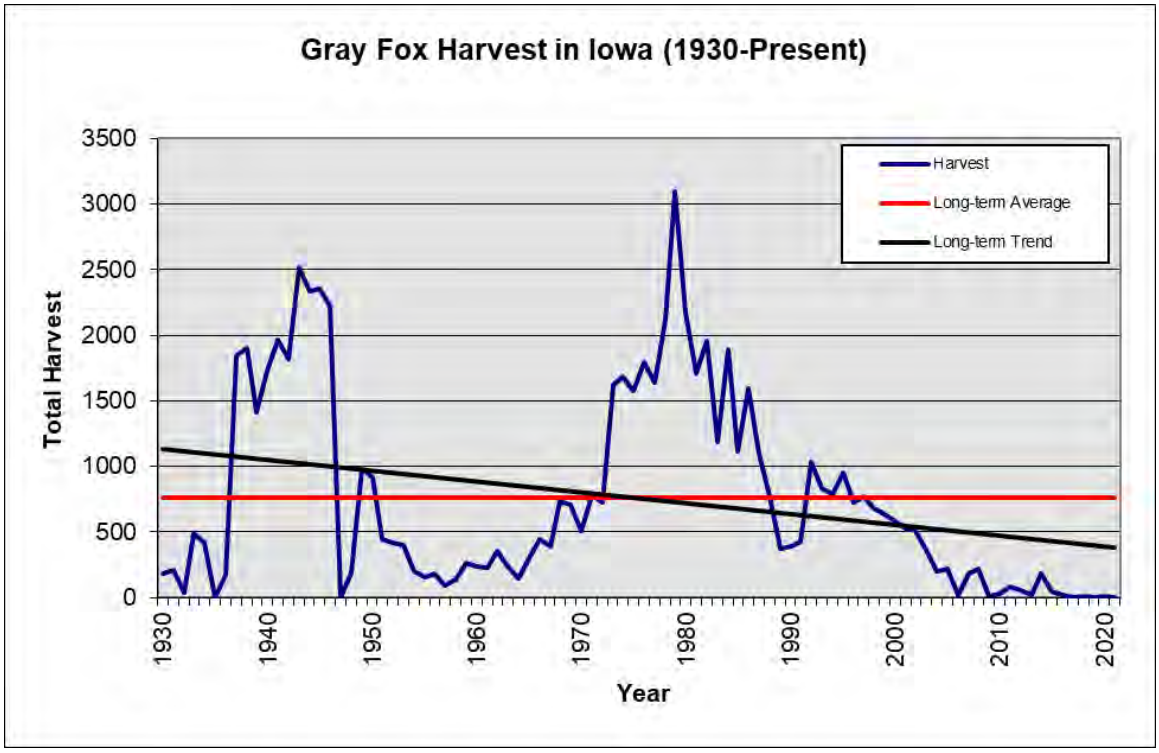


Figure 3.22 Annual gray fox harvests reported by licensed fur dealers in Iowa (1930-present).

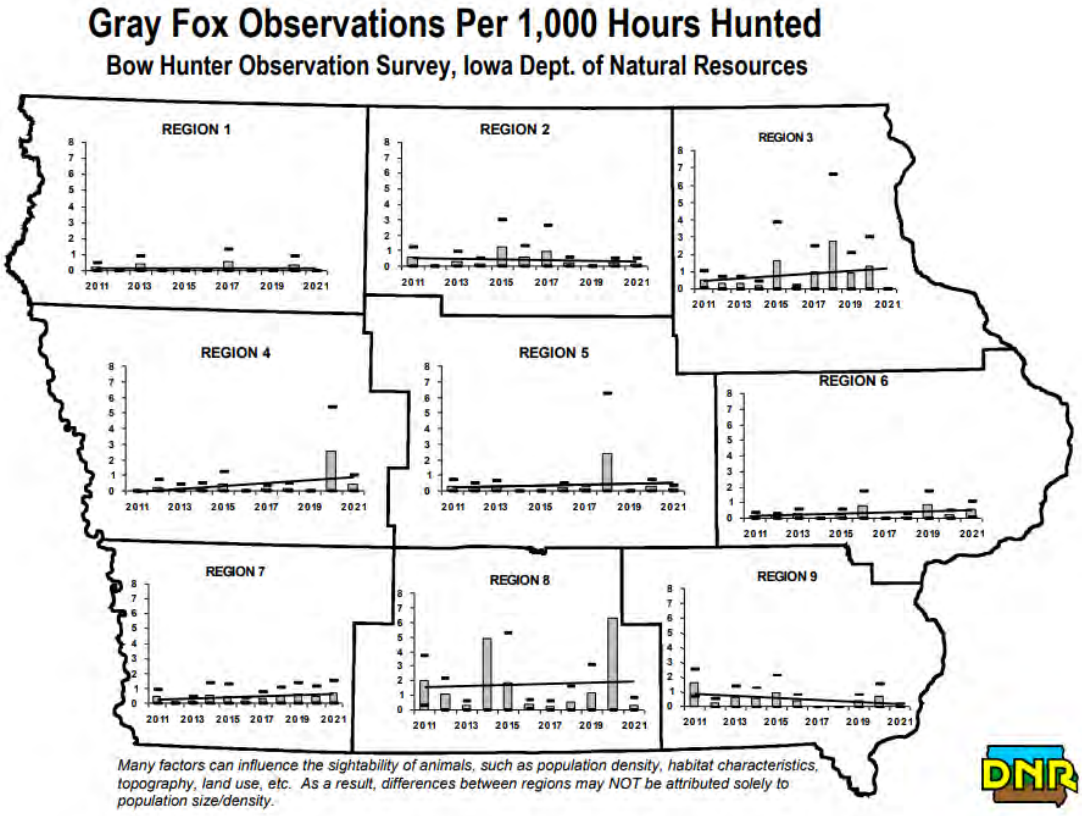


Figure 3.23 Regional results of gray fox Bowhunter Observation Survey in Iowa (2011-present).

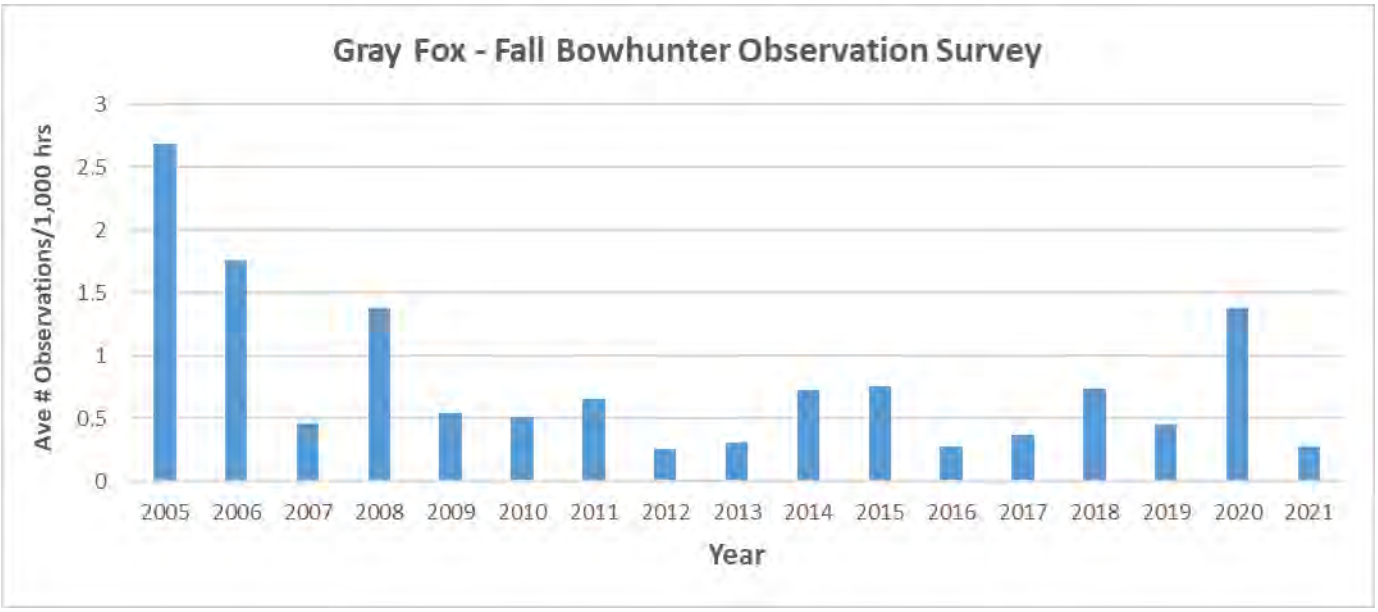


Figure 3.24 Bowhunter Observation Survey overall statewide trend of average observations for gray fox in Iowa (2005-present).

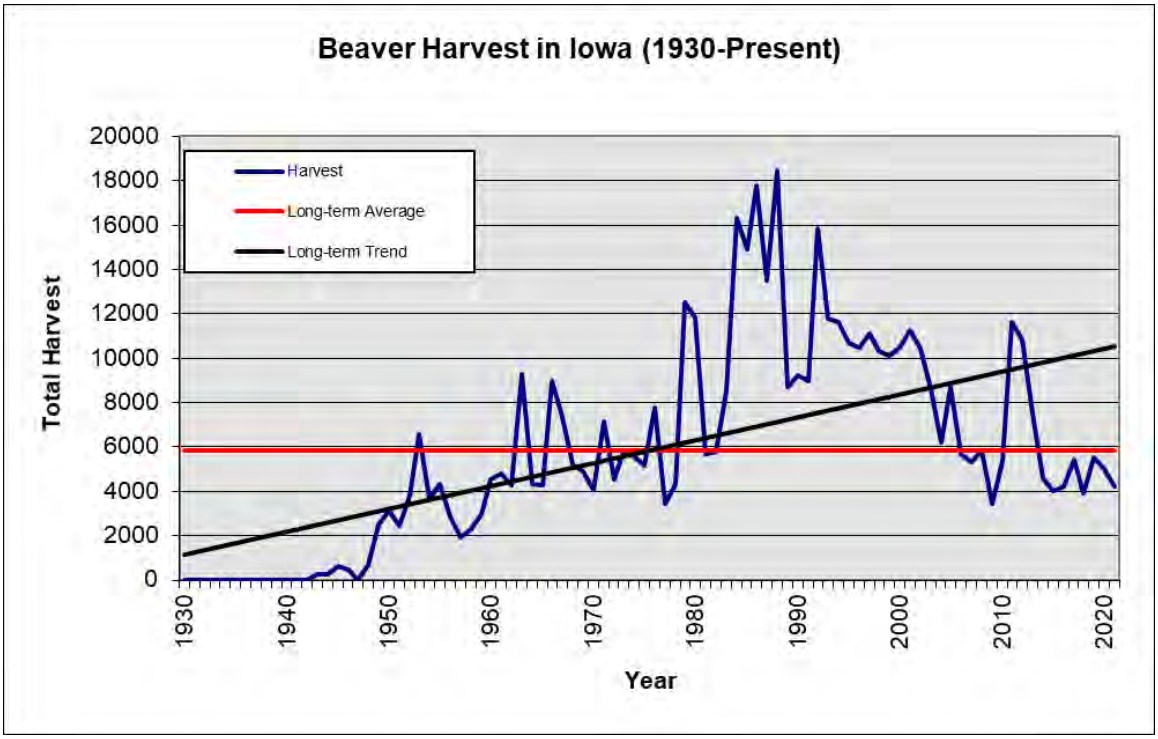


Figure 3.25 Annual beaver harvests reported by licensed fur dealers in Iowa (1930-present).

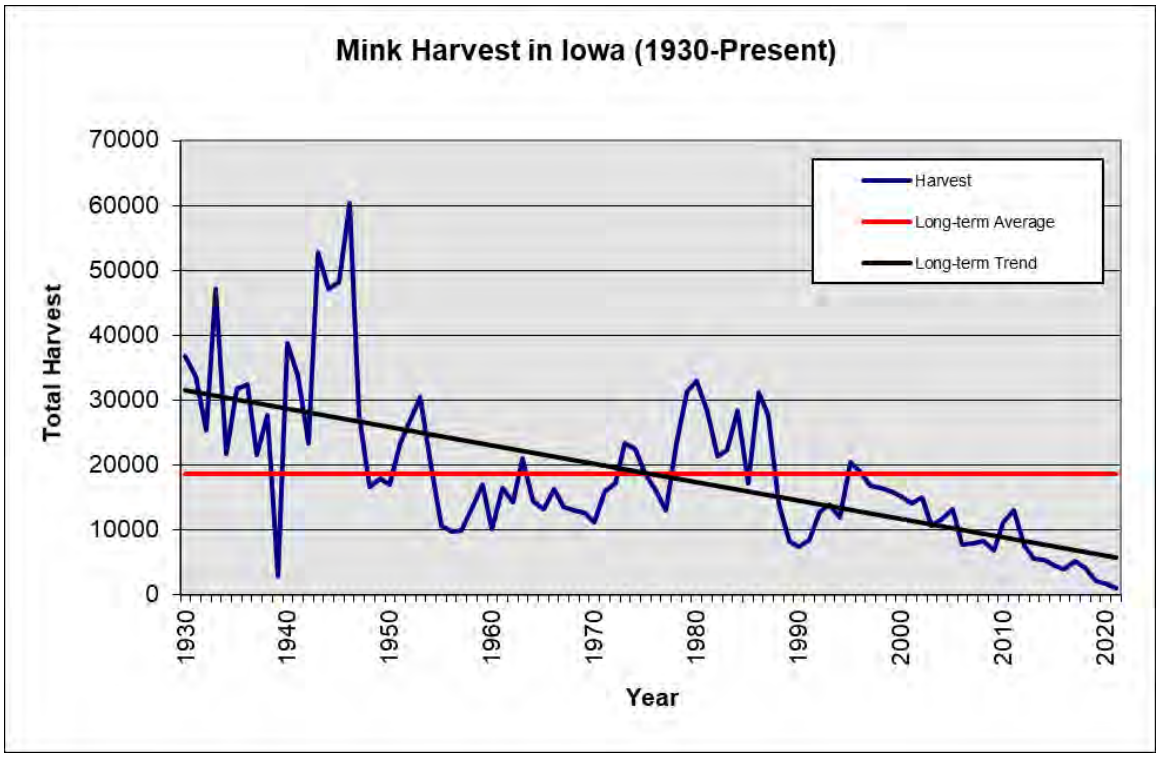


Figure 3.26 Annual mink harvests reported by licensed fur dealers in Iowa (1930-present).

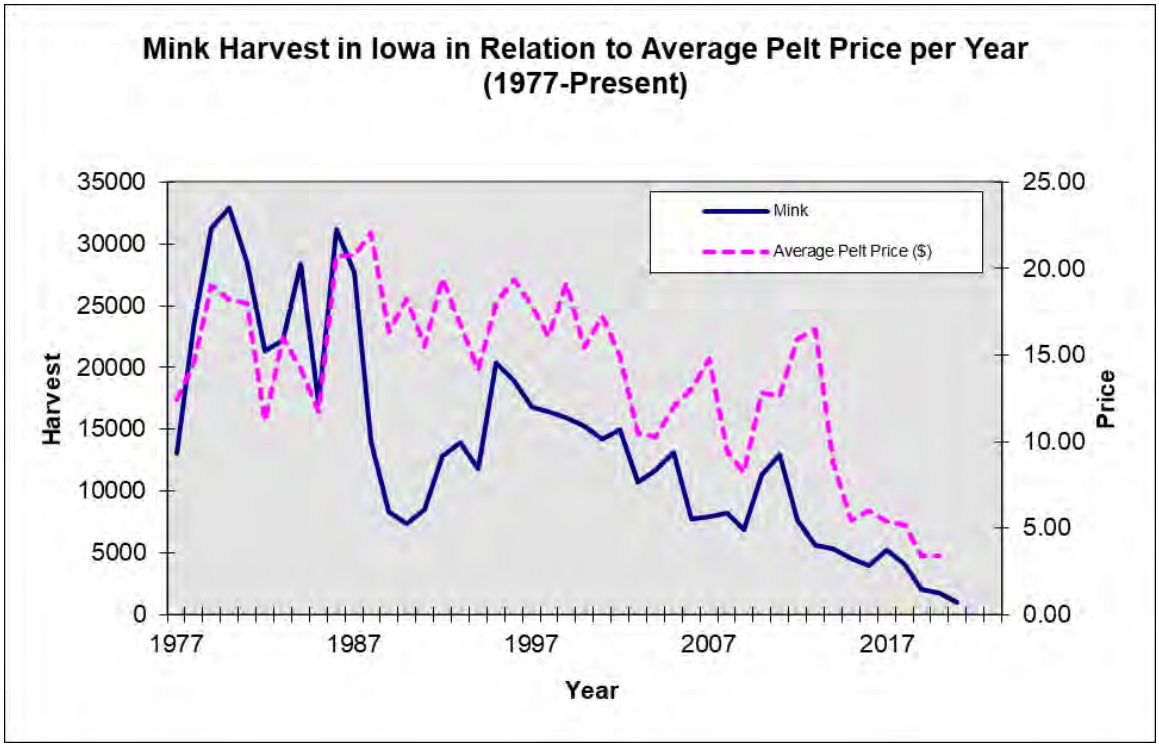


Figure 3.27 Mink harvest in Iowa and average pelt price paid by fur dealers (1977-present).

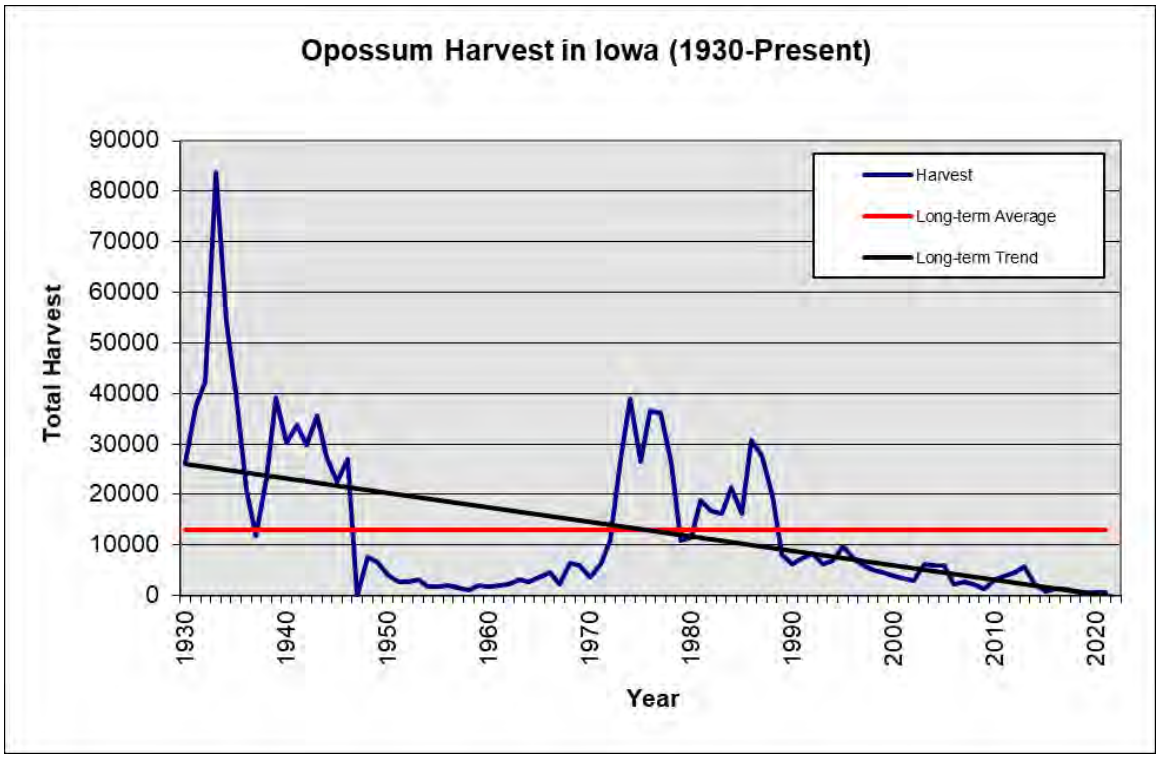


Figure 3.28 Annual opossum harvests reported by licensed fur dealers in Iowa (1930-present).

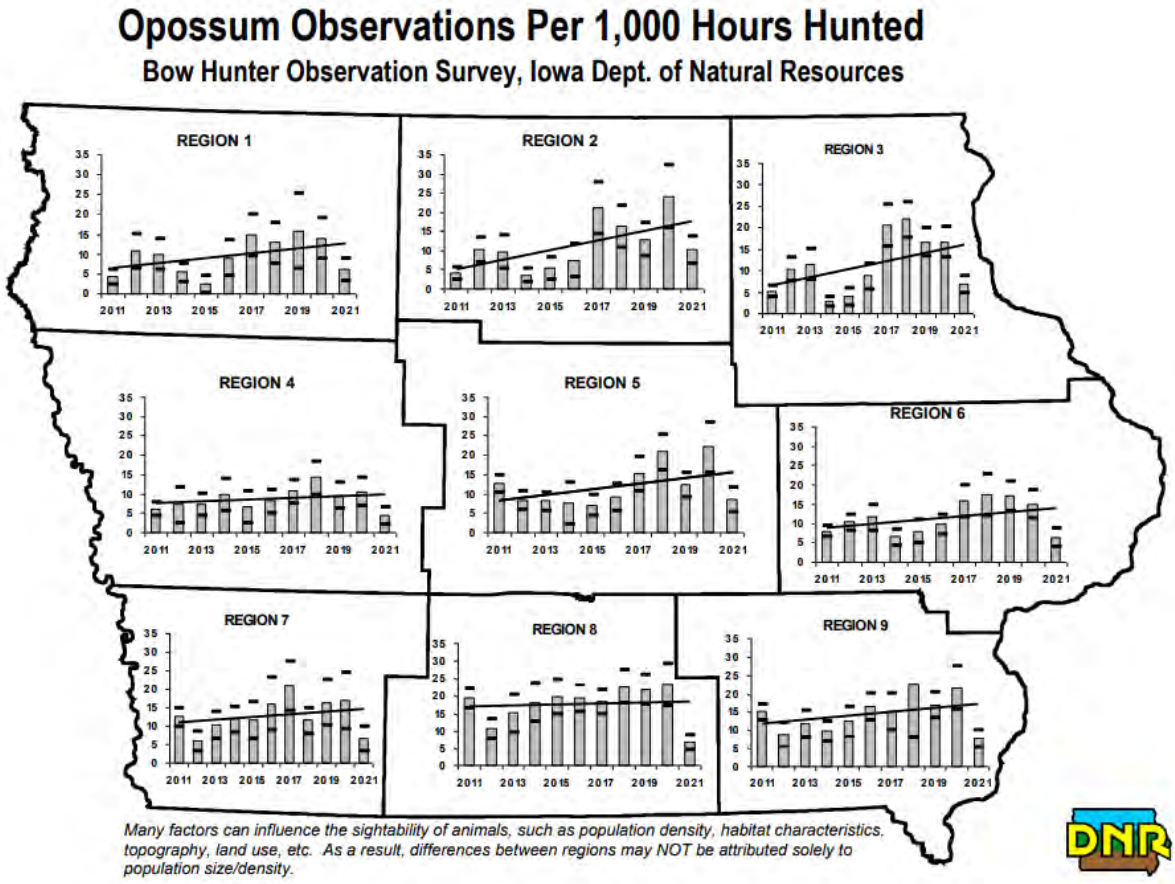


Figure 3.29 Regional results of opossum Bowhunter Observation Survey in Iowa (2011-present).

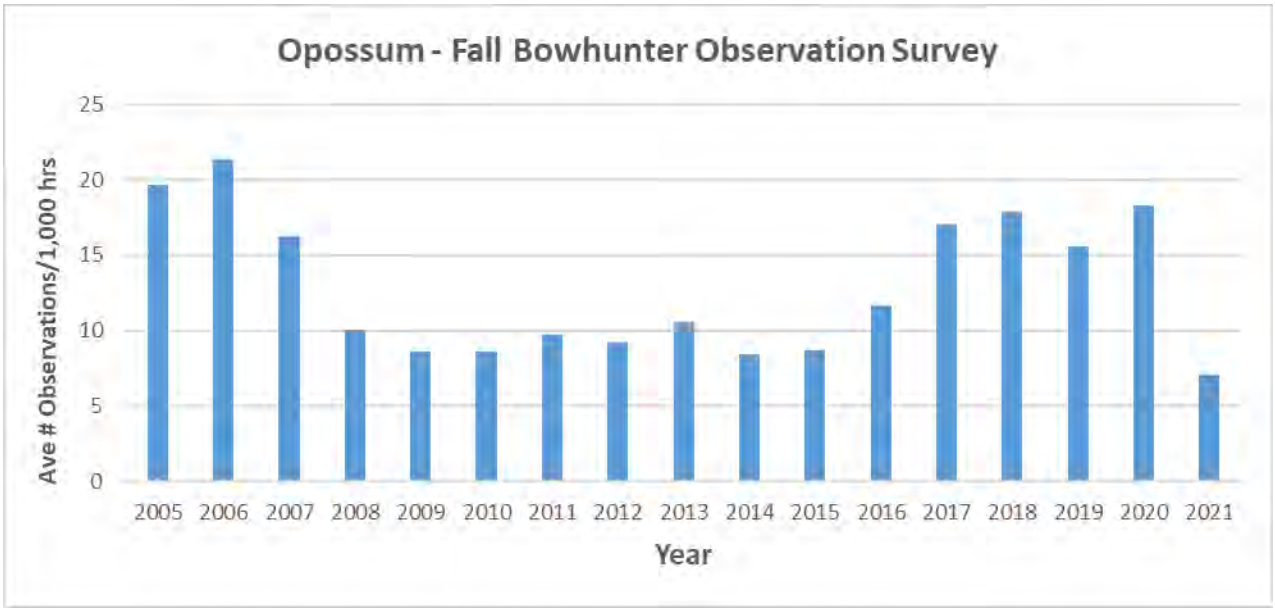


Figure 3.30 Bowhunter Observation Survey overall statewide trend of average observations for opossum in Iowa (2005-present).

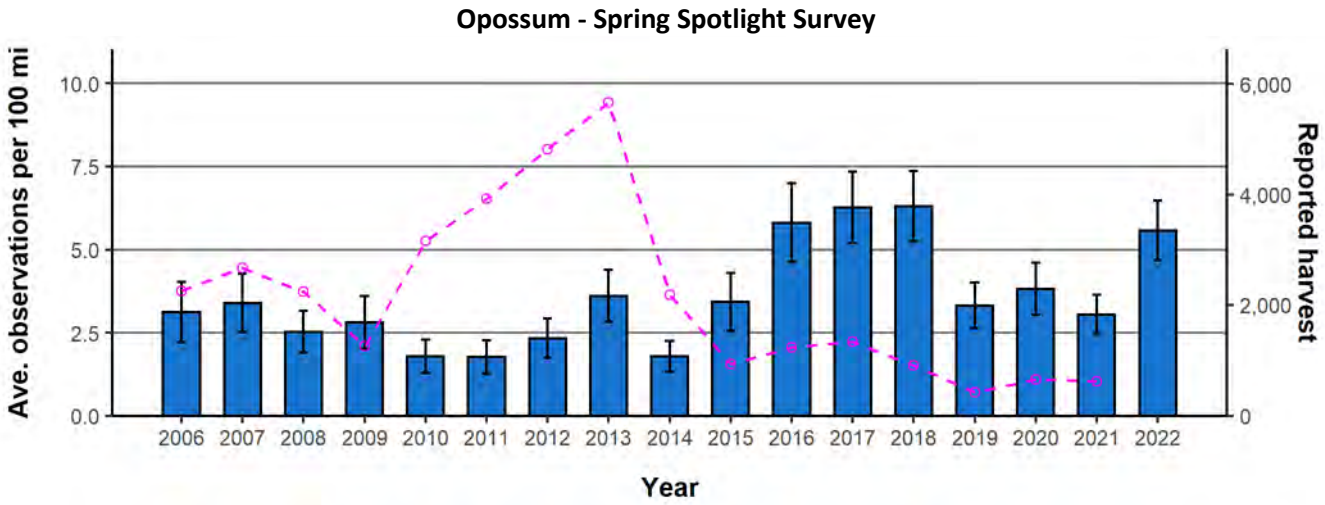


Figure 3.31 Total opossum observations by year during the Iowa Spring Spotlight Survey (2006-present).

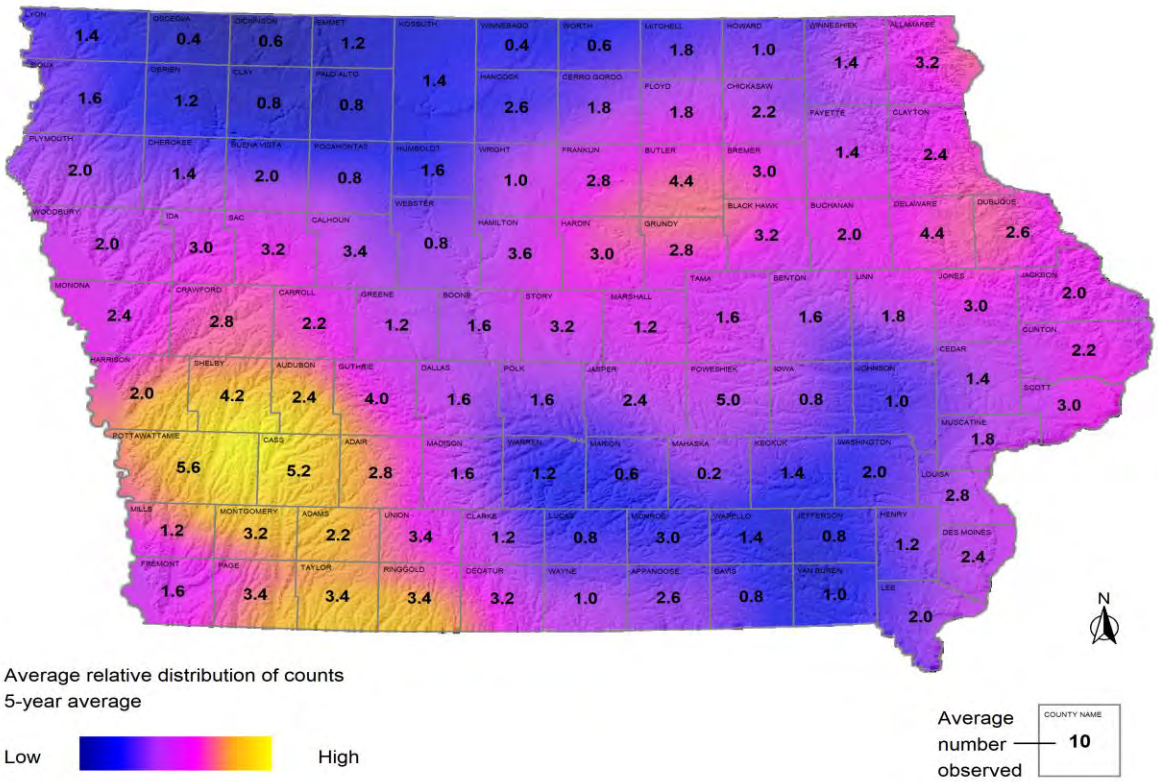


Figure 3.32 Relative distribution of average spring spotlight observations for opossum during the past 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

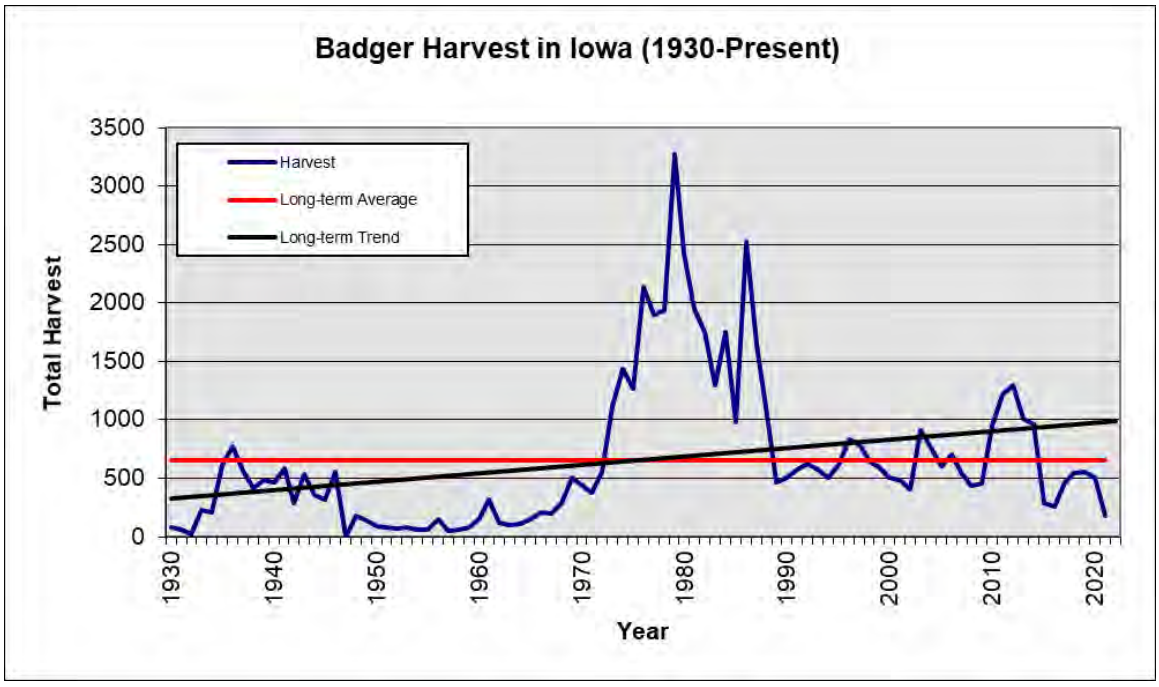


Figure 3.33 Annual badger harvests reported by licensed fur dealers in Iowa (1930-present).

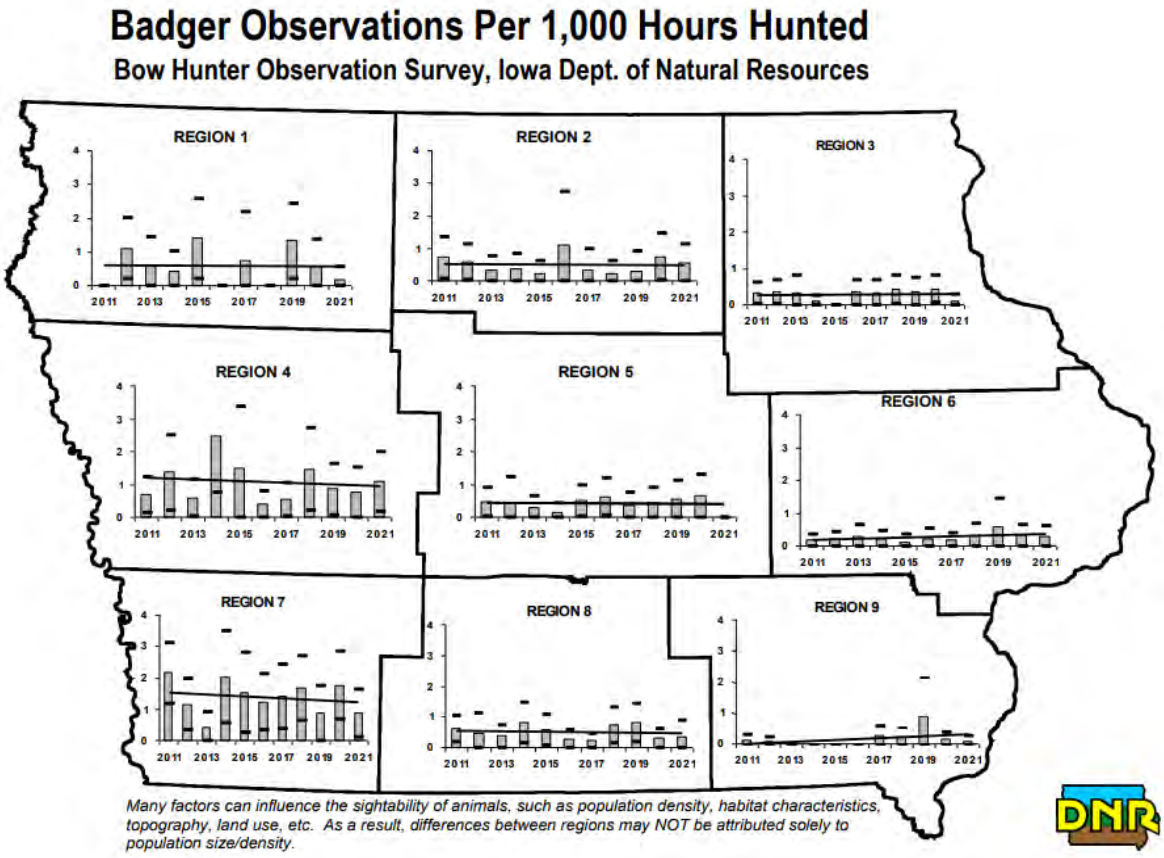


Figure 3.34 Results of badger Bowhunter Observation Survey in Iowa (2011-present).

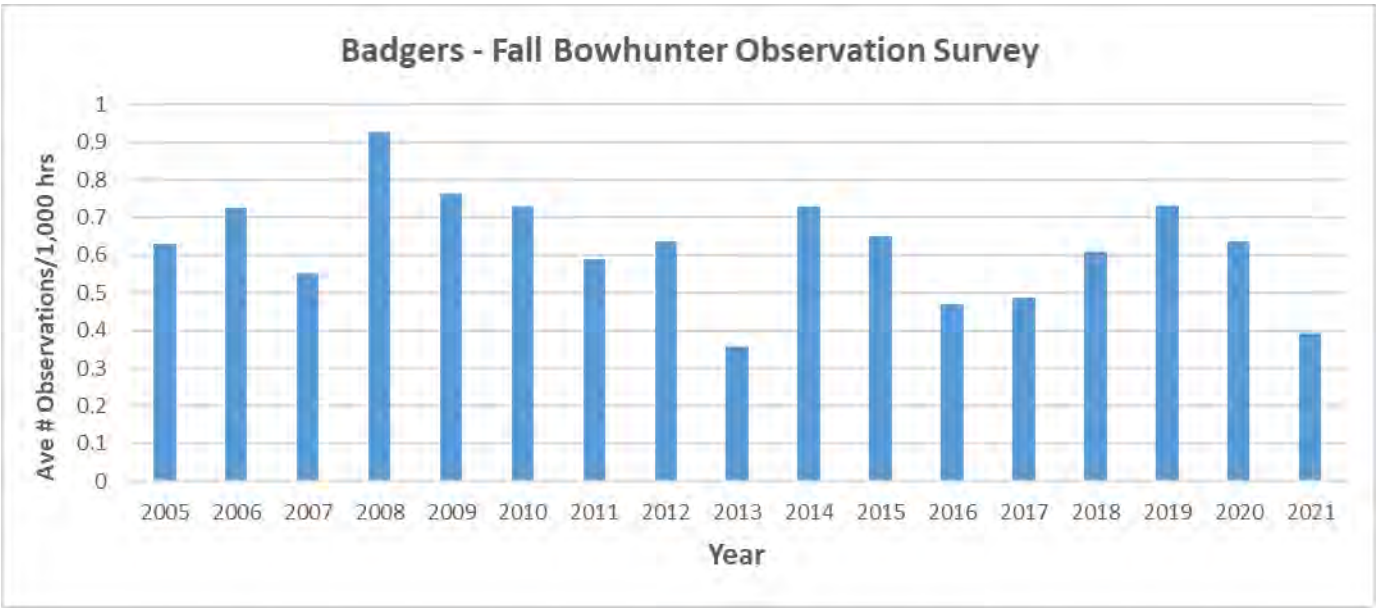


Figure 3.35 Bowhunter Observation Survey overall statewide trend of average observations for badgers in Iowa (2005-present).

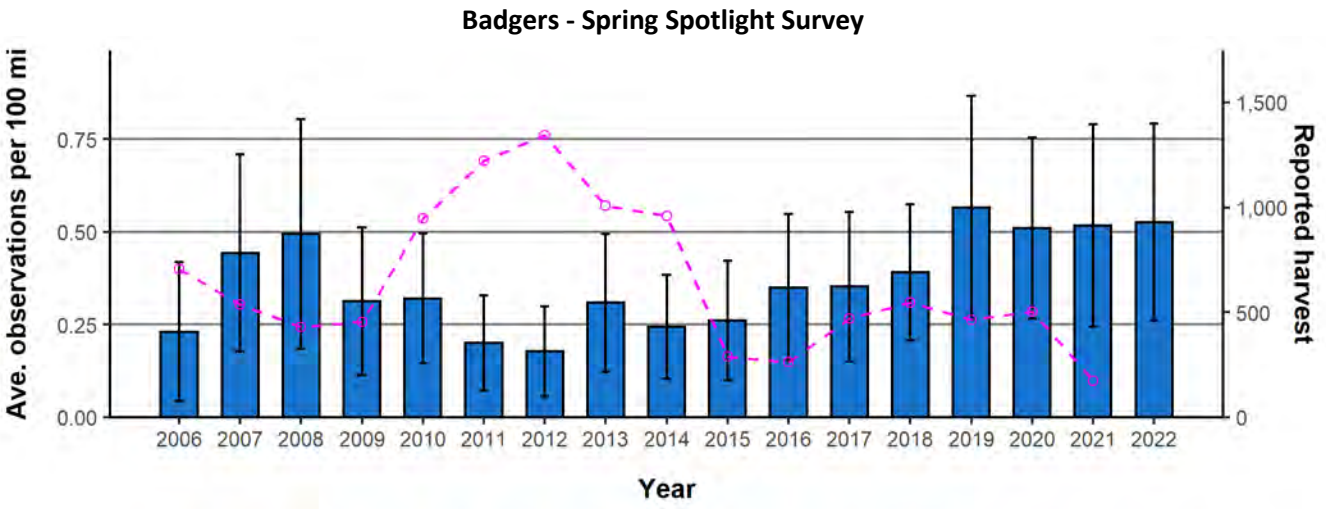


Figure 3.36 Total badger observations by year during the Iowa Spring Spotlight Survey (2006-present).

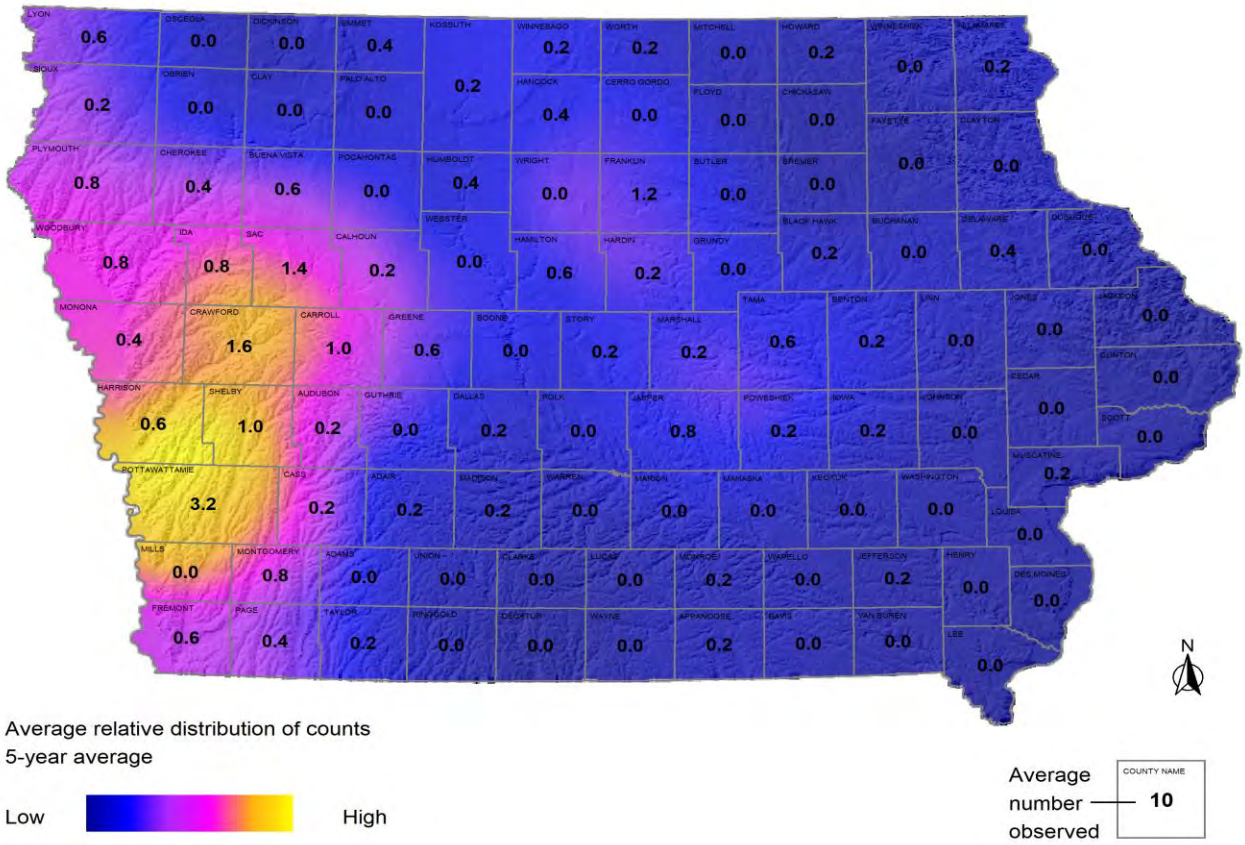


Figure 3.37 Relative distribution of average spring spotlight observations for badger during the past 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance of the species (i.e., high counts are considered high relative to those observed in all other counties).

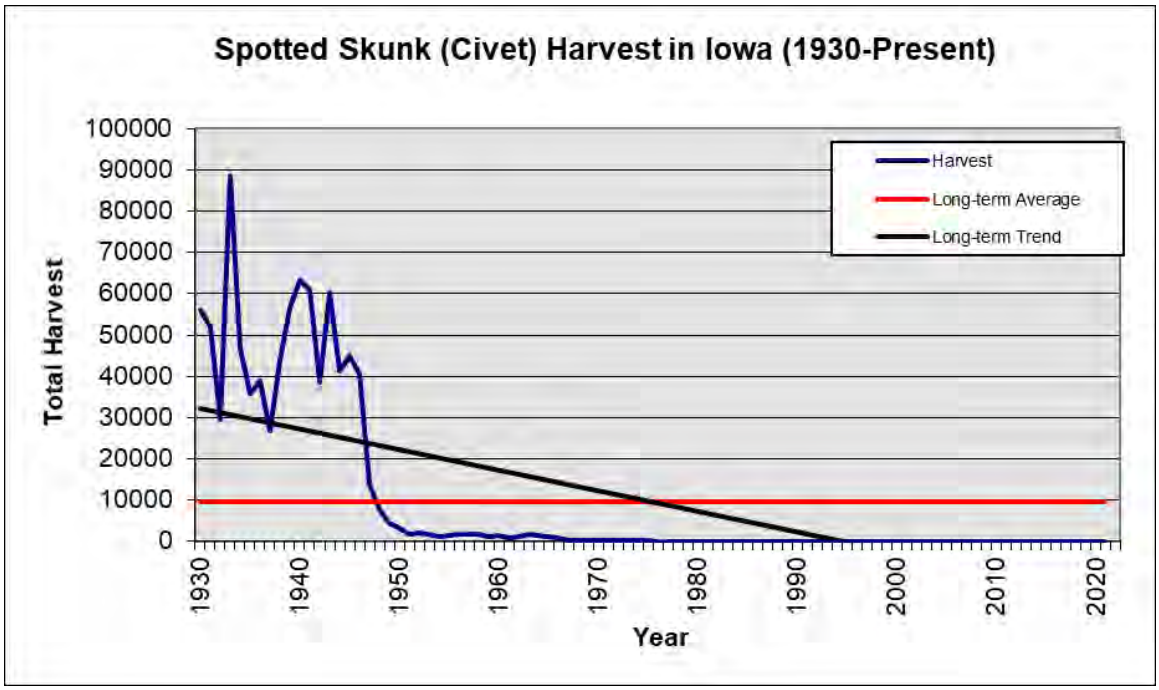


Figure 3.38 Annual spotted skunk harvests reported by licensed fur dealers in Iowa (1930-present)

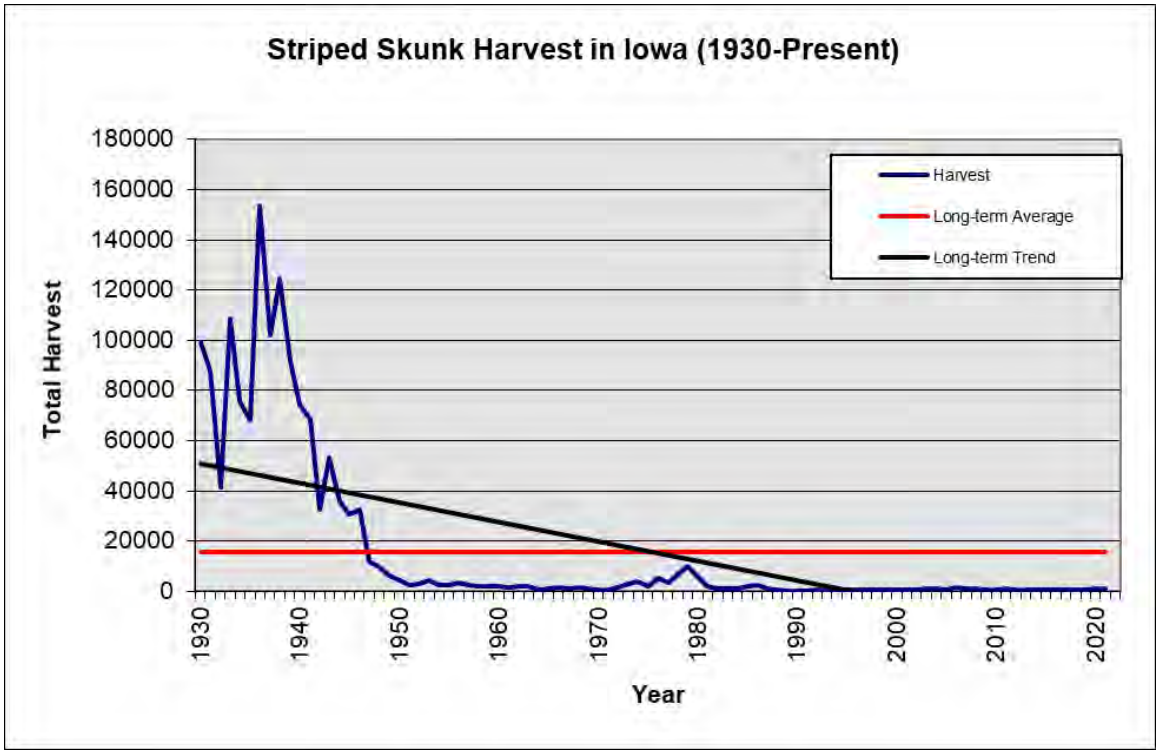


Figure 3.39 Annual striped skunk harvests reported by licensed fur dealers in Iowa (1930-present).

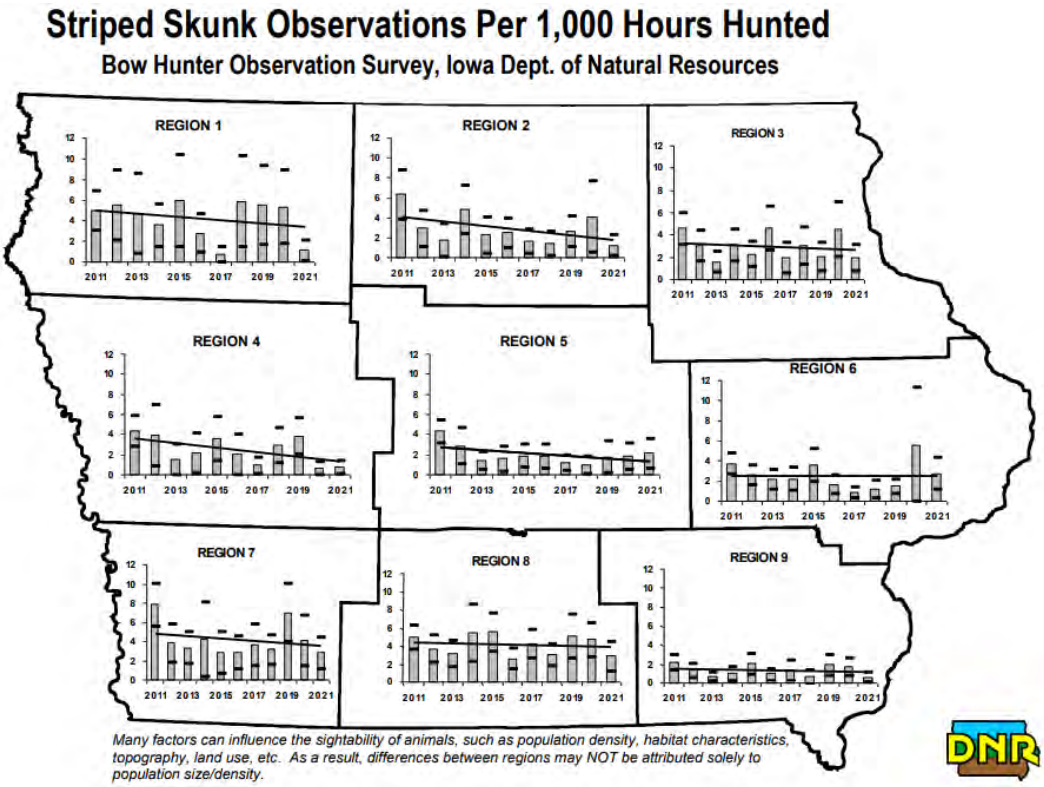


Figure 3.40 Regional results of striped skunk Bowhunter Observation Survey in Iowa (2011-present).

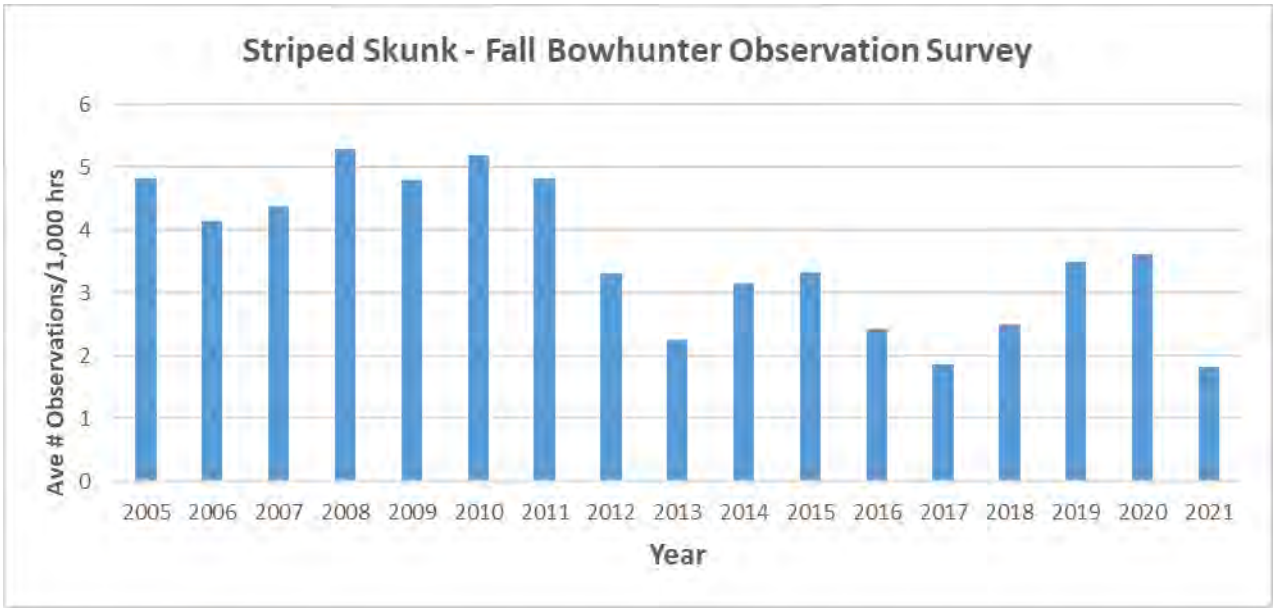


Figure 3.41 Bowhunter Observation Survey overall statewide trend of average observations for striped skunk in Iowa (2005-present).

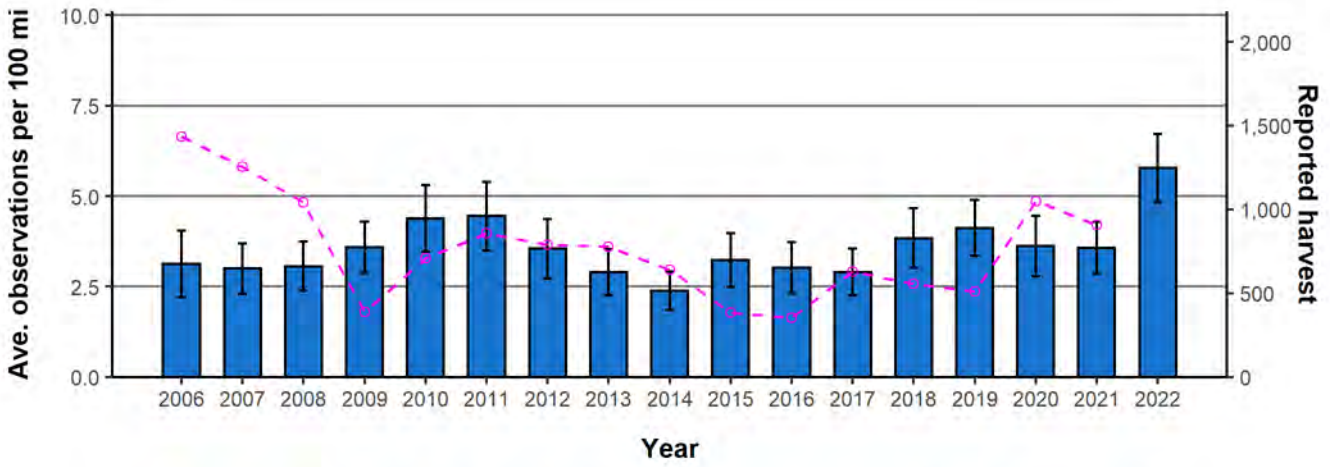


Figure 3.42 Total striped skunk observations by year during the Iowa Spring Spotlight Survey (2006-present).

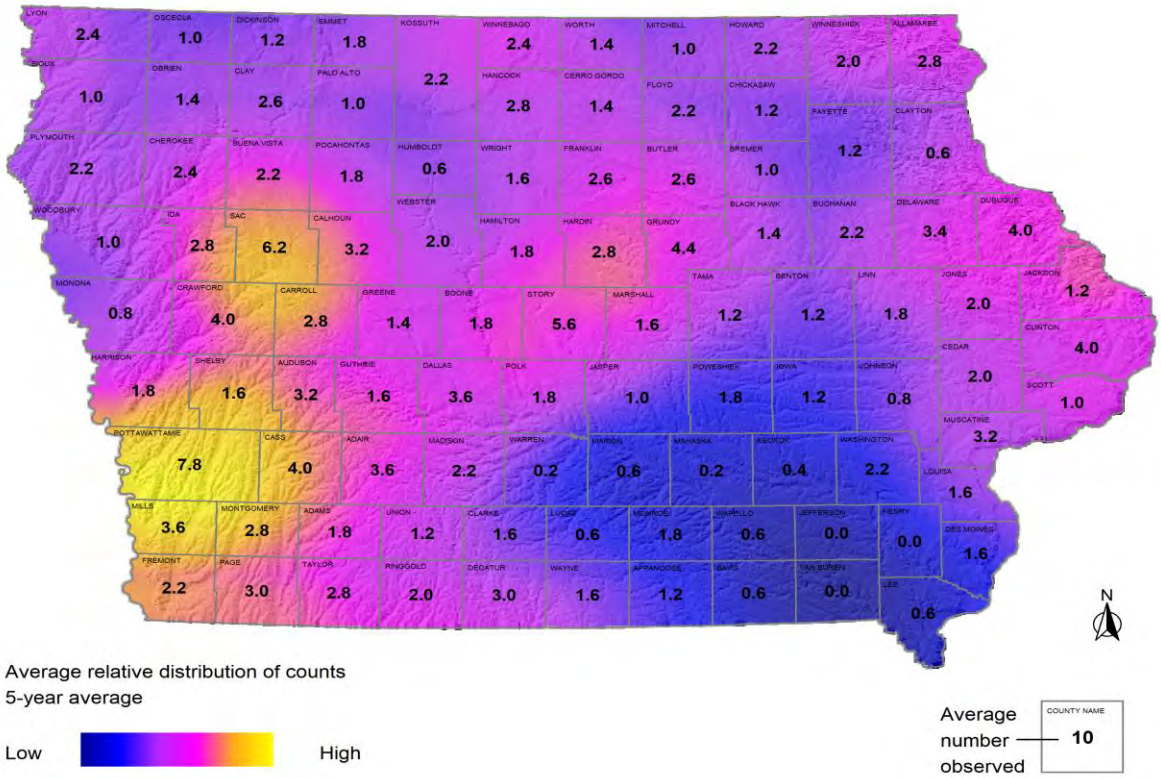


Figure 3.43 Relative distribution of average spring spotlight observations for striped skunk during the past 5 years. The number of observations per county is relative to the highest and lowest number of observations across all counties during the survey and may not represent an over- or under-abundance 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.

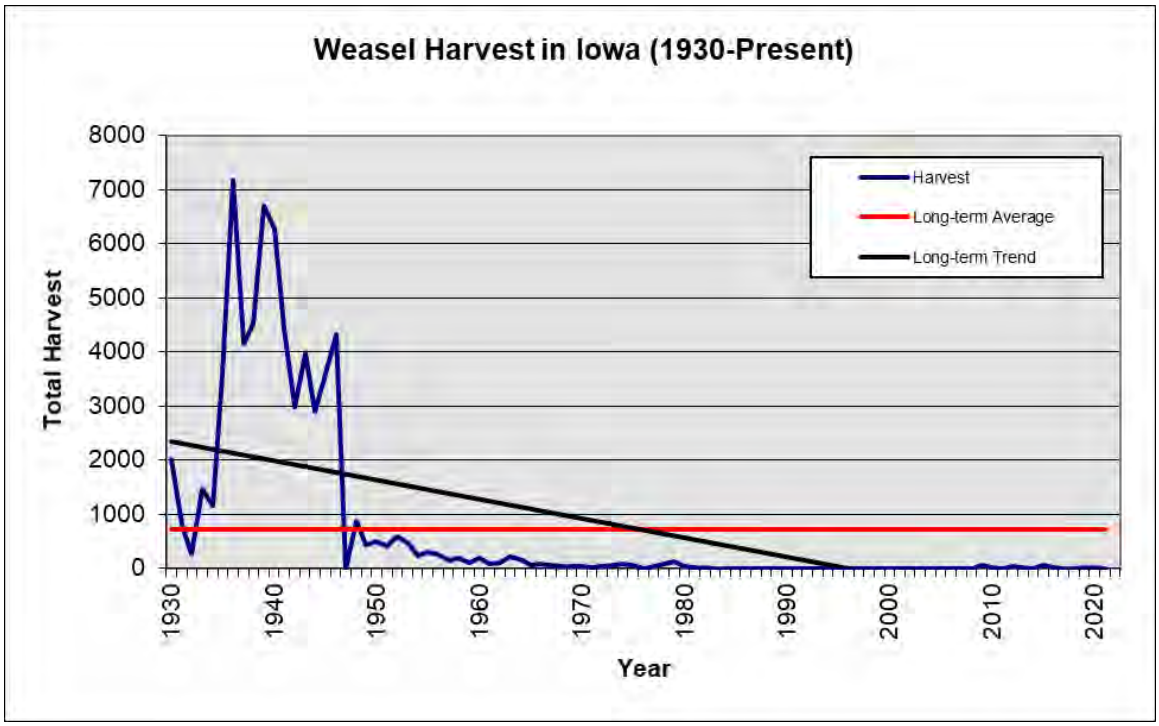


Figure 3.44 Annual weasel harvests reported by licensed fur dealers in Iowa (1930-present).

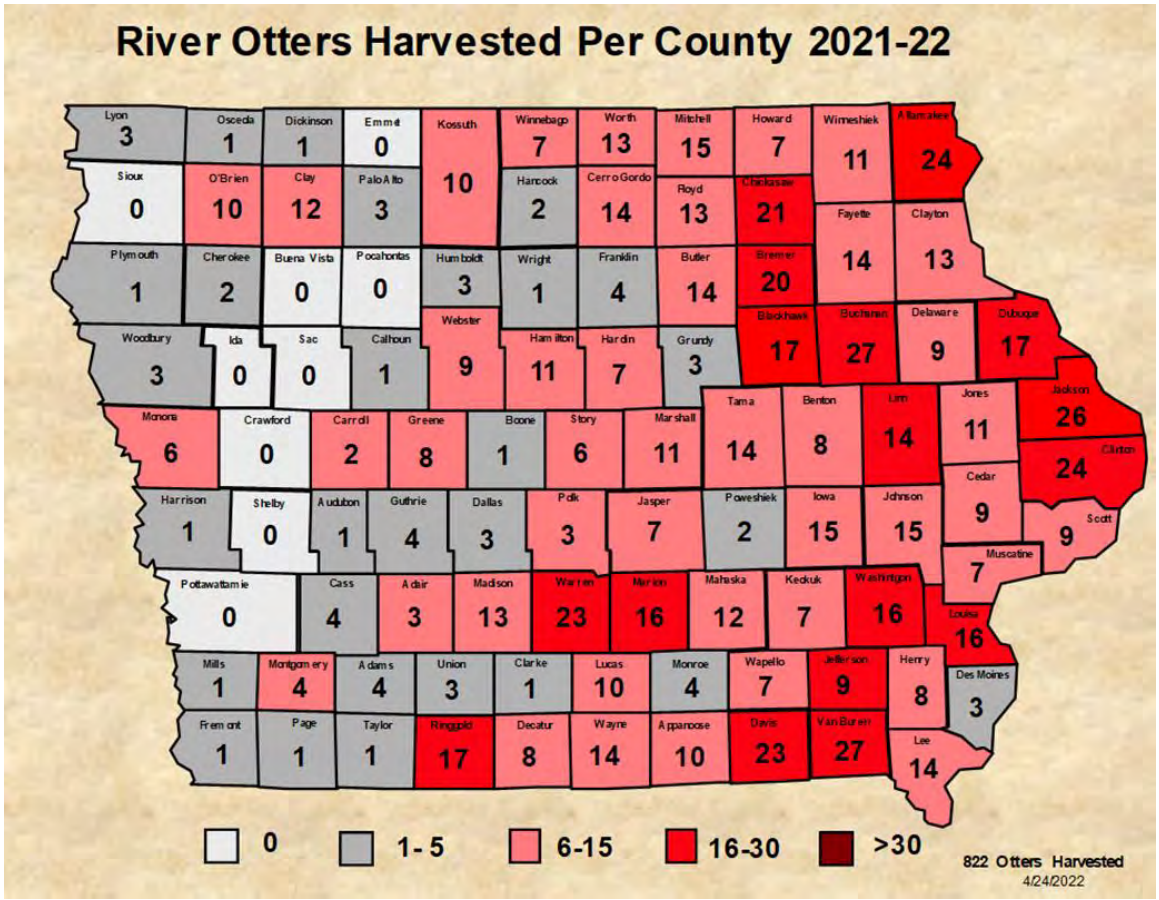


Figure 3.45 River otter harvest per county in Iowa (2021-2022).

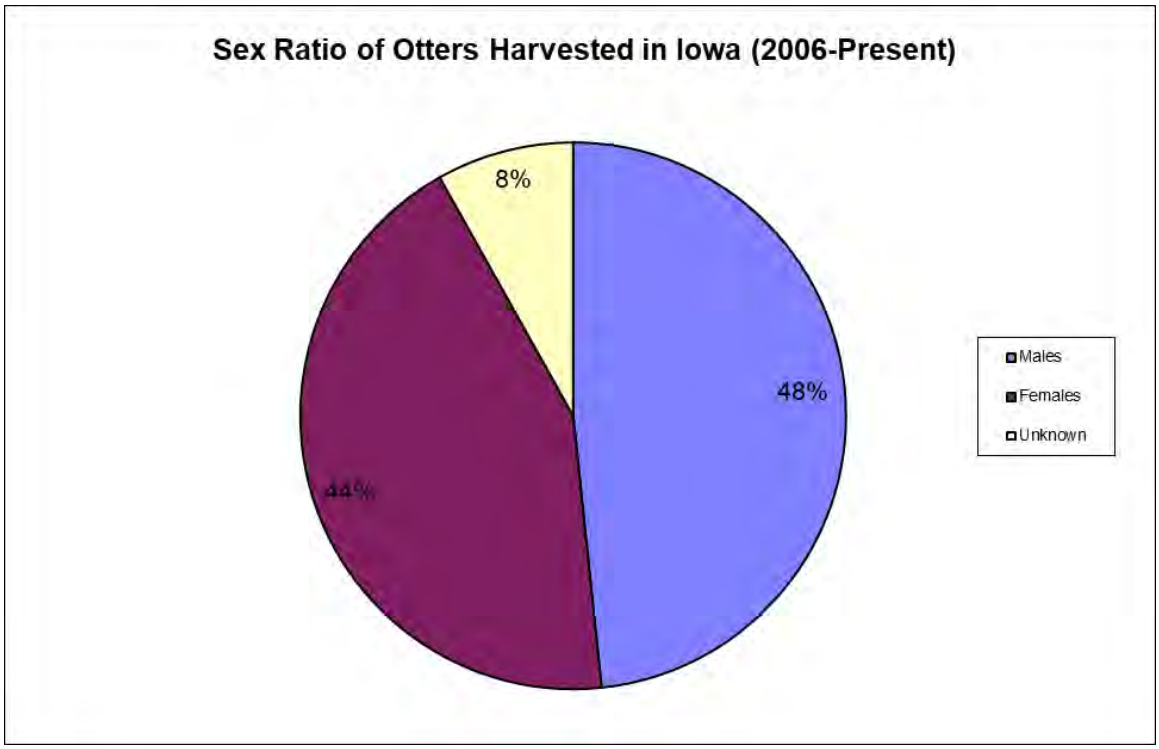


Figure 3.46 Sex ratio of harvested river otters in Iowa (2006-present).

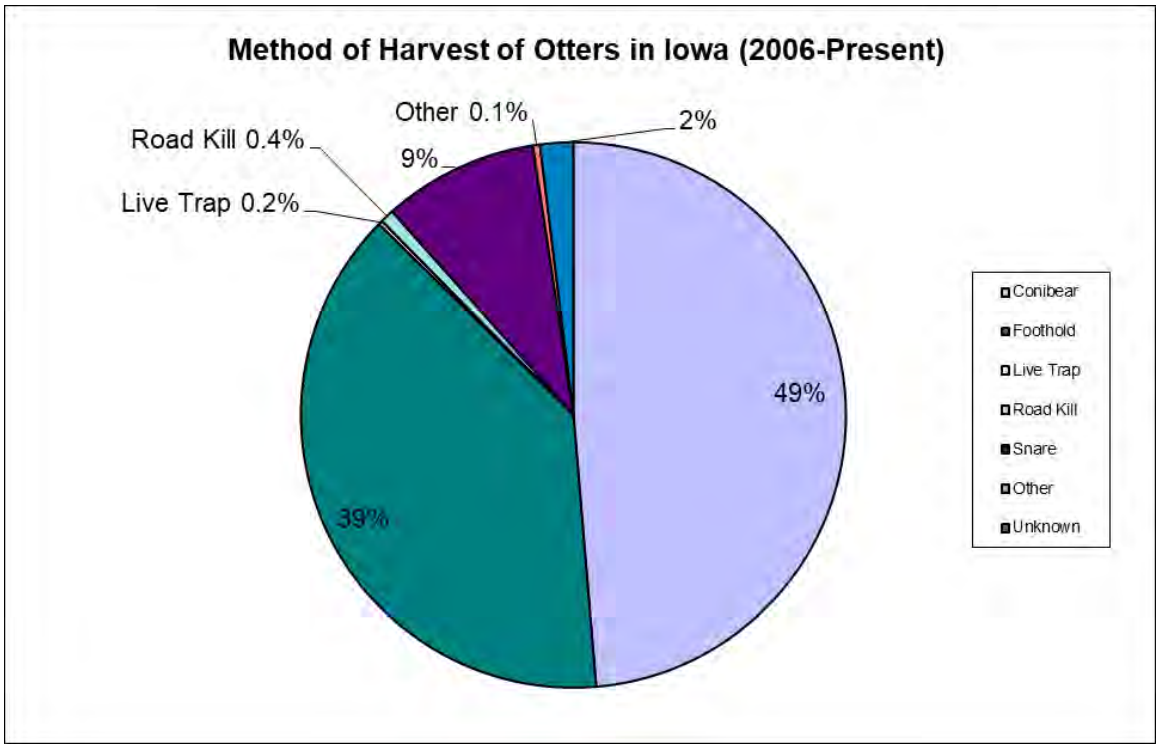


Figure 3.47 Harvest method of river otters in Iowa (2006-present).

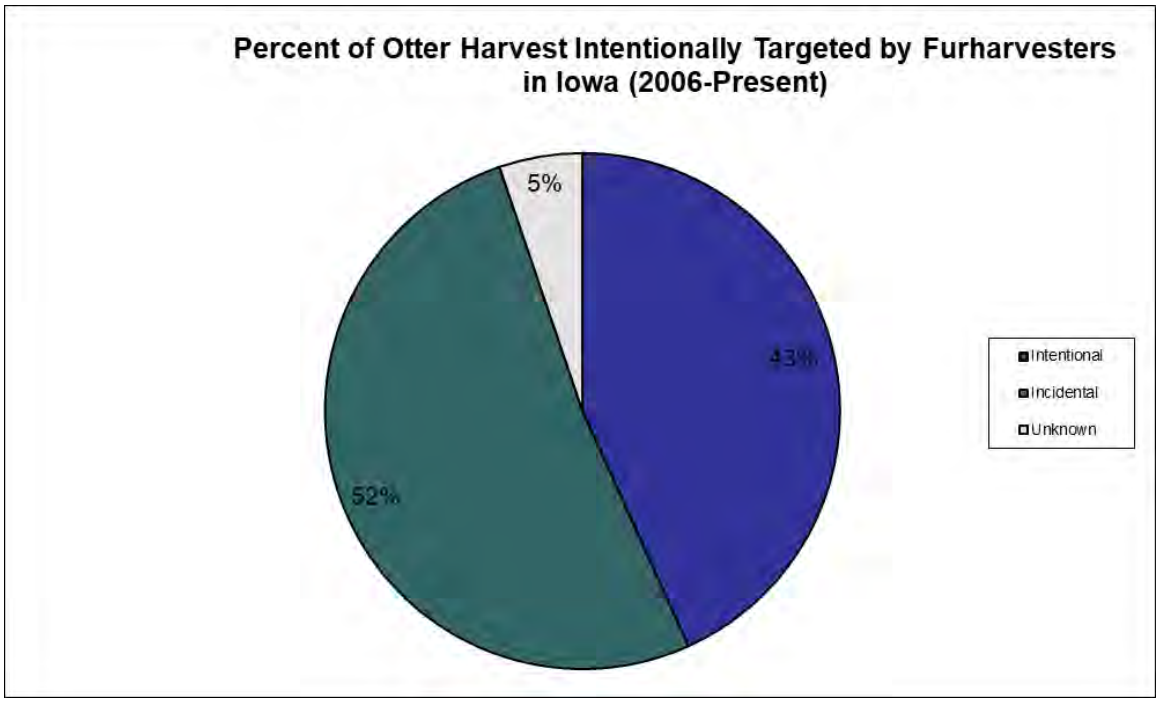


Figure 3.48 Percent of river otters intentionally and incidentally harvested in Iowa (2006-present).

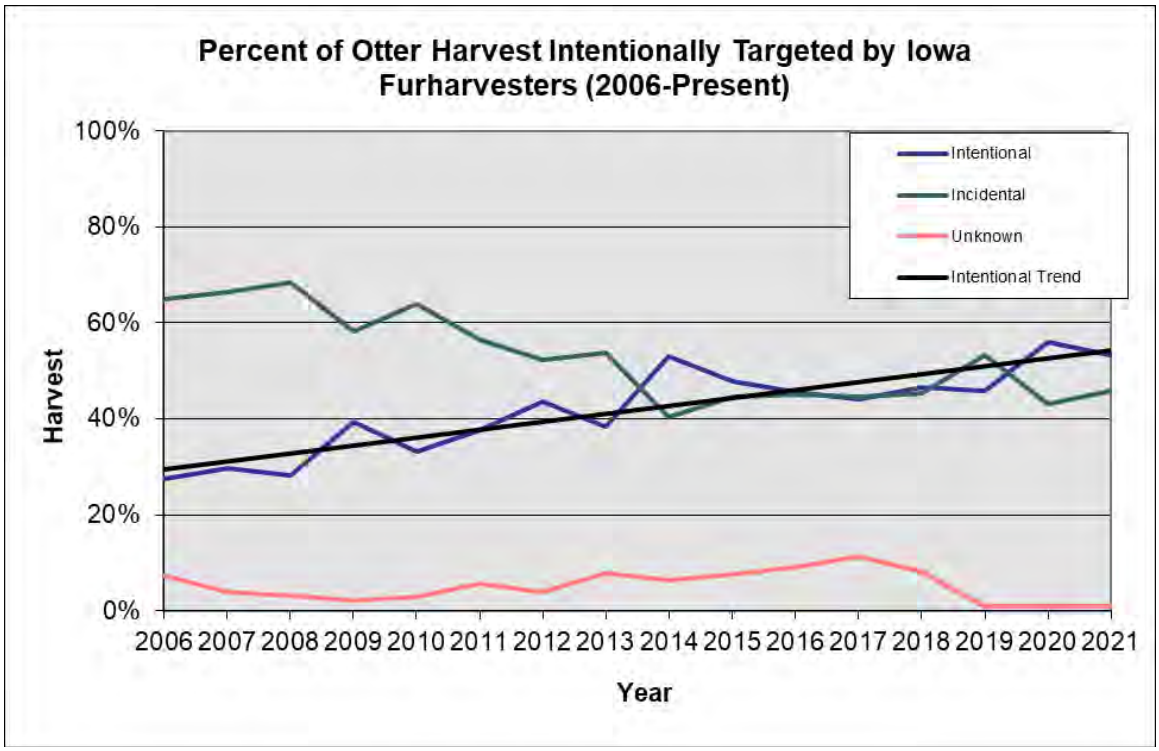


Figure 3.49 Trend for furharvesters intentionally targeting river otters in Iowa (2006-present).

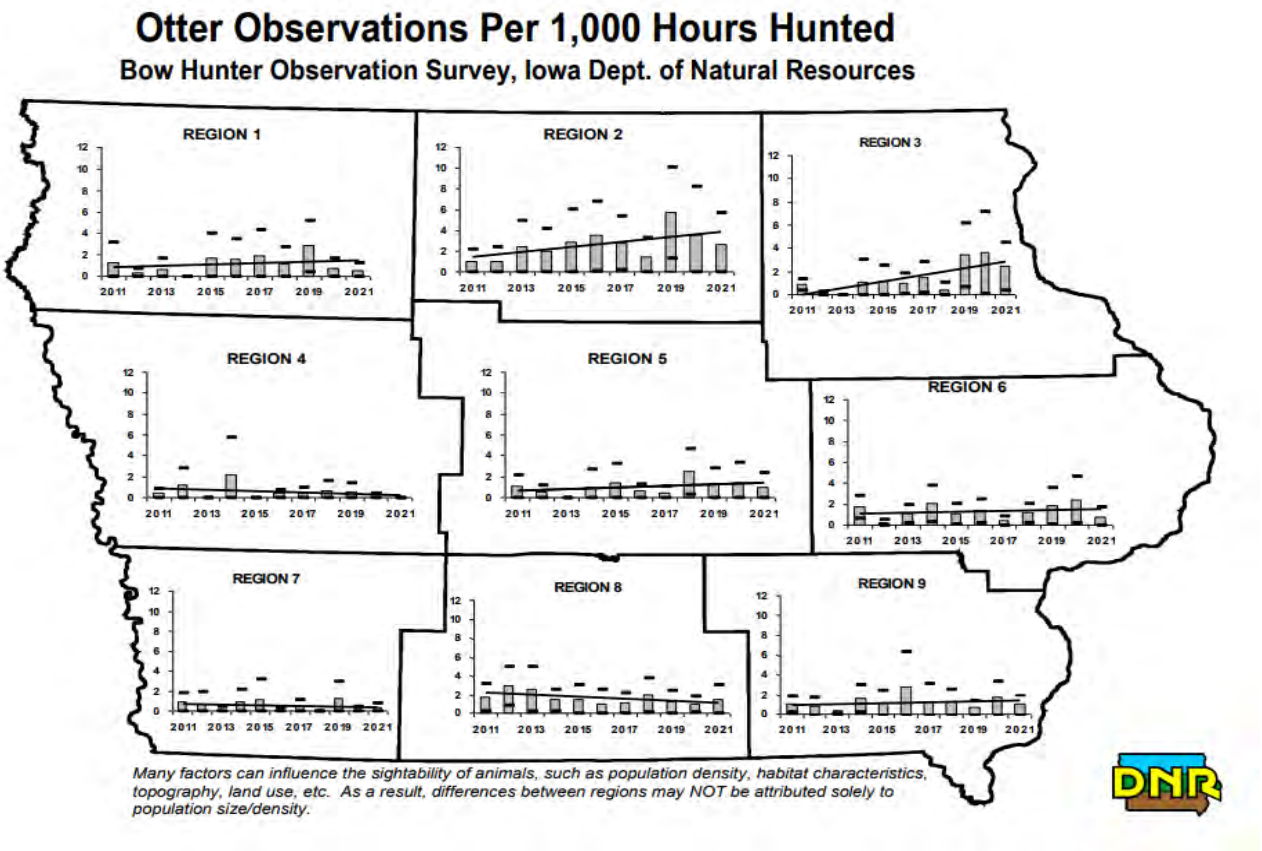


Figure 3.50 Results of river otter Bowhunter Observation Survey in Iowa (2011-present).

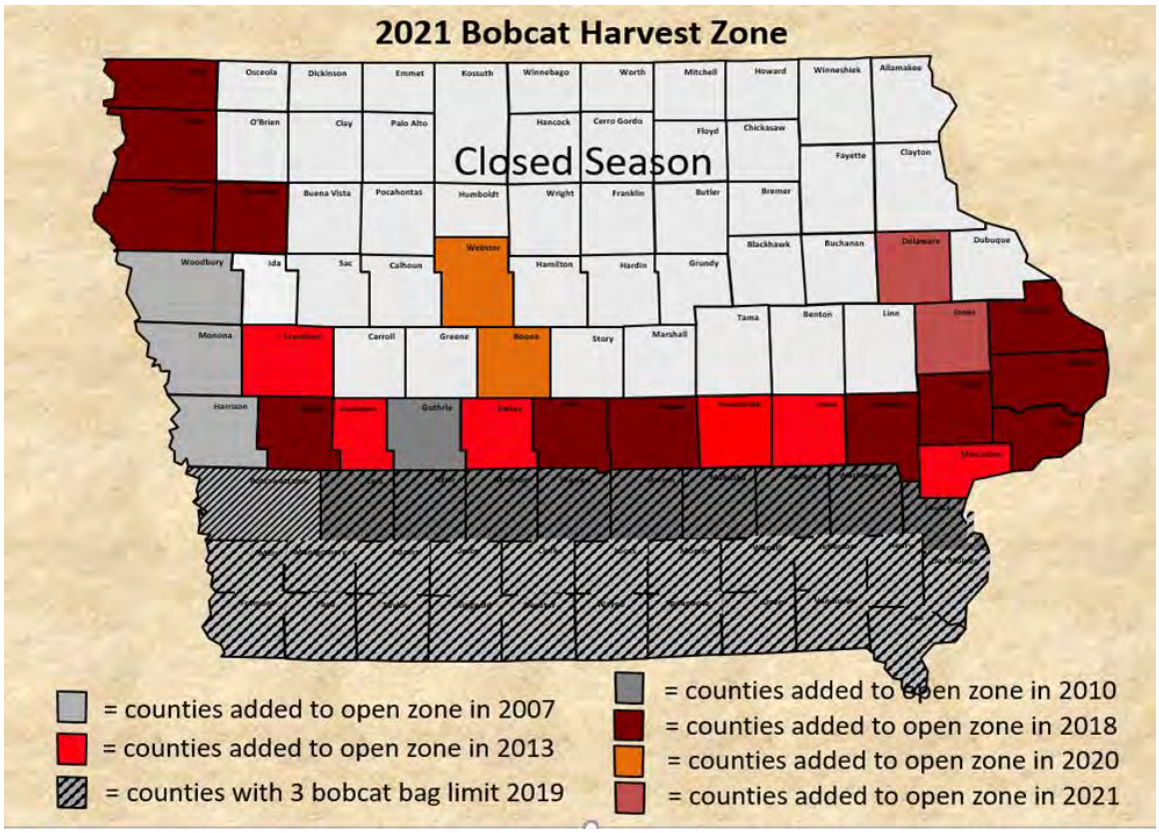


Figure 3.51 Open harvest zone for bobcat hunting/trapping season in Iowa (2021-2022).

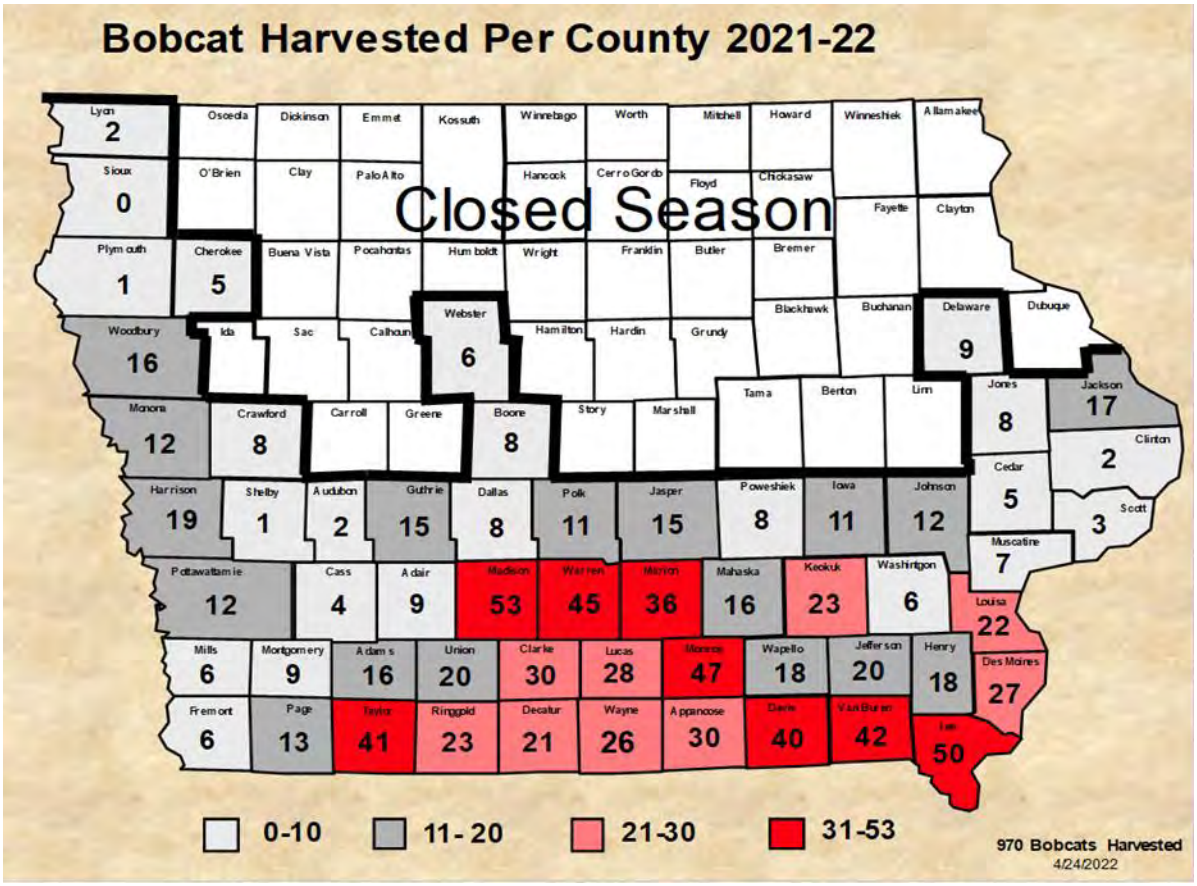


Figure 3.52 Bobcat harvest per county in Iowa (2021-2022).

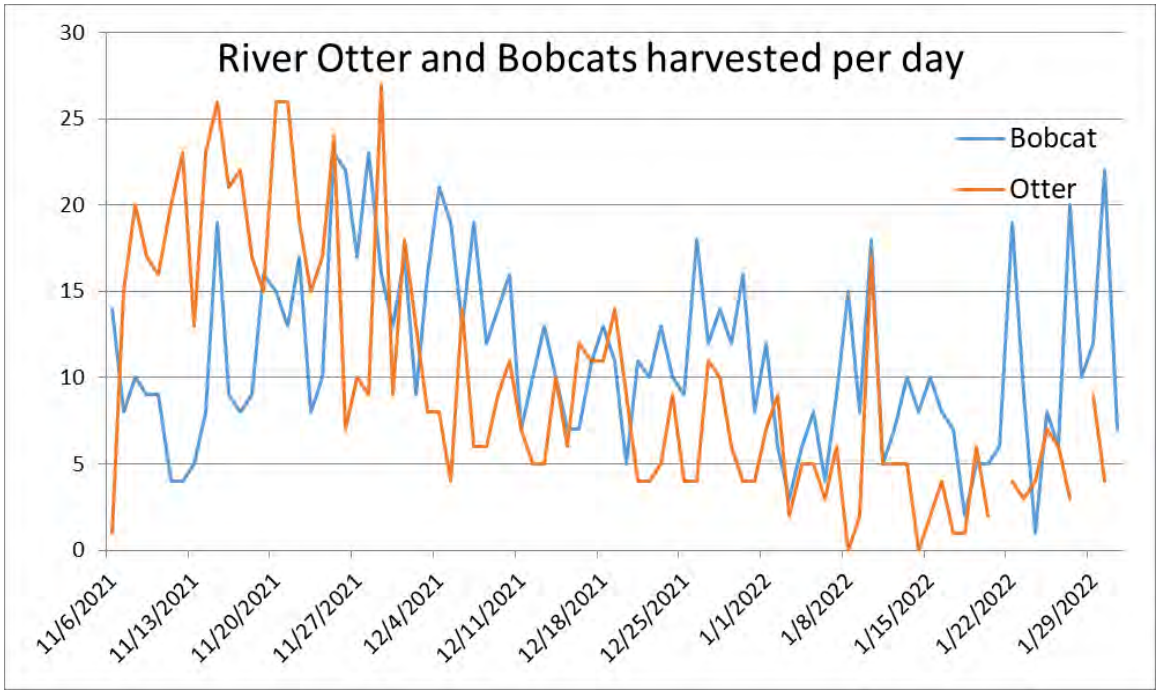


Figure 3.53 River Otter and bobcats harvested per day in Iowa (2021-2022).

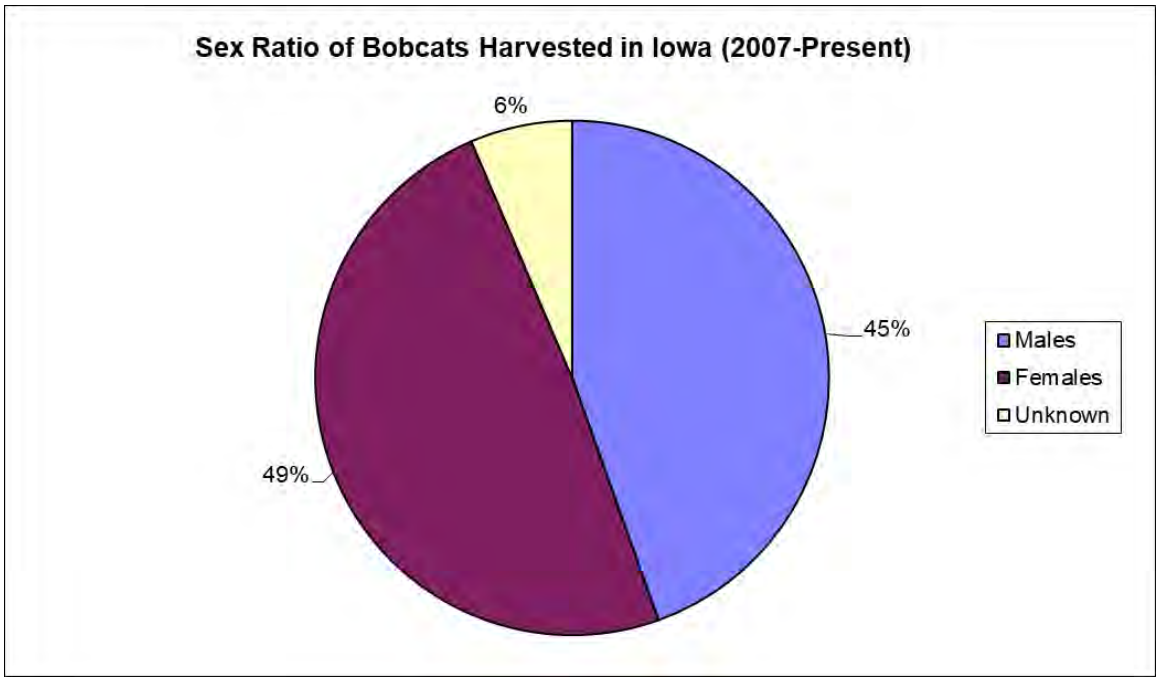


Figure 3.54 Sex ratio of harvested bobcats in Iowa (2007-present).

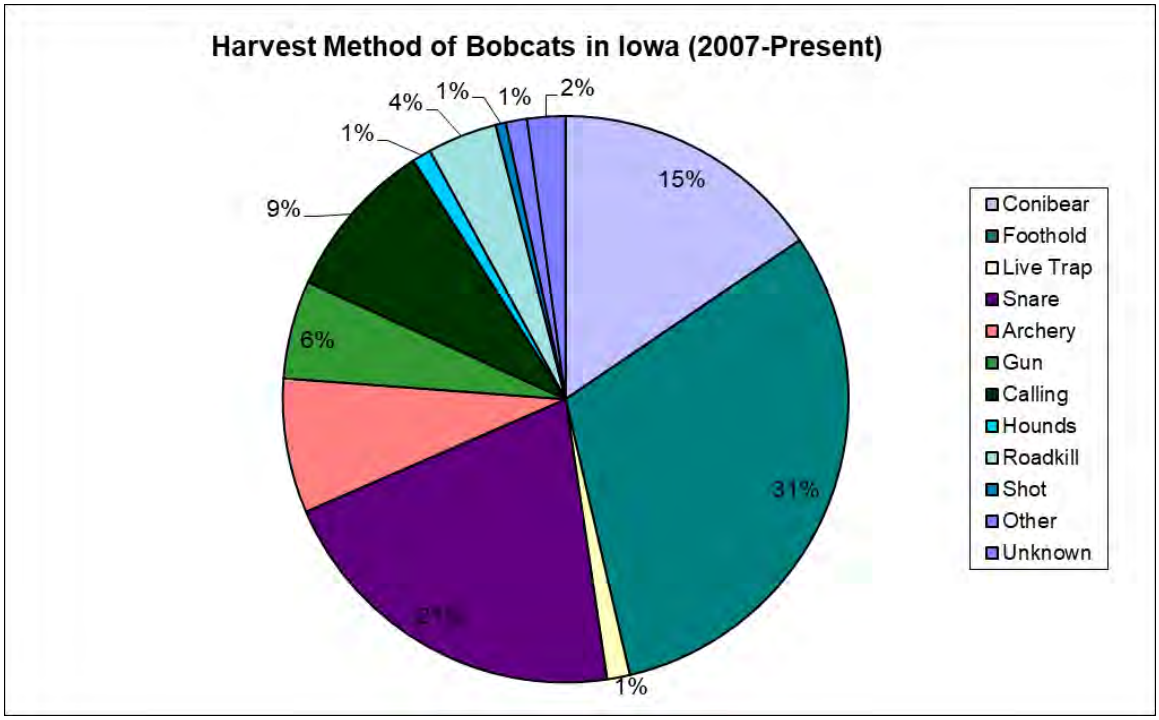


Figure 3.55 Harvest method of bobcats in Iowa (2007-present).

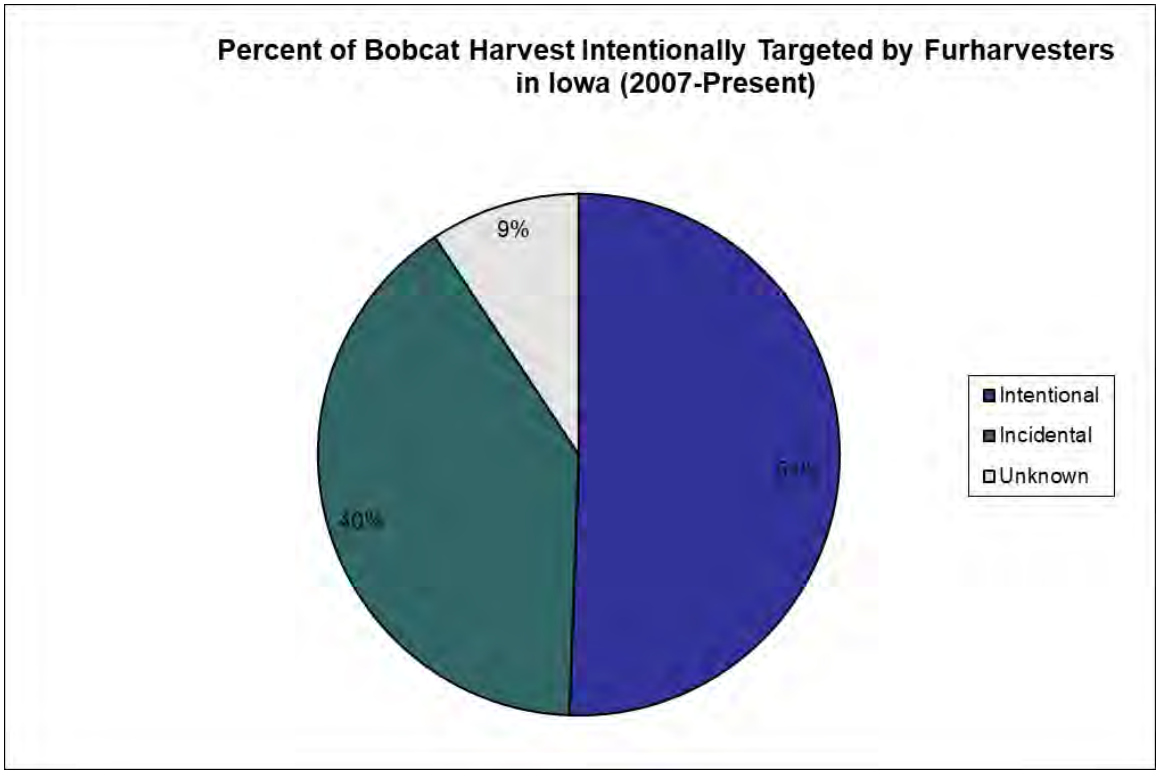


Figure 3.56 Percent of bobcats intentionally and incidentally harvested in Iowa (2007-present).

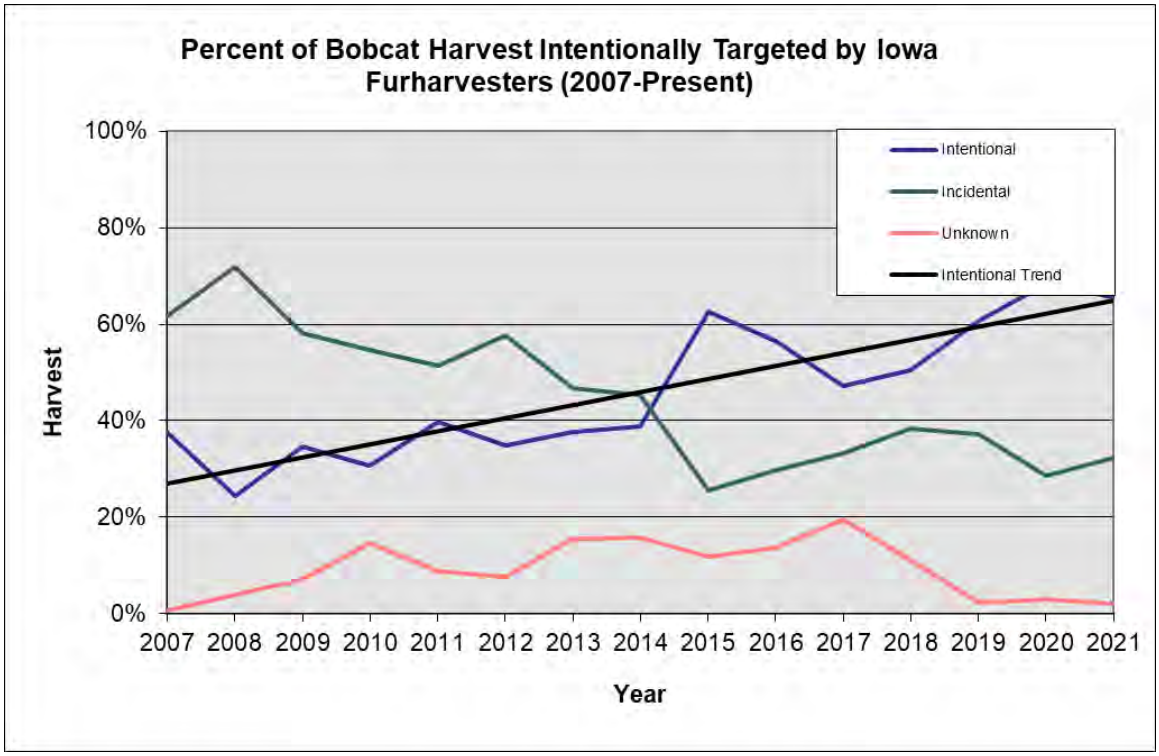


Figure 3.57 Trend for furharvesters intentionally targeting bobcats in Iowa (2007-present).

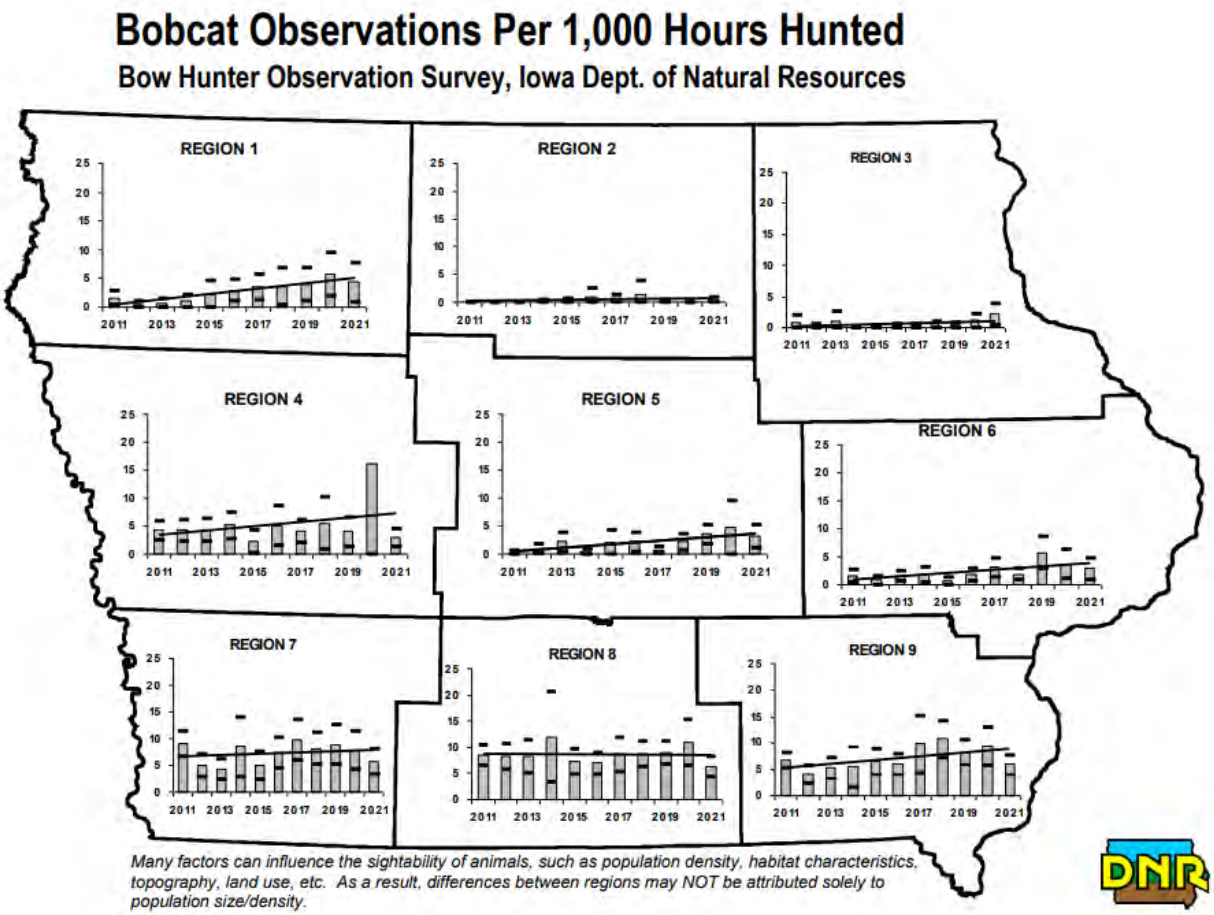


Figure 3.58 Results of bobcat Bowhunter Observation Survey in Iowa (2011-present).

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		
1961-62	351,822	16,365	1,307	49,659	918	5,486	223	1,979	89	113	317	4,790		

Season	Muskrat	Mink	Striped Skunk	Raccoon	Spotted Skunk	Red Fox	Gray Fox	Opossum	Weasel	Coyote	Badger	Beaver	Bobcat[a]	Otter[a]
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		
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		

Season	Muskrat	Mink	Striped Skunk	Raccoon	Spotted Skunk	Red Fox	Gray Fox	Opossum	Weasel	Coyote	Badger	Beaver	Bobcat[a]	Otter[a]
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
2020-21	16,865	1,776	1,051	49,622		999	5	658	9	15,087	504	5,031	980	853
2021-22	1,344	973	906	34,529		650	1	623	1	3,724	174	4,223	970	822
Average														
5-Year	20,059	2,796	776	81,396		1,355	4	814	4	13,800	451	4,818	923	769
10-Year	30,171	4,145	683	139,020	0	2,020	34	1,891	12	13,396	611	5,987	795	807
20-Year	48,045	7,351	775	156,604	0	3,954	109	2,765	14	9,638	654	6,554	617	698
50-Year	199,593	14,316	1,504	185,347	126	11,701	772	10,620	30	8,646	996	8,675	617	698
Long term[1]	226,976	18,618	15,515	124,202	18,327	9,695	774	13,158	1,027	5,263	663	6,944	617	698

[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
2020	14,851	273	135	15,259	31	4	35
2021	14,799	350	137	15,286	31	2	33

Table 3.3 Total number of pelts sold in Iowa and average prices paid per species by fur dealers (2019-Present).

	No. of Pelts Sold in Iowa	Average Iowa Price Paid per Pelt ($)
Raccoon		
2019-20	100857	4.96
2020-21	49222	3.58
2021-22	34529	2.99
Muskrat		
2019-20	14851	2.61
2020-21	16865	2.80
2021-22	11344	2.6
Mink		
2019-20	2026	3.36
2020-21	1776	3.37
2021-22	973	3.93
Beaver		
2019-20	5505	6.37
2020-21	5031	5.04
2021-22	4223	5.73
Coyote		
2019-20	16326	26.68
2020-21	15087	20.53
2021-22	3724	10.35

	No. of Pelts Sold in Iowa	Average Iowa Price Paid per Pelt ($)
Red Fox		
2019-20	1487	8.14
2020-21	999	5.82
2021-22	650	8.59
Opossum		
2019-20	532	0.80
2020-21	658	0.73
2021-22	623	0.93
Badger		
2019-20	559	11.66
2020-21	504	8.38
2021-22	174	13.39
Striped Skunk		
2019-20	738	3.26
2020-21	1051	5.32
2021-22	906	4.77
River Otter		
2019-20	512	15.42
2020-21	667	14.64
2021-22	284	17.63
Bobcat		
2019-20	230	29.37
2020-21	398	23.50
2021-22	165	69.44
Gray Fox		
2019-20	2	10.00
2020-21	5	14.83
2021-22	1	15.03
Weasel		
2019-20	8	2.00
2020-21	9	4.00
2021-22	3	3.33

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
2020-21	3.37	5,984	2.80	47,250	3.58	177,561	5.82	5,813	601,327
2021-22	3.93	3820	2.60	29,481	2.99	103,078	8.59	5,580	228,594
Average									
5-Year	4.24	13,062	2.62	51,585	5.03	460,150	8.75	12,643	908,288
10-Year	7.38	55,843	3.93	134,647	7.45	1,477,962	14.73	41,926	2,112,031
20-Year	9.63	94,177	3.89	210,018	9.09	1,693,706	14.51	65,153	2,311,665
50-Year	13.45	219,466	3.15	670,841	11.69	2,619,536	19.43	287,522	4,036,375
Long-term[1]	12.42	242,446	2.21	504,994	7.67	1,490,667	12.00	171,058	2,579,888

[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			

Season	Raccoon			Red and Gray Fox			Coyote			Bobcat		
	Trapper	Hunter	Unk	Trapper	Hunter	Unk	Trapper	Hunter	Unk	Trapper	Hunter	Unk
1993-94	43	52	5	43	50	7	34	57	9			
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
2020-21	60	39	1	77	23	0	45	54	1	64	34	2
2021-22	78	22	0	82	18	0	44	56	0	69	30	1
Average												
5-Year	69	31	0	71	27	2	39	61	0	79	20	1
10-Year	70	30	0	75	25	1	42	58	0	81	17	2
20-Year	60	36	5	62	32	5	37	57	5	81	17	2
Total Avg	48	45	7	53	40	7	32	61	7	81	17	2

Table 3.6 Trapping and hunting furbearer harvest seasons in Iowa (2011-Present).

Season	Species*	Trapping Season Dates		Hunting Season Dates		Bag Limit	
		Open	Close	Open	Close	Daily	Possession
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
	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			

Season	Species*	Trapping Season Dates		Hunting Season Dates		Bag Limit	
		Open	Close	Open	Close	Daily	Possession
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			
2020-21	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	Jan 31			No Limit	No Limit
	co	Nov 7	Jan 31	Continuous open season		No Limit	No Limit
	ot[9, 12]	Nov 7	Jan 31			3	3
	bc[9, 13]	Nov 7	Jan 31	Nov 7	Jan 31	3	3
	spsk, gw	Continuous closed season		Continuous closed season			
2021-22	ra, stsk, ba, op, rf, gf	Nov 6	Jan 31	Nov 7	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 6	Jan 31			No Limit	No Limit
	be	Nov 6	Jan 31			No Limit	No Limit
	co	Nov 6	Jan 31	Continuous open season		No Limit	No Limit
	ot[9, 12]	Nov 6	Jan 31			3	3
	bc[9, 14]	Nov 6	Jan 31	Nov 6	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.
[11]Bag limit in lower 3 tier counties (31) increased from 1 to 3 bobcats in 2019
[12]Bag limit of 2 otters increased to 3 in 2020
[13]Two counties (Boone & Webster) added to bobcat harvest zone (55 total) in 2020
[14]Two counties (Jones & Delaware) assed to bobcat harvest zone (57 total) in 2021

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

Year	Total Number of Routes	Mean Number Observed	Raccoon Harvest	Average Pelt Price ($)
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
2019	99	56	10,857	4.96
2020	99	45	49,622	3.58
2021	99	54	34,529	2.99
2022	99	66		
5-Year Avg	99	54	81,396	5.03
10-Year Avg	99	45	136,004	7.00
20-Year Avg	91	35	155,096	9.08
Total Avg	87	25	177,253	11.36

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
2020[f]	Statewide	Nov 7	Jan 31	86	10	425	395	33	853	None
2021	Statewide	Nov 6	Jan 31	87	9	465	346	9	822	None
					Total	5,401	4,863	909	11,173	

*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.

[f]Season bag limit of three per licensed furhavester in 2020

[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	Road Kill	Snare	Other[1]	Unknown[1]		
2006[a,b]	160	254	0	2	26	4	22	468	400
2007[c]	141	231	3	3	40	0	1	419	400
2008[c]	174	239	0	1	49	0	17	480	500
2009[c]	197	249	2	6	52	0	8	514	500
2010[c]	196	198	0	1	39	0	23	457	500
2011[c]	305	340	1	0	96	0	28	770	650
2012[c]	371	470	5	2	116	2	7	973	850
2013	549	471	1	5	119	6	19	1165	None
2014	422	308	2	8	79	12	12	835	None
2015	358	228	1	9	74	18	13	692	None
2016	288	183	3	10	58	3	11	556	None
2017	451	272	2	7	59	13	25	822	None
2018	325	184	1	7	38	11	17	576	None
2019	468	219	4	12	65	13	2	771	None
2020	519	246	1	9	64	15	8	853	None
2021	514	230	1	9	55	6	7	822	None
Total	5,438	4,322	27	91	1,029	43	213	11,173	

[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
2020[c]	55	7-Nov	31-Jan	86	11	455	498	27	980	None
2021	55	6-Nov	31-Jan	87	11	459	496	15	970	None
Total						4,166	4,573	510	9,249	

*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
[c] 2 counties(Webster & Boone) added in 2020
[d] 2 counties (Jones & Delaware) added in 2021

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 Deer	Calling	Hounds	Roadkill	Shot	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[b]	147	375	24	224	72	67	172	4	47		6	22	1160	none
2020	78	392	10	99	56	46	164	7	51	54	3	20	980	none
2021	87	451	22	83	40	51	125	3	38	63	0	7	970	none
Total	1,425	2,833	120	1,915	673	491	914	99	388	117	73	201	9,249	

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

[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.

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.

Many surveys did not occur in 2020 and 2021 due to the Covid-19 pandemic. This created an unprecedented situation where population estimates were unavailable for many species. At the same time, the northern prairies experienced a significant drought, which negatively impacted wetland habitat throughout north-central North America. Fortunately, the northern prairies received significant precipitation and surveys resumed in 2022.

Duck populations have fluctuated substantially over time. The drought of the 1980s 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 1990s. Pintails and scaup were exceptions to this rule; pintails because contemporary agricultural practices limit their nest success in prairie Canada 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 (DNR), 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 has recovered since (Figure 4.2). Each summer, DNR 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 2022 indicated the population was 90,246 (±15,547) (±95% Conf. Limit).

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 1960s, 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 and mallards.

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-1990s, 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 1970s, despite record high numbers of snow geese in the Flyway in the 1990s and 2000s. 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-1990s, 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 1998-2020 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 2021 Iowa held a 16 day Special September Teal season. This was the fourth 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.

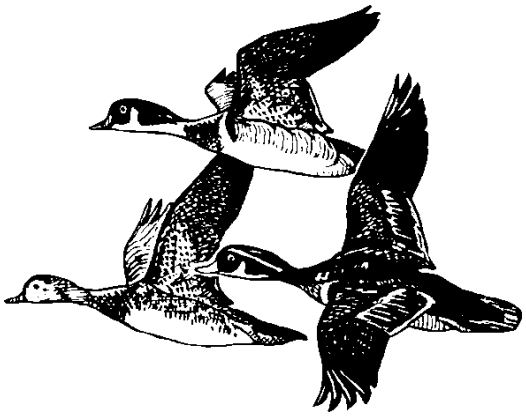
Waterfowl Banding

Ducks and geese are captured and marked 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 DNR 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 DNR personnel since 1964.

The USFWS, in concert with the MFC, determines banding priorities. In the 1960s emphasis was placed on banding blue-winged teal to evaluate special teal seasons. Winter mallard banding was conducted in the 1970s 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

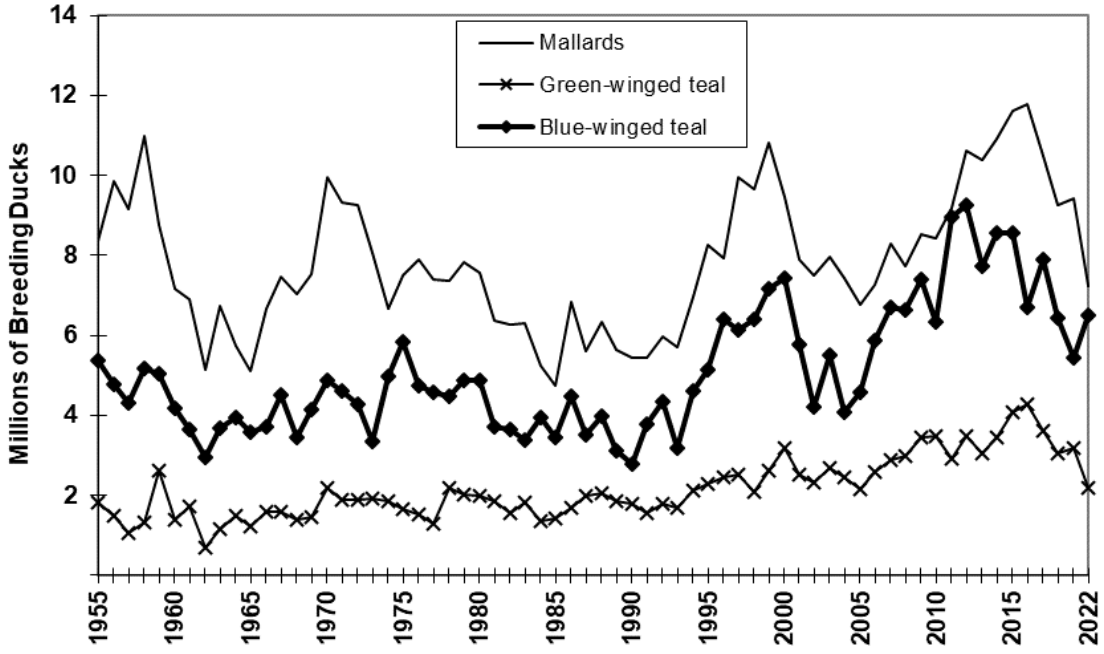


Figure 4.1 Breeding populations of ducks important to Iowa. (Source: USFWS)

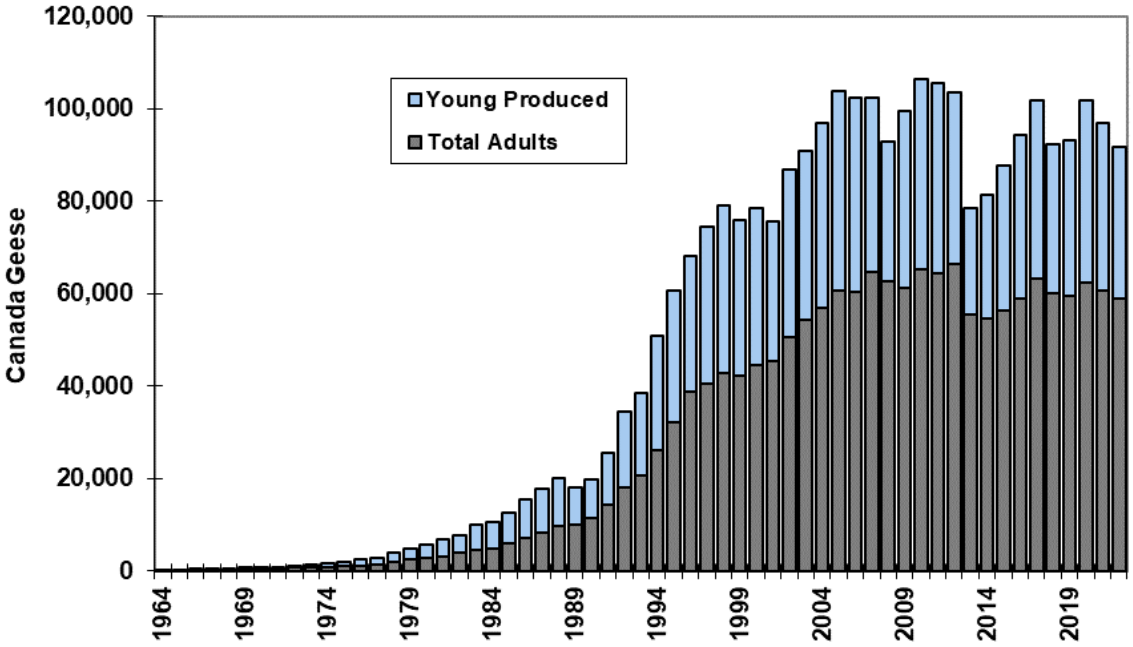


Figure 4.2 Iowa's Canada goose population.

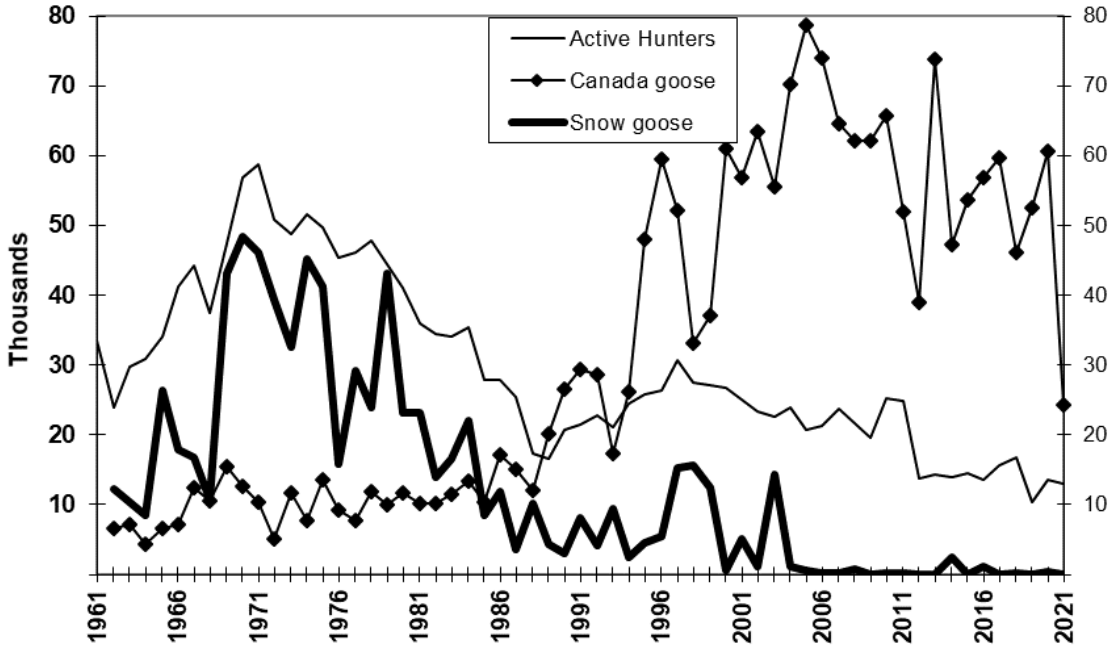


Figure 4.3 Goose harvests in Iowa.

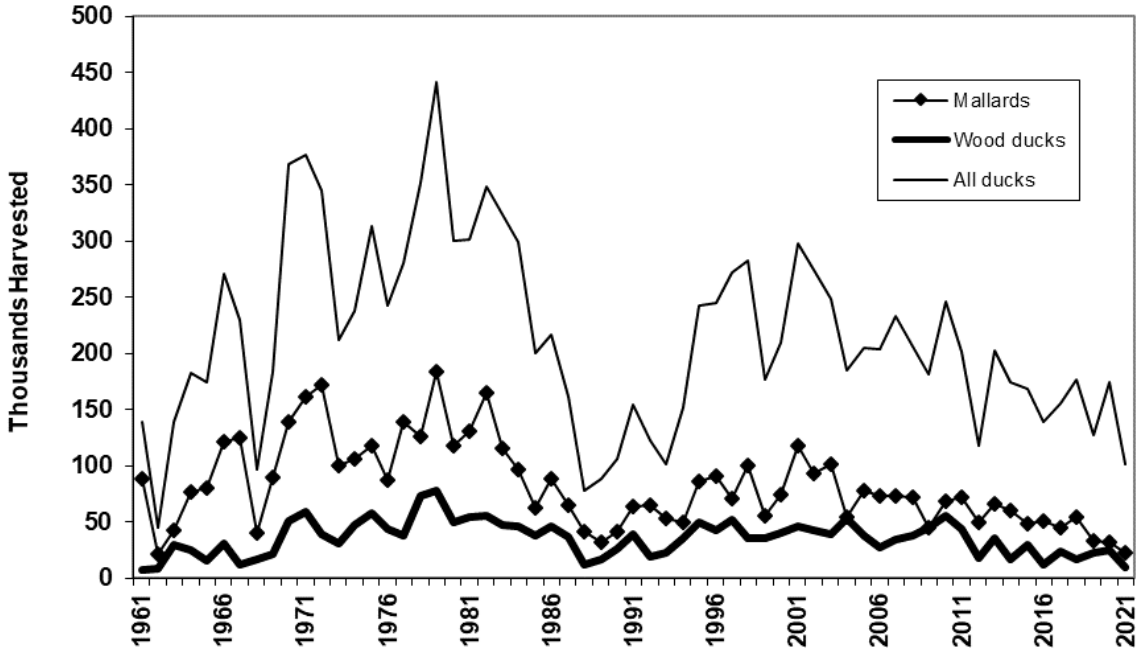


Figure 4.4 Duck harvests in Iowa. (Source USFWS)

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

Year	Mallard	Gadwall	American Wigeon	Green Winged Teal	Blue Winged Teal	Northern Shoveler	Northern Pintail	Red-Head	Canvas Back	Scaup
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
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.									
2021	Survey not conducted.									

Year	Mallard	Gadwall	American Wigeon	Green Winged Teal	Blue Winged Teal	Northern Shoveler	Northern Pintail	Red-Head	Canvas Back	Scaup
2022	7,223	2,665	2,127	2,170	6,485	3,041	1,783	991	585	3,599
Percent Change in 2022 from:										
2019	-23%	-18%	-25%	-32%	19%	-17%	-21%	35%	-10%	0%
1955-2019	-8%	27%	-18%	-1%	27%	15%	-53%	35%	0%	-27%
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 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
2020	32.4	24.9	45.6	27.9	174.0	60.6	0.3	114.9	NA	15.2	13,600
2021	22.5	9.7	23.6	24.0	101.7	24.2	0.0	79.6	NA	9.9	12,900
Percent Change in 2021 From:											
2020	-3%	9%	71%	113%	36%	15%		49%		23%	12%
1961-2019 Average	-61%	-30%	38%	12%	-19%	88%	-98%	-54%		91%	-54%
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	45,261	5.0	37,960
1971-80	130.9	51.6	37.6	31.4	309.9	9.9	33.9	442.1	56,845	6.0	48,440
1981-90	83.7	37.7	31.5	22.5	212.3	14.7	11.7	244.8	32,914	6.8	27,560
1991-00	70.7	37.1	27.6	23.0	195.7	39.2	7.8	256.0	29,973	7.2	25,385
2001-10	77.6	41.7	36.1	28.4	227.9	65.3	2.4	160.5	28,939.6	11.1	22,690
2011-20	51.3	24.3	36.0	18.9	163.6	54.1	0.4	104.5	NA	11.9	15,316

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 4-12 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 5-11 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		
2020	60	Sep 26-Oct 2 Oct 10-Dec 1	Oct 3-9 Oct 17-Dec 8	Oct 10-16 Oct 24-Dec 1	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,2 Bd, 2 Cb, & 1 Sc. 1st 15 days, 2 Sc. 45 days 5 merg., only 2 Hm
Youth Day		Sep 19-20	Sep 26-27	Oct 3-Oct 4	½ SR-SS	6/18*[at]	15/45	
Teal		Sep 1-16	Sep 1-16	Sep 1-16	SR-SS	6/18		
2021	60	Oct 2-8 Oct 16-Dec 7	Oct 9-15 Oct 23-Dec 14	Oct 16-22 Oct 30-Dec 21	½ SR-SS	6/18*[at]	15/45	*[at]Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,2 Bd, 2 Cb, & 1 Sc. 1st 15 days, 2 Sc. 45 days 5 merg., only 2 Hm
Youth Day		Sep 25-26	Oct 2-3	Oct 9-10	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.

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]	
	Sn	107	Sep 30-Jan 10	Oct 14-Jan 10		10/20*[k]	*k) Bag lim.= 10 w/ only 2 Ca & 2 Wf. Pos lim.= 20 w/ only 4 Ca & 4 Wf.
			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]	

Year	Goose Species	Season Length	Season Dates		Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
			Oct 16-Dec 15				
	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	½ SR-SS	2/4*[m]	
				Nov 4-Dec 27			
	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	½ SR-SS	2/4*[m]	
				Nov 10-Dec 26			
	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	½ SR-SS	2/4*[m]	*[m]Bag lim.= 2 Ca, 2 Wf, & 2 Br. Pos lim.= 4 Ca, 4 Wf, & 4 Br.
				Nov 9-Dec 25			
	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	½ SR-SS	2/4 *[o]	*[o]Bag lim.= 2 Ca & 2 Br. Pos lim.= 4 Ca & 4 Br.
				Nov 8-Dec 24			
	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 2-10	½ SR-SS	2/4*[o]	
			Oct 16-Dec 5	Oct 30-Dec 19			
	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 1-9	½ SR-SS	2/4*[o]	
			Oct 15-Dec 4	Oct 22-Dec 4			
			Dec 24-Jan 2	Dec 24-Jan 9			
	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]	

Year	Goose Species	Season Length	Season Dates		Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
	Ca	2	Sep 9-10	Sep 9-10	½ SR-SS	2/4*[l]	
	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]	

Year	Goose Species	Season Length	Season Dates			Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
	Ca & Br	98	Sep 29-Dec 11	Oct 6-Jan 11	Oct 13-Jan 18	½ SR-SS	2-3/4-6*[r]	
	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	

Year	Goose Species	Season Length	Season Dates			Shooting Hours	Limit Bag/Poss	Additional Bag Limit Information
			Dec 14-Jan 11	Dec 21-Jan 18		½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 26-April 15, 2020			½ SR-SS	20/none	
2020	Ca	9	Sep 5-13 in metro zones[e]			½ SR-SS	5/15*[q]	
	Dark Geese	98	Sep 19-Oct 4	Sep 26-Oct 11	Oct 3-18	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 10-Dec 1	Oct 17-Dec 8	Oct 24-Dec 15	½ SR-SS	20/none	
			Dec 12-Jan 9	Dec 19-Jan 16	Dec 26-Jan 23	½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 26-May 1, 2021			½ SR-SS	20/none	
2021	Ca	9	Sep 4-12 in metro zones[e]			½ SR-SS	5/15*[q]	
	Dark Geese	98	Sep 25-Oct 10	Oct 2-17	Oct 9-24	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 16-Dec 7	Oct 23-Dec 14	Oct 30-Dec 21	½ SR-SS	20/none	
			Dec 11-Jan 8	Dec 18-Jan 15	Dec 25-Jan 22	½ SR-SS	20/none	
	Sn/Ro	[c]Cons. Or.	Jan 23-May 1, 2022			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
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

Year	Canada Geese	Mallards	Wood Ducks	Blue-winged Teal	Trumpeter Swans	Other Waterfowl Species	Total Waterfowl	Mourning Doves
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
2020	3,665	0	2,350	0	51	0	6,066	2,001
2021	4,462	0	1,381	0	22	0	5,865	1,902
Totals	137,191	36,749	140,218	35,810	1,206	2,236	353,410	34,780
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%
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%

Year	Young Produced	Nesting Adults	Non-breeding Adults	Total Adults	Total Geese	% Change from Prev. Year
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%
2021	36,403	21,783	38,819	60,602	96,805	-5%
2022	32,874	20,779	37,981	58,760	91,634	-5%

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 on the Pheasant Survey page.

Historical Summary of Populations & Harvest

Ring-necked Pheasant

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, 1920-40s, 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."

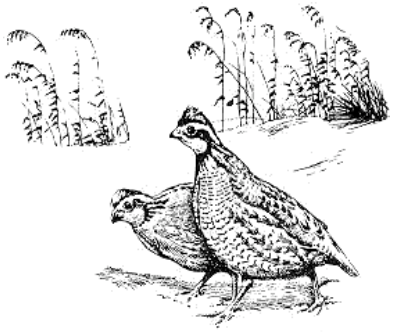
With the success of wild birds, the state game farms were shut down in 1932, but following several bad weather years, it was re-established in 1938. Populations recovered with good weather in the 1940s and stocking was greatly reduced, approximately 4,000 chicks and spent adults in 1943. The state game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

Through the 1940-50s 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 1970s 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, Black Hawk 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 (1930-50s), 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 1960s (Figure 5.2). Regionally, the greatest declines have occurred in the NC, C, and SW regions (Figure 5.7). By the early 1970s 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 and

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 and 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).

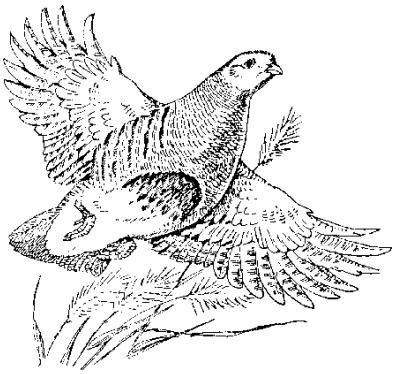


Bobwhite Quail

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 1930s. Large scale landscape changes and clean farming practices are considered the major factors in this decline.

Since survey procedures were standardized in the early 1960s 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-70s and early 80s (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).

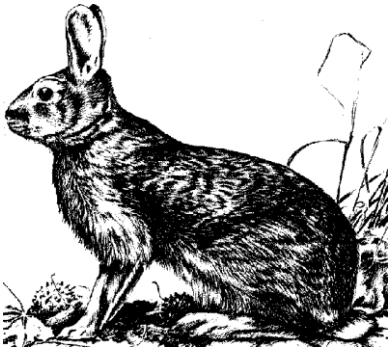


Gray Partridge
Senator HW Grant of Waterloo made the first release of fifty Hungarian or gray partridge in Iowa in Black Hawk County in 1902, but all birds died. The first successful release of Huns in Iowa occurred in Palo Alto County in 1905. This release constitutes Iowa's first wild stock.

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 pre-settlement 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

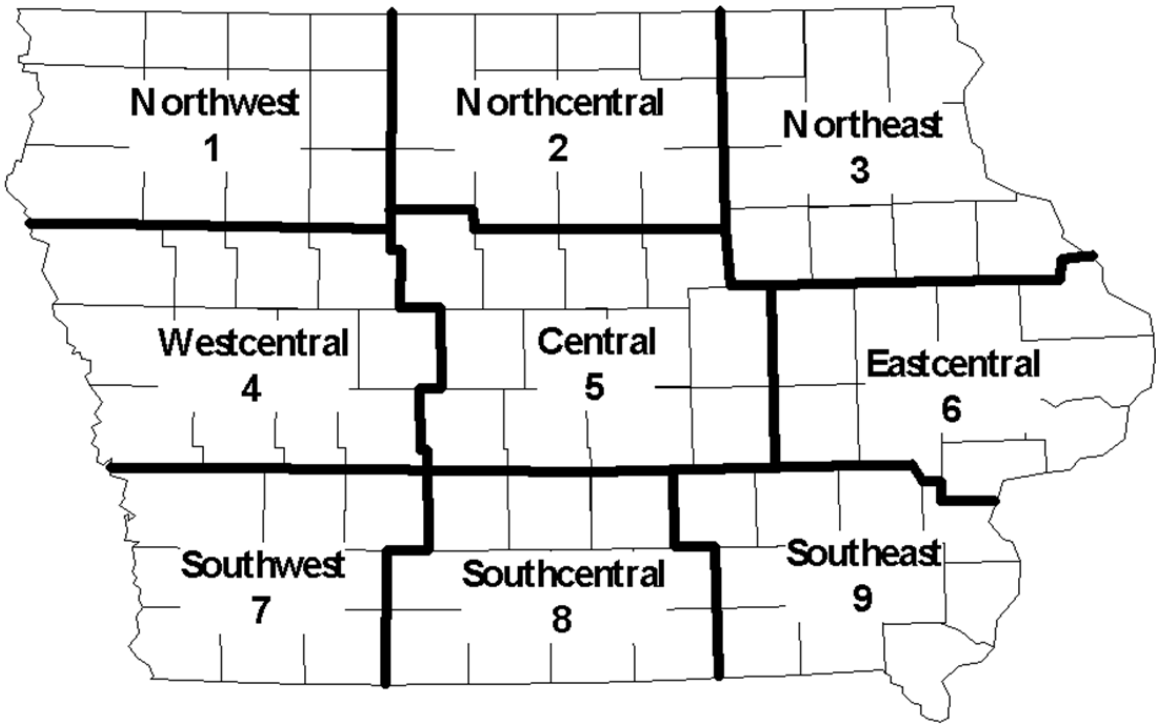


Figure 5.1 Survey regions for the August Roadside Survey.

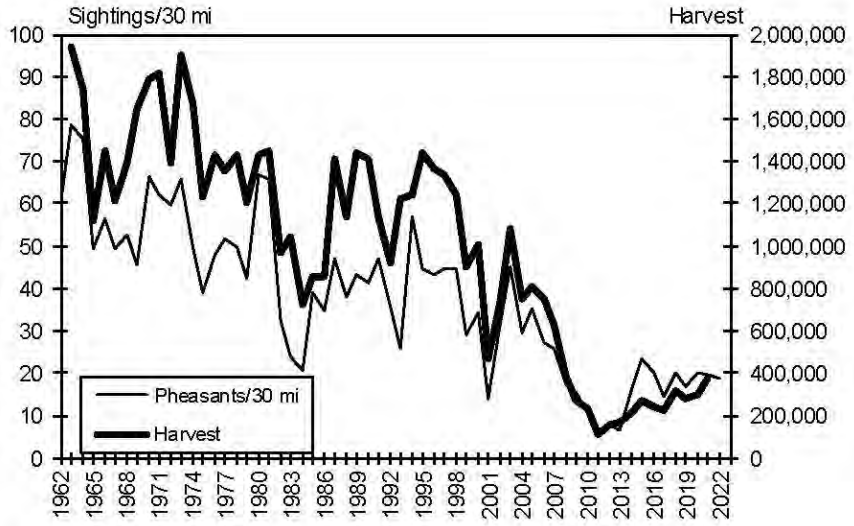


Figure 5.2 Statewide trends in pheasant harvest and August roadside survey counts

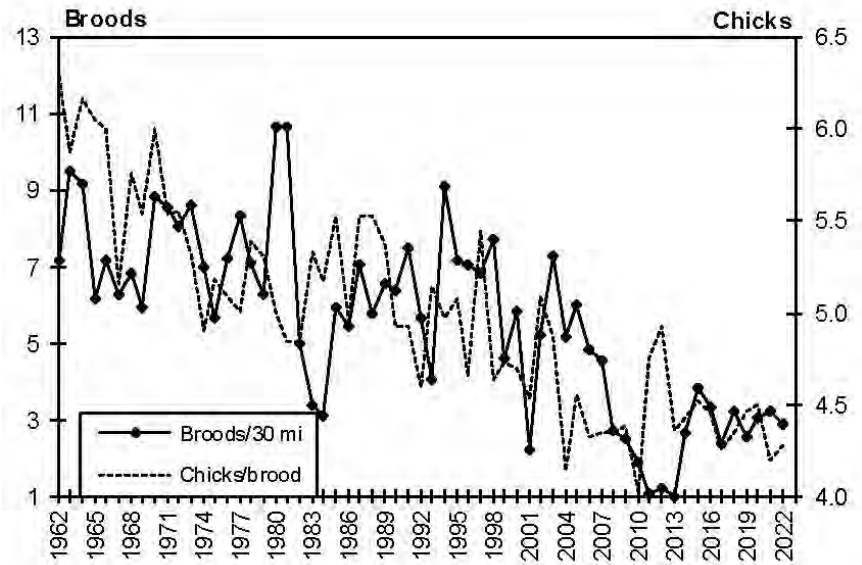


Figure 5.3 Statewide trends in pheasant broods and average brood size from August roadside survey

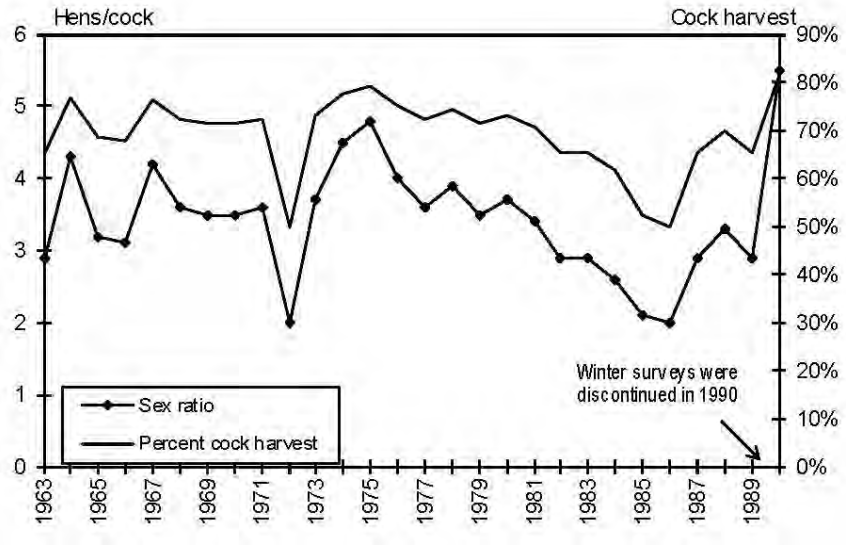


Figure 5.4 Statewide sex ratio and estimated cock harvest from winter pheasant surveys

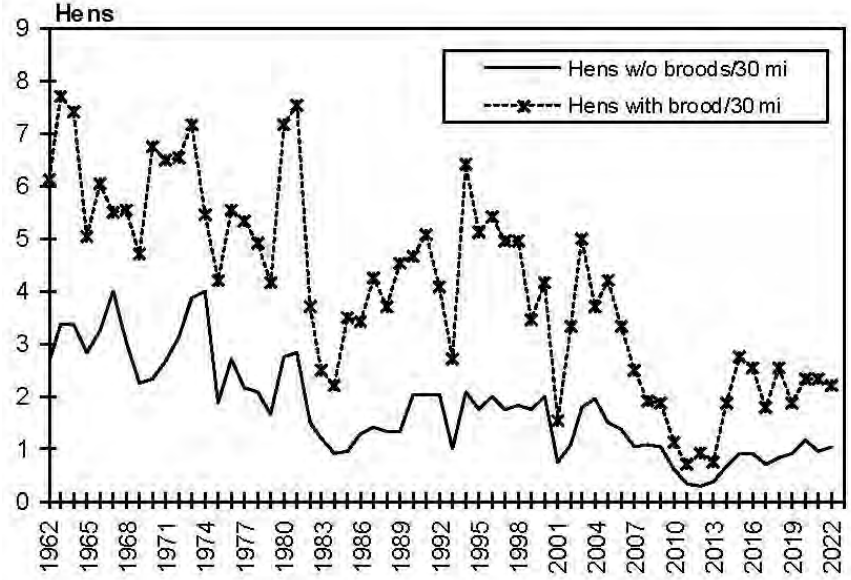


Figure 5.5 Statewide trends in pheasant hens with and without broods from August roadside survey

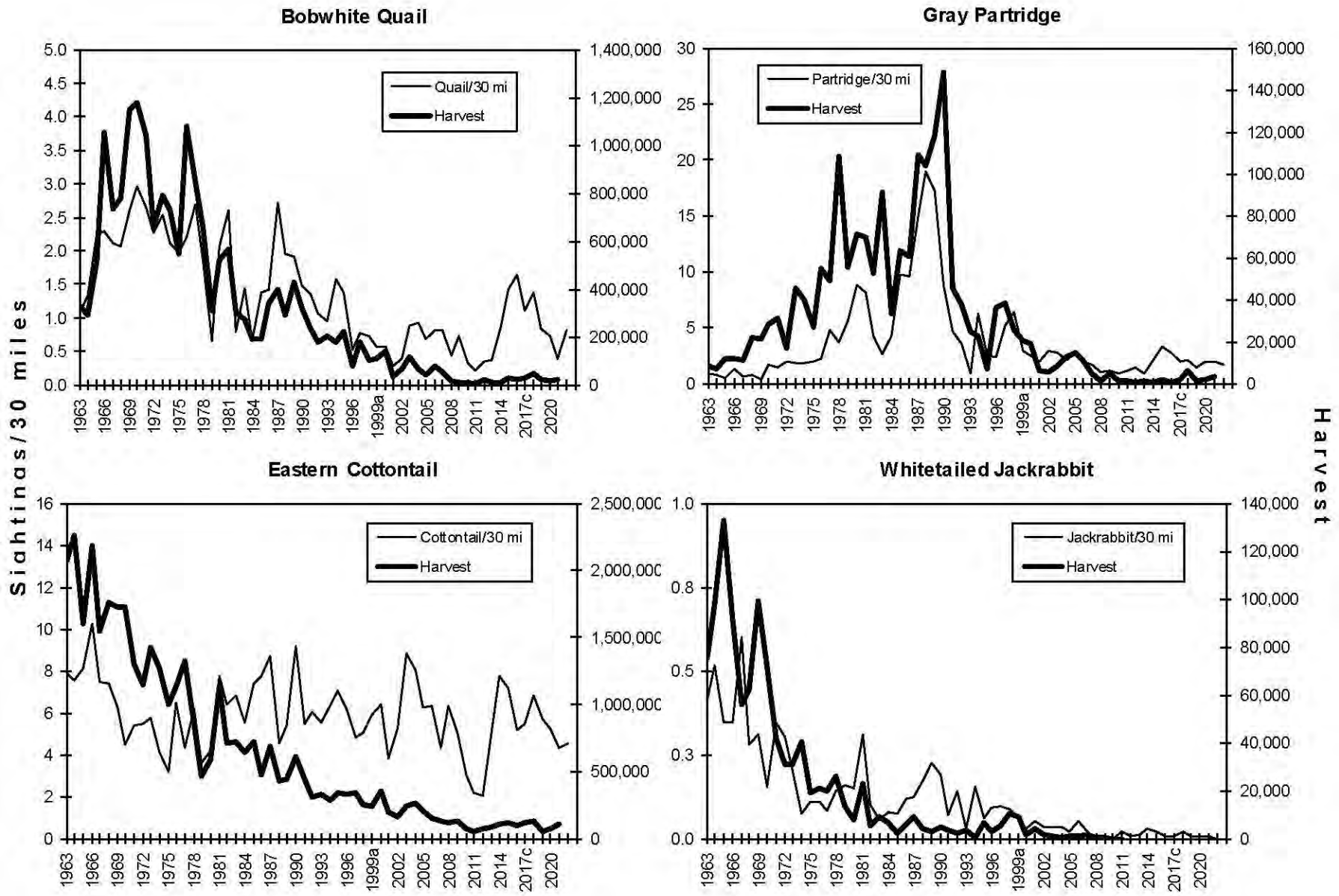


Figure 5.6 Statewide trends in small game harvests and August roadside survey counts

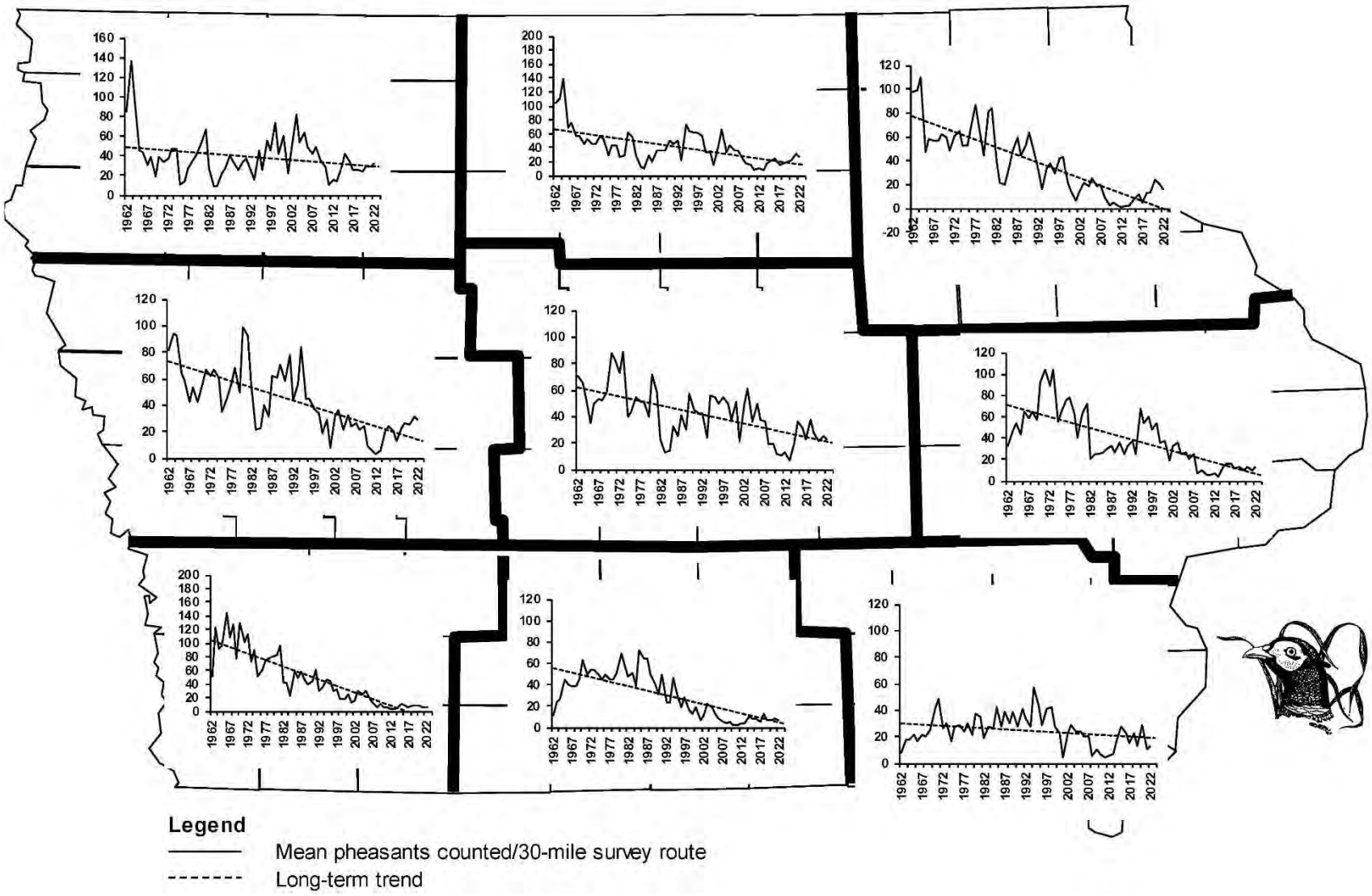


Figure 5.7 Regional trends in ring-necked pheasant numbers from the August roadside survey (1962-present).
Note: Because of variation in historical counts, vertical axis's among survey regions are not to the same scale.

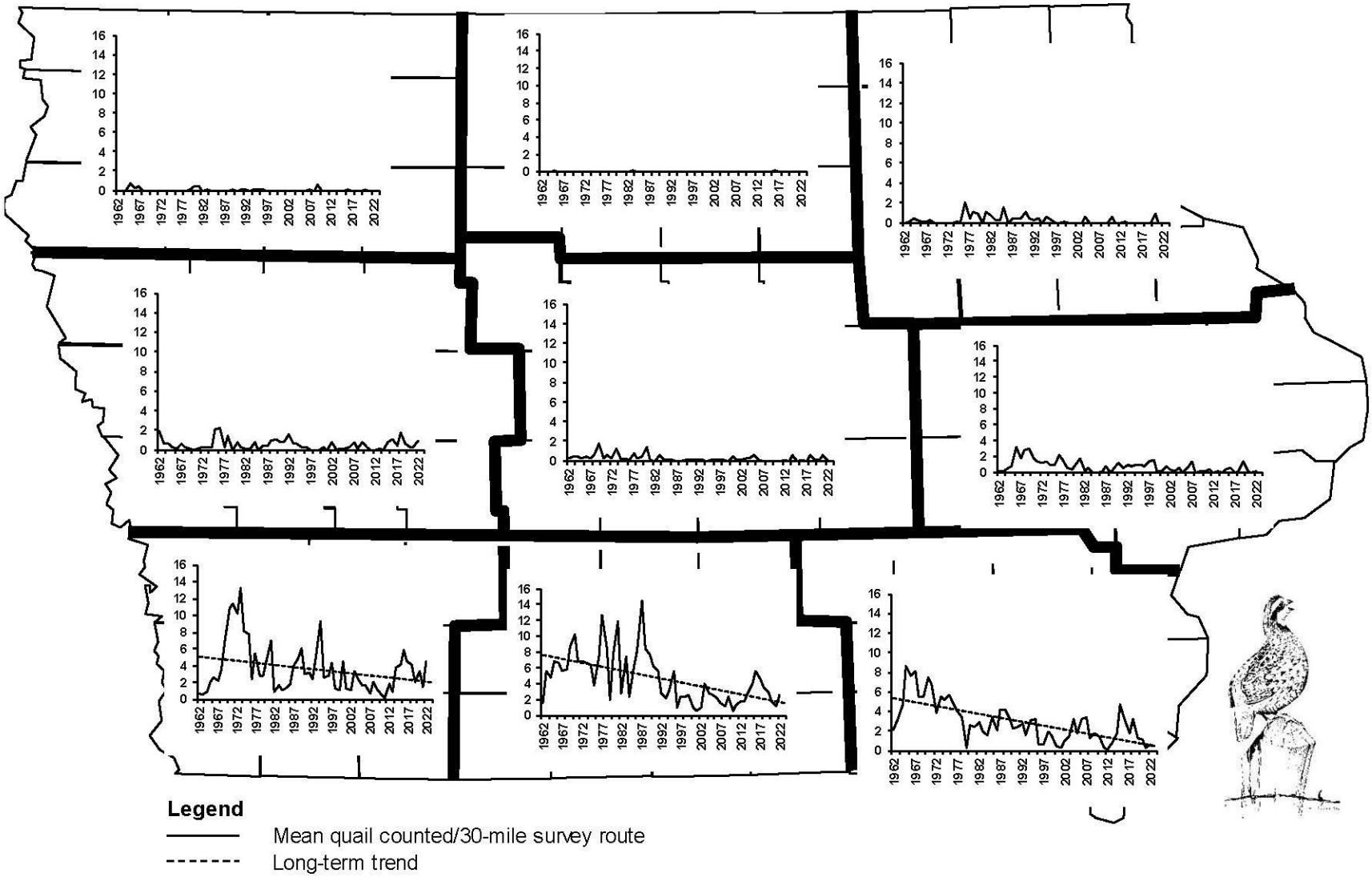


Figure 5.8 Regional trends in bobwhite quail numbers from the August roadside survey (1962-present)

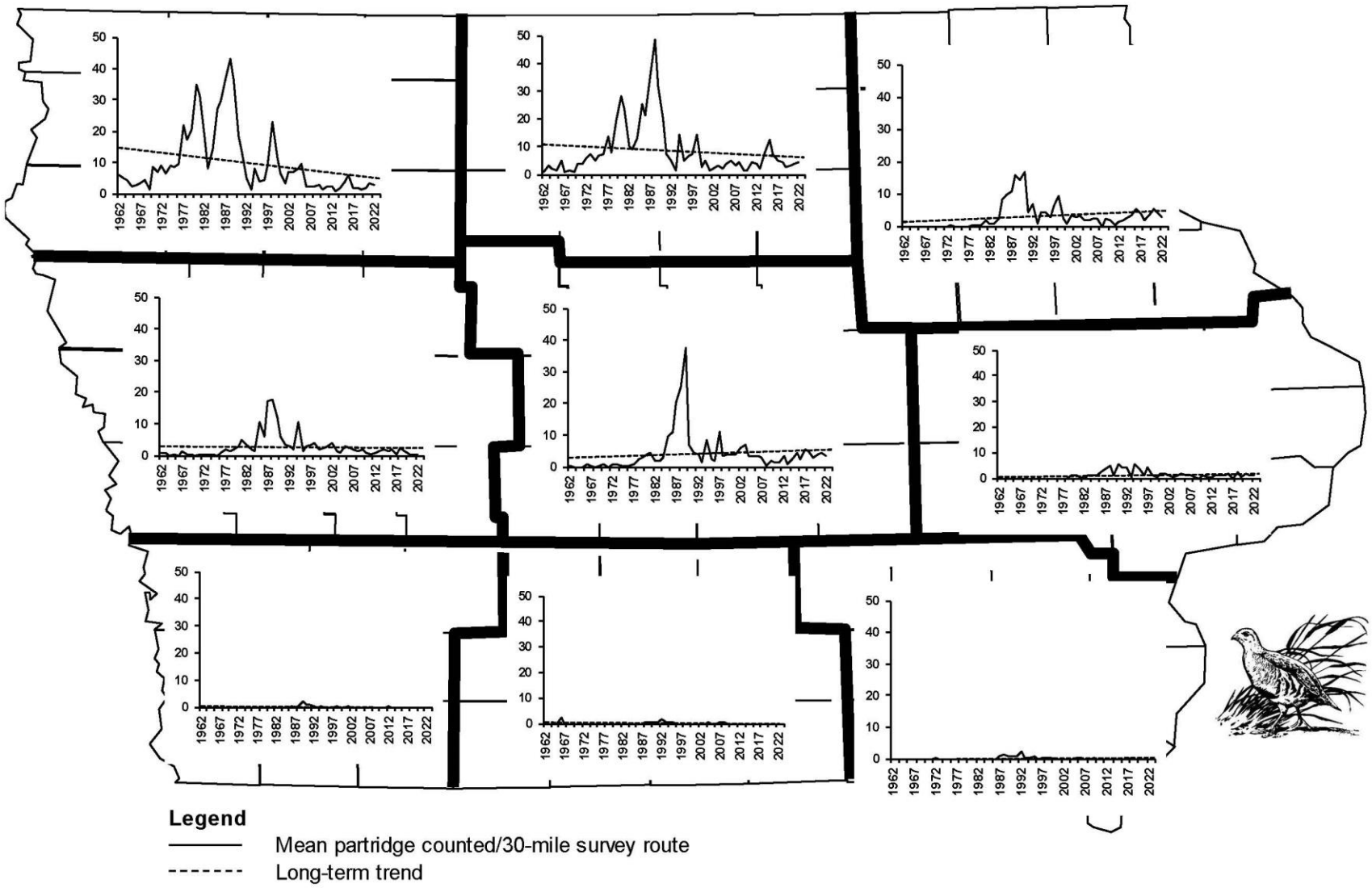


Figure 5.9 Regional trends in gray partridge numbers from the August roadside survey (1963-present)

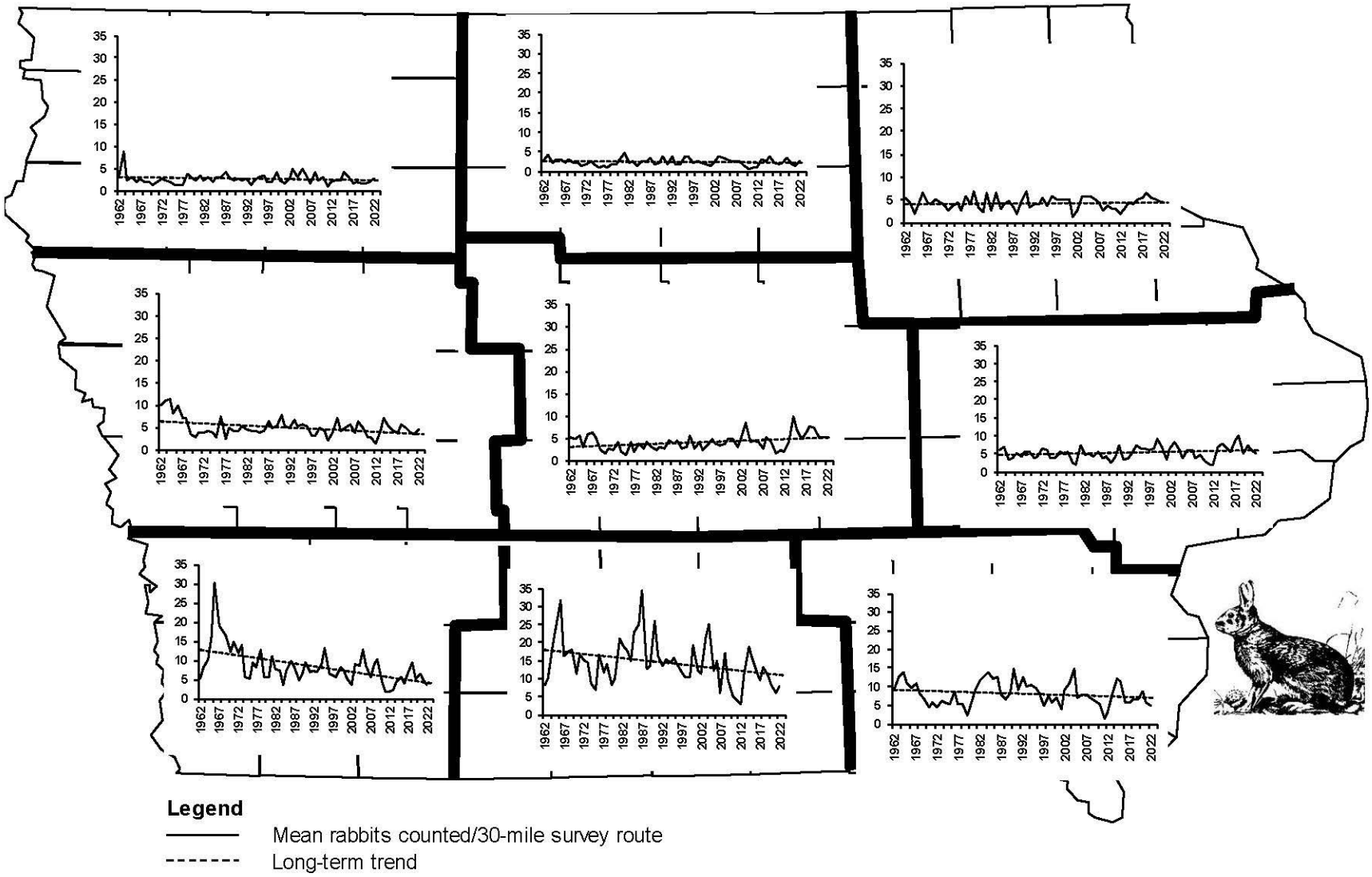


Figure 5.10 Regional trends in cottontail rabbit numbers from the August roadside survey (1962-present)

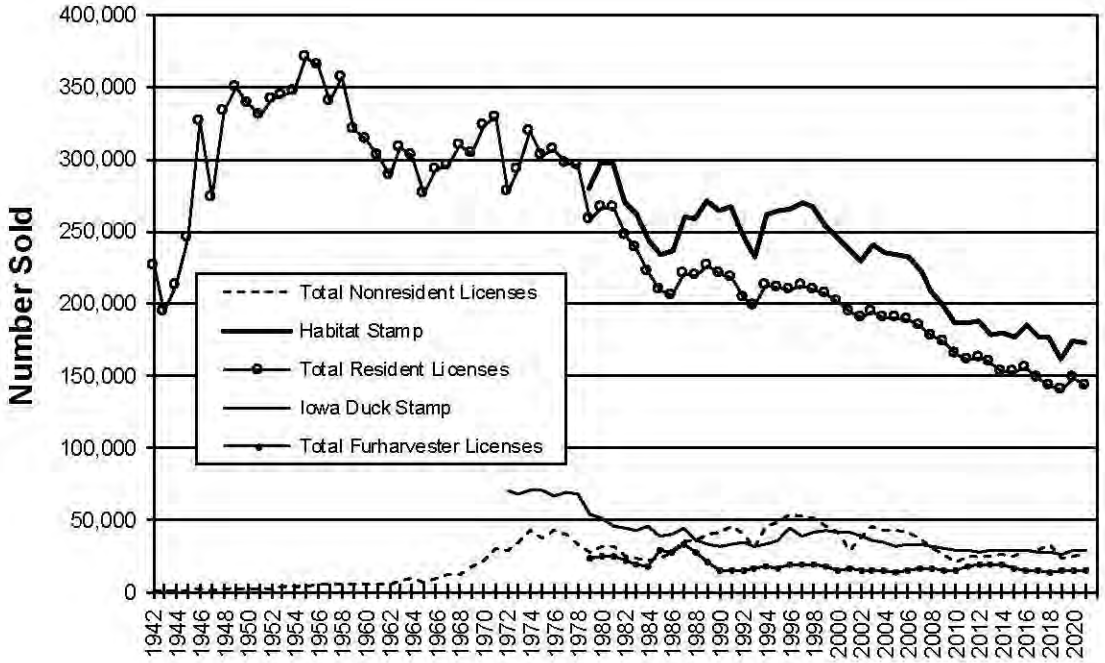


Figure 5.11 Sales of Iowa hunting licenses

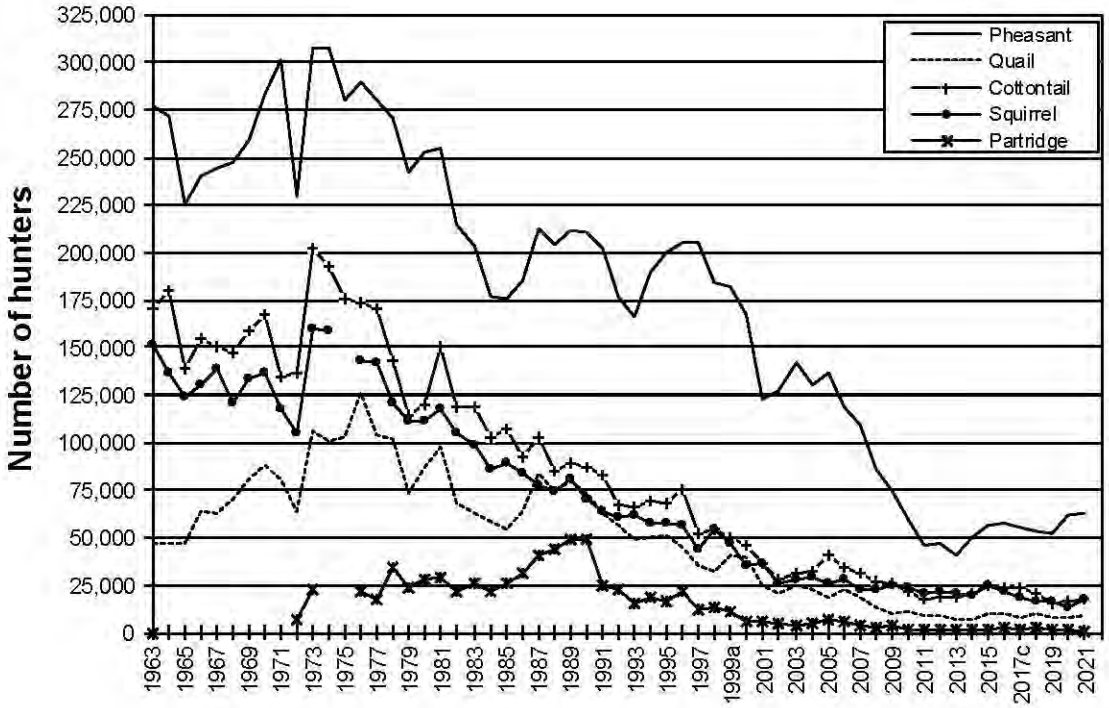


Figure 5.12 Estimated number of Iowa small-game hunters (resident and NR hunters combined)

Tables

Table 5.1 Mean number of pheasants counted per 30-mile route on the August roadside survey.*

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide	Hens/ Cock[a]	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%
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%

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide	Hens/ Cock[a]	Cock[b] Harvest
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		
2021	28.8	30.6	19.7	31.6	25.5	10.3	4.9	8.3	10.3	19.7		
2022	31.5	26.7	16.0	29.2	22.4	13.3	4.9	6.6	12.6	18.9		

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide	Hens/ Cock[a]	Cock[b] Harvest
Mean												
10 Year	28.3	20.8	11.6	21.8	25.0	12.0	6.9	7.6	17.7	17.7		
Long-term	39.0	41.2	38.1	43.2	41.5	38.6	46.6	29.7	24.7	37.8	3.4	69%
Change (%)												
2021	9.6	-12.7	-18.8	-7.7	-12.4	28.2	-1.1	-20.9	22.2	-4.2		
10 Year	11.5	28.5	38.0	33.6	-10.7	10.6	-29.1	-13.7	-28.8	6.8		
Long-term	-19.2	-35.0	-58.1	-.32.5	-46.1	-65.7	-89.5	-77.8	-49.0	-50.1		

[a]Winter sex ratio (hens per cock)

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

*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 hens per cock and cock harvest data are statewide estimates. Hens per cock counts were done the year succeeding the year listed.

Table 5.2 Mean number of broods counted/30-mile route and average brood size (checks/brood) on the August roadside survey.

Year	North West		North Central		North East		West Central		Central		East Central		South West		South Central		South East		Statewide	
	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size
1962	10.1	5.3	11.9	6.1	11.7	6.3	9.5	7.3	7.7	7.2	4.2	5.3	6.8	5.7	1.5	7.3	0.6	7.3	7.2	6.3
1963	12.9	6.9	14.2	5.5	11.8	6.0	12.2	5.8	8.4	5.4	5.8	6.1	15.4	6.5	3.5	5.0	2.4	5.2	9.5	5.9
1964	11.8	5.0	16.9	6.1	11.5	7.4	11.6	6.0	7.4	5.2	6.5	6.2	12.0	6.4	3.1	8.7	1.8	6.3	9.2	6.2
1965	5.9	5.6	8.0	6.2	5.7	5.7	8.7	5.0	4.4	6.1	4.8	7.6	13.3	5.8	5.9	6.0	2.3	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

Year	North West		North Central		North East		West Central		Central		East Central		South West		South Central		South East		Statewide	
	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size
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
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

Year	North West		North Central		North East		West Central		Central		East Central		South West		South Central		South East		Statewide	
	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size
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
2021	5.0	4.5	5.0	4.3	3.1	4.9	5.1	4.4	4.3	4.1	1.7	3.9	0.9	3.6	1.2	4.0	1.6	3.4	3.2	4.2
2022	4.4	5.0	4.3	4.2	2.8	3.8	4.3	4.4	3.7	3.9	2.4	4.0	0.8	4.3	1.2	3.5	1.5	5.2	2.9	4.3
Mean																				
10 Year	4.5	4.5	3.3	4.5	1.9	4.1	3.5	4.4	4.1	4.3	1.8	4.6	1.1	3.9	1.2	4.3	2.8	4.4	2.8	4.4
Change %																				
2021	-12	12	-14	-3	-10	-22	-17	0	-15	-6	47	3	-13	20	1	-15	-8	54	-10	2
10 Year	-3	11	29	-7	47	-8	22	1	-11	-10	34	-13	-28	11	0	-20	-48	17	3	-2
Long-term	-27	3	-27	-18	-49	-23	-35	-7	-41	-21	-56	-25	-89	-8	-74	-31	-60	2	-48	-14

Table 5.3 Mean number of bobwhite quail and white-tailed jackrabbits counted per 30-mile route on the August roadside survey.

Year	Quail										Jackrabbit
	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide	Statewide
1962	0.00	0.00	0.00	1.82	0.23	0.18	0.64	1.55	2.00	0.70	0.382
1963	0.00	0.00	0.08	0.50	0.44	0.13	0.54	5.50	3.13	1.08	0.412
1964	0.00	0.00	0.43	0.50	0.48	0.60	0.83	4.69	4.68	1.33	0.517
1965	0.81	0.04	0.32	0.28	0.25	0.81	2.08	6.76	8.55	2.25	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

Year	Quail										Jackrabbit
	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide	Statewide
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

Year	Quail										Jackrabbit
	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide	Statewide
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
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
2021	0.00	0.00	0.00	0.17	0.59	0.00	1.50	1.20	0.17	0.39	0.005
2022	0.00	0.00	0.00	0.87	0.03	0.13	4.39	2.46	0.58	0.82	0.000
Mean											
10 Year	0.02	0.01	0.10	0.58	0.21	0.25	3.39	3.01	1.80	0.95	0.01
Long-term	0.06	0.00	0.25	0.47	0.24	0.73	3.57	4.56	2.89	1.32	0.125
Change (%)											
2021							192.6	104.8	249.1	111.7	-100.0
10 Year						-48.4	29.5	-18.3	-67.6	-14.5	-100.0
Long-term						-82.1	22.9	-46.1	-79.8	-38.3	-100.0

Table 5.4 Mean number of gray partridge counted per 30-mile route on the August roadside survey.

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	0.89
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
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

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
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
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
2021	3.27	3.89	4.05	0.44	4.09	1.04	0.00	0.00	0.00	2.00
2022	2.77	4.46	3.00	0.09	3.06	0.91	0.00	0.00	0.00	1.71
Mean										

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
10 Year	2.47	5.27	3.40	1.06	3.40	1.03	0.00	0.00	0.01	2.00
Long-term	9.93	8.49	2.97	2.57	4.11	1.09	0.08	0.11	0.15	3.59
Change (%)										
2021	-15.3	14.7	-25.9	-80.0	-25.2	-12.5				-14.6
10 Year	11.9	-15.4	-11.8	-91.8	-9.9	-11.6				-14.5
Long-term	-72.1	-47.4	1.1	-96.6	-25.5	-16.4				-52.4

Table 5.5 Mean number of cottontail rabbits counted per 30-mile route on the August roadside survey.

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	4.9	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	14.0	7.6
1965	3.1	3.0	3.7	7.9	3.1	4.0	16.2	24.3	11.1	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

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
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
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

Year	North West	North Central	North East	West Central	Central	East Central	South West	South Central	South East	Statewide
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
2021	2.2	1.6	4.7	3.3	5.1	6.0	4.9	6.1	5.7	4.3
2022	2.8	2.5	4.4	4.3	5.1	5.0	3.4	7.8	5.1	4.5
Mean										
10 Year	2.3	2.5	4.9	4.5	6.2	6.9	5.2	11.3	7.6	5.7
Long-term	2.7	2.4	4.3	4.8	4.1	5.3	8.4	14.6	8.2	5.9
Change (%)										
2021	28.6	60.7	-7.4	31.6	1.2	-16.0	-29.6	28.0	-10.3	4.2
10 Year	18.2	-0.2	-10.9	-3.8	-17.4	-27.0	-34.3	-30.9	-33.2	-21.0
Long-term	3.7	2.5	1.3	-10.3	25.2	-4.0	-59.2	-46.2	-37.7	-23.6

Table 5.6 Harvest estimates from the Iowa small game survey, resident and nonresident hunters combined.

Year	Pheasant	Quail	Cottontail	Jackrabbit	Squirrel	Huns	Dove
1942*	684,000						
1943	70,000	Spring season					
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	

Year	Pheasant	Quail	Cottontail	Jackrabbit	Squirrel	Huns	Dove
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	
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	26,880	117,024		125,794	1,754	76,474
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
2020	299,548	17,475	75,247		76,622	1,538	81,740
2021	373,035	24,415	101,774		102,926	3,015	162,092
Mean							
10 Year	255,107	22,940	93,675		110,552	1,802	112,352
Long-term	1,010,817	319,390	641,196	22,127	551,911	31,048	107,346
Change (%)							
2020	24.5	39.7	35.3		34.3	96.0	98.3
10 Year	46.2	6.4	8.6		-6.9	67.3	44.3
Long-term	-63.1	-92.4	-84.1		-81.4	-90.3	51.0

[a]Small Game Harvest Survey changed from a single (1998) to a double mailing (1999). Harvest estimates from 1999-present are more conservative than pre-1999 estimates.

[b]Survey methods changed account for unrealistic harvest (e.g. reports of 1 bird harvested for 60 days effort). Hunters asked to report days they hunted rather than trips.

[c]Survey methodology changed in 2017 for unrealistic harvest/day for quail, hun, rabbit, squirrel, dove.

*The 1942-43 data from Conservation Magazine 1955 Vol 14 Issue 10.

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

Table 5.7 Estimated hunters, harvest, and days hunted for pheasant and quail by residency status from the Iowa small game survey

Year	Pheasant						Quail					
	Resident			Nonresident			Resident			Nonresident		
	Hunters	Harvest	Days	Hunters	Harvest	Days	Hunters	Harvest	Days	Hunters	Harvest	Days
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	1,285,878	38,569	319,039	130,363	69,591	381,321	407,078	10,380	44,981	26,052
1990	171,016	1,047,529	1,173,280	39,829	359,473	142,622	61,219	269,896	287,133	11,667	51,597	33,090
1991	161,741	852,158	1,129,983	40,578	286,305	131,035	49,713	184,195	294,665	11,271	47,623	32,124
1992	139,681	677,670	976,851	36,749	247,453	119,021	47,641	155,919	283,054	8,646	23,906	20,854
1993	138,619	999,149	1,075,277	27,642	226,857	104,643	43,027	175,793	220,174	6,318	25,667	20,139
1994	147,841	876,365	1,065,926	41,824	369,216	154,261	41,504	156,413	252,633	8,754	22,176	33,848
1995	155,308	1,118,638	1,265,982	44,995	324,368	166,760	39,653	193,544	248,962	11,185	27,454	41,944
1996	155,889	1,059,385	1,242,058	49,704	307,675	202,474	33,996	62,438	165,153	10,978	18,601	44,215
1997	154,855	1,037,620	1,103,360	50,349	302,432	191,869	24,927	134,418	142,433	10,546	46,607	48,988
1998	141,838	936,181	1,101,550	42,748	301,797	160,303	26,393	83,067	206,032	5,985	17,527	22,229
1999[a]	142,521	684,596	878,967	39,152	214,578	106,880	32,306	86,058	156,855	8,811	24,070	21,305
2000[b]	134,873	781,143	1,103,177	32,648	220,724	170,929	33,114	114,110	265,587	6,843	26,718	36,138
2001	99,125	352,469	675,141	23,781	117,620	118,899	20,459	24,812	133,206	4,132	7,414	19,144
2002	97,842	548,413	760,501	29,757	181,047	143,568	16,194	43,492	120,540	4,693	20,380	30,644
2003	108,819	849,898	960,472	33,414	230,568	162,018	19,937	99,971	151,928	4,958	14,096	22,053
2004	99,753	586,632	746,262	31,009	169,552	145,511	17,139	57,486	129,920	5,197	10,770	21,694
2005	107,255	641,957	818,755	28,937	164,644	130,174	15,277	33,714	81,293	3,301	6,961	16,217
2006	91,642	558,369	720,986	27,038	189,656	137,724	17,787	49,783	97,778	4,769	25,493	23,622
2007	85,803	481,754	600,541	23,426	149,884	121,862	14,227	42,799	115,104	4,007	11,645	18,183
2008	69,640	299,875	475,250	16,231	83,208	71,545	12,114	10,716	92,090	1,791	2,675	7,300
2009	60,708	217,816	423,511	13,309	53,310	60,041	8,237	11,098	59,202	1,942	1,038	10,672
2010	51,258	197,266	347,067	8,800	40,942	41,529	9,150	9,572	53,969	1,454	2,048	7,384
2011	39,515	75,897	219,515	6,460	33,008	30,407	8,574	3,664	51,577	862	875	3,537
2012	41,437	137,215	261,828	5,743	20,884	24,547	7,947	19,420	40,922	822	1,054	2,421
2013	34,688	140,348	244,096	6,293	26,206	26,897	6,165	8,467	47,635	320	241	1,261
2014	41,200	165,000	245,934	8,725	50,816	37,286	5,428	9,666	30,538	1,118	1,039	4,132
2015	46,679	212,858	298,709	9,480	55,606	44,391	8,189	26,081	47,166	1,573	2,281	6,310
2016	46,455	200,229	278,826	10,763	44,540	42,712	9,093	21,452	50,269	912	2,914	2,607

Year	Pheasant						Quail					
	Resident			Nonresident			Resident			Nonresident		
	Hunters	Harvest	Days	Hunters	Harvest	Days	Hunters	Harvest	Days	Hunters	Harvest	Days
2017[c]	45,007	177,762	295,820	9,908	43,529	48,905	6,581	25,373	32,853	938	1,507	3,523
2018	43,707	266,237	289,762	10,196	53,574	45,586	7,811	72,791	50,648	2,071	4,514	6,268
2019	41,708	217,102	275,903	10,183	66,582	52,541	6,264	16,111	40,071	1,867	4,599	8,263
2020	50,867	238,798	326,925	11,064	60,750	44,787	6,876	16,068	56,936	1,028	1,407	4,575
2021	48,267	307,081	333,189	14,465	65,954	69,102	6,891	19,907	42,815	1,785	4,508	11,265
Mean												
10 Year	44,002	206,263	285,099	9,682	48,844	43,675	7,125	23,534	43,985	1,243	2,406	5,063
Long-term	100,489	574,228	697,009	25,468	167,737	102,460	24,648	86,104	135,037	5,384	18,460	18,545
Change (%)												
2020	-5.1	28.6	1.9	30.7	8.6	54.3	0.2	23.9	-24.8	73.6	220.4	146.2
10 Year	9.7	48.9	16.9	49.4	35.0	58.2	-3.3	-15.4	-2.7	43.6	87.3	122.5
Long-term	-52.0	-46.5	-52.2	-43.2	-60.7	-32.6	-72.0	-76.9	-68.3	-66.8	-75.6	-39.3

[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 methods changed to account for unrealistic harvest (reports of 1 bird harvested for 60 days effort). Hunters asked to report days they hunted rather than trips.
[c]Survey methodology changed for unrealistic harvest/day for quail, huns, rabbits, squirrel and doves.

Table 5.8 Sales of hunting-related licenses and stamps in Iowa.

Year[a]	Resident							Nonresident							
			Fur/Fish	Fur		Furharvester		Resident Hunt[d]	Lifetime Over 65[j]	Hunting		Total License[e]	Habitat Stamp[f]	IA Duck Stamp[g]	Hunt Preserve[h]
	Hunting	Combo	Game	Over16	Over 16[b]	Under 16	Total[c]			Over 18	Under 18				
1942	118,252	107,794						226,046				447			
1943	84,671	108,599						193,270				612			
1944	94,361	117,296						211,657				1,163			
1945	105,651	139,958						245,609				998			
1946	133,284	192,844						326,128				1,646			
1947	121,200	152,042						273,242				632			
1948	173,297	158,722						332,019				1,727			
1949	193,280	156,454						349,734				2,256			
1950	187,079	151,032						338,111				2,393			
1951	187,838	141,482						329,320				2,371			

Year[a]	Resident							Nonresident							
			Fur/Fish	Fur	Furharvester					Hunting					
	Hunting	Combo	Game	Over16	Over 16[b]	Under 16	Total[c]	Resident Hunt[d]	Lifetime Over 65[j]	Over 18	Under 18	Total License[e]	Habitat Stamp[f]	IA Duck Stamp[g]	Hunt Preserve[h]
1952	190,669	150,266						340,935				2,391			
1953	192,026	151,956						343,982				3,115			
1954	196,327	150,108						346,435				3,203			
1955	214,210	155,283						369,493				3,936			
1956	217,095	147,890						364,985				4,544			
1957	175,256	164,133						339,389				4,422			
1958	211,742	143,916						355,658				5,521			
1959	179,564	140,682						320,246				4,535			
1960	174,924	138,927						313,851				5,352			
1961	167,519	134,290						301,809				5,448			
1962	174,319	113,768						288,087				5,470			
1963	194,962	112,513						307,475				7,531			
1964	189,060	112,904						301,964				8,370			
1965	165,063	110,577						275,640				6,505			
1966	174,904	117,841						292,745				9,638			
1967	169,819	125,457						295,276				11,244			
1968	184,345	125,079						309,424				12,223			
1969	166,857	136,745						303,602				17,326			
1970	174,074	148,435						322,509				21,898			
1971	171,530	157,012						328,542				30,264			
1972	159,145	118,172						277,317				28,559		70,446	
1973	173,764	117,991						291,755				34,497		67,323	
1974	173,049	145,881						318,930				42,224		70,797	
1975	162,612	139,824						302,436				36,382		70,814	
1976	164,434	142,055						306,489				41,849		66,120	
1977	164,496	132,444						296,940				39,032		69,023	
1978	161,295	134,401						295,696				32,848		67,041	
1979	148,341	109,335		17,602	17,602	4,813	22,415	257,676				27,302	279,621	52,865	768
1980	161,596	105,059		19,366	19,366	5,529	24,895	266,655				30,793	296,667	50,202	822
1981	158,551	107,502		19,116	19,116	4,990	24,106	266,053				31,379	297,297	45,751	742

Year[a]	Resident							Nonresident							
			Fur/Fish	Fur	Furharvester					Hunting					
	Hunting	Combo	Game	Over16	Over 16[b]	Under 16	Total[c]	Resident Hunt[d]	Lifetime Over 65[j]	Over 18	Under 18	Total License[e]	Habitat Stamp[f]	IA Duck Stamp[g]	Hunt Preserve[h]
1982	139,044	106,925		17,505	17,505	4,248	21,753	245,969				24,002	269,290	44,391	751
1983	134,140	103,711		14,964	14,964	3,699	18,663	237,851				23,206	261,340	42,981	766
1984	120,341	101,178		14,537	14,537	3,329	17,866	221,519				21,927	243,154	44,445	696
1985	118,163	90,281		25,156	25,156	3,519	28,675	208,444				22,977	233,779	37,681	729
1986	121,640	83,653	63	23,646	23,709	3,064	26,773	205,356				27,254	236,219	40,157	882
1987	134,155	78,285	8,234	20,689	28,923	3,338	32,261	220,674				35,676	259,350	43,357	1,112
1988	130,547	77,342	10,699	13,406	24,105	2,380	26,485	218,588				35,023	257,702	34,799	1,696
1989	134,894	81,795	9,435	8,976	18,411	1,530	19,941	226,124				40,197	271,342	32,920	1,499
1990	131,601	80,241	7,794	6,059	13,853	973	14,826	219,636				41,500	263,530	31,468	1,786
1991	127,432	81,977	7,791	6,417	14,208	719	14,927	217,200				45,792	266,845	32,537	1,454
1992	142,059	54,028	7,421	6,851	14,272	793	15,065	203,508				39,211	247,673	34,304	1,810
1993	137,489	52,416	8,061	6,611	14,672	829	15,501	197,966				29,231	232,298	31,741	2,137
1994	148,770	54,185	8,334	7,477	15,811	952	16,763	211,289				45,610	260,815	33,232	1,870
1995	146,497	55,367	8,863	6,480	15,343	903	16,246	210,727				48,028	263,531	34,903	2,467
1996	137,724	62,834	9,105	8,132	17,237	1,021	18,258	209,663				53,058	265,653	43,060	2,317
1997	135,010	66,398	10,122	8,208	18,330	1,066	19,396	211,530				52,730	269,443	38,275	2,516
1998	133,000	65,129	10,661	7,664	18,325	1,078	19,403	208,790				50,511	266,519	40,349	3,107
1999*	Discontinued				***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

Year[a]	Resident							Nonresident							
	Hunting	Combo	Fur/Fish Game	Fur Over16	Furharvester Over 16[b]	Furharvester Under 16	Total[c]	Resident Hunt[d]	Lifetime Over 65[j]	Hunting Over 18	Hunting Under 18	Total License[e]	Habitat Stamp[f]	IA Duck Stamp[g]	Hunt Preserve[h]
2012					17,970	1,215	19,185	161,642	2,350	23,766	793	24,559	187,698	26,420	2,270
2013i					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					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
2020					14,527	597	15,124	148,124	3,624	23,489	714	24,203	174,174	28,140	1,757
2021					14,593	556	15,149	142,820	3,637	26,239	575	26,814	172,211	28,160	1,985
Mean															
10 Year					15,125	843	15,968	150,045	2,958	25,272	811	26,083	176,685	27,700	2,194
Long-term					16,300	1,593	17,894	246,419	2,426	30,123	1,192	23,603	230,629	39,837	2,086
Change (%)															
2020					0	-7	0	-4	0	12	-19	11	-1	0	13
10 Year					-4	-34	-5	-5	23	4	-29	3	-3	2	-10
Long-term					-10	-65	-15	-42	50	-13	-52	14	-25	-29	-5

[a]ELSI electronic licensing system in 1999

*Resident hunting combination, fur/fish/game licesnses and furharvester were license types issed 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. Lifetime Furharvester license type (34) added in 2019.

[c]Total furharvester sales 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 years total NR licenses is sum of NR over and under 18 sales after 1999 ELSI implementation. NR Apprentices license (38) added in 2016, NR 5-day licenses (40, 41) added in 2019.

[fgh]Numbers represent combined resident and non-resident sales. Habitat fee license types (9, 20, 24, 28-32, 37, 38, 41, 93, 94)

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

[j]Includes Vet Lifetime license type (821) beginning in 2018

Table 5.9 Estimated hunter numbers and days hunted (resident and nonresident combined) from the Iowa small game survey.

Year	Pheasant		Quail		Cottontail		Jackrabbit		Squirrel		Huns		Dove	
	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days
1925*	75,000													
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	1,416,241	79,971	433,130	89,054	419,336	5,634	38,364	80,937	391,257	48,785	289,071		

Year	Pheasant		Quail		Cottontail		Jackrabbit		Squirrel		Huns		Dove	
	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days
1990	210,845	1,315,902	72,886	320,223	87,437	431,627	4,679	9,044	70,539	305,551	49,220	239,066		
1991	202,319	1,261,018	62,684	326,789	83,200	385,398	4,001	6,018	63,601	299,538	25,165	168,761		
1992	176,430	1,095,872	56,287	303,908	66,967	294,922	5,802	23,676	60,443	266,256	22,949	114,239		
1993	166,260	1,179,920	49,345	240,313	65,704	282,336	1,547	5,957	62,175	275,771	14,920	50,156		
1994	189,664	1,220,187	50,258	286,481	68,840	269,206	1,239	3,947	57,381	294,027	18,294	101,603		
1995	200,302	1,432,742	50,839	290,906	68,499	305,178	4,361	8,142	57,495	287,766	15,954	75,444		
1996	205,592	1,444,532	44,974	209,368	75,870	403,848	2,623	8,112	56,382	222,331	21,914	188,344		
1997	205,203	1,295,229	35,473	191,421	51,785	258,715	2,872	19,748	43,632	212,564	12,330	114,369		
1998	184,585	1,261,853	32,378	228,261	54,588	264,193	1,604	6,493	53,859	108,568	13,502	111,038		
1999[a]	181,673	985,847	41,117	178,160	50,254	208,218	2,456	11,837	46,994	174,920	11,390	57,884		
2000[b]	167,521	1,274,106	39,957	301,725	46,311	335,299	1,572	13,503	35,395	232,032	6,043	65,631		
2001	122,906	794,040	24,591	152,350	36,125	208,122	2,933	19,093	36,760	203,331	5,757	35,917		
2002	127,599	904,069	20,887	151,184	27,945	177,961	1,692	20,351	25,482	145,692	4,417	33,012		
2003	142,233	1,122,490	24,895	173,981	31,600	204,593	326	4,590	27,863	170,971	4,054	49,850		
2004	130,583	891,773	22,336	151,614	32,195	276,306	600	6,389	29,302	218,276	4,537	46,331		
2005	136,192	948,929	18,578	97,510	40,225	200,177	1,870	13,369	25,943	113,748	7,147	44,080		
2006	118,680	858,710	22,556	121,400	34,292	187,376	1,989	7,838	27,746	138,572	5,553	30,289		
2007	109,229	722,403	18,234	133,287	31,106	286,446	1,502	7,421	23,160	144,960	3,819	18,232		
2008	85,871	546,795	13,095	99,390	27,191	158,214	1,405	14,498	22,857	134,128	2,996	20,414		
2009	74,017	483,552	10,179	69,874	25,840	137,337	1,894	8,721	24,586	139,791	3,705	25,113		
2010	60,058	388,596	10,604	61,353	22,005	113,597	541	3,568	23,440	127,999	1,229	9,895		
2011	45,975	249,922	9,436	55,114	17,197	104,457	Closed		20,420	119,802	1,782	13,325	8,780	45,603
2012	47,180	286,375	8,769	43,343	18,247	81,105			21,698	124,814	1,481	11,321	9,328	29,018
2013	40,981	270,993	6,485	48,896	18,903	86,100			20,203	82,973	1,651	11,134	8,208	34,707
2014	49,925	283,220	6,546	34,670	20,904	97,618			19,704	96,473	1,631	8,071	11,396	43,950
2015	56,159	343,100	9,762	53,476	24,838	113,876			25,081	145,467	1,994	9,075	11,353	39,546
2016	57,218	321,538	10,005	52,876	23,475	111,104			21,874	96,972	2,686	14,237	13,409	51,713
2017[c]	54,915	344,725	7,519	36,376	23,299	107,313			18,301	124,149	2,013	5,421	9,568	35,089
2018	53,266	335,348	9,882	56,916	20,523	102,596			16,749	60,737	2,379	10,295	9,767	32,594
2019	51,891	328,444	8,131	48,334	15,173	69,686			16,018	92,464	1,561	5,734	9,000	34,607
2020	61,931	371,712	7,904	61,511	16,152	82,028			13,553	70,159	1,713	12,583	8,585	35,710
2021	62,732	402,291	8,676	54,080	16,919	90,500			17,500	57,572	861	1,655	10,942	43,331

Year	Pheasant		Quail		Cottontail		Jackrabbit		Squirrel		Huns		Dove	
	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days	Hunters	Days
Mean														
10 Year	53,620	328,775	8,368	49,048	19,843	94,193			19,068	95,178	1,797	8,953	10,156	38,027
Long-term	179,216	799,469	49,332	153,582	85,420	207,721	9,005	11,849	71,401	172,110	14,915	60,351	10,031	38,715
Change (%)														
2020	1	8	10	-12	5	10			29	-18	-50	-87	27	21
10 Year	17	22	410	-15	-4				-8	-40	-52	-82	8	14
Long-term	-65	-50	-82	-65	-80	-56			-75	-67	-94	-97	9	12

[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 methods changed account for unrealistic harvest (reports of 1 bird harvested for 60 days effort). Hunters asked to report days they hunted rather than trips.

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

*From Conservation Magazine 1955 Vol 14 Issue 10.

**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
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

Year	Dates Regular/Youth	Season Length (days)	Shooting Hours	Limit Bag/Poss.		# Counties Open
				Regular	Youth	
	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
	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		

Year	Dates Regular/Youth	Season Length (days)	Shooting Hours	Limit Bag/Poss.		# Counties Open
				Regular	Youth	
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				
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				
2021-22	30 Oct-10 Jan/23-24 Oct	73/2				
2022-23	29 Oct-10 Jan/22-23 Oct	74/2				

[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	
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			

Year	Dates	Season Length	Shooting Hours	Limit Bag/Poss	Area Open
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			
2021-22	30 Oct-31 Jan	94			
2022-23	29 Oct-31 Jan	95			

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

Year	Dates	Season Length	Shooting Hours	Limit Bag/Poss	Area Open
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			
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			
2021-22	9 Oct-31 Jan	115			
2022-23	8 Oct-31 Jan	116			

Table 5.13 Iowa's cottontail and jackrabbit hunting 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	
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	

Year	Dates Cottontail/Jackrabbit	Season Length	Shooting Hours	Limit-Bag/Poss		Area Open
				Cottontail	Jackrabbit	
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				
2021-22	4 Sep-28 Feb/Closed	178/Closed				
2022-23	3 Sep-28 Feb/Closed	179/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.

WILDLIFE RESTORATION 2021-2022 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-19th century until about 1900. Numbers peaked about 1880 when most of Iowa was a mosaic of small grainfields, 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 25-50 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 1930s, most prairie chickens found in the northwestern part of the state were migrant winter flocks. By the 1950s, 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 1980s, 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 1960s. 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 60-100 km southeast of the Ringgold Wildlife Area and 10-40 km south of the Iowa border (Larry Mechlin, MDC, *pers. comm.*). Some of these birds were spotted in Iowa over the years.

Continued Restoration

Recent 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 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 2022 covers all or parts of 3 counties (not including two counties in Missouri) and 31 survey sites. All 31 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 20 minutes at each of 15 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 are done on and around the Dunn Ranch in Missouri. It is possible that some booming grounds have not been located.

One final method Iowa uses to survey prairie-chickens, which Missouri does not, is a winter flock survey. The survey consists of driving 3 standardized routes after a snowfall and counting any winter flocks observed. The routes cover an area around each of the three known lek areas: d Kellerton WMA, Tingley and Lamoni.

Results (Current and Previous 10 Years)

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 Kelleron 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 results 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.

2021: Repeated route lek surveys were performed on 34 sites between March 20 and April 20 and a lek survey blitz happened on April 6, 2021. The Missouri Department on Conservation was able to participate in the blitz-style survey but because of staffing shortages could not complete the route-based surveys in their portion of the Grand River Grasslands. Winter flock surveys were conducted in January and February 2021 in Iowa only.

The Kellerton and Lamoni winter flock survey routes were conducted twice and the Tingley route was conducted once. No prairie-chickens were detected on the Lamoni or Tingley routes and a maximum of 14 birds were counted across three locations on the Kellerton route.

The results of the breeding season survey were similar. The highest count on a single morning was 13 birds all around the Kellerton WMA area. One male was detected booming on the first visit to the Tingley area lek but was not detected on two subsequent visits. The Lamoni area lek had no detections in 2021. Iowa only had 2 reliably active leks, which are very close to one another this year.

Missouri counted 27 birds on their one blitz-style survey on 6 lek sites. This was down from 35 counted on this same day in 2020.

With a total of 47 birds counted on surveys across Iowa and Missouri, 46 of which were male, a rough estimate of the population is between 90 and 100 birds if sex ratios are equal. These are the lowest numbers recorded since prior to the translocation.

2022: Repeated lek surveys were performed on 31 sites between March 20 and April 20, and a blitz style survey of selected leks was done on April 7, 2022. These surveys were conducted in Iowa and Missouri. Winter Flock surveys were conducted in late February, 2022.

All three winter flock survey routes were surveyed once on February 25, 2022. The route around the Kellerton lek site was the only area to have any flock activity and only one flock of 16 birds was detected.

Lek counts were similar to 2021, with only 3 active leks detected. The Lamoni area lek was surveyed 3 times across both methods of lek survey and only one male was detected booming one time. The Tingley lek was inactive. The only reliable activity was at Kellerton WA's lek and its satellite lek on private ground. A maximum of 17 birds were counted in a single morning between these two lek sites, 14 males and 3 females. On April 9th, the Iowa DNR hosted our public viewing day for prairie chickens at the Kellerton viewing platform and a total of 20 birds were counted on this day between the two leks, 16 males and 4 females.

Results in Missouri were inconclusive. The primary lek site on Dunn Ranch was abandoned this spring and a consistent alternative lek location was never found. Two birds total were counted on the route lek survey and no birds were detected on the blitz survey. The difficulty locating the birds' breeding location in Missouri led to unreliable counts for 2022.

Without a reliable estimate of birds in Missouri we can only be certain that there was a minimum of 20 birds in Iowa. Trail cameras were installed on the Kellerton and satellite lek in 2022 but these data are still being processed.

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 numbers were hopeful as the birds were able to maintain and even very slightly increase numbers after two bad years. Unfortunately, that trend did not continue into 2021 and the numbers did not improve this year. The instability of some of the major lek sites is also a concern, particularly because it is unclear what is causing the birds to change location.

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

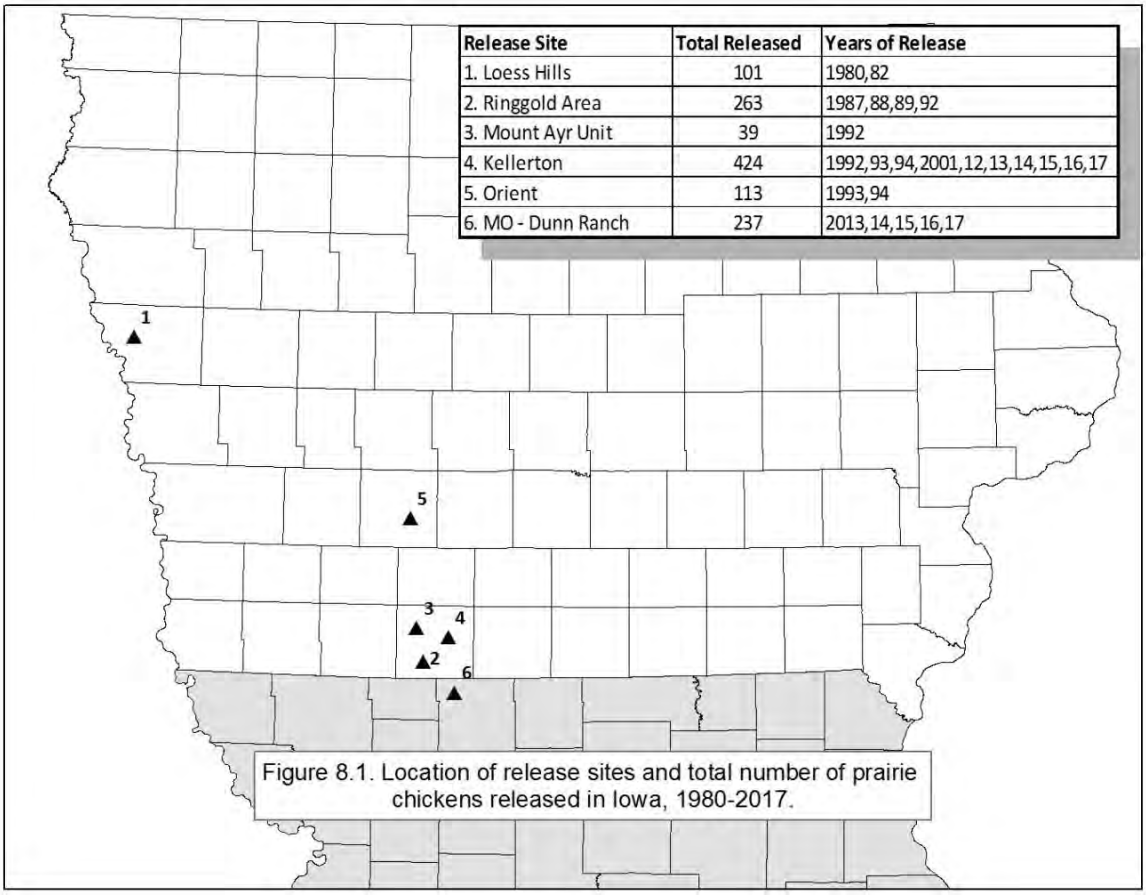

Figure 6.1 Location of release sites and total number of prairie chickens released in Iowa, 1980-2017.

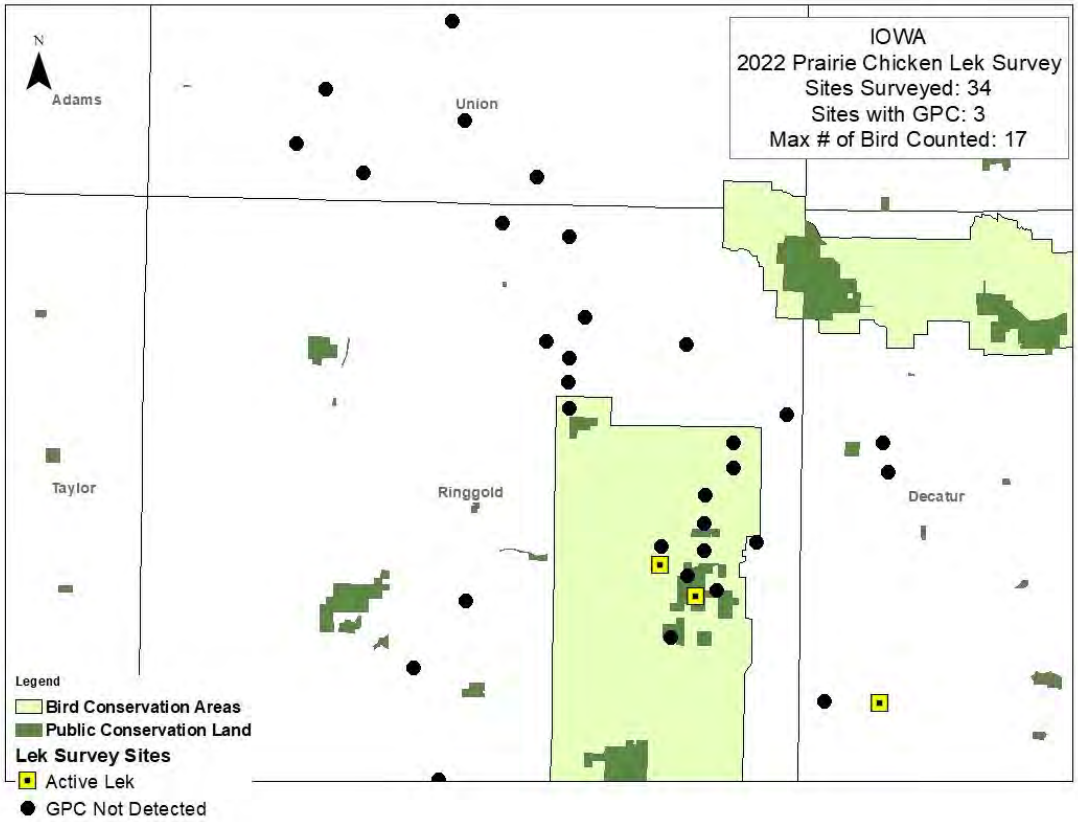

Figure 6.2 Location of sites surveyed and sites where chickens were detected during the 2021 Prairie-chicken lek surveys both route based and blitz combined.

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
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, 2012-2022

County	Township	Legal Description			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
		Twp.	Rge.	Sec.											
Adams	Douglas	72N	35W	26											
Adams	Prescott	72N	33W	4											
Decatur	Grand River	69N	27W	16											
Decatur	Grand River	68N	27W	33											
Decatur	Garden Grove	70N	24W	36											
Ringgold	Athens	68N	28W	4											
Ringgold	Athens	68N	28W	16NE	2	9	17	35	28	17	24	18	16	3	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	10	2
Ringgold	Athens	68N	28W	6	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	1	0
Ringgold	Liberty	69N	29W	3								1			
Ringgold	Tingley	70N	29W	34											
Wayne	Jackson	68N	21W	18											
Total Chickens[b]		mean=		31.73	17	24	22	55	55	36	49	31	28	14	19
Total Active Sites		mean=		4.182	4	4	3	5	6	5	7	3	4	3	3
Total Chickens/Sites[b]					4.25	6	7.3	11	9.2	7.2	7	10.3	7	4.7	6.3

[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 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 1930s indicated that only 69 trumpeters existed in the continental United States, all occurring in the Red Rock Lakes area in southwest Montana. The Red Rock Lakes became the nation's first National Wildlife Refuge in order to protect 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 376 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 obtaining and transporting 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 2023.

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. Geological Survey (USGS) 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 USGS 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 USGS 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 2022, 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). Based on 20 years of migration observations, the largest concentrations of migrating Iowa swans winter in northeast and east-central Kansas and northwest and west-central Missouri. Iowa swans also winter near Heber Springs, Arkansas and the Riverlands Bluffs area in southwestern 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 1880s. 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 near Atlantic, Laurie Severe's Pond near Nora Springs, Dale Maffitt Reservoir southwest of Des Moines, Ada Hayden Heritage Park in Ames 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 partnered with Iowa State University (ISU) to capture and deploy GPS/GSM collars on trumpeter swan cygnets. Goals of the project included: 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. One GPS/GSM collared swan traveled 1,800 miles northwest into northern British Columbia for the summer and later migrated south for the winter, traveling over 3,800 miles in one year.

In 2020-2022 the DNR partnered with a multi-state research project lead by the University of Minnesota which is focused on understanding the movement ecology of the Interior Population of Trumpeter Swans. The DNR deployed GPS/GSM collars on 11 adult Trumpeter Swans across Iowa. DNR also conducted a cygnet winter survival study by placing green neck collars and matching leg bands on 37 cygnets reared by the GPS/GSM collared adults. We followed the movements of the family groups and recorded survival through collar re-sighting from September 2020 to April 2021. Our research found an average 78% cygnet survival rate over their first winter.

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.

Lead poisoning

Iowa has recorded 230 Trumpeter Swan deaths from lead poisoning between 1995 and 2022. Lead poisoning increases in years of drought when wetland water levels are low and legacy and recent lead (from shot and sinkers, respectively) is more easily accessible and more likely to be ingested by foraging waterfowl. For example, 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. 40% of reported swan deaths in Iowa are lead related.

Collision with power lines

Iowa has recorded 197 Trumpeter Swan deaths associated with power line collisions between 1995 and 2022. Swans have large wingspans and heavy bodies, increasing their likelihood of colliding with power lines because they are unable to quickly reroute their flight. Recently fledged cygnets may be more threatened by power line collisions as they learn to

fly. Weather conditions such as dense fog also increase incidence of power line collision across all ages of Trumpeter Swans. Collisions may cause instantaneous fatality, or may injure swans so they cannot fly and do not survive for long. In some cases, swans that collide with power lines can successfully recover and be released if taken to a licensed wildlife rehabilitator. 33% of reported swan deaths in Iowa are due to power line collisions.

Illegal harvest
Iowa has recorded 89 Trumpeter Swan deaths associated with illegal harvest between 1995 and 2022. An estimated 40% of the shootings are reported as intentional. Shooting a trumpeter swan can result in a citation of $1,500, liquidated damages, court costs, and possible hunting license revocation. 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. 14% of reported swan deaths in Iowa are due to illegal harvest.

Disease
Iowa has recorded 58 Trumpeter Swan deaths due to disease between 1995 and 2022. The most common diseases affecting Trumpeter swans are Aspergillosis and Avian Cholera, although many others could possibly contribute to mortality. 9% of reported swan deaths in Iowa are due to disease.

Malnutrition
Iowa has recorded 13 Trumpeter Swan deaths due to malnutrition between 1995 and 2022. Most malnutrition mortalities affect pre-fledging cygnets and occur in drought years when wetlands dry up and foraging options are limited. 2% of reported swan deaths in Iowa are due to malnutrition.

Current Status of the Trumpeter Swan Restoration Program
Trumpeter Swans are nearing sustainable numbers in north central and east central Iowa and populations have exceeded initial restoration goals. 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. The southern half of Iowa has been the priority area for restoration work and cygnet releases in recent years 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 southern Iowa is desired. The goal of eight nesting pairs south of Interstate 80 by 2022 was reached during the 2020 breeding season. A trumpeter swan management plan is currently being drafted and will determine the future course of action in Iowa.

Due to COVID-19 public swan releases were canceled and no swans were released in 2020. Nineteen trumpeter swans were released in Iowa in 2021 (Table 6.3). A total of 1,237 trumpeters have been released to date. A total of 129 wild free flying Trumpeter swans have been captured, banded and released in Iowa since 1997 (Table 6.4). There were 54 nests reported in 2017 and 2018 and 55 nests reported in 2019 (Figure 6.3). Additional efforts to survey Iowa swan nests in 2020 resulted in 119 trumpeter swan nest attempts tallied. No formal nest monitoring occurred during the 2021 breeding season, but a monitoring strategy will be developed as part of the forthcoming Trumpeter Swan Management Plan. A preliminary tally estimates ~130 nest attempts in 2022.

Since 1998, 822 known trumpeter swan nests have occurred in Iowa (Table 6.5). Spring flooding accounts for 5-10% of annual nest loss. Nesting attempts, nest success, and cygnet survival was reportedly down in 2021 due in part to drought conditions in many parts of the state. 2022 seemed to be a more normal nesting year. 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 2021 and 2022. Also of note, several pairs of swans released in Iowa are now nesting in Southern Minnesota and Wisconsin.

A total of 3,164 trumpeters were tallied in 51 out of 99 counties during the mid-winter waterfowl survey in January 2022.

The number is up from 3,080 trumpeters tallied in January 2021 (Table 6.6). In some years, it appears the colder temperatures and harsher winter weather in MN and WI may force 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 expect their numbers to remain strong as they continue to expand their breeding range.

Figures

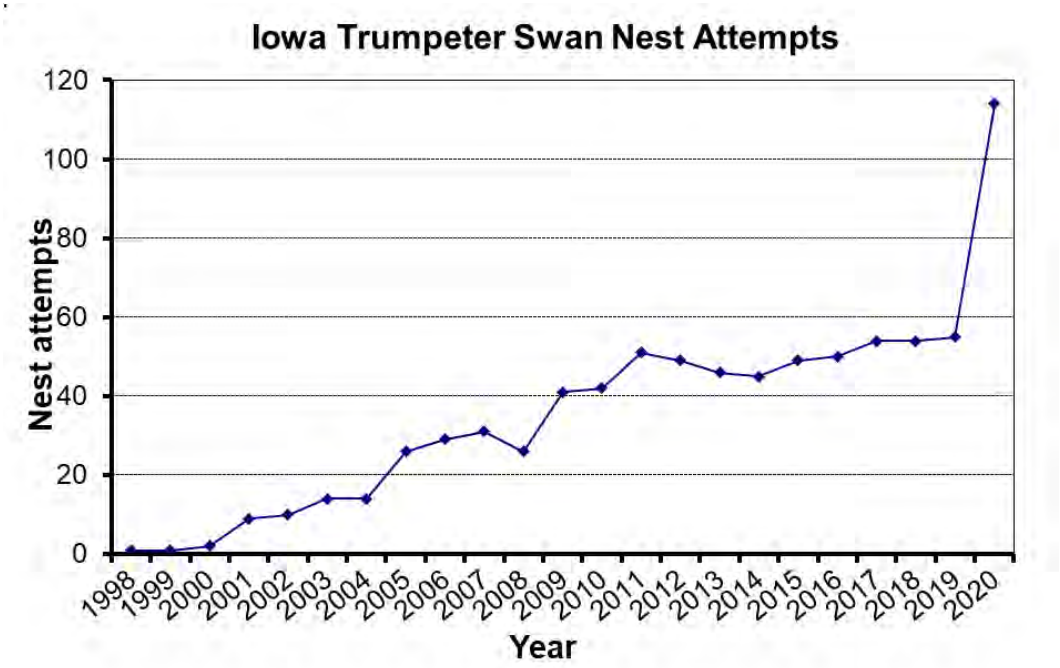

Figure 6.3 Iowa Trumpeter Swan Nests Attempts by Year

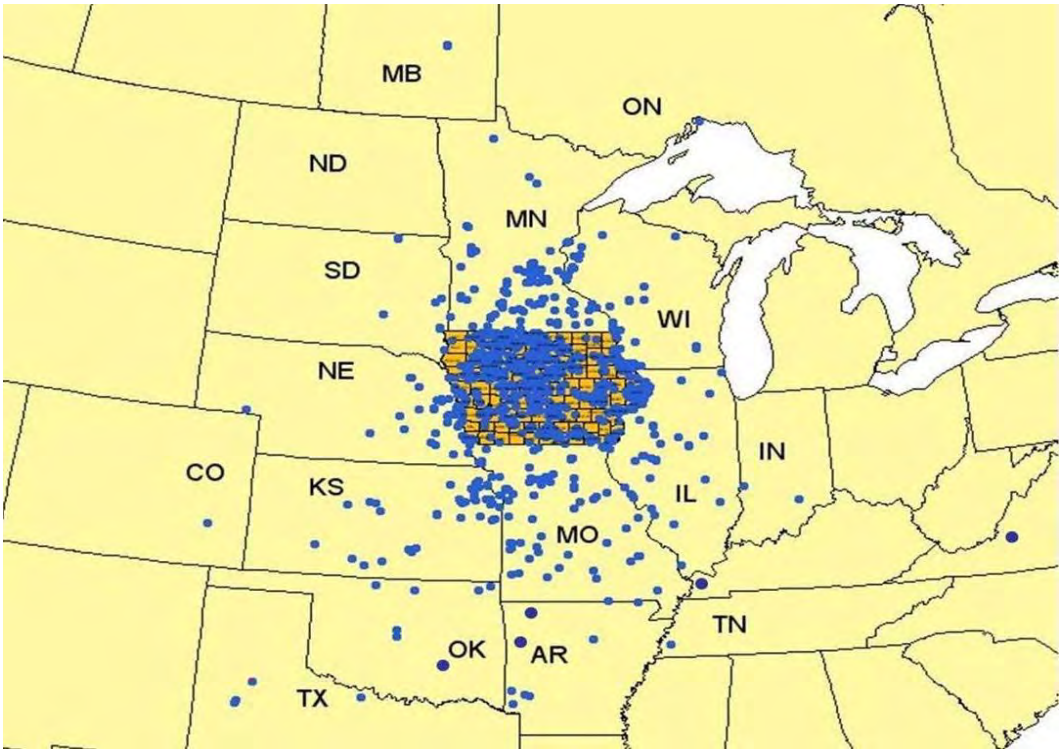

Figure 6.4 Observation reports of Iowa-collared/banded Trumpeter Swans, 1995-2022.

Tables

Table 6.3 Trumpeter Swans released in Iowa (2019 and 2021).

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
2021	Lake Anita	Cass	2	1	3
	Lake Icaria	Adams	6	3	9
	Sedan Bottoms	Appanoose	3	2	5
	Viking Lake	Montgomery	1	1	2
				Total	19
		(1994-2021)		Grand total	**1,237**

Table 6.4 Wild free flying Trumpeter Swans banded and released in Iowa (1997-2021).

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
2020	Twelve Mile Lake	Emmet	1	2	3
2020	CREP	Floyd	4	1	5
2020	Private wetland	Hamilton	2	5	7
2020	Gladfelter Marsh	Hancock	1	4	5
2020	High Amana	Iowa	1	0	1
2020	Negus Rec area	O'Brien	3	3	6
2020	Private wetland	Story	2	2	4
2020	Cardinal Marsh	Winneshiek	5	1	6
2020	Hanlontown/Elk Creek	Worth	13	4	17

Year	Area	County	Males	Females	Total
2021	Private wetland	Clinton	1	0	1
2021	Hale Slough	Dickinson	0	2	2
2022	Lakin Slough	Guthrie	1	0	1
				Total	129

Table 6.5 Wild free flying Trumpeter Swans nest attempts and total number of released swans (1997-2021).

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			
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	123	97	436	4.5	305		0	3080	-21.4	
2021							0	3164	2.7	
Total	822	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
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
2020	125	115		55	440	375		64	3080 Midwinter survey
2021	76	91		65	40	600	35	150	3164 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

Bald Eagle (*Halieetus leucocephalus*) status in Iowa, 2021

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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 community scientists to annually monitor 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 2021 nesting season, Iowa had 487 active Bald Eagle territories. 74% of the 354 nests surveyed were successful and on average 1.7 young were produced per nest. A total of 1,936 Bald Eagles were counted on the Bald Eagle Midwinter survey, averaging 1.2 birds observed per mile of river surveyed. The results of both surveys suggest that 2021 was an average year for Bald Eagles that nest and/or winter in Iowa and they still have an overall trend of 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 1960s and 1970s 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. Since that time the bald eagle population has remained on an upward or stable trajectory.

The Iowa DNR uses two different surveys to monitor Bald Eagle Populations in Iowa: Bald Eagle Nest Monitoring and the Bald Eagle Midwinter Survey.

The goal in monitoring Bald Eagle nesting data is to measure reproductive success while also building 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 population's health.

The Bald Eagle Midwinter Survey, focuses on the 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 January 2021 and the nesting season that followed.

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 6.5). Opportunistic reports of new nests or existing nest activity from various sources are accepted. However, for most summary and analyses, monitoring data collected by trained volunteers and staff are used. In 2021, standardized data was collected on 354 Bald Eagle territories in 86 Iowa counties spaced across the state (Figure 6.5).

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 153 bald eagle breeding sites established as sentinel territories. The goal is to have most of these sentinel nests, in addition to the non-random nests, monitored reliably on an annual basis by trained volunteers (Figure 6.6). 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.

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 2021, 1,676 miles of river or lake shore were surveyed on 50 standardized routes (Figure 6.7). 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.

Methods

Bald Eagle Nest Monitoring

Since eagles returned to nest in Iowa in the late 1970s, 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 all Iowans. These data are not systematically collected so the data available for each breeding territory varies. Additionally, the territories reported on may not be representative (i.e. people may be more likely to report an active nest versus an inactive nest).

To complement the opportunistic reports received, the Iowa DNR has a program to collect data on bald eagle nesting territories in a more systematic manner. This data collection method relies heavily on trained community volunteers who monitor nests that are assigned to them in their area. 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 it was determined that no differences in the data would provide an overly positive or negative result.

Volunteer monitors visit their assigned nest site at least 3 times during the nesting season and collect data on the nest's activity, number of young and number of fledglings. Nests are observed using optics from a distance to avoid disturbance 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 they 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. 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 conservation actions.

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 the 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 2021, the dates for the survey were January 6-20th with target dates of the 8th and 9th.

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 6.8). 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.

Results

Bald Eagle Nest Monitoring

Since 1977, approximately 1,129 bald eagle territories have been recorded by 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 6.9). Allamakee County, with 148, has the highest number of nests reported, followed by Clayton County with 71 (Figure 6.9). Following the 2021 nesting season, 389 territories have an overall designation of active, 258 are designated inactive, and 384 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.

In 2021 a total of 354 nests were monitored; 97 sentinel territories and 257 non-random nests.

Within the 354 territories monitored, 291 were active (82%), 59 were inactive (14%) and four were reported as activity unknown (Table 6.7). The outcome of the nesting season for the 291 active territories broke down as follows: 216 nests successful, 22 failed and 53 unknown (Table 6.7, Figure 6.10). Failed nests usually had birds at the nest early but they either abandoned or did not produce young.

Out of the 170 territories which had reliable reports of the nest's outcome in producing young, 282 young were produced: 14 nests fledged no young, 41 nests fledged 1 young, 92 nests fledged 2 young and 19 nests fledged 3 young. The estimated number of young produced per nest was 1.7 (Table 6.7).

For 86 territories, monitors were able to collect data on the number of chicks and the number of fledglings. Four young were lost before fledging. From these data it appears that eaglet survival to fledging was high; 98% of the chicks observed in these nests reached fledging (165 total young counted, 161 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.

Bald Eagle Midwinter Survey

In 2021, 50 routes were completed, covering 1,676 miles of habitat. Twenty-three (46%) of the 50 surveys were conducted on the target dates of January 8-9th and the average survey took 153 minutes to complete. Weather conditions during the survey were relatively mild with an average temperature at 31^{o} Fahrenheit, which was quite high compared to previous years. Despite the warmer temperatures, the average percentage of ice cover on the waterways was higher than the previous two years (which was 18% and 25% respectively) at 61%.

A total of 1,936 Bald Eagles were counted during the 2021 Bald Eagle Midwinter Count, which is one of the lower counts in the survey's history, especially in the last 20 years (Figure 6.12). It is a below the previous 10-year average of 3,159 birds. The average number of birds counted per route was 39 or 1.2 eagles per mile surveyed (Figure 6.13). A total of 1,308 of the birds counted, or 68%, were adults and 604 (31%) were immatures (Figure 6.14). The remaining 24 birds counted could not be aged.

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 2021, the total number of birds counted was highest on the Mississippi River and the Iowa River actually edged out the Des Moines river for total birds counted (Table 6.8). The Iowa river also had the highest number of eagles per mile (6.99) except for a roost site count on the Nodaway River. The Des Moines had the third highest number of total eagles this year.

Discussion

Bald Eagle Nesting

The original Northern States Bald Eagle Recovery Plan (Grier et al., 1983) set recovery goals at 1,200 nesting pairs across 16 states with an average of 1.0 young produced per nest. With a minimum of 400-500 nesting pairs in Iowa alone and an average young/nest consistently between 1 and 2, Iowa is positively 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. While the Bald Eagle Nest Monitoring survey is not designed to document the increase in nesting territories, focusing instead on reproductive success, the trend in the bald eagle midwinter survey supports an upward or stable trend since 1991.

The conservatively estimated nest success rate of 74% is higher 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, which includes those with an unknown outcome and if those nests are removed, nest success rate jumps to 91%. 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.

Of the territories monitored in 2021, 82% were active and 74% were successful in producing an average of 1.7 young. Using those percentages to extrapolate out to all the 487 known active nests in the state, there was a total of 361 nests in Iowa that produced 614 total young. With 487 territories classified as active in Iowa, that places the adult population of breeding Bald Eagles at a minimum total of 974. The Bald Eagle population is four times the original goal set for Iowa in the early recovery plan (Grier et al., 1983) and the successful reproduction rates suggest the population is currently stable or growing.

The number of nests monitored and reported on in 2021 shows a continuing upward trend in the number of nests being monitored by the program. A total of 135 volunteer monitors collected data on these 354 nests! This represents 72% of known active nests in the state.

As a whole, 2021 was an average nesting season. A lower percentage of nests were active compared to 2020 but the success rate and number of young produced went up slightly. The introduction of an easy to use public reporting form on the DNR webpage also helped add many new territories to the database.

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 2021, after a very large count in 2020, we were back to 2016 levels with a very low count, well below the 10-year average.

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. In fact, 2021 had substantially higher ice coverage than 2020 but with many fewer birds counted. This doesn't necessarily mean that weather doesn't have an effect but the survey design may not be appropriate for measuring it. 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. For example, what explains the large increase in the number of eagles on the Iowa river in 2021 compared to previous years?

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. 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.

In 2021, a mix of 81 volunteers and natural resources professionals spent over 125 collective hours surveying 1,676 miles of waterbody shoreline.

Management Implications

2021 was an average year for eagles in Iowa. They showed up in smaller numbers during the winter but then had a hugely successful nesting season. Based on these 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.

Acknowledgments

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 community scientists who volunteer their time. A huge thanks goes out to all the volunteers who generously make such important yearly contributions of time and energy 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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Figures

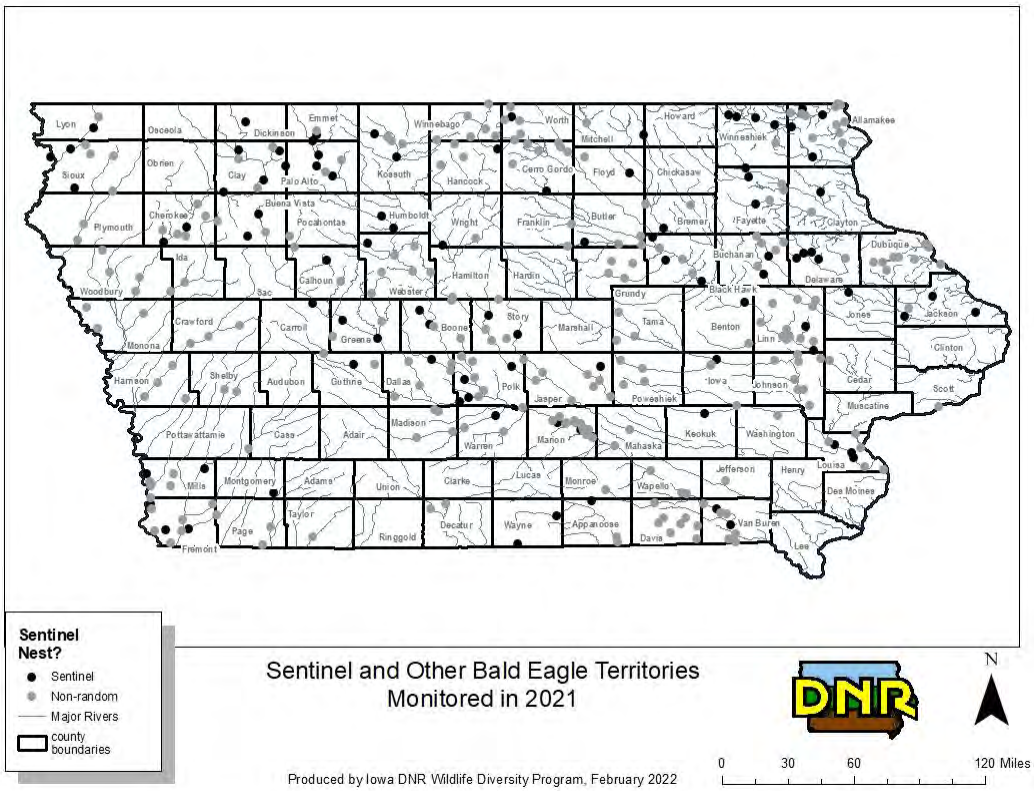

Figure 6.5 Data was collected on 354 nests in 86 Iowa Counties in 2021. Sentinel Nests were randomly selected, other nests were non-random.

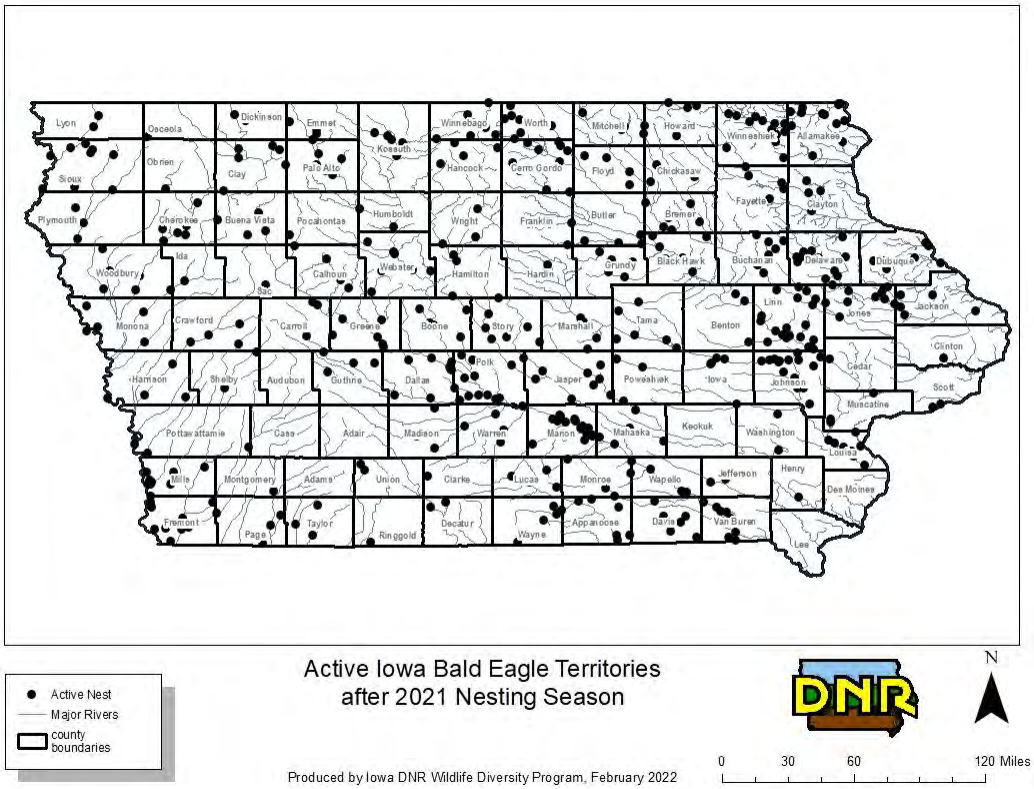

Figure 6.6 Active Bald Eagle Nests in Iowa after 2021 nesting season (487 nests).

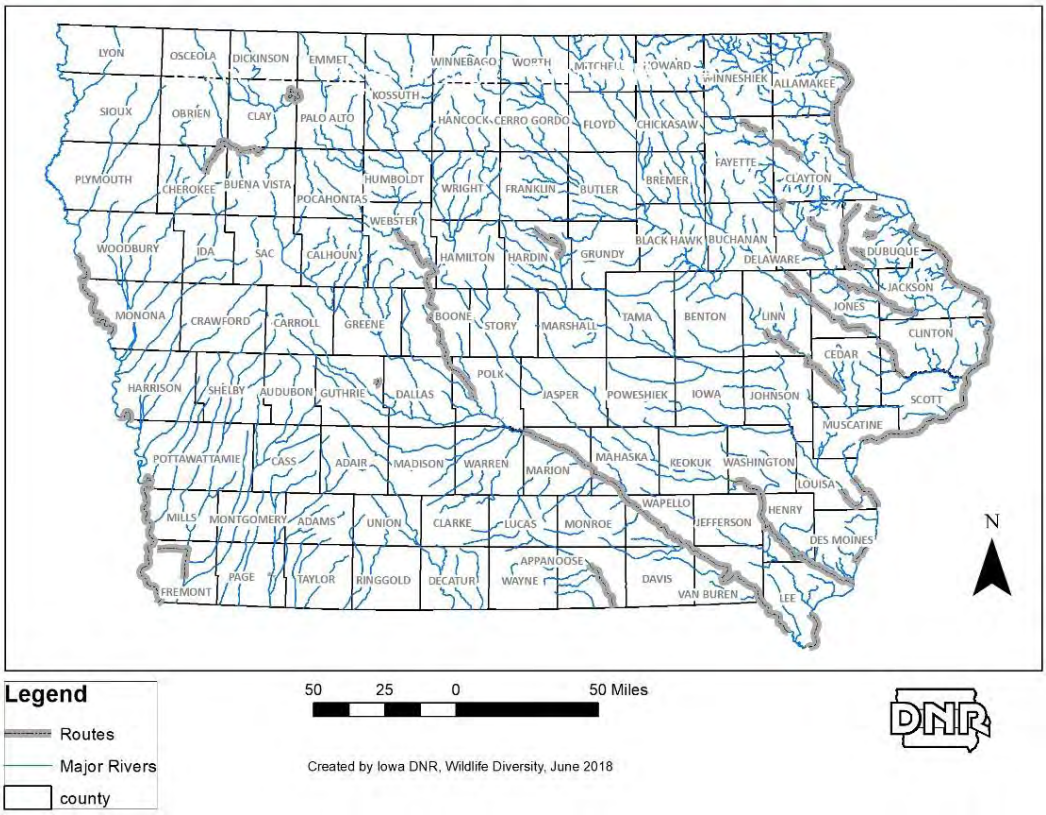

Figure 6.7 Bald Eagle Midwinter Routes in Iowa.

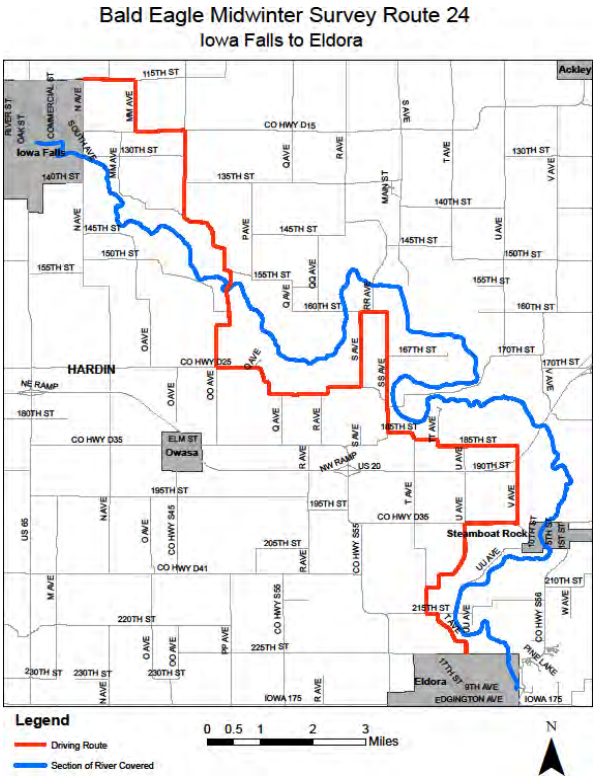

Figure 6.8 Example of a Midwinter Survey Route (in red) - Route 24 - The portion of river (eagle habitat covered) and the driving route.

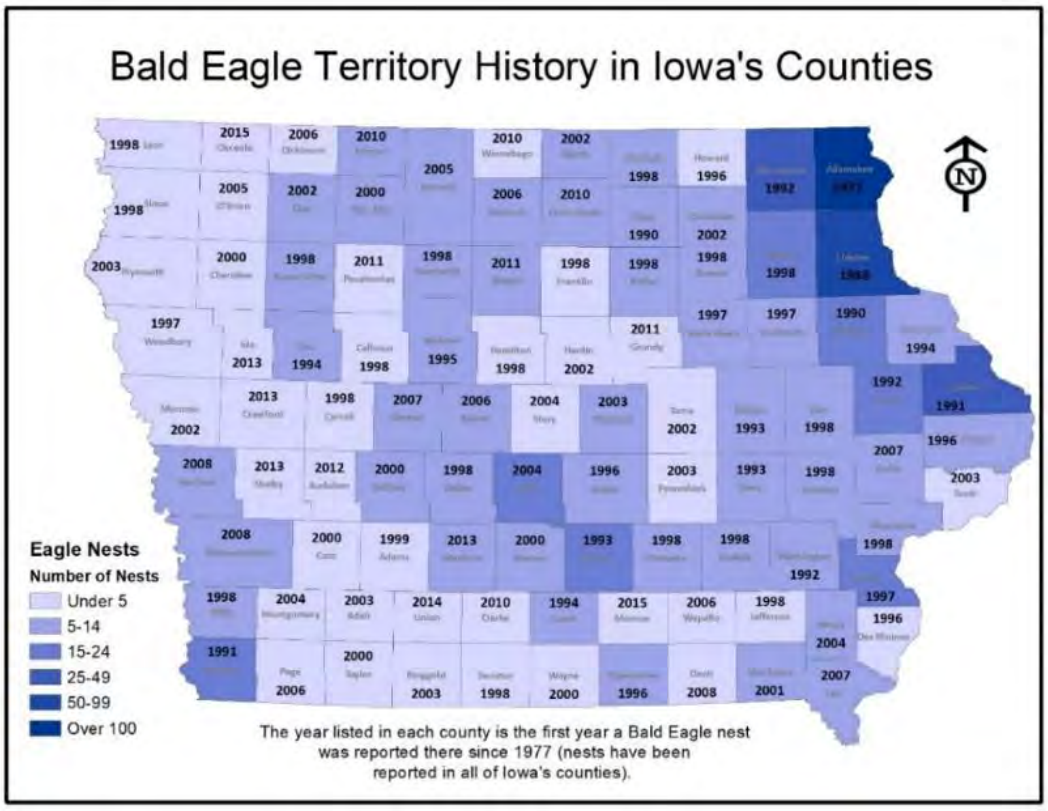

Figure 6.9 Number of eagle nests and first year reported for each county in Iowa.

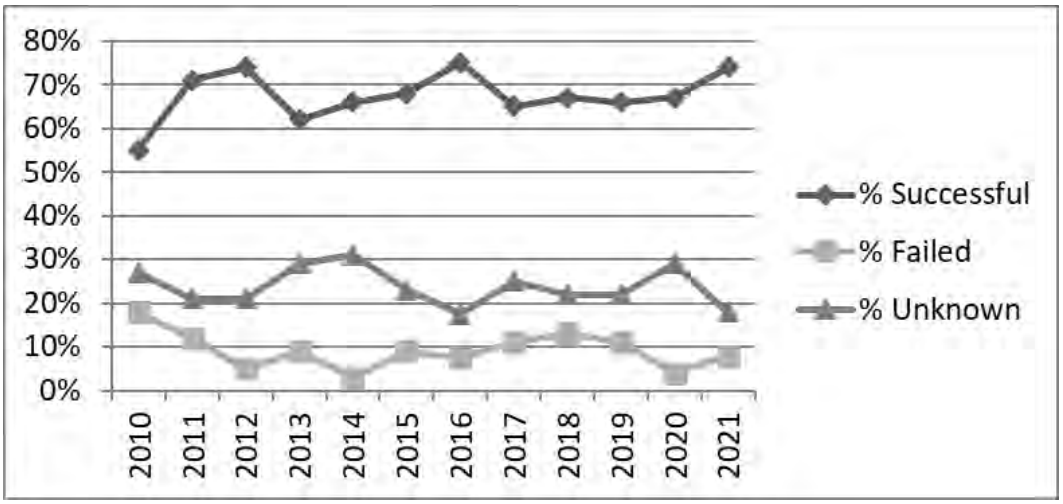

Figure 6.10 Percent of monitored Eagle nests that were successful versus failed (2010-present).

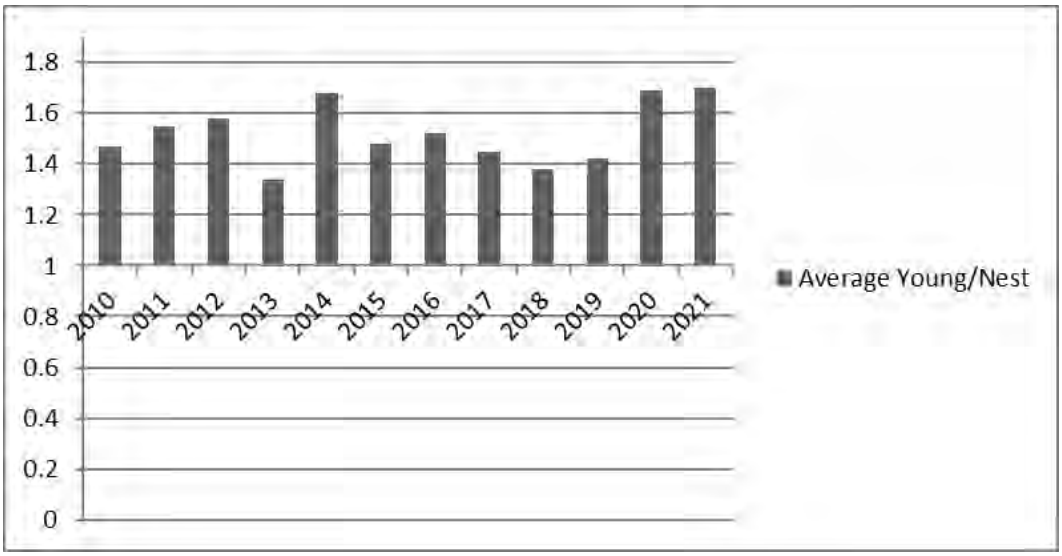

Figure 6.11 Average number of young produced by monitored Bald Eagle nests.

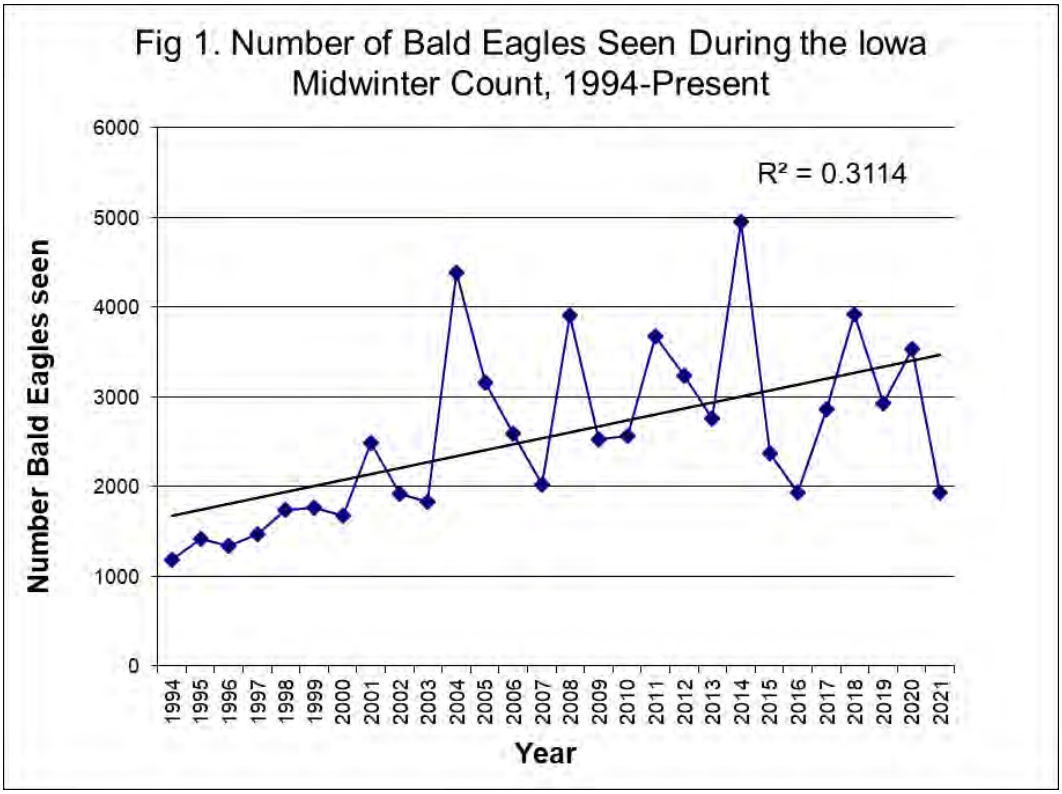

Figure 6.12 Total Bald Eagles counted during the Bald Eagle Midwinter survey (1994-present).

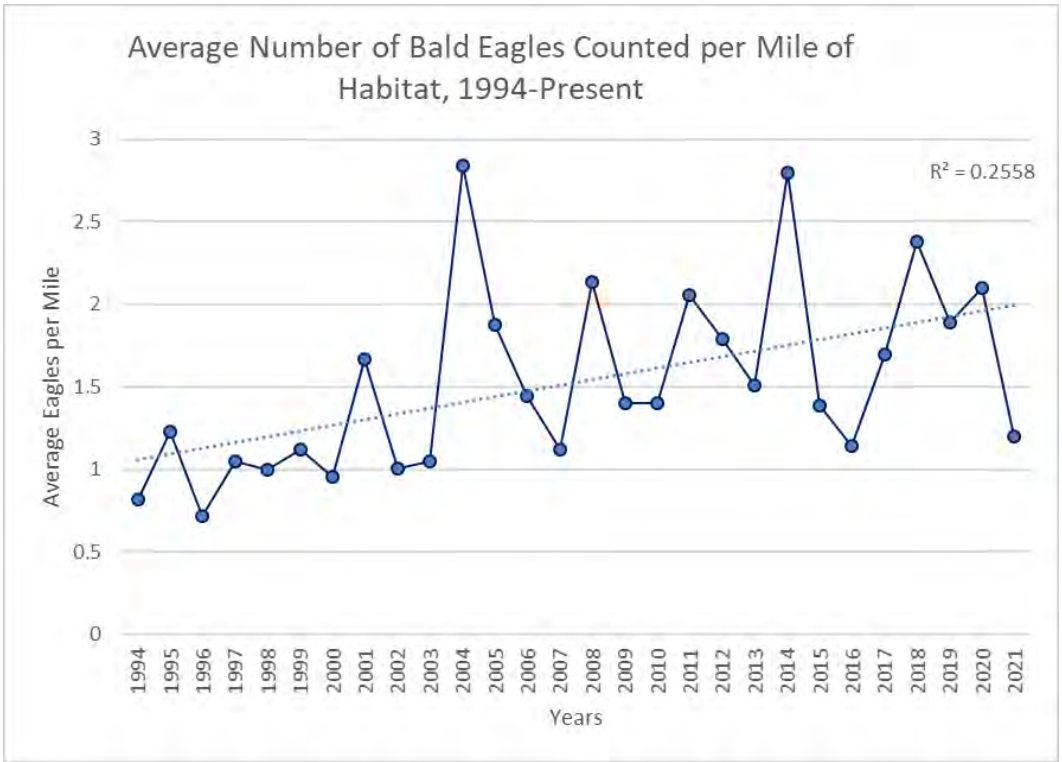

Figure 6.13 Average number of Bald Eagles per survey mile counted during the Bald Eagle Midwinter survey (1994-present).

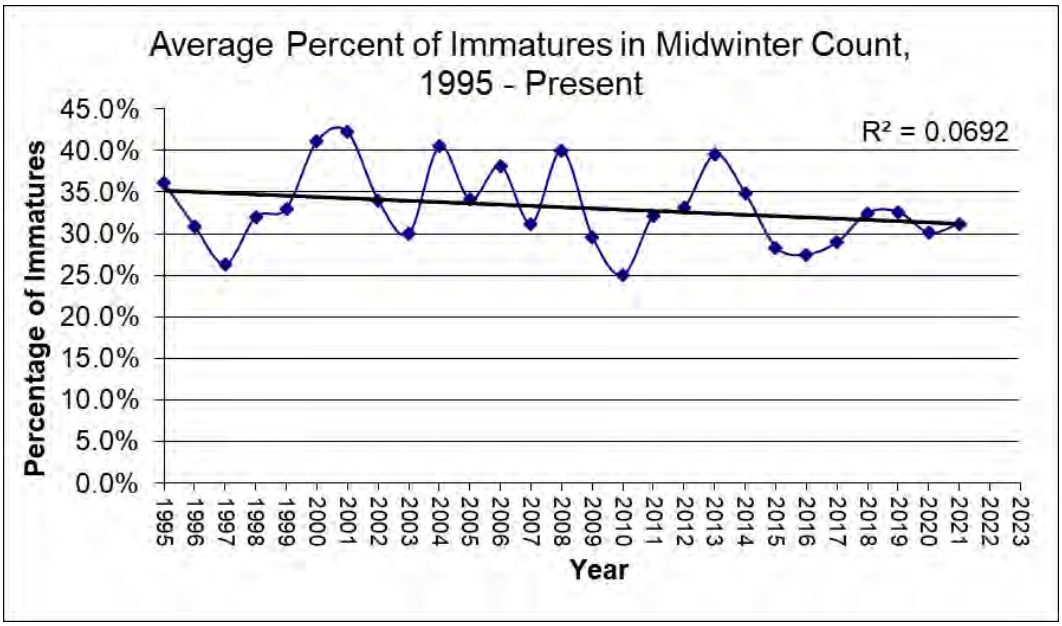

Figure 6.14 Percentage of immature bald eagles counted during the Bald Eagle Midwinter survey (1995-present).

Tables

Table 6.7 Summary of data collected by volunteer monitors on Bald eagle nests (2014 to 2021).

	2014	2015	2016	2017	2018	2019	2020	2021
# of Territories with Data Collected	76	85	84	172	182	262	286	354
Active Territories	62	78	80	160	165	227	254	291
Successful	*41(66%)*	*53(68%)*	*60(75%)*	*104(65%)*	*111(67%)*	*149(66%)*	*170(67%)*	*216 (74%)*
Failed	*2(3%)*	*7(9%)*	*6(7.5%)*	*17(11%)*	*17(13%)*	*26(11%)*	*10(4%)*	*22 (8%)*
Outcome Unknown	*19(31%)*	*18(23%)*	*14(17.5%)*	*40(25%)*	*37(22%)*	*52(23%)*	*74(29%)*	*53 (18%)*
Number of Young	*72*	*88*	*107*	*175*	*170*	*240*	*253*	*282*
Avg. # of Young/ Nest	*1.68*	*1.48*	*1.52*	*1.45*	*1.38*	*1.40*	*1.69*	*1.7*
Inactive Territories	13	7	4	11	15	28	25	59
Unknown Territories	1	0	0	1	2	7	7	4

Table 6.8 Summary of data collected during the 2021 Bald Eagle Midwinter Survey by waterbody, listed in descending order from most eagles per mile to least.

Water Body*	% of Total BE	Total BE	Adult BE	Imm BE	Unk Age BE	Total GE	Un-ID Eagle	Miles Surveyed	Average Bald Eagles Per Mile
State Total	**100**	**1,936**	**1,308**	**604**	**24**	**0**	**2**	**1,676**	**1.2**
Mississippi River	26.5	514	331	175	8	0	1	210.5	2.44
Iowa River	24.5	475	362	111	2	0	0	68	6.99
Des Moines River	18	348	220	124	4	0	0	320.5	1.09
Maquoketa River	5	96	64	29	3	0	0	133	0.72
Skunk River	5	96	62	33	1	0	1	77	1.25
Wapsipinicon River	4.3	83	54	26	3	0	0	106	0.78
Missouri River	4.1	80	46	34	0	0	0	182	0.44
Lakes and Other	3.8	74	52	21	1	0	0	170	0.44
S. Maquoketa River	2	39	28	10	1	0	0	105	0.37
Chariton River	1.86	36	21	15	0	0	0	45	0.80
Cedar River	1.39	27	17	10	0	0	0	68	0.40
Little Sioux River	1.34	26	17	9	0	0	0	65	0.40
Turkey River	1.34	26	21	4	1	0	0	40	0.65
Lake Rathbun	0.5	9	8	1	0	0	0	85	0.11
Nodaway River	0.4	7	5	2	0	0	0	1	7.00
Age Composition		100%	68%	31%	1%	NA			NA

STATUS OF SELECTED OTHER SPECIES IN IOWA - LARGE CARNIVORES

Mountain Lion/Cougar Status in Iowa 1995-2022

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-1990s, the DNR has received several reports of large "cat" like sightings which at the time 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 were either escapees, or released animals, privately owned, (grandfathered in before July 1, 2007 legislation to curtail the ownership of certain "dangerous wild animals") or DNA testing has shown they were fully wild animals dispersing from the western states of South Dakota, Nebraska, and Wyoming. Since, then wild, free-roaming mt lions have been confirmed in Iowa. Other states in the Midwest (Missouri, Minnesota, Wisconsin, and Illinois) have also reported increased sightings during the past 15 years however, the number of dispersing mountain lions/cougars fluctuates annually.

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 (1995-2022). 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, there were multiple unconfirmed reports especially in the Polk County area of Iowa. For 2020, there were no confirmed reports. For 2021, there have been two confirmed reports (Polk and Jasper Counties). So far in 2022, there have four confirmed mountain lions. 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 photos, 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 these cats matched DNA common to established populations 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 only one case showed indications it was by a mountain lion. In almost all other cases, it was from dogs, coyotes, 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 it is not usually the culprit. Mountain lion research in western states shows that white-tailed deer, mule deer, and other wild mammals are the preferred prey. Even so, predators are generally opportunists and if hungry they may take what is readily available.

All mountain lions that have been killed in Iowa in recent years have all been reproductively immature 1 to 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.

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.

Over the past 110 years, 65-80 people have been attacked by mountain lions/cougars, resulting in 66 injuries, 21 of which were fatal, and none have 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

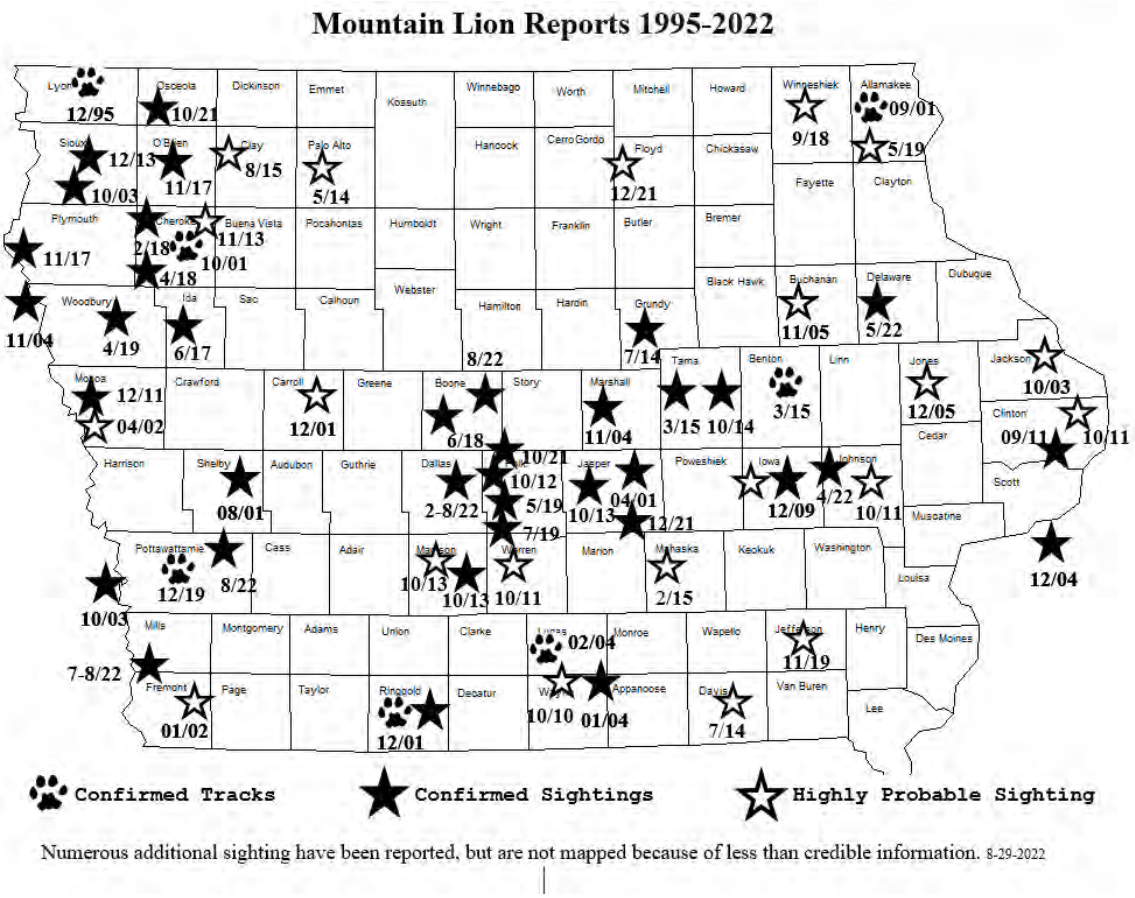

Figure 7.1 Confirmed locations of mountain lion reports in Iowa. Numerous additional sighting have been reported, but are not mapped if they were not confirmed.

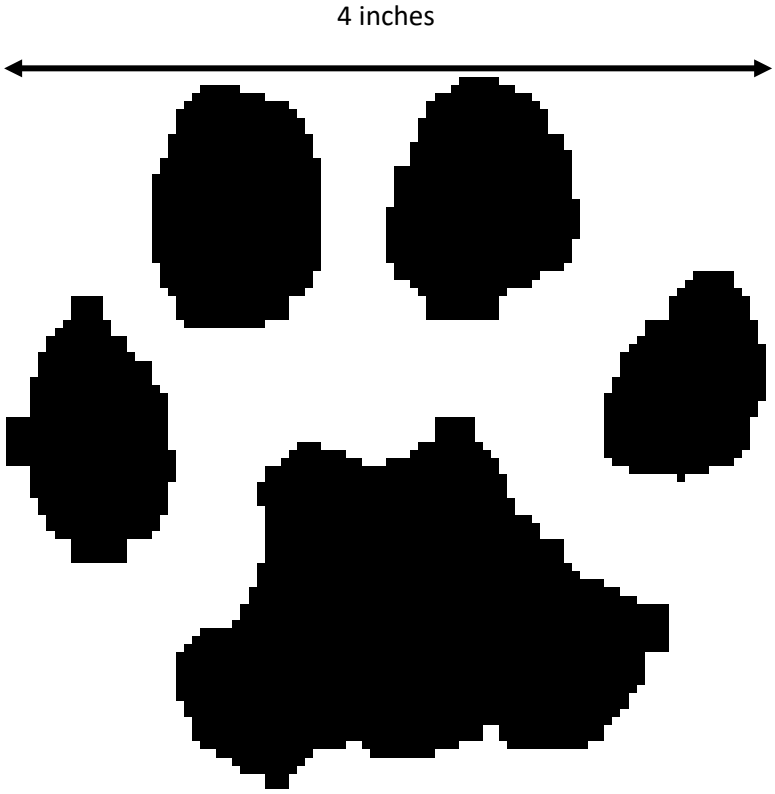

Figure 7.2 Typical Mountain Lion track

Tables

Table 7.1 Confirmed Mountain Lions in Iowa (2001-2022).

Month	Year	Type of Confirmation	County
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

Month	Year	Type of Confirmation	County
May	2019	Videos/Sightings	Polk
July	2019	Sighting	Polk
May	2019	Sighting	Allamakee
November	2019	Sighting	Jefferson
December	2019	Tracks	Pottawatamie
October	2021	Videos/Sightings	Polk
December	2021	Sighting	Jasper
April	2022	Trail Camera Pictures	Johnson
May	2022	Trail Camera Pictures	Delaware
July	2022	Trail Camera Pictures	Mills/Fremont
August	2022	Trail Camera Pictures	Pottawatamie

Table 7.2 Confirmed and Probable Mountain Lions in Iowa by year (2001-2022).

Year	Amount
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
2021	2
2022	4
Total	**34**

Table 7.3 Method of confirmation for Mountain Lions in Iowa, 1995-2021

Confirmation Method	No. of Mountain Lions
Sightings	8
Tracks	9
Pictures	13
Shot	5
Roadkills/Collision	3
Found Dead/Snare	1
Video(s)	1
Total	40

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 Crocketts" 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. During 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 confirmed locations by county of the most recent sightings of bears in Iowa - including so far in 2022. Many of these 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.

In 2020, there have been at least five confirmed bears in Iowa. Two were in Dubuque County, one in Chickasaw County, one in Winneshiek 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. This bear eventually travelled further south to northern Louisiana. During the summer of 2021, it was unfortunately hit by a vehicle and severely injured. Eventually staff with the Louisiana Dept. of Wildlife had to euthanize it.

In 2021, there were at least three confirmed black bears in Iowa. One of these bears has been sighted repeatedly in Dubuque County, but has not been a human safety threat. The other two sightings occurred in Mitchell County and Kossuth County. None of these bears have been killed, and at this time and at least one of those is known to reside in Iowa (Dubuque County).

So far in 2022, there have been 3 confirmed bears in Iowa (Table 7.4). During 2022, the Iowa DNR joined BearWise, an organization developed by state-level bear biologists to deliver standard, consistent, and science-based messaging to citizens on how to 'live with bears' in today's modern landscape. Pro-active outreach and education about bears is very important to share with Iowa citizens to help reduce fear, conflicts, and nuisance issues with black bears.

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. Grassroots (citizen-level) legislation would be the best course of action 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. A lot of emotion is generated when one of these bears are killed in Iowa. Where possible, we should discourage the indiscriminate 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

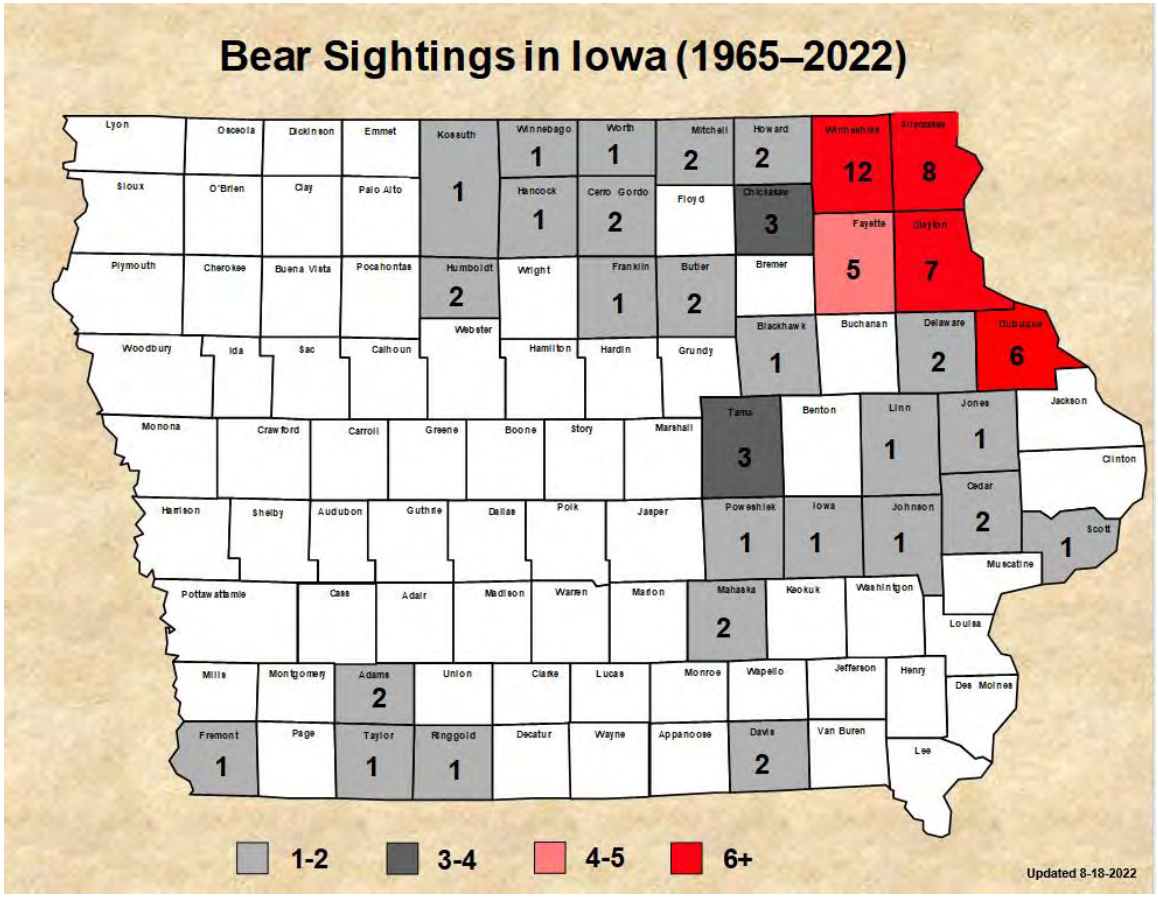

Figure 7.3 Confirmed locations of Black Bears in Iowa 1965-2021. (1876 Last Historical Sighting, Dickinson County)

Tables

Table 7.4 The number of confirmed black bears in Iowa by year (2002-2022).

Year	Amount
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

Year	Amount
2019	4
2020	5
2021	3
2022	3
Total	**49**

Gray Wolf (Timber Wolf) Status in Iowa (2001-2022)

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.

Population Status of Gray Wolves

In 1978, the Great Lakes population of wolves were reclassified (down-listed) from endangered to threatened under the Endangered Species Act (ESA) for Minnesota, Wisconsin, and Michigan. 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. On October 29, 2020 gray wolves were removed from the Endangered Species List in the U.S. which meant they're no longer federally protected. However, the cycle of listing and then de-listing gray wolves under the Endangered Species Act (ESA) for protection will continue. A court decision on February 10, 2022 reversed the rule to delist the gray wolf in U.S. Gray wolves are once again listed as 'Threatened' under the ESA, in most areas of the U.S.

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 in Iowa 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 'continuous closed season' but a gray wolf can be killed if it is causing livestock damage.

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 Couty 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 (Figure 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 was one confirmed wolf that was trapped and killed in Scott County. DNA testing showed it was a true gray wolf. In addition, we continue to have an occasional wolf-dog hybrid sighted, killed, or reported in various areas of the state.

2020

In 2020, a large male wolf was caught in a foothold trap in Scott County and released unharmed. A small amount of hair and blood was gathered from the trap and the DNA tested which showed it was a true gray wolf matching wolf DNA from the Great Lakes Region.

2021

For 2021, there was only one confirmed wolf in Iowa.

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

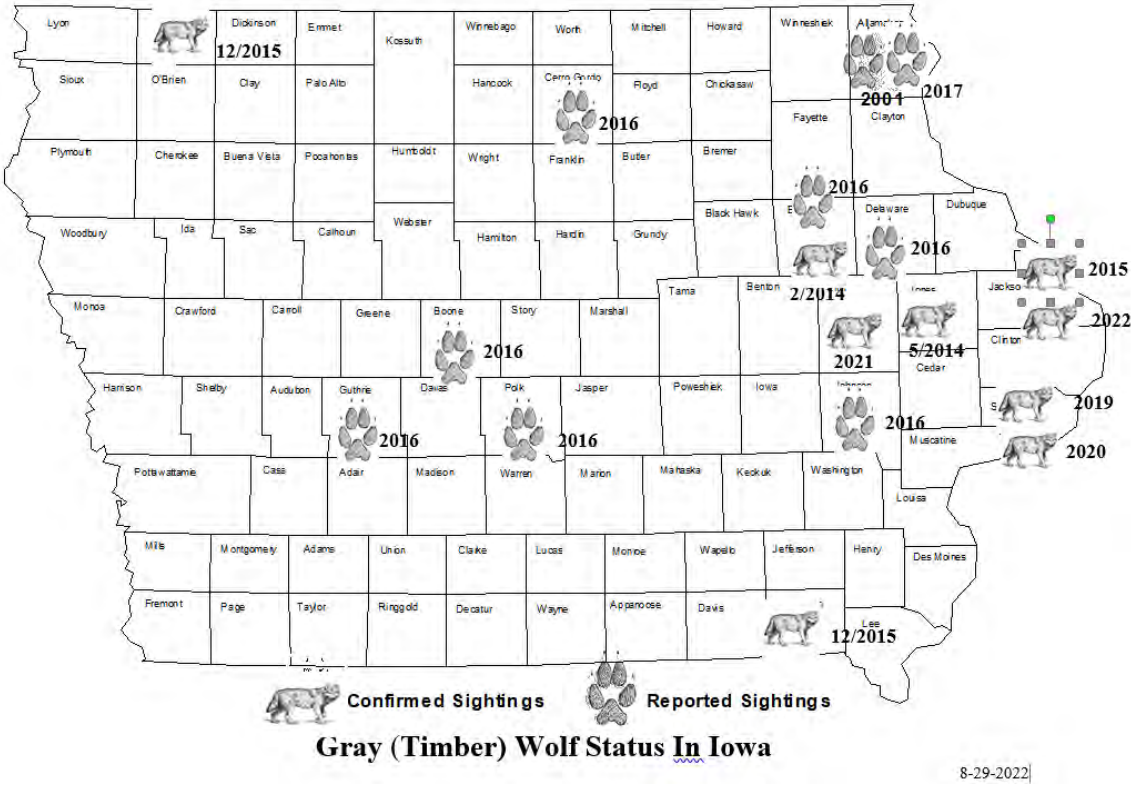

Figure 7.4 Gray (Timber) Wolf Sightings in Iowa (8/29/22)

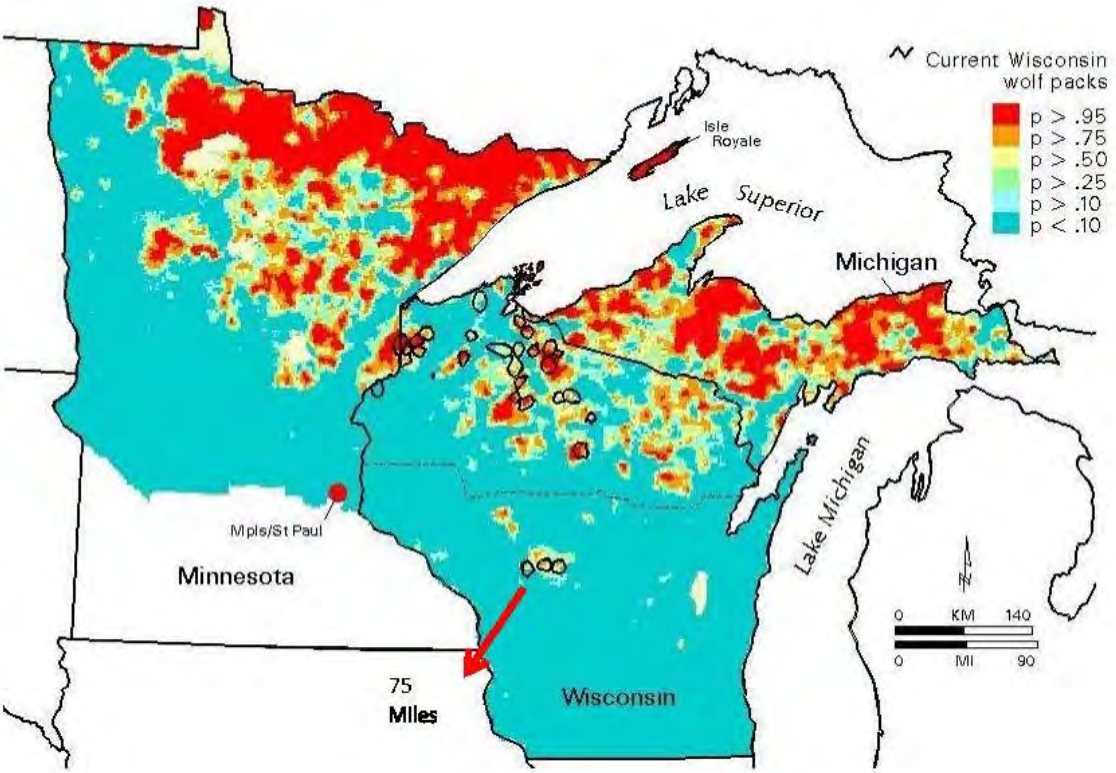

Figure 7.5 Favorable Gray Wolf habitat and pack locations in the Northern Great Lakes Region.
(Source: http://www.timberwolfinformation.org/info/wolves/prob1.jpg)

Tables

Table 7.5 Public reports of wolf sightings in Iowa by year (2012-2022).

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	1	0
2020	1	0
2021	1	0
2022	0	3
Total	8	24

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.

APPENDIX: BOWHUNTER OBSERVATION SURVEY

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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 early 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 their long-term population trends. 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, we estimate the mean number of animals seen per 1,000 hours hunted statewide and by survey region for 12 species. In 2021, we collected responses from 1,726 bow hunters (19% response rate) consisting of 22,300 hunting trips and 74,184 hours of total observation time (3.31, 95% CI = 3.14, 3.47). With the exception of north-central Iowa, the total number of deer observations decreased between 2020 and 2021. However, the 10-year trend for total deer is increasing in all regions except southwest Iowa. Between 2020 and 2021, wild turkey observations increased in all regions except northwest, central, and southeast Iowa.

According to 10-year trends, bobcat and opossum observations continue to increase statewide while striped skunk observations are decreasing statewide. Observations for badger, coyote, raccoon, and red fox are mostly stable statewide, and otter observations are increasing across the northern one-third of the state. 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. Additionally, many bow hunters have access to privately-owned lands that may not be

accessible by paid staff, which increases 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 2021 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 A-1).

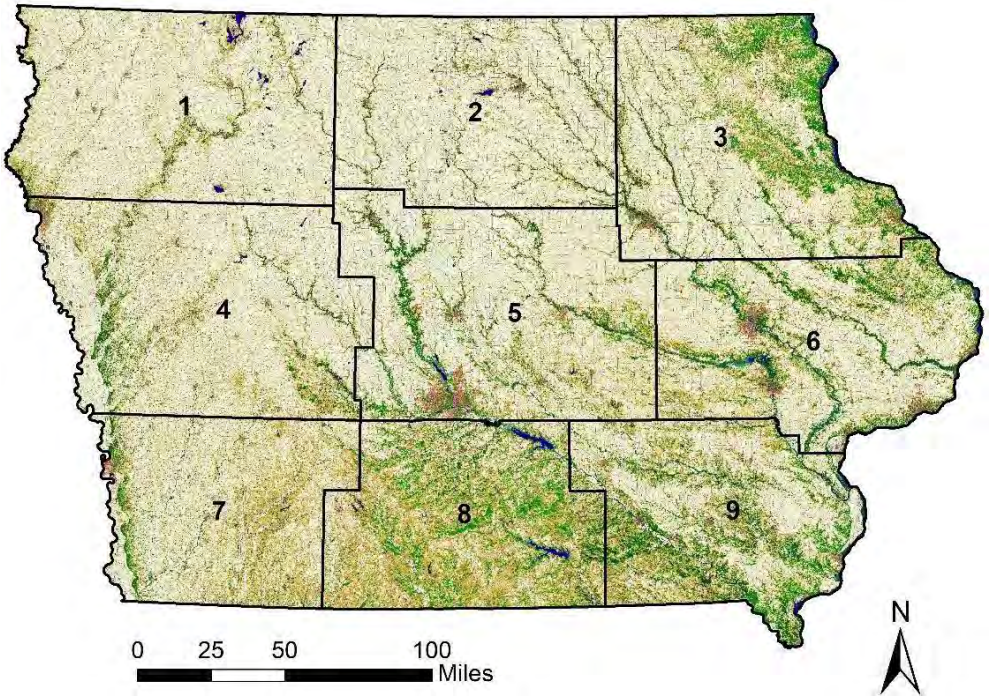

Figure A-1. Survey regions in Iowa used for distributing the Iowa Bow Hunter Observation Survey, 2021.

Methods

We selected survey participants using a two-stage, stratified random sampling design (Figure A-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 2021 (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 A-2). The core sample is refreshed every three years to maintain a consistent response rate and was refreshed prior to the 2021 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 a "supplemental" sample (Figure A-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 A-1) which resulted in approximately 91 survey participants selected for each of Iowa's 99 counties. Our final statewide sample size was 8,991, which is approximately 15% of the population of all archery hunters in recent years (*N* = ~60,000 individual hunters annually).

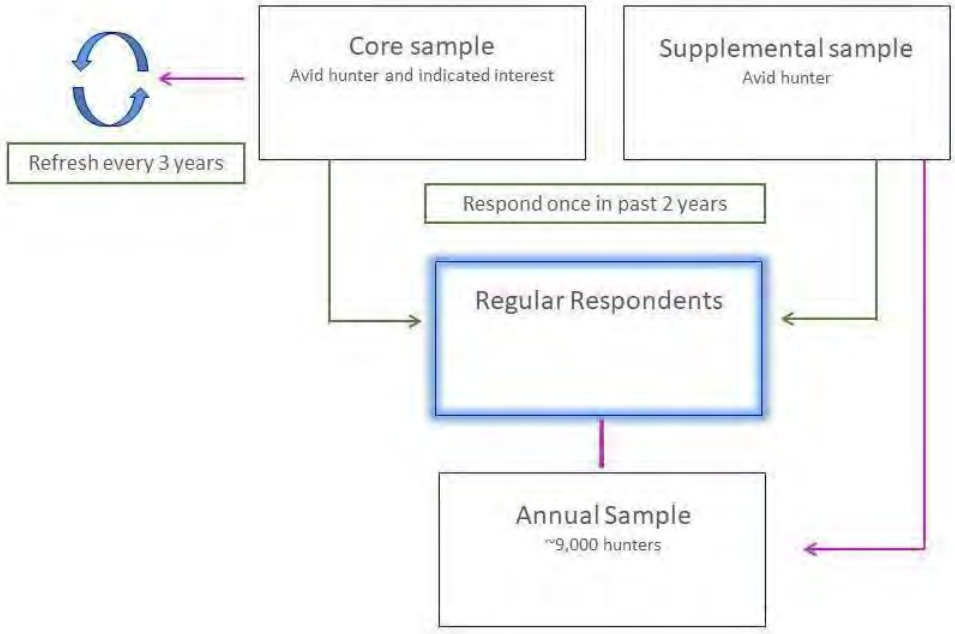

Figure A-2. Sampling process schematic for Iowa Bow Hunter Observation Survey, 2021.

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 end of this section 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. We did not mail reminder postcards to hunters in 2021 due to mailing constraints. Hunters were asked to return their survey by December 3 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 60 surveys were returned as undeliverable in 2021, therefore, the realized sample size was 8,931. We obtained responses from 1,726 bow hunters statewide for a response rate of 19%. Statewide, participants spent a total of 74,184 hours hunting on 22,300 trips for an average of 3.31 (95% CI = 3.14, 3.47) hours per trip. Participants reported a median of 13 trips during the 64-day hunting season. The number of trips and hours hunted varied by region and ranged from 1,633 trips (5,249 total hours) in northwest Iowa (Region 1) to 3,291 trips (11,045 total hours) in southeast Iowa (Region 9; Appendix).

White-tailed deer was the most frequently observed species with an average of 1,657 (95% CI = 1,474, 1,865) observed per 1,000 hours hunted statewide, which included an average of 492 (95% CI = 437, 547) antlered deer and 1,069 (95% CI = 927, 1,210) antlerless deer observed per 1,000 hours hunted. Total deer observed per 1,000 hours hunted ranged from a low of 1,402 (95% CI = 1,251, 1,554) in east-central Iowa (Region 6) to a high of 2,109 (95% CI = 1,843, 2,375) in north-central Iowa (Region 2). The 10-year trend for total deer, antlered deer, and antlerless deer observations is increasing in all regions except southwest Iowa (decreasing; Region 7; Appendix). Despite increasing 10-year trends in most regions for all deer, observations decreased between 2020 and 2021 in most regions.

Wild turkey (*Meleagris gallopavo*) continue to be the second-most frequently observed species on the survey with an average of 507 birds (95% CI = 370, 645) observed per 1,000 hours hunted statewide. Wild turkey observations ranged from 216 birds (95% CI = 175, 258) per 1,000 hours hunted in southeast Iowa (Region 9) to 814 birds (95% CI = 600,

1,028) per 1,000 hours hunted in north-central Iowa (Region 2). Between 2020 and 2021, wild turkey observations increased in six of nine regions. However, the regional 10-year trends show 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 trends with the most pronounced increases occurring in northwest Iowa (Regions 1; Appendix). Statewide, an average of 4 bobcats (95% CI = 2, 6) were observed per 1,000 hours hunted in 2021, a decrease from 7 (95% CI = 2, 12) observed per 1,000 hours hunted in 2020. Observations of badger (*Taxidea taxus*) are mostly stable statewide according to the 10-year trends with the exception of a declining trend in southwest Iowa (Region 7; Appendix). River otter (*Lontra canadensis*) observations decreased mostly statewide between 2020 and 2021 (Appendix). However, the regional 10-year trends continue to show increasing otter observations in six of nine regions, mostly in northern Iowa (Regions 1-3; Appendix). The 10-year trend across all regions shows a mostly statewide decline in observations of raccoon (*Procyon lotor*) and striped skunk (*Mephitis mephitis*), whereas trends in observations of coyote (*Canis latrans*), opossum (*Didelphis virginiana*), and red fox (*Vulpes vulpes*) are stable to slightly increasing statewide.

Discussion

Total white-tailed deer observations decreased in all regions except north-central Iowa (Region 2; Appendix) between 2020 and 2021 with the most significant decreases observed in west-central, southwest, and south-central Iowa (Regions 4, 7, and 8, respectively; Appendix). Iowa experienced its second-largest outbreak of Epizootic Hemorrhagic Disease (EHD) in 2019 during which 78% of the 1,927 reported mortalities statewide came from south-central Iowa (Region 8; Appendix). Since 2019, mortalities likely due to EHD have continued to be reported throughout west-central and southwest Iowa (Regions 4 and 7, respectively; Appendix). EHD was first discovered in Iowa in 2012 and has since been documented annually in the state, though the severity and spatial extent of the disease has varied drastically. EHD mortality tends to be high in deer, particularly in naive populations (Ruder et al. 2015). Therefore, the virus can significantly reduce local deer populations in years immediately following outbreaks, especially if outbreaks occur repeatedly in the same area. The repeated presence of EHD in west-central, southwest, and south-central Iowa is likely the cause for decreased deer observations in 2021. Despite this decrease, the 10-year trend in total deer observations is increasing in west-central and south-central Iowa (Regions 4 and 8, respectively; Appendix) and only slightly decreasing in southwest Iowa (Region 7; Appendix). The decrease in total deer observations in 2021 coincides with a decrease in deer harvest during 2021 deer hunting seasons (Iowa DNR, unpublished data), another index used to monitor deer population trends in Iowa, and corroborates reports from both hunters and field staff that fewer deer were observed during the fall of 2021.

Wild turkey observations are decreasing in all regions except northwest, north-central, and west-central Iowa (Regions 1, 2, and 4, respectively; Appendix), likely due to decreased fecundity across much of the state. Rolley et al. (1998), using data from Wisconsin, suggested an average poult-to-hen ratio of 2.6 was needed to sustain wild turkey populations. In 2020, poult-to-hen ratios ranged from 1.3 to 2.6 in northwest and southeast Iowa, respectively, and the 5-year average ratio ranged from 1.7 to 2.3 statewide (Iowa DNR 2021). Similar decreasing trends in fecundity have been observed and cited as the primary reason for wild turkey population declines in Missouri (Tyl 2021). In 2020, the Iowa DNR initiated a pilot research project to monitor movements of female wild turkeys and their broods as well as investigate cause-specific mortality of hens and poults in order to better understand regional turkey population dynamics and declines.

Trends in bobcat observations are stable to mostly increasing statewide despite observations decreasing in nearly every region between 2020 and 2021 (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. The Iowa DNR intentionally set conservative harvest quotas for bobcats 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. 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. Additionally, in 2020 the season limit increased to three bobcats per furharvester for the southern three tiers of counties in Iowa. Bobcat harvest peaked at 980 animals in 2020 (Iowa DNR 2021) and survey data continue to show growth and expansion of the bobcat population in Iowa.

Increasing trends in river otter observations continued in the northern one-third of Iowa (Regions 1-3) but have stabilized elsewhere in the state (Appendix). A total of 853 otters were harvested during the 2020-2021 fur harvest season, the highest total harvest since the harvest season began in 2006 (Iowa DNR 2021). Farm pond nuisance complaints related to otters have increased over the past two years across eastern and southern Iowa (Iowa DNR, unpublished data). 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 decreased in northwest, north-central, and southwest Iowa between 2020 and 2021 (Regions 1, 2, and 7, respectively; Appendix). However, regional 10-year trends in raccoon observations remain mostly stable statewide. Observations of raccoons on the annual spring spotlight survey also remain relatively stable and higher than the long-term average, likely the result of reduced furharvester effort and low pelt prices in recent years (Kaminski et al. 2021). Striped skunk observations decreased notably in seven of nine regions between 2020 and 2021 and regional 10-year trends continue to show a statewide decline (Appendix). Kaminski et al. (2021) also noted a decrease in striped skunk observations in five of nine regions in Iowa on the annual spring spotlight survey, although the long-term trends of striped skunk observations on that survey remain relatively stable statewide. Opossum observations also decreased notably in all regions between 2020 and 2021, though regional 10-year trends are still increasing for this species statewide. Opossum observations decreased in six of nine regions during the annual spring spotlight survey, likely the result of harsh winter conditions in 2021 (Kaminski et al. 2021). Trends in observations of coyotes, red foxes, and gray foxes are highly variable statewide, though observations of coyotes remain more numerous than the other two species (Appendix). Kaminski et al. (2021) documented a 96% increase in red fox observations on the annual spring spotlight survey between 2020 and 2021, while bow hunter observations of red foxes remained relatively stable between 2020 and 2021. The reason for this difference in observations between surveys is unclear and it will be interesting to see if this difference is perpetuated in future years. Gray foxes continue to be rare and likely declining in Iowa according to both survey and harvest data. More research is needed to determine the causative factors for the decline of this once-common species in Iowa.

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 P Fritzell, who assisted with survey distribution and data entry.

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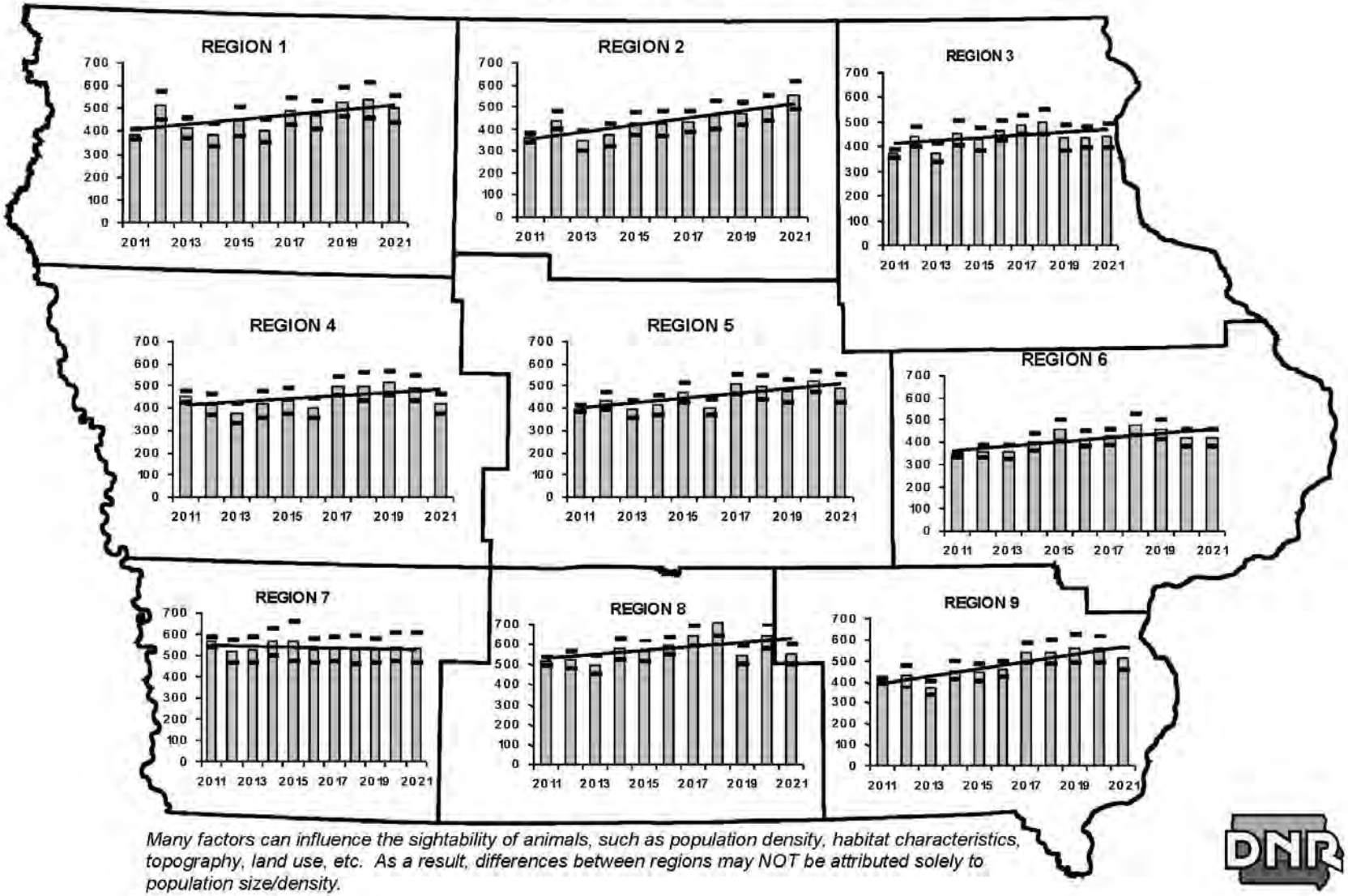
Appendix Figures

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, 2021.

Antlered Deer Observations Per 1,000 Hours Hunted

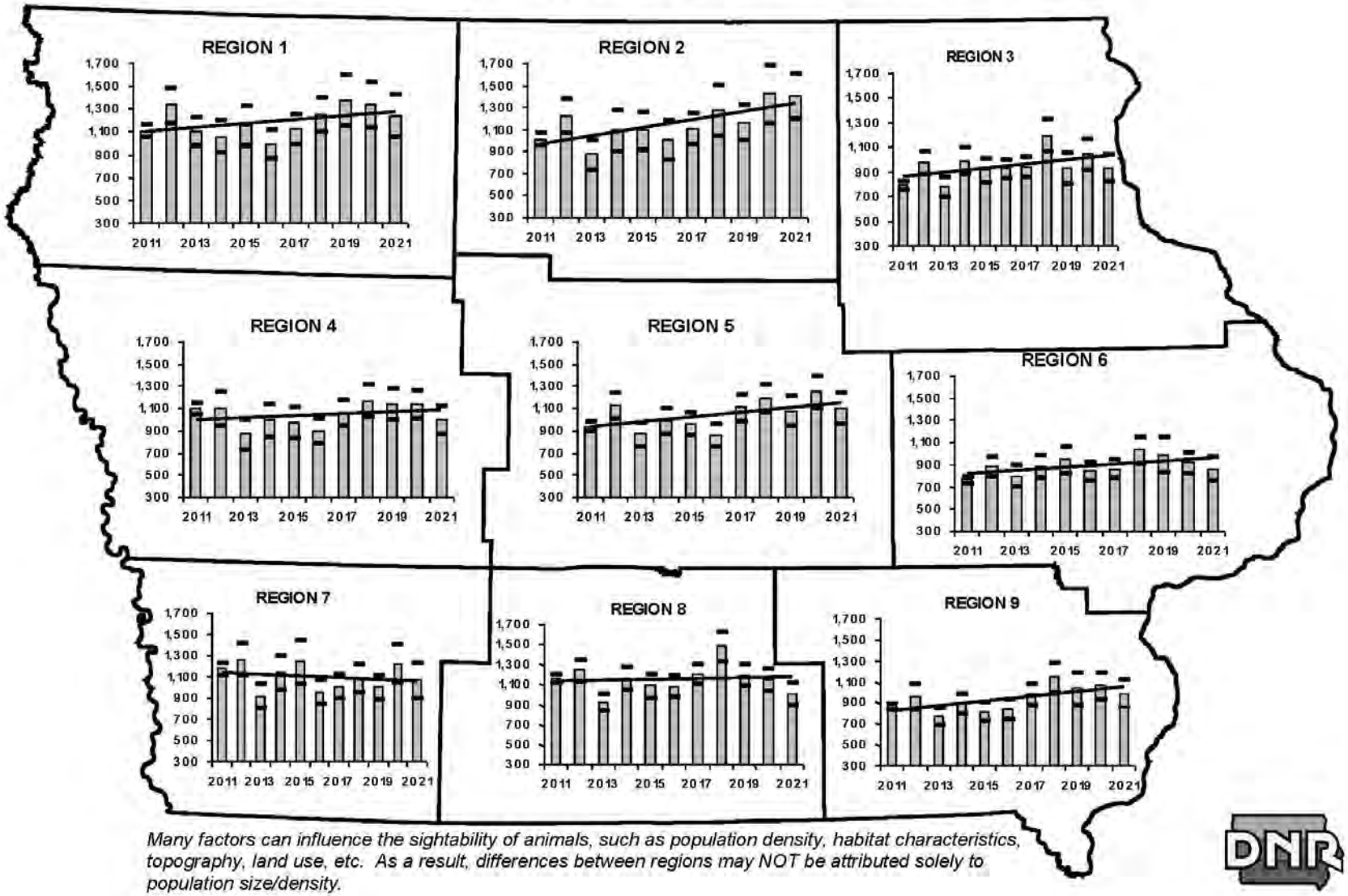
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

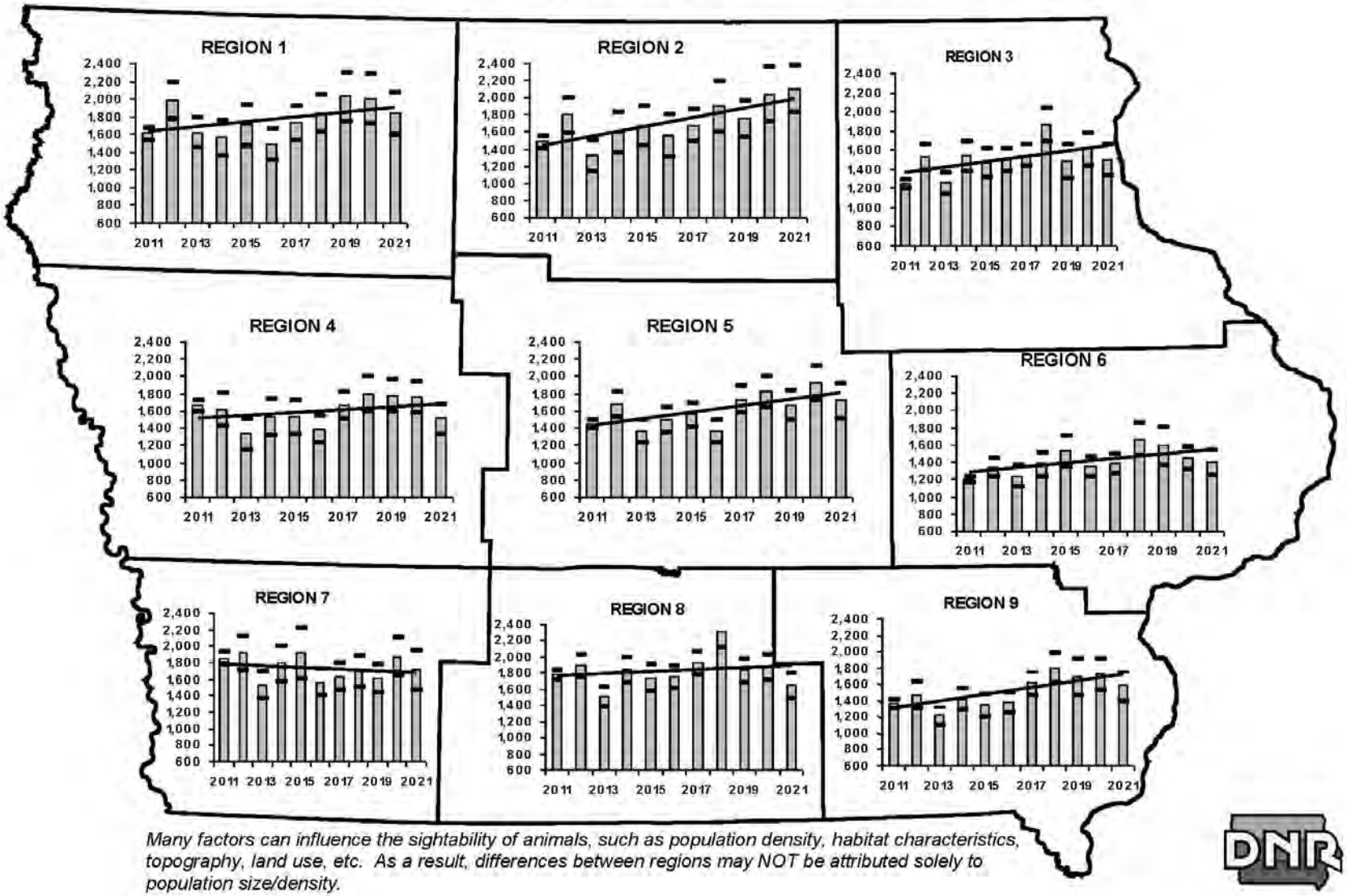
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

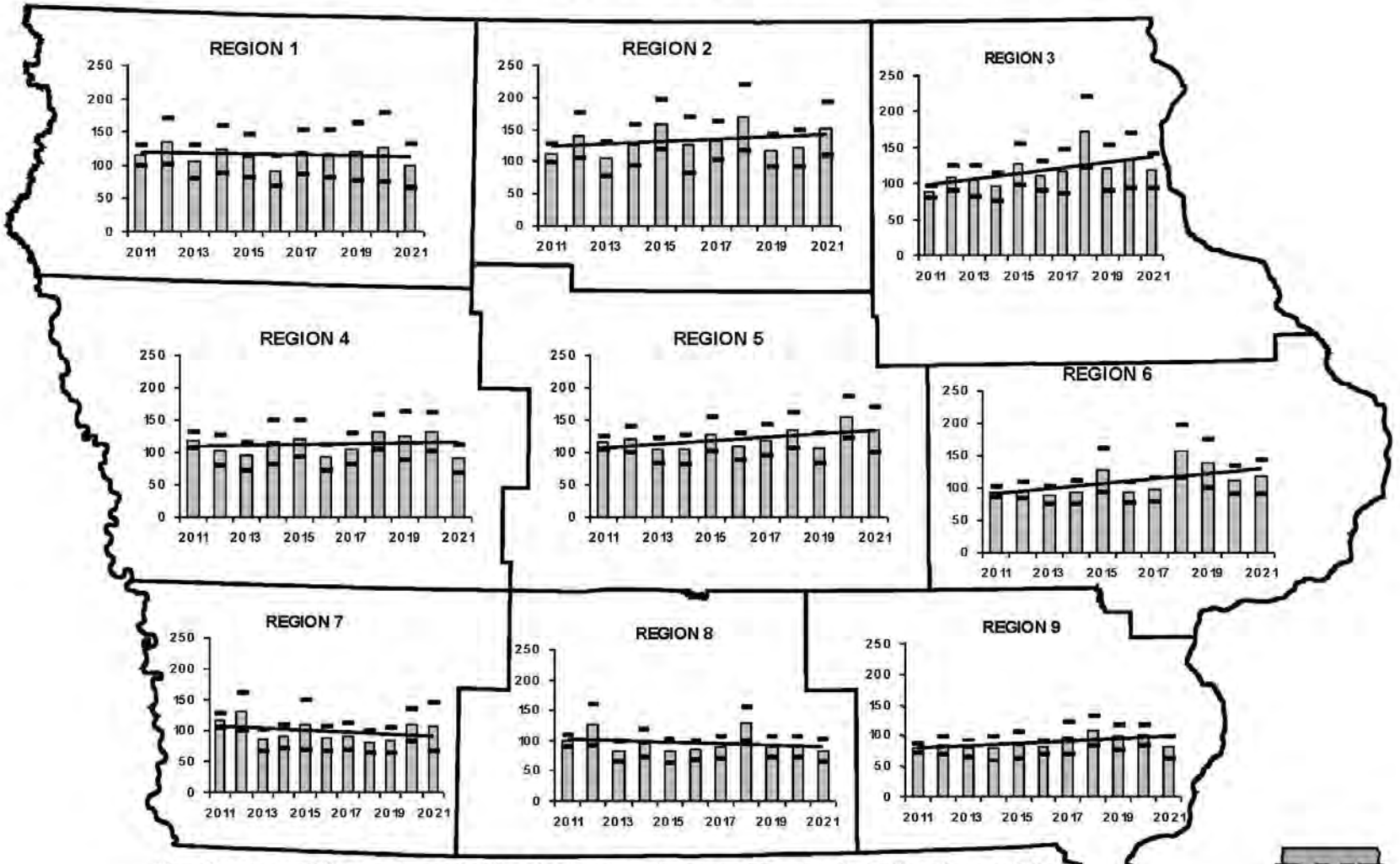
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

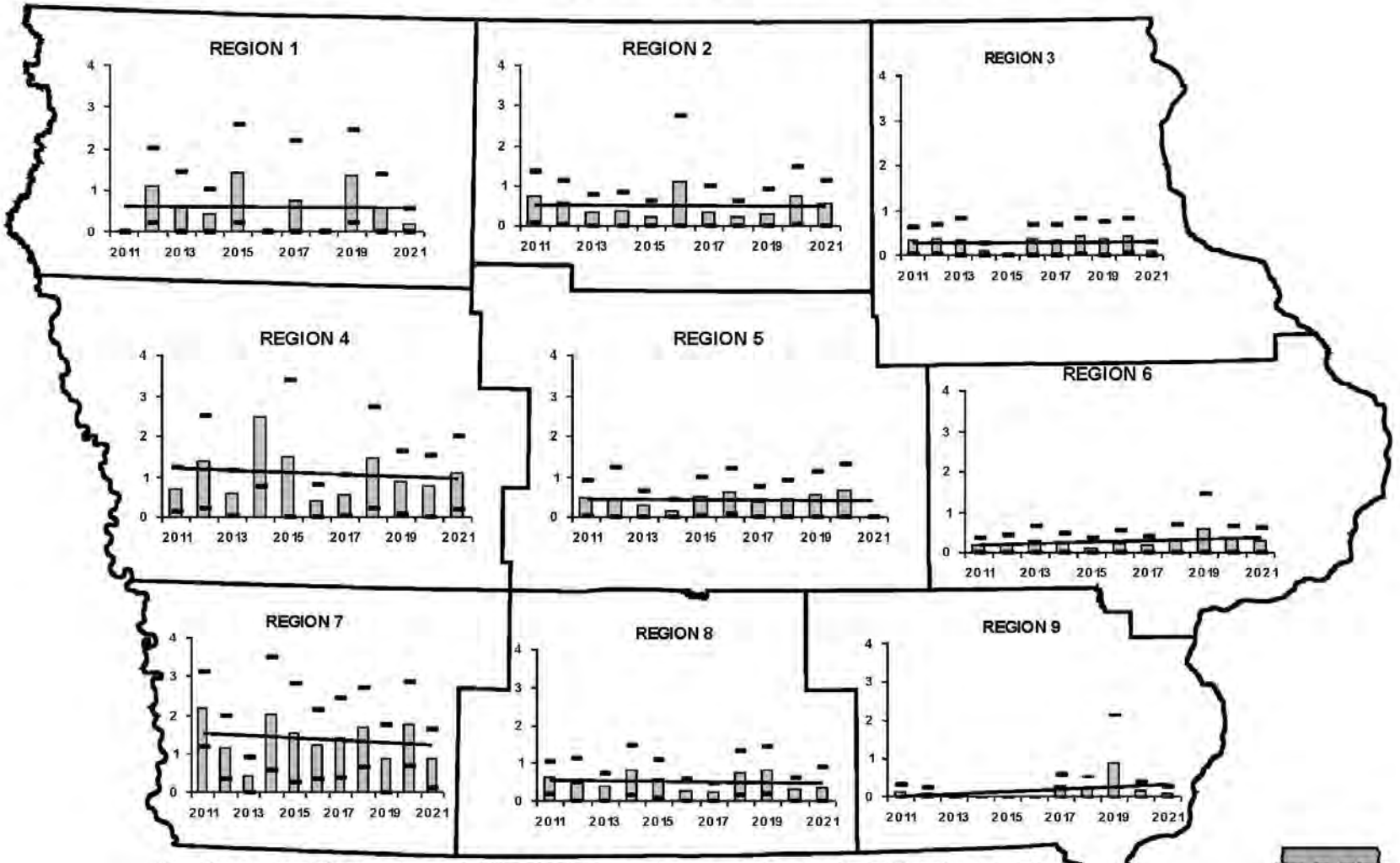
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

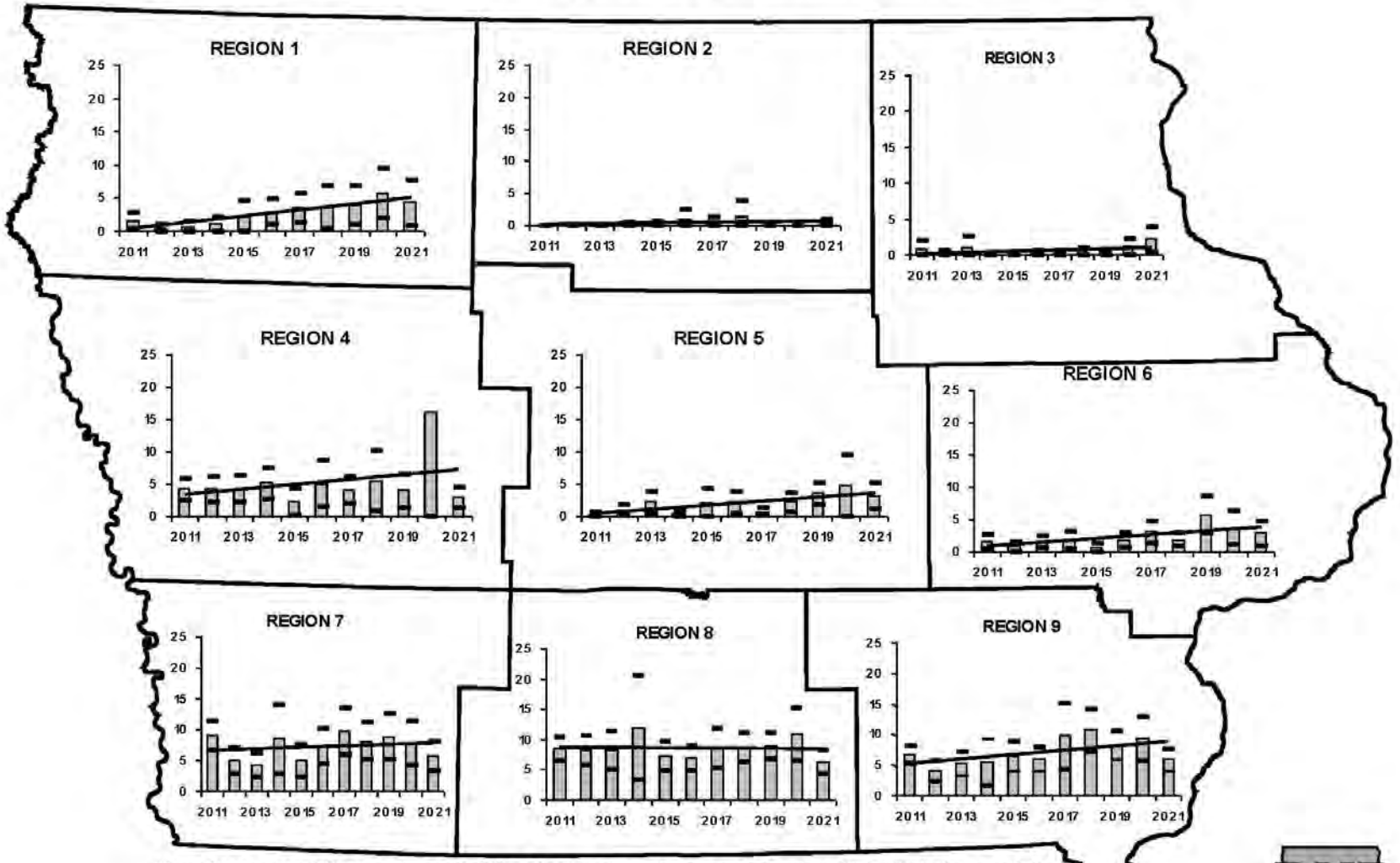
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

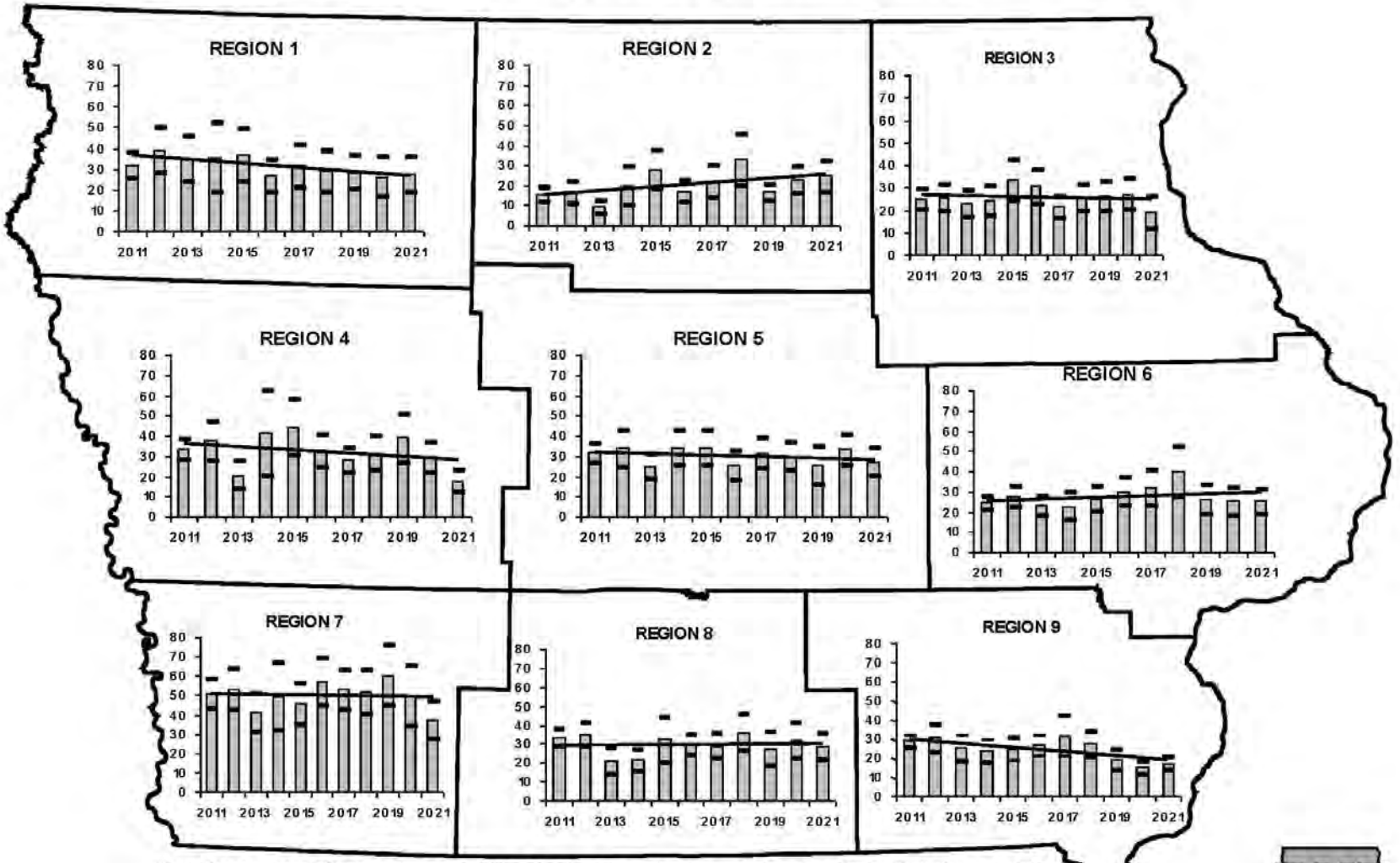
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

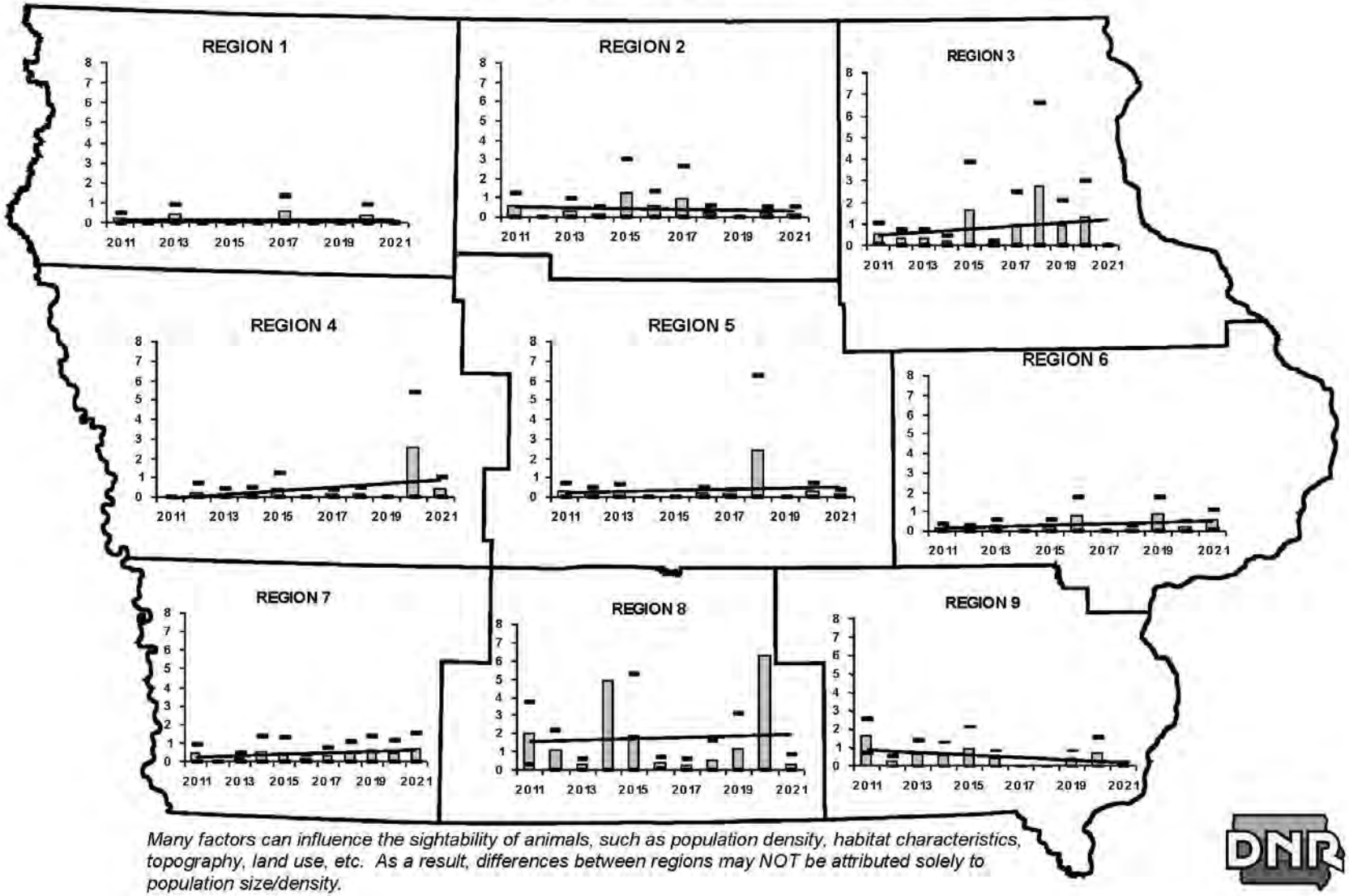
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

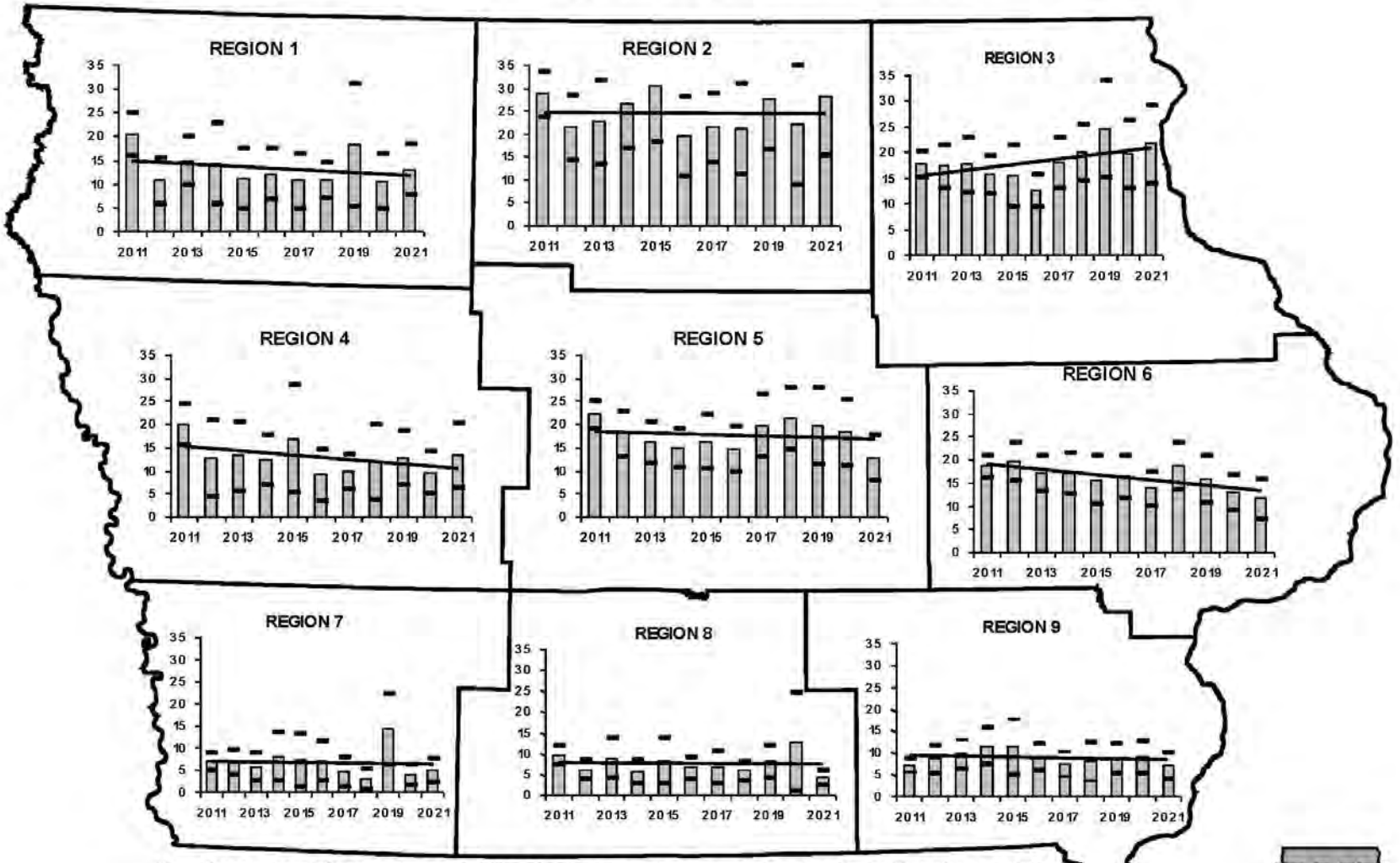
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

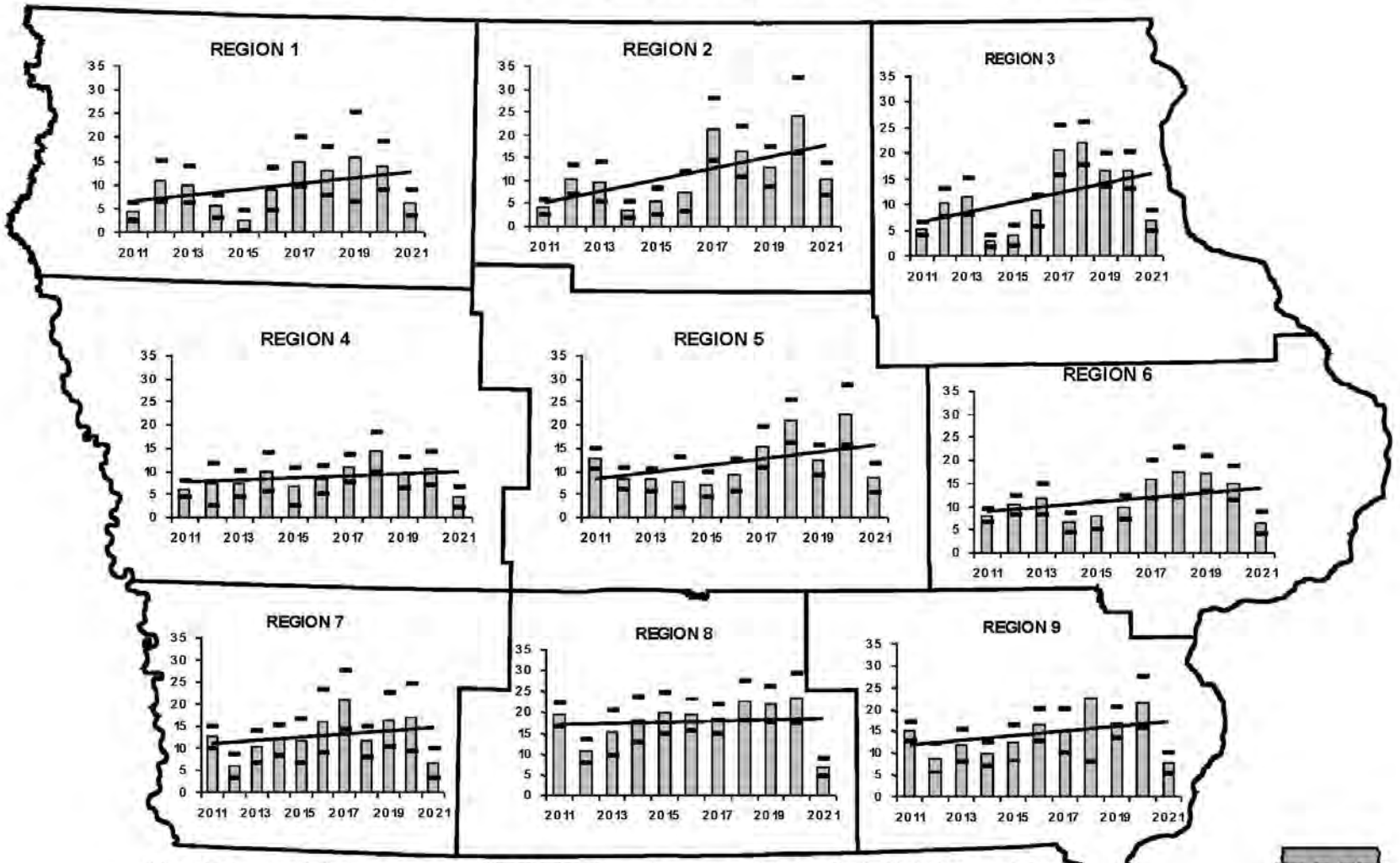
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

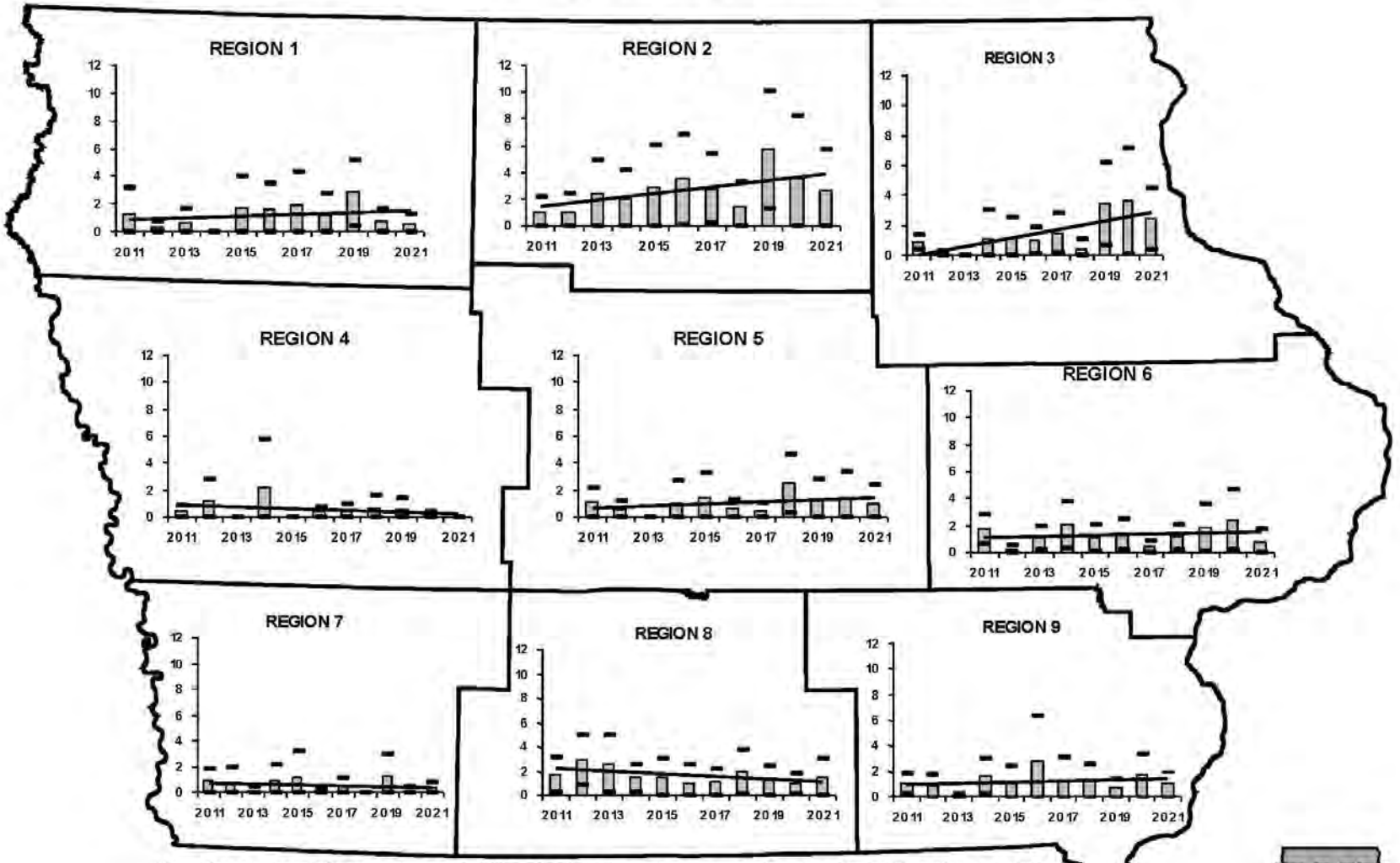
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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.

Otter Observations Per 1,000 Hours Hunted

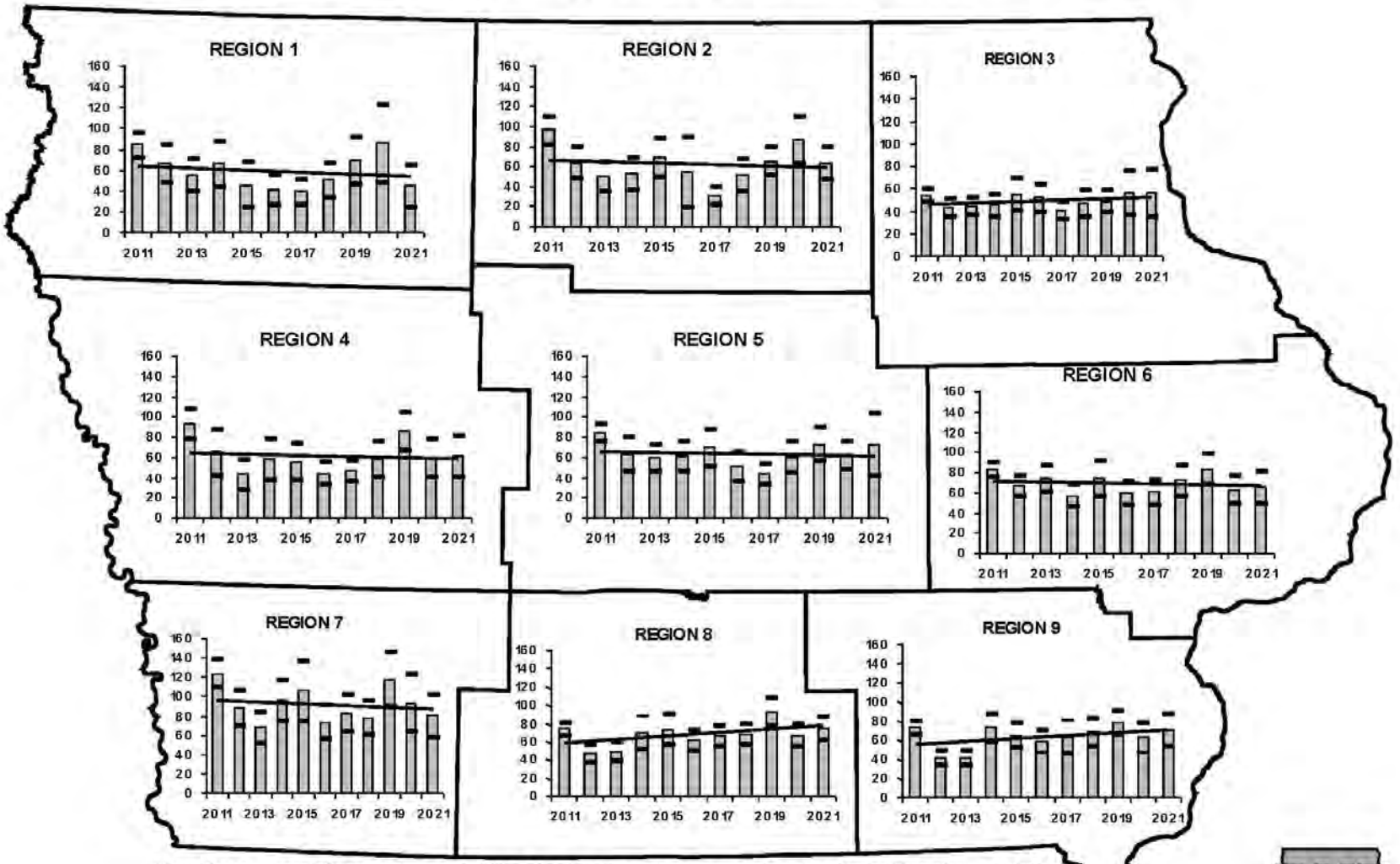
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

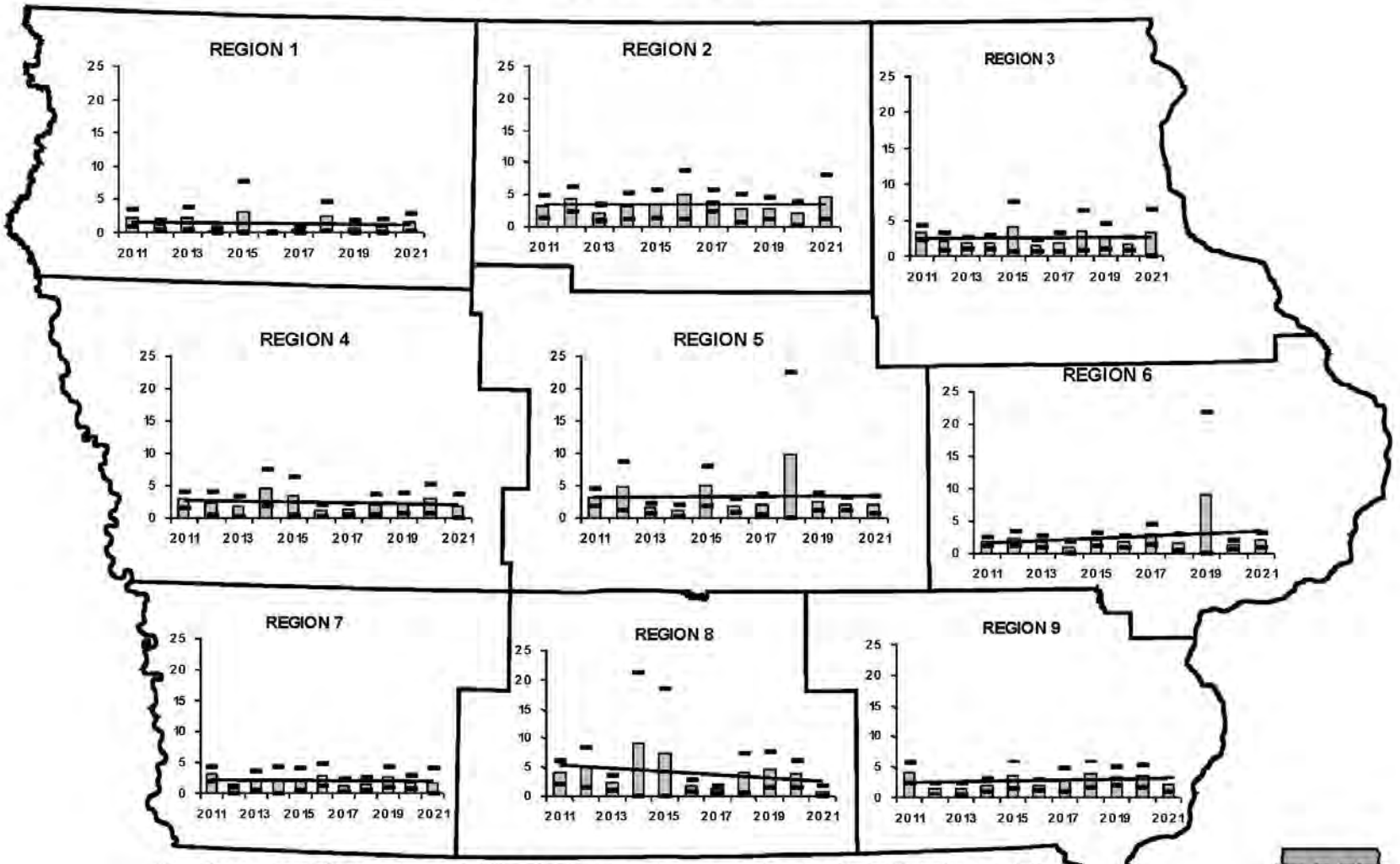
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

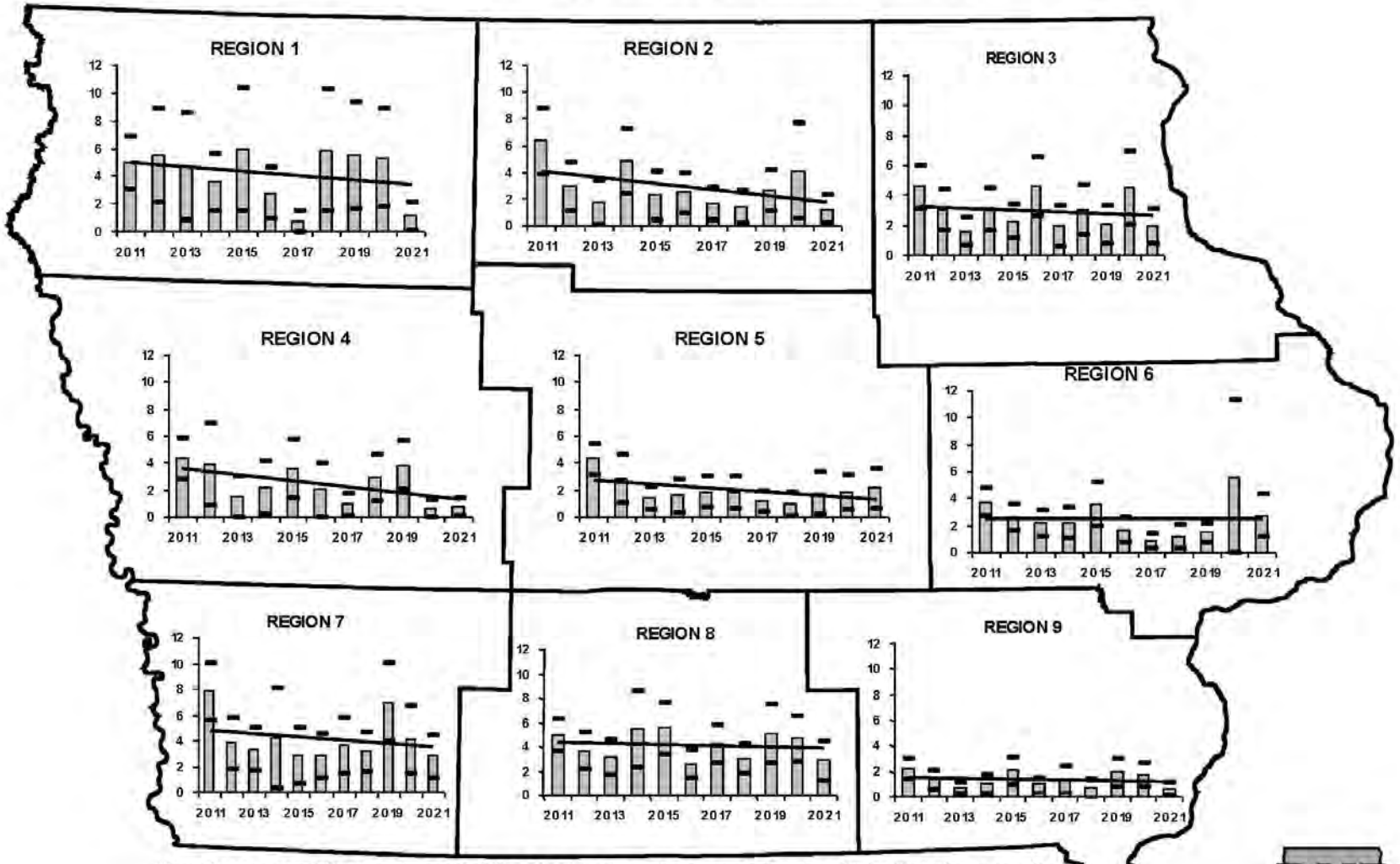
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

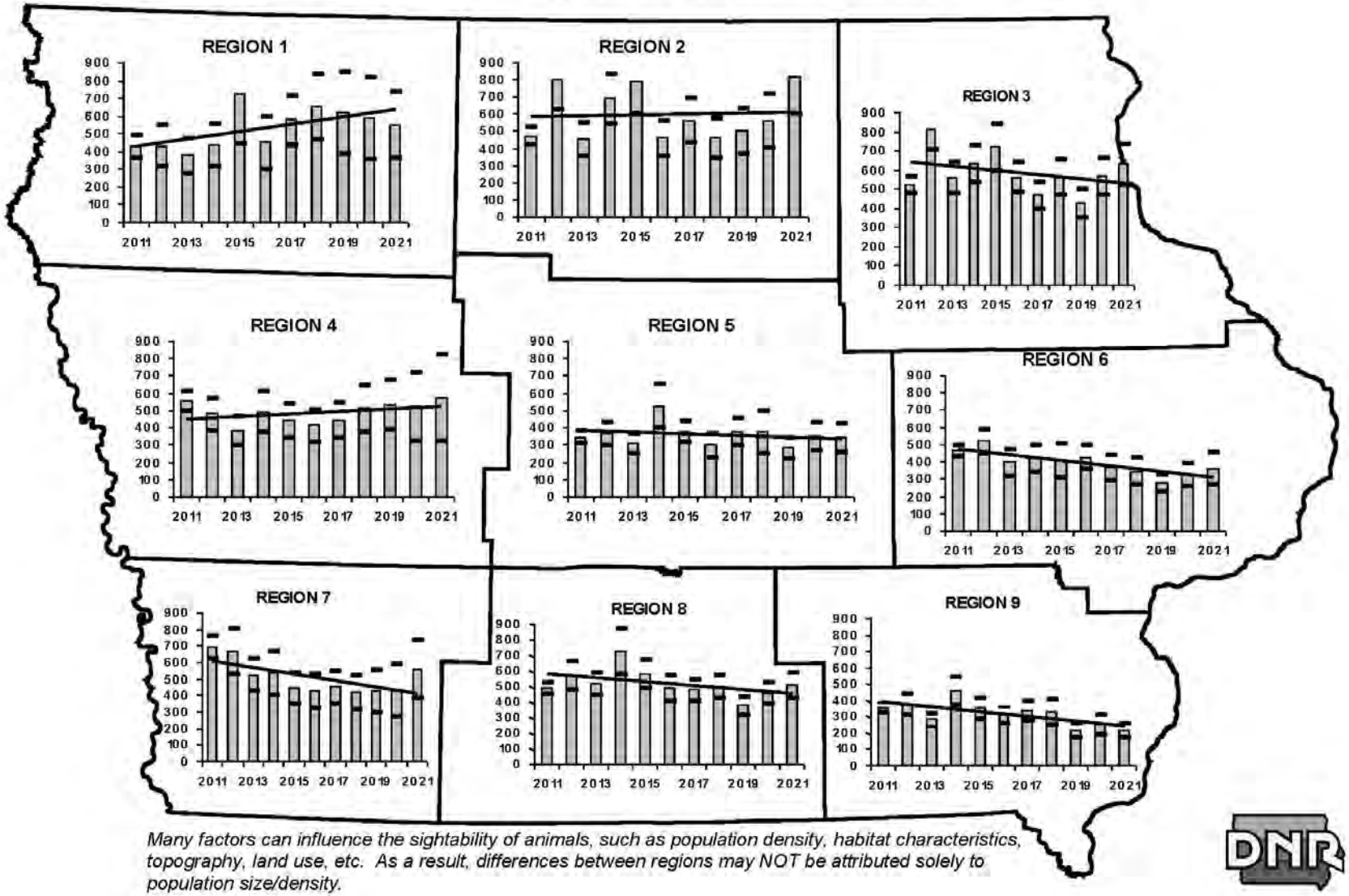
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

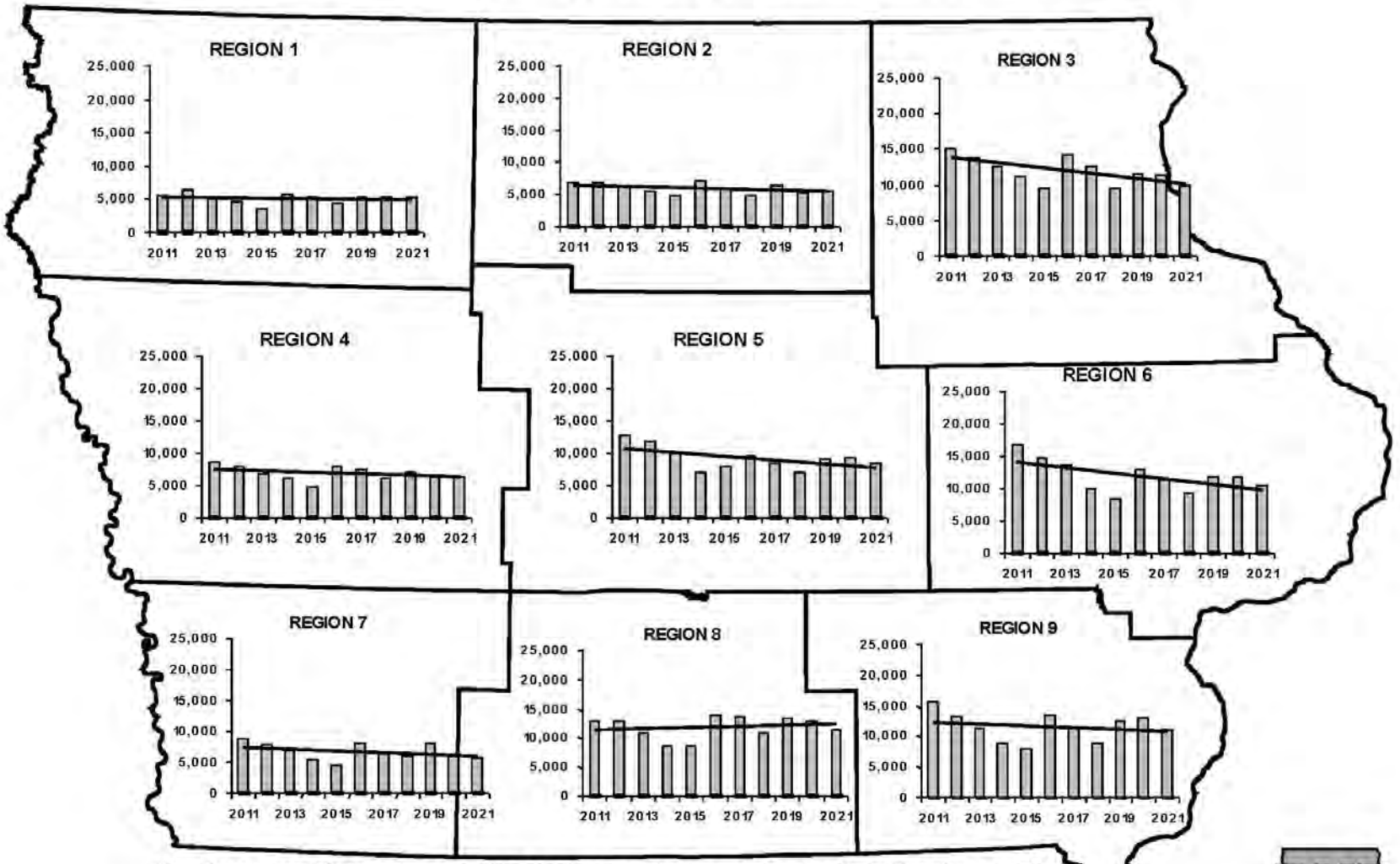
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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

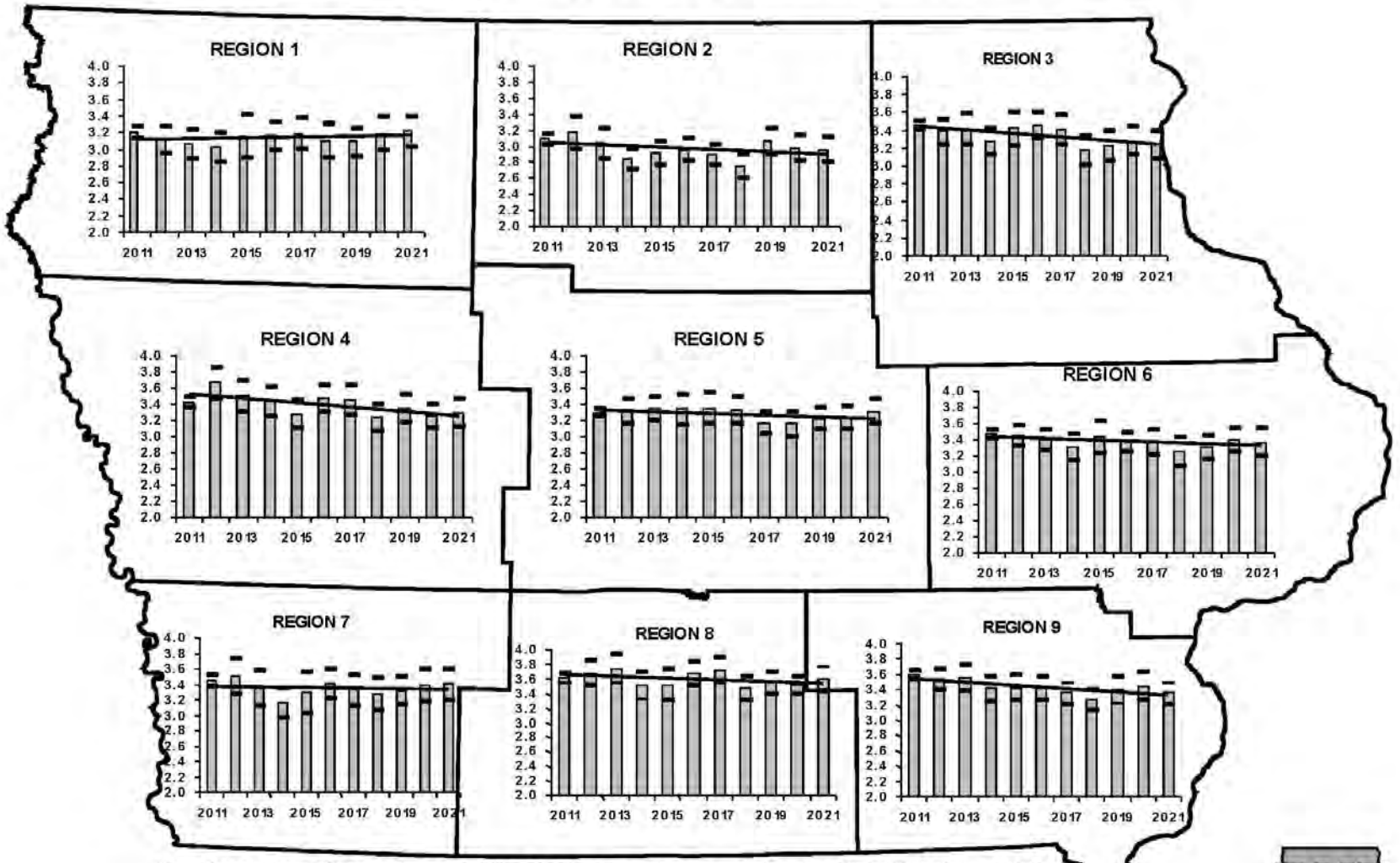
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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.

Average Hours Hunted/Bowhunting Trip

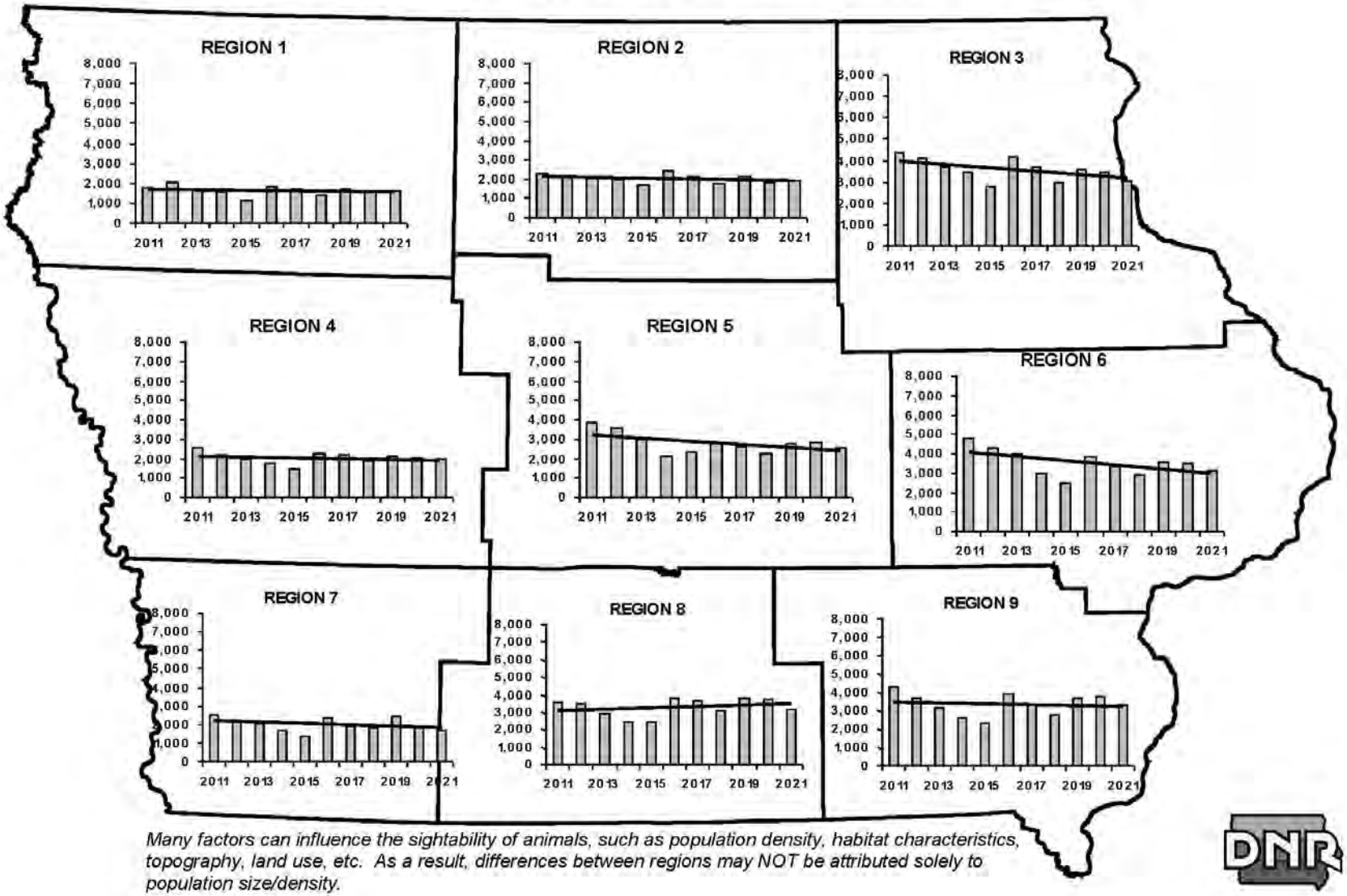
Bow Hunter Observation Survey, Iowa Dept. of Natural Resources



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.

Bowhunting Trips by Survey Participants

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.