TRENDS IN IOWA WILDLIFE POPULATIONS AND HARVEST 2011

Iowa Department of Natural Resources
Chuck Gipp, Director
October 2012

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CONSERVATION & RECREATION DIVISION

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WHITE-TAILED DEER

Historical Perspective

White-tailed deer (*Odocoileus virginianus*) were reported to be quite 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 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 at 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. Concentrations in some areas were beginning to cause problems by damaging agricultural crops in addition to some complaints concerning deer/vehicle collisions. In response to these problems the first modern deer season was held in December of 1953 and 4,000 deer were killed. The harvest in 1996 exceeded 100,000 for the first time ever.

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, easy travel lanes, 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.

The whitetail's ability to thrive in Iowa is likely the result of abundant, reliable food sources and a winter climate where snow depths rarely exceed 12" for a prolonged length of time. These factors combine to allow deer to come through the "winter bottleneck" in excellent condition. The excellent nutrition also enables deer to have high reproductive rates. Many does in Iowa give birth to a single fawn at one year of age and 2 fawns each subsequent year. Deer in the wild can maintain these high reproductive rates until they are past 10 years of age. Past research in Iowa has found that 8 to 12% of adult does have 3 fawns.

Another reason that deer do so well in Iowa is that they are very mobile. Although many deer never move far from the area where they were born, a significant number (10-20% on average) leave and travel to new areas before establishing a core area. These core areas

may change seasonally with deer shifting between wintering areas and fawning areas. These movements allow deer to fill voids left open due to deaths and changing habitat. Thus deer easily pioneer into new areas when habitat is suitable. The highest rates of movement occur during 2 periods of the year. The first is in the spring when does move to their fawning areas. Many of the previous year's fawns are forced to 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 modern day Iowa. Unchecked, 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 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 growth. Deer numbers this high would cause severe economic hardship to Iowa's landowners as well as alter the natural vegetative community. 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.

2011-2012 Hunting Season Results

This hunting season represented the sixth year of mandatory harvest reporting in Iowa. The reported kill for the 2011/12 season was 121,407 (Table 1.1) which is about 4.5% lower than in 2010 (Table 1.2). Both of these figures represent the known minimum harvest for 2011 and 2010. The hunting season of 2005 represents the record harvest year for Iowa under the former harvest estimation system. The considerations of utilizing a new harvest reporting system and its compatibility with the former system were discussed in detail in the 2006/07 annual deer report.

In 2005 and prior years, a total harvest estimate was calculated and reported based on a postseason postcard survey, this survey was felt to overestimate the actual harvest. Caution should be used when comparing the reported harvest and license success rates for this year (2011) to the harvest estimates and hunter success rates from years prior to 2006 since the techniques used to record/estimate the harvest are very different (please see the 2006 logbook report).

Antlerless deer represented 62% of the 2011 harvest and about 52% of the total harvest was comprised of does (Table 1.3). The proportions represented no change for antlerless deer and a 1% increase in does when compared to the 2010 season. Thirteen percent of the reported doe kill occurred during the November and January antlerless seasons. The reported number of antlered deer in the harvest was 5% lower than in 2010 and represented 38% of the 2011 harvest (shed-antlered bucks are included in this statistic). There were 932 shed-antlered bucks reported which represented 1.6% of the total buck harvest (includes button bucks) or 2.0% of the "antlered" buck harvest (since shed-antlered bucks, by definition, carried antlers at some point during the deer season).

Information (registration numbers, age and sex, county of kill, etc.) was collected from about 2,200 deer checked in the field and at lockers during chronic wasting disease (CWD) surveillance and hunter contacts to determine what proportion of successful hunters reported their deer. Examination of this data indicated that 88.8% of the harvested deer that were encountered in the field were reported. This was an increase of 2.2% from the reporting rate observed during the 2010 seasons.

There is likely a bias in the above rate since all of these situations require the hunter to take the deer to a locker or have contact with a DNR official or someone in an official capacity. People in these situations may be more likely to report their deer than would someone who hadn't talked with a DNR official or someone who doesn't take their deer to a locker. Recent deer hunter surveys indicate that about 1/3 of Iowa's deer hunters completely process their deer themselves. However, gathering data from these individuals is problematic since there is no way to gather the data without someone from, or working with, the DNR contacting them. In final analyses, making some allowance for the potential bias, it was estimated that about 83.8% of the deer harvested in 2011/12 were properly reported.

Figure 1.1 compares the 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 displays what past harvests might have looked like using the calculated relationship between the two systems (the "actual" harvest levels).

Utilizing the reporting information, an estimate of the number of antlered bucks, does, and button bucks killed in 2011 can be made. In Figure 1.2, estimates from 1985-2005 have been constructed on the assumption that the relationship between the reported harvest and the post-season mail survey were consistent through time and that 90% of the harvest was reported (2006 compliance data). Harvest estimates from 2006-2011 were calculated from annual harvest reporting rates as described previously. The 2011 estimate is based on an estimated 83.8% reporting rate as discussed earlier. The total corrected harvest estimate for 2011 is 144,877 which is a 7% decrease from the similar estimate for the 2010 season.

There was very little change in license sales in 2011 with 1,368 fewer deer licenses being issued for the 2011/12 deer season compared to 2010 (Table 1.4). The difference was comprised of 1,777 fewer antlerless licenses and 409 more any-deer licenses. The number of paid licenses decreased by 689 and landowner/tenant licenses decreased by 679. Antlerless licenses made up about 41% of the deer licenses issued during the 2011/12 deer season.

The season framework did not change from 2010 (Table 1.5). This was the 16th year for the special January Antlerless season and the 7th year for the November Antlerless season. Centerfire rifles could be used during the entire January Antlerless season in the 21 southernmost counties (Figure 1.3). Landowners could get 1 free either-sex license and 2 free antlerless licenses in addition to the regular tags a deer hunter could legally obtain. Seventy-two counties had additional antlerless licenses available. Twenty-seven counties in northern and central Iowa had no antlerless quota (Figure 1.3). Hunters in all seasons could obtain an unlimited number of antlerless licenses but were limited to the purchase of one

antlerless license prior to 15 September. Antlerless licenses were restricted to a specific county and season.

About 2,650 deer were taken during special management hunts in urban areas and in state and county parks (Table 1.6). Approximately 2,450 deer were reported by hunters using special antlerless depredation licenses that were allotted to landowners who were experiencing crop damage problems. Authorization numbers are issued to the landowner who can then distribute them to hunters who use them to purchase a depredation license. The harvest represents a slight decrease for the special management hunts (2%) while the depredation harvest increased by 4%.

Four of the top 10 counties for total kill were in the northeast portion of the state in 2011 with the remainder being in southern and central Iowa. Clayton was again the top county for total reported kill with 4,729 deer or about 6.1 deer harvested per square mile (Tables 1.7 & 1.3). Van Buren County had the highest kill density at 7.5 deer harvested per square mile. Grundy County had the lowest kill with a reported 123 deer or about 0.25 deer per square mile. Calhoun County had the lowest harvest density at 0.22 deer per square mile.

Tissue samples were gathered and tested from 4,526 wild deer for CWD surveillance purposes. The majority of the samples were obtained during the shotgun seasons with concentrated efforts in northeastern Iowa as the disease occurs in neighboring wild deer populations in Illinois and Wisconsin. Two southern Iowa counties (Appanoose & Wayne) also received increased sampling efforts in response to captive whitetails that tested positive for CWD in Linn and Macon counties, Missouri in 2010 and 2011. Missouri later confirmed its first cases of CWD in wild deer from Macon County in 2012. Surveillance was also increased in Howard, Mitchell, and Winneshiek counties in 2011 in response to one wild whitetail testing positive in Olmstead County, Minnesota near Pine Island in 2011. Tissue samples were also collected from 375 captive deer and elk.

The 2011/12 samples were shipped to the Texas Veterinary Medical Diagnostic Lab at Texas A&M University. On 10 July 2012, it was confirmed that a single captive animal from a Davis County shooting preserve (captive whitetail operation) near Bloomfield, Iowa tested positive for CWD. The facility is currently under quarantine and the case is in the process of being investigated. Increased surveillance of wild deer will be implemented this fall to determine if the disease has spread outside the facility. Iowa has tested approximately 2,650 deer from shooting preserves since 2003 (including 127 deer from the positive facility). Since 2003, Iowa has tested more than 42,500 tissue samples from wild deer and no CWD has been detected to date.

Shotgun Season

The reported kill during the shotgun seasons was about 7% lower than the reported harvest for 2010 (Table 1.1). Looking at just the data from the mandatory reporting system (2006-2011), the shotgun harvest has declined for the last 5 years. Overall, hunting conditions were good with an early crop harvest and reasonable weather during the seasons. The opening day of Shotgun 1 season experienced some rain (snow in northwest Iowa) and there were small amounts of precipitation mid-week during the Shotgun 2 season. More deer were reported during the Shotgun 2 season compared to 2010 while fewer were reported during the Shotgun 1 season.

Antlered bucks made up about 38% of the total kill, while does made up 51% of the kill. Button bucks made up about 11%

of the reported harvest and shed-antlered bucks accounted for less than 1%. However, the number of shed-antlered bucks harvested during the shotgun seasons (215 reported) represented 23% of the total number of shed-antlered bucks reported during the 2011/12 season.

There were 80,051 paid resident licenses sold for the first season and 31,061 deer were reported killed, while 63,944 paid resident licenses resulted in 21,069 deer reported during the second season. The reported success rate for first season hunters was 39% while second season license holders reported 33% success.

Does made up a slightly higher proportion of the first season harvest when compared to antlered bucks at 46% and 43%, respectively. During the second season, does made up the majority of the harvest at 53%. Antlerless deer made up 57% of the reported kill during the first season and 65% of the kill during the second season.

The reported deer kill (Figure 1.4) was highest in eastern and southern Iowa during both seasons as would be expected due to deer densities and hunting opportunities.

Does made up less than 50% of the kill in most counties during the first season (Figure 1.5). However, does made up over 50% of the harvest in 62 counties during the second season (63 counties in 2010).

Assuming that any biases in reporting are consistent between counties (which the data suggests), some generalizations can be made regarding harvest distribution (Tables 1.7 and 1.3). Current regulations continue to be effective in allowing more deer to be taken in southern and eastern Iowa (Figure 1.6). The deer seasons and antlerless quota allocations for 2011 also maintained higher levels of doe harvest in the targeted areas of the state (Figure 1.7) as does make up over 50% of the harvest in the vast majority of these counties.

January Antlerless Season

For 2011/12 license year, there were 42 counties open for the January antlerless season (the same as in 2010/11, Figure 1.3). All licenses issued for this season were for antlerless deer only. The season was the same length for all counties (11-29 January) but centerfire rifles could be used during the entire season in designated southern counties. A total of 25,829 licenses were issued, which is 3% less than the previous year with 30% of them being reported as filled (Table 1.1). Licenses for this season did not go on sale until 15 December.

About 7,775 antlerless deer were reported during the season (does not include harvest from depredation licenses) which was an 8% decrease from the reported kill in January 2011. The reported kill during this season accounted for 6.8% of the statewide total kill and does harvested during the January antlerless season represented about 11% of the total doe harvest.

However, the impact in many counties was much greater. The harvest represented 30% of the reported county kill and 47% of the doe kill in Decatur County for example. In most southern Iowa counties the harvest represented from 15-30% of the total doe harvest for the county (Figure 1.8). Hunters reported that 81% of the deer taken were does and about 13% were buck fawns.

Shed-antlered bucks made up 5.9% of the reported harvest for the January antlerless season (490 animals). The season accounted for 53% of the total number of shed-antlered bucks reported during the 2011/12 season.

November Antlerless Season

This season was initiated during the 2005 hunting season. The season runs for 3 days beginning the Friday after Thanksgiving. The licenses for this season did not go on sale until 15 November. The reason for the delay was to only have this season in those counties where the county antlerless license quota had not filled. The season was potentially open in 42 counties, the same as in 2010.

About 7,450 licenses were issued (an 18% decrease from 2010) and hunters reported killing about 2,000 deer during this season (a 29% decrease from 2010). Seventy-eight percent of the deer killed were does. The kill during this season represented about 2% of the total harvest and accounted for 2.7% of the doe harvest (Table 1.1).

Archery

The reported harvest for 2011 was about 23,300 deer which was 4% more than the reported harvest in 2010 (Table 1.1). The number of licenses issued increased by 1% from the previous year to 92,728. Hunters reported that 29% of the antlerless licenses were used to tag a deer and the overall reported success rate was 25%, 1% higher than in 2010.

Sixty percent of the deer taken by archers were male and 53% were antlered bucks (includes shed-antlered bucks, Table 1.8). During the archery season, 50 shed-antlered bucks were reported which represented 5% of the total number of shed-antlered bucks reported in 2011.

Muzzleloader

The reported kill during the early muzzleloader season was 4,427 (a 10% increase from 2010) and license sales were consistent with 2010 sales (Table 1.1). About 36% of the licenses purchased were reported to have been used to tag a deer. Bucks made up 53% of the kill, with antlered bucks making up about 46% of the total (Table 1.9).

The reported kill during the late muzzleloader season was 8,745 (Table 1.1) which represented a decrease of 8% from the 2010 reported harvest. Fifty-five percent of the deer reported were does and 36% of the deer killed during the late muzzleloader season were antlered bucks (includes shed-antlered bucks). During the late muzzleloader season, 151 shed-antlered bucks were reported in the kill which represents about 2% of the harvest for the season and about 16% of the total number of shed-antlered bucks reported in 2011/12.

Nonresidents

Of the 5,991 any-deer licenses issued, 2,940 or 49% went to hunters during the shotgun seasons, 2,101 or 35% to bowhunters, 944 or 16% to late season muzzleloader hunters, and 6 were drawn by disabled nonresidents. All of these nonresident hunters also received an antlerless-only license (5,991 licenses) as part of their any-deer license package.

The reported success rates for the any-deer licenses were 51% for the shotgun licenses, 36% for the late muzzleloader licenses, and 44% for the archery licenses. Only 5% of the deer tagged by nonresidents with any-deer licenses were does (Iowa residents reported 27% does on any-deer licenses). The reported success rates for the antlerless-only licenses held by these hunters were 38% for the shotgun licenses, 26% for the late muzzleloader licenses, and 19% for the archery licenses.

An additional 2,524 Optional Antlerless-only licenses were issued to nonresidents. Of these, 2,241 went to

shotgun hunters, 206 went to hunters participating in the holiday season (12/24 – 1/2/12), and 77 licenses were purchased for the January Antlerless season. The reported success rates for the optional antlerless licenses were 38% for the shotgun seasons, 23% for the holiday antlerless season, and 51% during the January season.

Collectively, the success rate for all the nonresident antlerless licenses issued during the shotgun seasons was 38%.

In total, nonresidents reported harvesting about 2,771 antlered bucks, 2,400 does, and 308 button bucks. The reported success rate for all licenses was 38% and the overall harvest consisted of 44% does.

Special Youth & Disabled Hunter Season

The total number of licenses issued (9,590) for this special season was 3% higher than in 2010 (Table 1.1). About 280 of the licenses were issued to disabled hunters which was a 3% decrease from 2010. Youth season hunters who did not take a deer during the Youth deer hunting season were able to use the deer hunting license and unused tag during the early or late muzzleloader seasons or one of the two shotgun seasons. Also, an any-deer license purchased by either a Youth or Disabled season hunter did not count towards the maximum number of any-deer licenses allowed in Iowa.

The reported success rate was 35% with 3,368 deer registered with the harvest reporting system (a 6% increase from 2010). About 48% of the deer reported were antlerless and the reported harvest consisted of 39% does.

Special Deer Management Zones

Special management hunts were conducted at 55 locations in 2011/12 (some hunts were cancelled due to the Missouri River flooding) and about 2,650 deer were reported (Table 1.6). 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 license purchases or bag limit. Most hunts were very successful in removing deer in these problem areas.

An additional 4,915 licenses and permits were issued to hunters/landowners in depredation situations which resulted in the reported harvest of 2,448 deer. This is a 4% increase in the depredation harvest from 2010/11.

Population Trend Surveys

Four techniques are currently used to monitor deer population trends in Iowa. These are 1) aerial surveys conducted in January–March after the deer seasons are complete, 2) spotlight surveys conducted in April, 3) a record of the number of deer killed on Iowa's rural highways throughout the year coupled with annual highway use estimates, and 4) the bowhunter observation survey conducted during October–November. All of these surveys correlate well with the corrected harvest estimates and appear to provide reliable long-term trend indices. However, none of these surveys can be considered absolutely reliable predictors of annual changes in the population because of the high variability in the survey conditions, deer behavior, and habitat conditions.

Deer populations for the state as a whole have declined after displaying strong growth for over a decade (Figure 1.9). This is due to the dramatically increased harvest pressure that has been applied to the female segment of the herds beginning with the

2003 hunting season. The goal is to return deer population levels to those that existed in the mid-to-late 1990s.

Iowa experienced a very mild winter during 2011/12 which resulted in very few aerial trend surveys being completed. Only 15% (52) of the surveys were completed with many of those being flown under marginal survey conditions. This was the lowest number of surveys completed in the last 20 years. Due to the number and quality of the completed surveys, no statewide assessment was attempted with the data.

The number of deer killed on rural highways increased by about 5% in 2011. The estimated number of vehicle miles driven also increased in 2011 when compared to 2010 so the adjusted road kill (kills per billion miles – KBM) increased by 4% overall (Table 1.10). The trend in road kills (KBM) has been a declining one as the deer population decreases, but the relationship between these two variables has never been directly linear. The KBM rates over the last 4 years compare well to estimates from the early 1990s.

The old spotlight routes were discontinued in 2012 with the trend survey being continued using the new spotlight routes that were established in 2006. The new spotlight routes first began to be utilized in the model analyses in 2010 and display less variability overall when compared to the old routes. 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 were also set up to be more representative of the available rural habitats within a county. The average number of deer observed per 25 miles decreased by 13% on the new routes in 2012 (Table 1.10).

The bowhunter observation data, which began to be collected during the 2004 season, also were utilized beginning with the 2010 analyses. This survey represents over 100,000 hours of observation distributed throughout the state and is conducted voluntarily by Iowa archers. The tactics used during this season (stand hunting) make it useful for gathering observational data.

While both of these newer trend surveys (new spotlight routes and bowhunter) are relatively "young" as far as their trend history is concerned, their value will increase as more annual data is gathered.

Utilizing the mathematical relationships described earlier to plot estimated harvests and harvest structures from 2006-2012, the data was utilized in the population model and the resulting "best fit" simulation indicates a declining deer population statewide (Figure 1.9). The model suggests that about a 10% decline in the population occurred as a result of the 2011/12 harvests in conjunction with other mortality factors. The model has its best correlations with components of the road kill survey, the bowhunter survey, and the spotlight surveys.

The data indicates that, statewide, the deer herd has been declining since 2006. Approximately two-thirds of Iowa's counties have reached the established goal to return to the mid-to-late 1990 population levels.

Outlook for 2012

After 9 years of increased doe harvest, hunters are seeing reduced deer numbers in most areas of the state. Nearly two-thirds of Iowa's counties have reached or exceeded the department's goal. The goal is a stable population at a level comparable to the mid-to-late 1990s. A population at this level should sustain an

estimated annual harvest of 100,000 to 120,000 deer.

Thirty-three counties, primarily in north-central and northwestern Iowa, are currently at or slightly below the department's goal. Antlerless quotas for these counties were reduced prior to the 2010 season and current harvest levels are keeping numbers fairly stable. However, adjustments may be needed in the future to further stabilize or slightly increase populations in some counties that the data indicates are below goal. Current data indicate that 22 additional counties in the eastern portions of the state are at goal along with at least another 8 counties in central portions of the state.

Some county antlerless quota reductions were adopted for the 2012 season in 20 eastern counties. However, hunters will still need to be judicious in their use of antlerless licenses in these counties as well as others or deer numbers may go below the department's goal. Deer numbers are still above the department's goal in some areas in central and southwestern Iowa. The 2012 antlerless quotas will help reduce deer numbers in these areas to the department's goals.

In addition to the antlerless quota reductions, the complete elimination of the November Antlerless season was adopted so this season will not be held in 2012. Four northeastern counties were removed from the January Antlerless season and in the remaining open counties the season was shortened by one week.

As deer numbers continue to decline, hunters will need to become more cautious in the number of does they harvest. Hunters can drive deer numbers lower than desired in local areas even in those counties where deer numbers remain above the goal. Conversely, there are areas in some counties that are at goal where deer numbers are still overabundant. Hunters need to work with landowners to find a desirable level of harvest.

The 2011/12 winter was mild with very little snow cover or severe temperatures. The spring weather warmed up early and was drier than normal and this trend has continued on into the summer. The lack of rain, coupled with hotter than normal temperatures, has put Iowa into severe to extreme drought conditions statewide. This is having an impact on natural forage production, crop production, and water availability. Beginning in early August, reports of dead deer began to come in from southeastern and central Iowa counties. The timing, description, and necropsy of dead animals are indicative hemorrhagic disease and samples are being gathered for laboratory diagnosis.

Figure 1.1. A comparison of the post-season harvest estimates from 1985-2005 (the top line) with the reported harvests from 2006-11 (the bottom line). The dotted line would be the "actual" harvest based on annual reporting compliance estimates (2006-11) and on 2006 reporting rates (90%) for the years prior to 2006 (the first year of mandatory reporting).

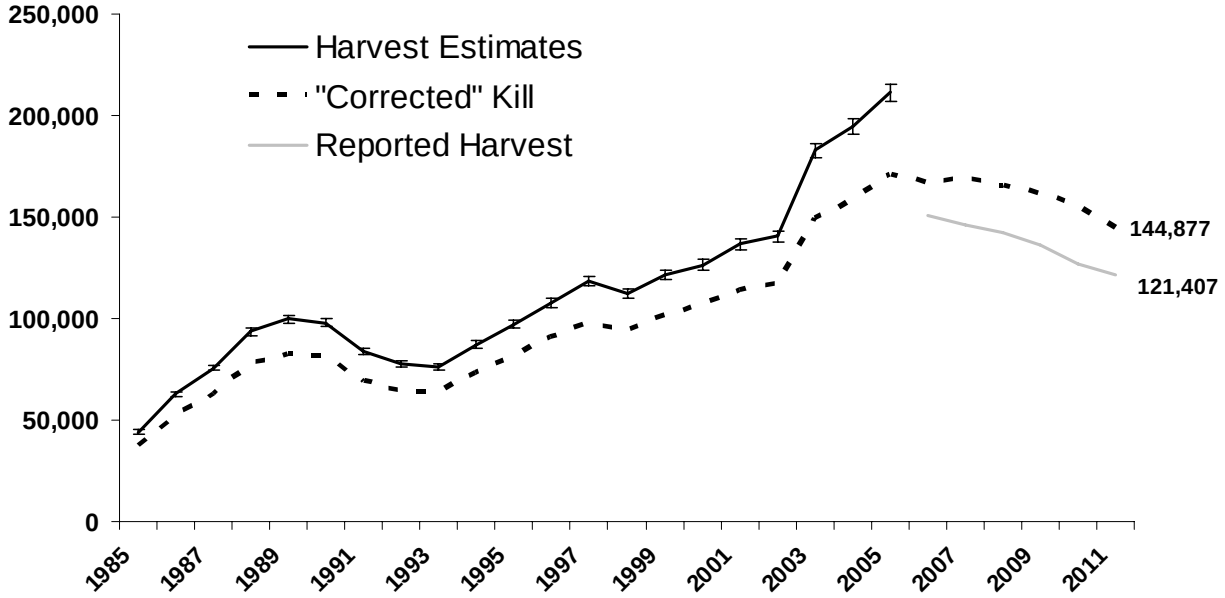


Figure 1.2. An estimate of the number of antlered bucks, does, and button bucks killed in 2011 if 83.8% of the actual harvest were reported. The estimates from 1985 -2005 assume the relationship between the reported harvest and the post-season mail survey would have been consistent in the past and were constructed using the 90% reporting rate estimate that was calculated for the 2006 hunting season (the first year of mandatory reporting).

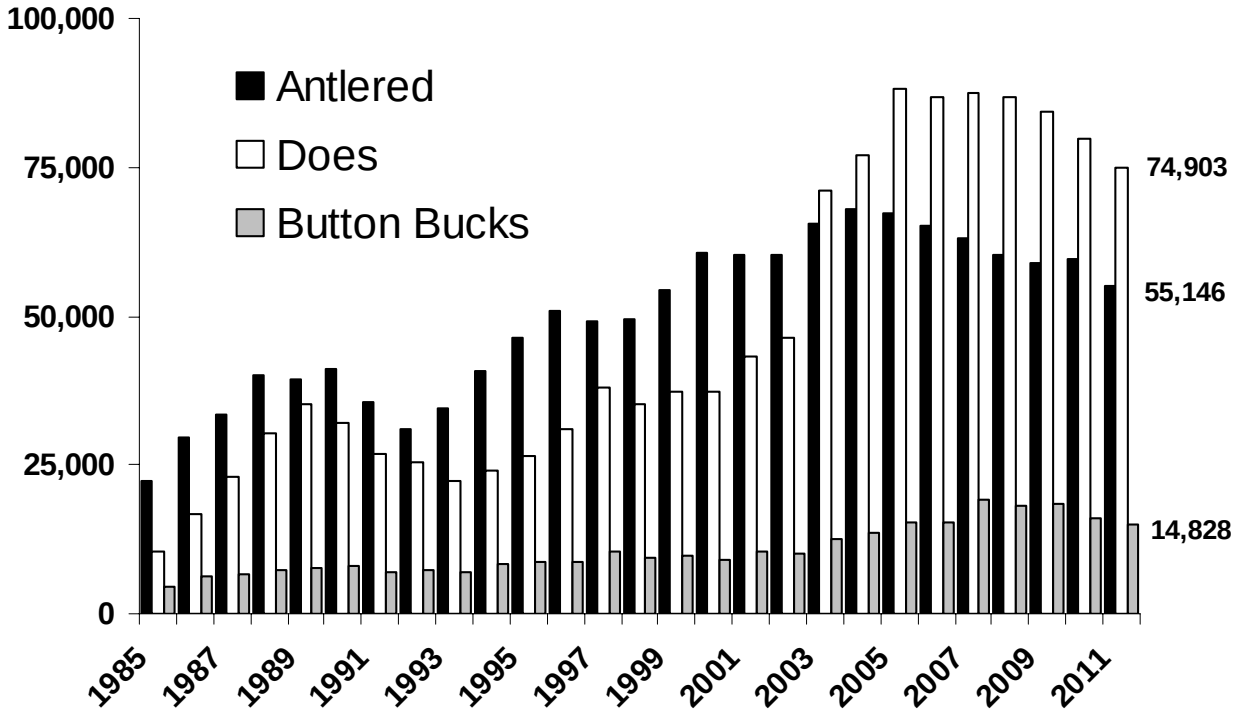


Figure 1.3. The number of paid resident antlerless-only license available in 2011/12 in each county. The shaded counties were open for the November and January antlerless-only seasons and centerfire rifles were legal during the January antlerless season in the dark shade counties.

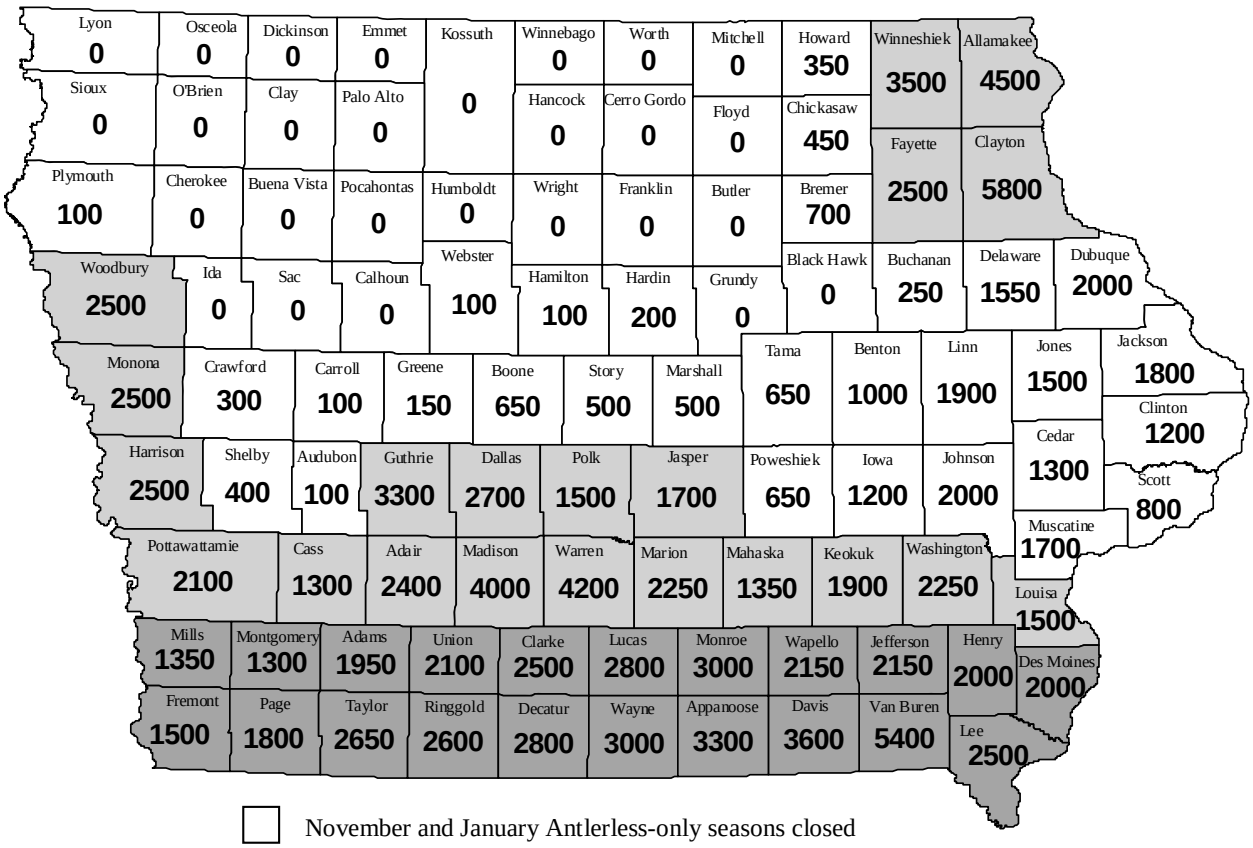
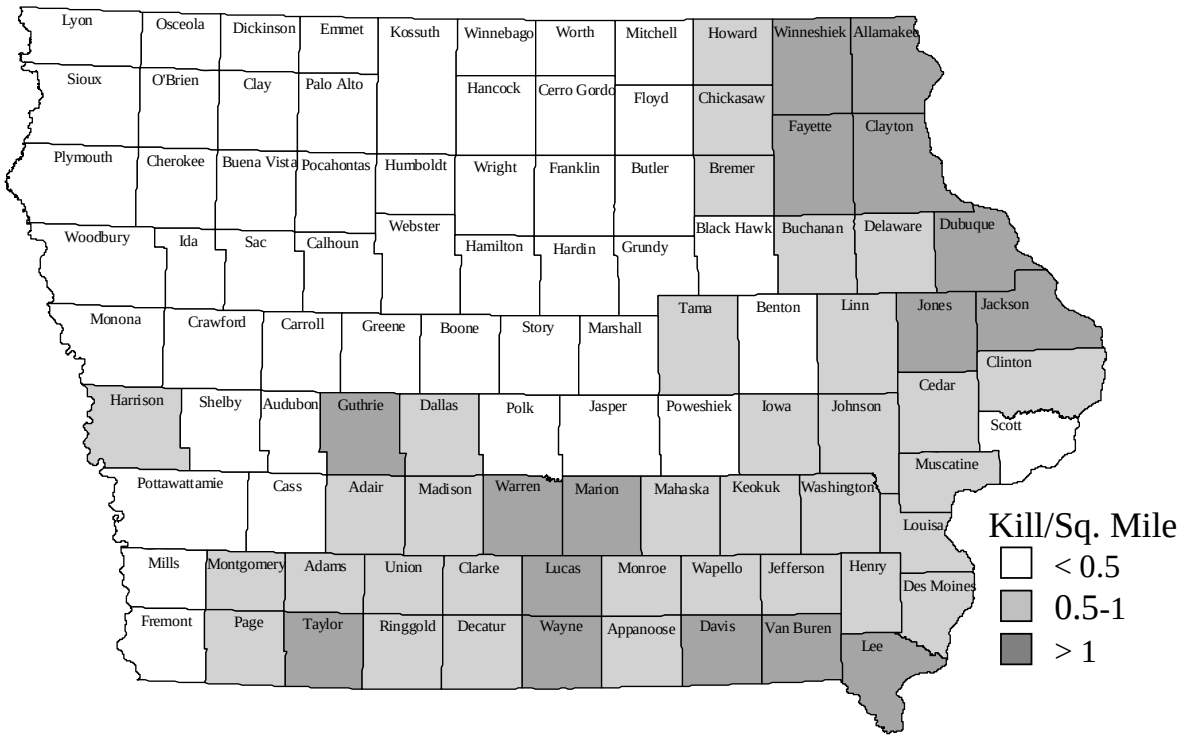
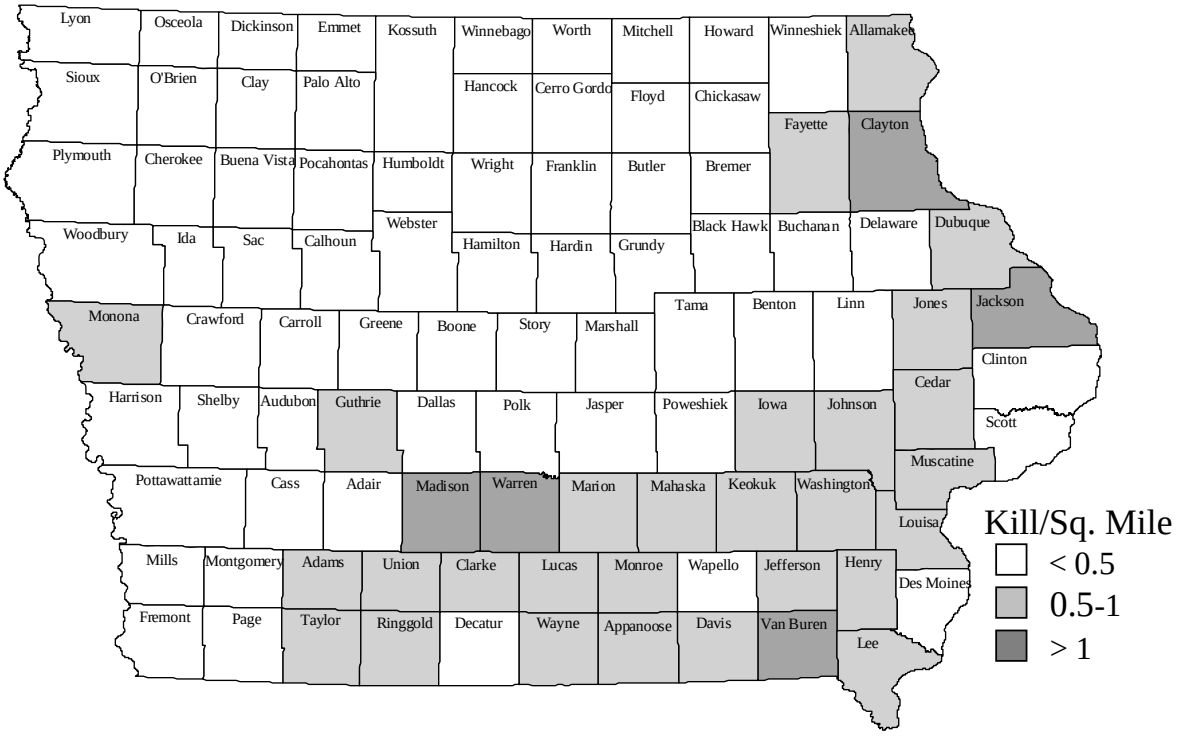


Figure 1.4. The average number of deer killed per square mile in each county based upon the reported harvest during the 2011 shotgun seasons. The kill by hunters with free landowner/tenant licenses was not included since their licenses were valid for both seasons.

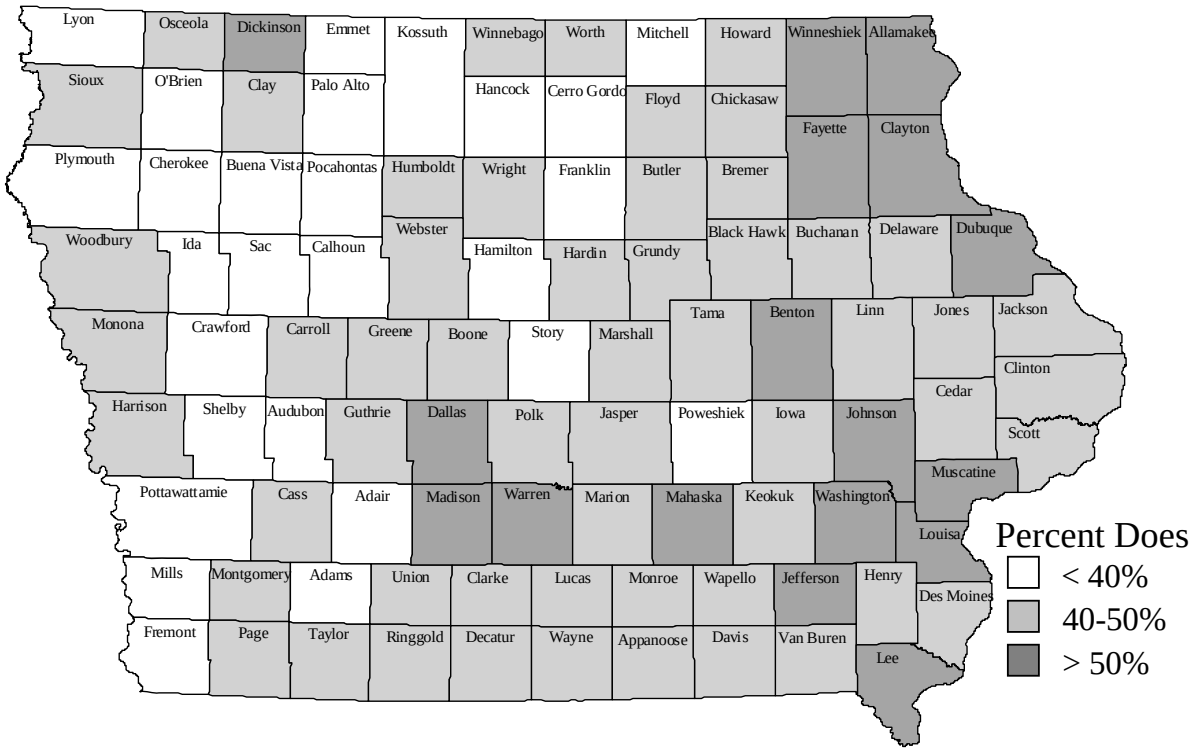


Season 1

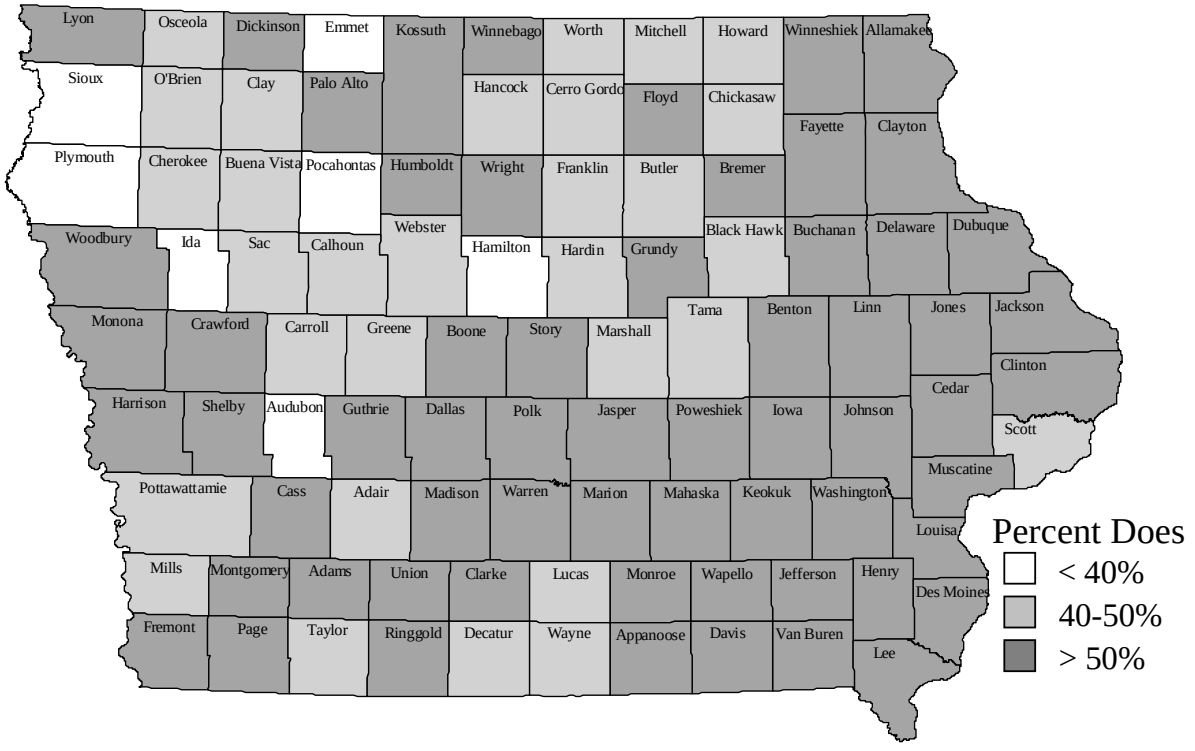


Season 2

Figure 1.5. The proportion of the reported harvest by hunters with paid licenses that were does during the 2011 shotgun seasons. The kill by hunters with free landowner/tenant licenses are not included since their licenses are valid for both seasons.



Season 1



Season 2

Figure 1.6. The average number of deer killed per square mile in each county during the 2011/12 deer season using the reported harvest.

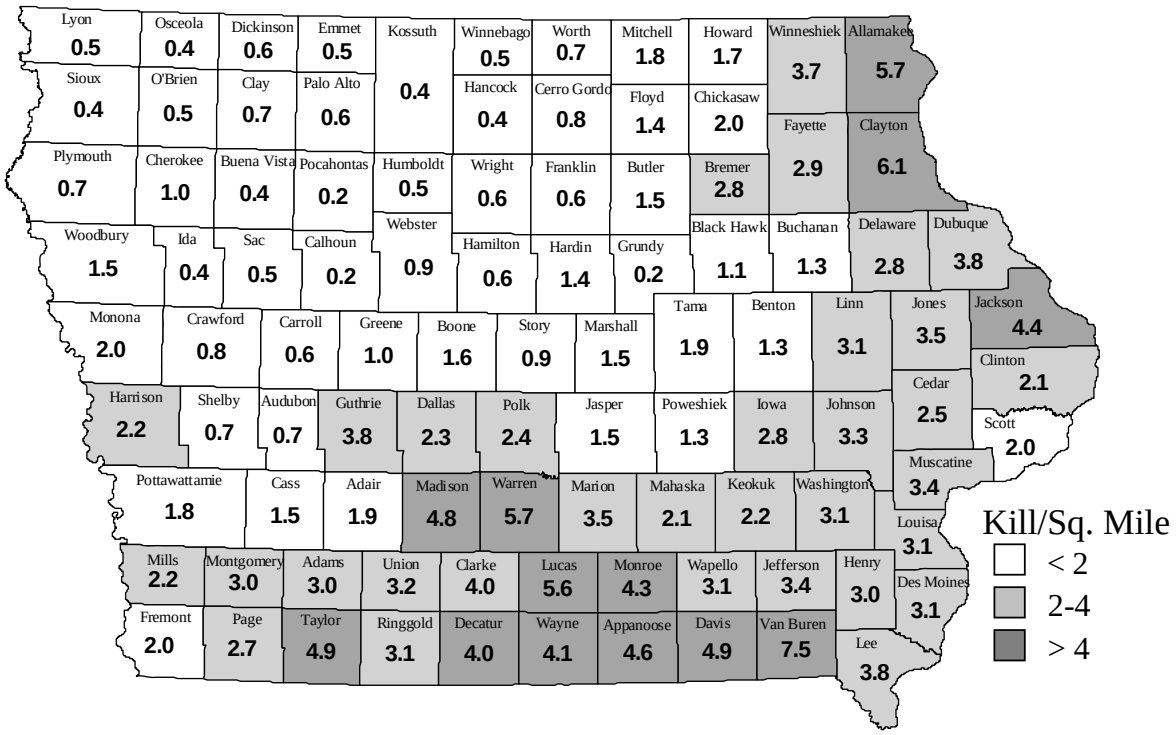


Figure 1.7. The proportion of the reported harvest that were does in each county during the 2011/12 deer season.

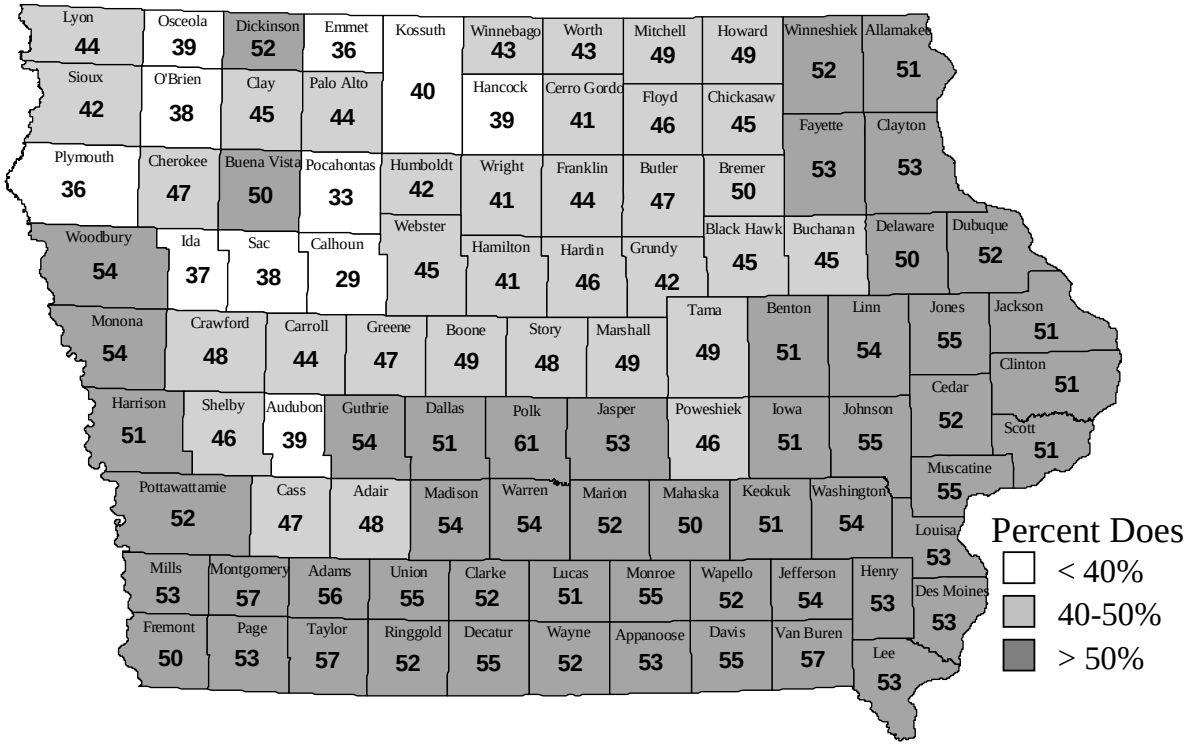


Figure 1.8. The proportion of the total reported doe harvest in each county that were killed during the 2012 January Antlerless deer season.

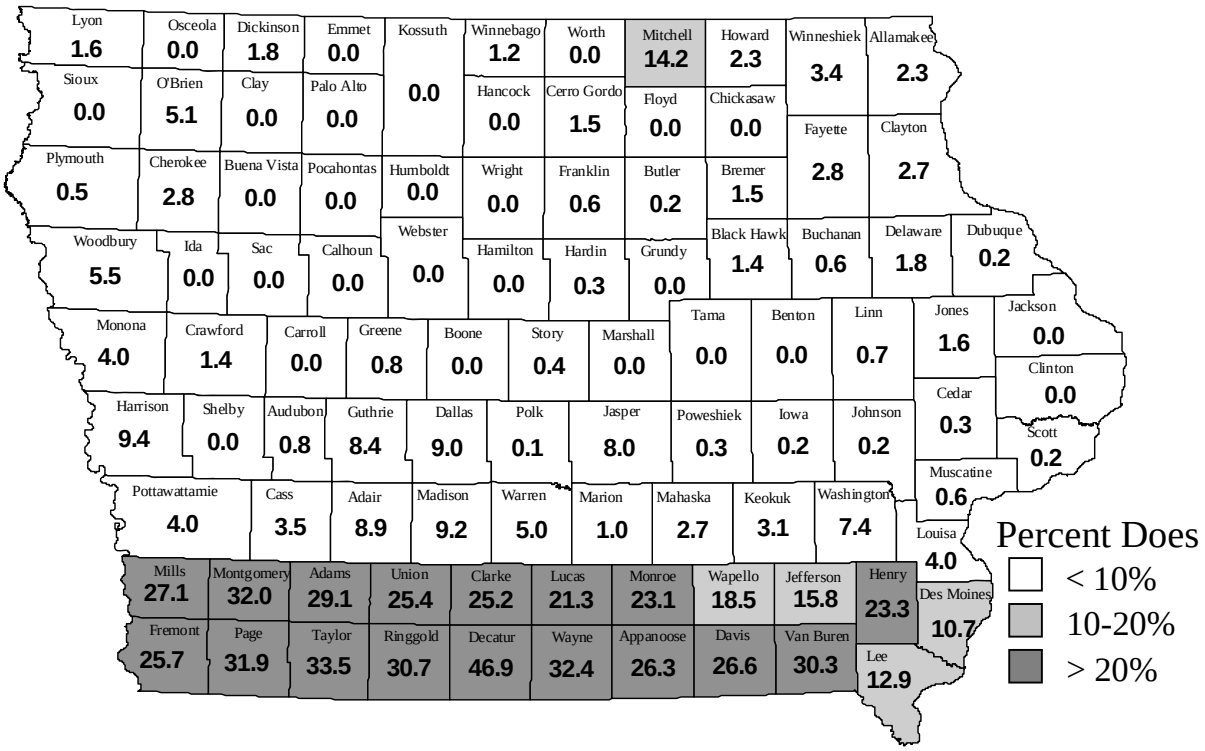


Figure 1.9. A comparison of the results from the statewide population simulation with deer population trend surveys. This simulation uses the 2011 harvest from the reporting system and a reporting rate of 83.8%.

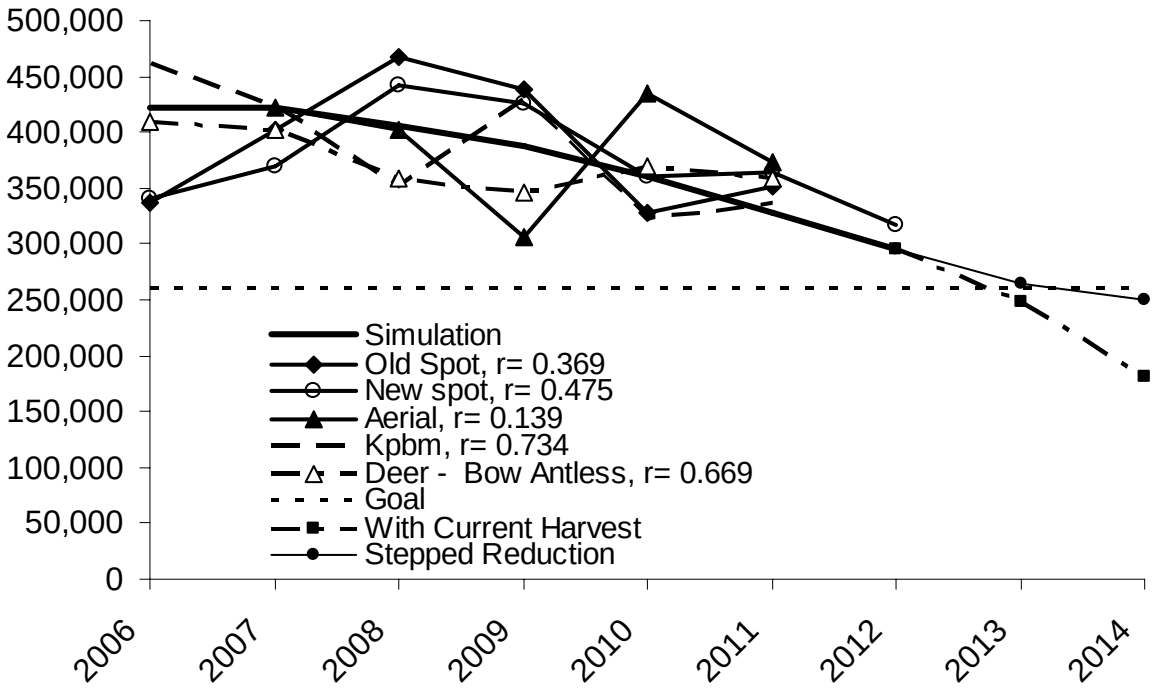


Table 1.1 A summary of the number of licenses issued, the number of deer harvested, and success rates for the 2011-2012 season.

Season		License Type	Licenses Issued		Number of Hunters [c]	Harvest [d]		Success Rate [e]
REGULAR GUN								
Season 1	Paid	Either-sex	58,237		58,237	21,348		37%
		Antlerless	21,814		13,725	9,713		45%
Season 2		Either-sex	43,892		43,892	12,998		30%
		Antlerless	20,052		11,953	8,071		40%
	Nonresident	Both	8,121		5,196	3,467		43%
		Total	152,116	(-1%)[a]	133,003	55,597	(-7%)	37%
Season 1 & 2	Landowner	Either-sex	24,438		24,438	5,734		23%
		Antlerless	17,535		14,860	5,275		30%
		Total	41,973	(+1%)	39,298	11,009	(-4%)	26%
GUN SEASON TOTAL			**194,089**	**(NC)**	**172,301**	**66,606**	**(-7%)**	**34%**
MUZZLELOADER								
Early	Paid	Either-sex	7,499		7,499	2,752		37%
		Antlerless	1,745		1,264	851		49%
	Landowner	Both	3,189		2,746	824		26%
		Total	12,433	(NC)	11,509	4,427	(+10%)	36%
Late	Paid	Either-sex	19,619		19,619	4,005		20%
		Antlerless	13,210		9,144	3,288		25%
	Landowner	Both	5,363		4,679	872		16%
	Nonresident	Both	1,888		944	580		31%
		Total	40,080	(+4%)	34,386	8,745	(-8%)	22%
MUZZLELOADER TOTAL			**52,513**	**(+3%)**	**45,895**	**13,172**	**(-2%)**	**25%**
NOVEMBER ANTLERLESS SEASON								
	Paid	Antlerless	6,280		5,124	1,733		28%
	Landowner	Antlerless	1,166		1,095	261		22%
		Total	**7,446**	**(-18%)**	**6,219**	**1,994**	**(-29%)**	**27%**
JANUARY ANTLERLESS SEASON								
	Paid	Antlerless	18,889		11,475	6,659		35%
	Landowner	Antlerless	6,940		6,416	1,122		16%
		Total	**25,829**	**(-3%)**	**17,891**	**7,781**	**(-8%)**	**30%**
YOUTH	Paid	Both	9,134		8,718	3,222		35%
	Landowner	Both	176		160	51		29%
	Disabled	Both	280		235	95		34%
		Total	**9,590**	**(+3%)**	**9,113**	**3,368**	**(+6%)**	**35%**
ARCHERY	Paid	Either-sex	52,561		52,561	11,706		22%
		Antlerless	27,151		17,676	7,917		29%
	Landowner	Both	8,814		6,683	2,360		27%
	Nonresident	Both	4,202		2,101	1,312		31%
		Total	**92,728**	**(+1%)**	**79,021**	**23,295**	**(+4%)**	**25%**
TOTAL [b]			**392,930**	**(NC)**	**335,450**	**121,407**	**(-4%)**	

[a] - the numbers in parentheses are the percent change from 2010-2011, NC = < 0.5%

[b] - total include licenses and kill from hunts in special deer management zones and depredation licenses

[c] - number of individuals with licenses, not comparable to estimates prior to 2006 hunting season

[d] - reported kill, not comparable to estimates prior to the 2006 hunting season

[e] - licenses reported successfully filled, not comparable to estimates prior to 2006 hunting season

Table 1.2. Historical data on deer harvest by license type (1987-present). Grand Total includes IAAP harvest, special management unit hunts, nonresidents and youth.

	Regular Gun			Muzzleloader				Grand
Year	Paid	Landowner	Total	Early	Late	Total	Archery	Total*
1987	53,230	10,270	63,500	1,509	1,027	2,536	9,722	75,758
1988	66,757	13,298	80,055	1,835	1,294	3,129	9,897	93,756
1989	67,606	12,963	80,569	2,619	3,715	6,334	11,857	99,712
1990	69,101	9,095	78,196	2,819	5,884	8,703	10,146	98,002
1991	56,811	11,575	68,386	3,120	2,766	5,886	8,807	83,635
1992	50,822	10,453	61,275	3,316	3,231	6,564	8,814	77,684
1993	52,624	8,354	60,978	2,219	2,883	5,102	9,291	76,430
1994	59,054	8,735	67,789	2,610	3,196	5,806	12,040	87,231
1995	65,206	7,917	73,123	2,831	3,408	6,363	13,372	97,256
1996	71,577	10,896	82,473	2,895	4,558	7,453	12,314	107,632
1997	77,169	10,588	87,757	4,062	5,508	9,570	14,313	118,404
1998	73,165	9,989	83,154	4,448	5,343	9,791	12,302	112,608
1999	74,362	12,966	87,328	5,277	5,329	10,606	15,266	121,635
2000	77,743	13,189	90,932	4,585	5,936	10,521	17,727	126,535
2001	82,721	14,801	97,522	4,593	7,320	11,913	18,798	136,655
2002	77,940	18,932	96,872	5,091	7,772	12,863	20,703	140,490
2003	96,757	25,353	122,110	6,155	12,049	18,204	26,486	182,856
2004	97,830	26,333	124,163	6,818	13,550	20,368	30,025	194,512
2005	96,110	27,988	124,098	7,209	13,930	21,139	32,986	211,451
2006	76,218	14,956	91,174	5,431	8,698	14,129	22,008	150,552
2007	67,175	13,862	81,037	4,462	10,530	14,992	22,240	146,214
2008	63,330	12,762	76,092	4,342	10,254	14,596	21,793	142,194
2009	58,801	12,630	71,431	4,495	9,482	13,977	23,172	136,504
2010	56,511	11,455	67,966	4,026	8,838	12,864	21,154	127,094
2011	52,130	11,009	63,139	4,427	8,165	12,592	21,983	121,407

*Harvest estimates from 2005 and prior are not comparable to subsequent years.

Table 1.3. Total reported deer kill by county during the 2011-2012 deer season.

				Shed-		Percent of kill		
County	Antlered Bucks	Does	Button Bucks	antlered Bucks	Total	Does	Antlered Bucks [a]	Kill/ Sq. Mile
Adair	467	519	103	3	1,092	47.5%	43.0%	1.92
Adams	428	718	130	13	1,289	55.7%	34.2%	3.03
Allamakee	1424	1838	346	8	3,616	50.8%	39.6%	5.69
Appanoose	824	1278	254	33	2,389	53.5%	35.9%	4.57
Audubon	169	121	19	0	309	39.2%	54.7%	0.69
Benton	352	492	118	6	968	50.8%	37.0%	1.35
Black Hawk	272	289	73	3	637	45.4%	43.2%	1.12
Boone	369	460	96	6	931	49.4%	40.3%	1.62
Bremer	439	614	171	7	1,231	49.9%	36.2%	2.80
Buchanan	320	325	79	3	727	44.7%	44.4%	1.28
Buena Vista	106	128	21	0	255	50.2%	41.6%	0.45
Butler	370	423	97	2	892	47.4%	41.7%	1.53
Calhoun	80	37	9	2	128	28.9%	64.1%	0.22
Carroll	160	146	24	3	333	43.8%	48.9%	0.58
Cass	373	396	72	4	845	46.9%	44.6%	1.51
Cedar	547	770	151	6	1,474	52.2%	37.5%	2.52

Table 1.3 (cont.). Total reported deer kill by county during the 2011-2012 deer season.

County	Antlered Bucks	Does	Button Bucks	Shed-antlered Bucks	Total	Percent of kill		Kill/ Sq. Mile
						Does	Antlered Bucks [a]	
Cerro Gordo	236	199	46	3	484	41.1%	49.4%	0.84
Cherokee	248	254	43	1	546	46.5%	45.6%	0.95
Chickasaw	422	454	123	2	1,001	45.4%	42.4%	1.98
Clarke	657	876	150	16	1,699	51.6%	39.6%	3.96
Clay	191	181	31	1	404	44.8%	47.5%	0.71
Clayton	1760	2501	436	32	4,729	52.9%	37.9%	6.07
Clinton	524	738	164	8	1,434	51.5%	37.1%	2.07
Crawford	252	277	54	0	583	47.5%	43.2%	0.81
Dallas	517	703	155	6	1,381	50.9%	37.9%	2.31
Davis	769	1372	292	41	2,474	55.5%	32.7%	4.86
Decatur	765	1161	169	29	2,124	54.7%	37.4%	4.01
Delaware	624	816	175	14	1,629	50.1%	39.2%	2.85
Des Moines	440	662	143	15	1,260	52.5%	36.1%	3.09
Dickinson	91	112	13	0	216	51.9%	42.1%	0.57
Dubuque	831	1188	276	9	2,304	51.6%	36.5%	3.76
Emmet	116	75	16	2	209	35.9%	56.5%	0.53
Fayette	759	1100	209	13	2,081	52.9%	37.1%	2.86
Floyd	288	321	88	2	699	45.9%	41.5%	1.39
Franklin	165	164	44	1	374	43.9%	44.4%	0.64
Fremont	420	517	80	11	1,028	50.3%	41.9%	1.96
Greene	243	258	49	1	551	46.8%	44.3%	0.97
Grundy	67	52	4	0	123	42.3%	54.5%	0.25
Guthrie	793	1233	252	10	2,288	53.9%	35.1%	3.84
Hamilton	149	135	47	0	331	40.8%	45.0%	0.57
Hancock	105	87	31	1	224	38.8%	47.3%	0.39
Hardin	332	361	86	4	783	46.1%	42.9%	1.36
Harrison	601	775	129	14	1,519	51.0%	40.5%	2.18
Henry	454	694	146	8	1,302	53.3%	35.5%	2.96
Howard	315	395	85	3	798	49.5%	39.8%	1.69
Humboldt	103	92	24	0	219	42.0%	47.0%	0.50
Ida	93	65	17	0	175	37.1%	53.1%	0.41
Iowa	616	838	173	6	1,633	51.3%	38.1%	2.80
Jackson	1064	1458	311	7	2,840	51.3%	37.7%	4.41
Jasper	393	575	115	9	1,092	52.7%	36.8%	1.49
Jefferson	520	792	133	27	1,472	53.8%	37.2%	3.38
Johnson	695	1143	225	5	2,068	55.3%	33.8%	3.34
Jones	668	1136	237	9	2,050	55.4%	33.0%	3.50
Keokuk	487	648	129	11	1,275	50.8%	39.1%	2.20
Kossuth	215	156	21	0	392	39.8%	54.8%	0.40
Lee	677	1058	237	8	1,980	53.4%	34.6%	3.76
Linn	750	1202	262	13	2,227	54.0%	34.3%	3.11
Louisa	454	669	135	6	1,264	52.9%	36.4%	3.14
Lucas	868	1238	262	41	2,409	51.4%	37.7%	5.55
Lyon	144	127	20	0	291	43.6%	49.5%	0.49
Madison	969	1463	257	13	2,702	54.1%	36.3%	4.79
Mahaska	453	602	130	9	1,194	50.4%	38.7%	2.09
Marion	748	1016	186	8	1,958	51.9%	38.6%	3.45
Marshall	330	408	91	5	834	48.9%	40.2%	1.45

Table 1.3 (cont.). Total reported deer kill by county during the 2011-2012 deer season.

County	Antlered Bucks	Does	Button Bucks	Shed-antlered Bucks	Total	Percent of kill: Does	Percent of kill: Antlered Bucks [a]	Kill/ Sq. Mile
Mills	391	527	69	13	1,000	52.7%	40.4%	2.24
Mitchell	342	401	79	4	826	48.5%	41.9%	1.77
Monona	536	746	107	5	1,394	53.5%	38.8%	1.99
Monroe	647	1023	187	13	1,870	54.7%	35.3%	4.30
Montgomery	431	726	108	18	1,283	56.6%	35.0%	3.04
Muscatine	479	824	197	6	1,506	54.7%	32.2%	3.40
O'Brien	170	118	22	3	313	37.7%	55.3%	0.54
Osceola	70	55	15	0	140	39.3%	50.0%	0.35
Page	529	750	122	19	1,420	52.8%	38.6%	2.65
Palo Alto	141	135	33	0	309	43.7%	45.6%	0.55
Plymouth	315	204	42	4	565	36.1%	56.5%	0.65
Pocahontas	83	46	11	0	140	32.9%	59.3%	0.24
Polk	377	865	156	10	1,408	61.4%	27.5%	2.37
Pottawattamie	681	891	133	23	1,728	51.6%	40.7%	1.79
Poweshiek	347	366	77	1	791	46.3%	44.0%	1.34
Ringgold	592	860	179	32	1,663	51.7%	37.5%	3.09
Sac	162	110	16	2	290	37.9%	56.6%	0.50
Scott	316	462	117	4	899	51.4%	35.6%	1.98
Shelby	195	193	31	1	420	46.0%	46.7%	0.72
Sioux	132	118	29	0	279	42.3%	47.3%	0.36
Story	219	238	32	3	492	48.4%	45.1%	0.87
Tama	530	659	157	4	1,350	48.8%	39.6%	1.88
Taylor	828	1493	245	34	2,600	57.4%	33.2%	4.92
Union	460	749	138	11	1,358	55.2%	34.7%	3.20
Van Buren	1128	2070	388	70	3,656	56.6%	32.8%	7.51
Wapello	488	697	133	21	1,339	52.1%	38.0%	3.06
Warren	1162	1764	331	28	3,285	53.7%	36.2%	5.74
Washington	606	952	211	9	1,778	53.5%	34.6%	3.13
Wayne	782	1131	222	44	2,179	51.9%	37.9%	4.10
Webster	280	291	71	4	646	45.0%	44.0%	0.90
Winnebago	86	81	22	0	189	42.9%	45.5%	0.47
Winneshiek	915	1334	294	15	2,558	52.2%	36.4%	3.72
Woodbury	466	729	141	7	1,343	54.3%	35.2%	1.54
Worth	141	125	26	1	293	42.7%	48.5%	0.73
Wright	172	135	21	0	328	41.2%	52.4%	0.57
Total	45,280	62,769	12,426	932	121,407	51.7%	38.4%	2.27

[a] Shed-antlered bucks are included in the percentages for antlered bucks; this is what they represent biologically in the population.

Table 1.4. Historical data on deer license issue by license type (1985 - present). Grand Totals include special IAAP licenses (1985-1990), 4074 special late season AS licenses for zone 6 (1985), nonresidents, special management unit hunts and special youth licenses.

	Regular Gun			Muzzleloader				Grand
Year	Paid	Landowner	Total	Early	Late	Total	Archery	Total
1985	82,218	20,674	102,892		1,522	1,522	22,830	127,244
1986	84,858	25,432	110,290	2,246	1,973	4,219	26,521	141,030
1987	91,804	26,780	118,584	3,091	2,710	5,801	28,910	153,295
1988	101,338	28,002	129,340	3,565	3,618	7,183	30,020	166,543
1989	107,171	33,798	140,969	5,995	12,201	18,196	34,745	194,611
1990	106,781	27,106	133,887	6,602	15,949	22,551	35,217	192,551
1991	100,587	30,834	131,421	7,064	11,458	18,522	33,359	184,041
1992	100,461	30,084	130,545	8,280	10,978	19,315	34,165	186,436
1993	96,577	21,887	118,464	7,306	8,926	16,232	30,938	168,017
1994	102,773	22,809	125,582	8,113	9,737	17,850	34,222	180,525
1995	101,053	18,157	119,210	7,193	8,059	15,463	34,434	177,441
1996	106,746	28,080	134,826	8,806	11,820	20,626	36,351	202,834
1997	109,169	24,423	133,592	8,979	15,049	24,028	37,106	211,118
1998	114,358	25,960	140,318	9,504	12,721	22,225	39,506	223,419
1999	113,695	31,196	144,891	10,246	13,260	23,506	43,687	233,690
2000	113,728	32,116	145,844	10,279	15,242	25,521	44,658	229,800
2001	128,041	38,820	166,861	10,037	18,751	28,788	52,002	265,939
2002	118,973	42,989	161,962	9,807	19,479	29,286	51,534	265,185
2003	136,810	52,148	188,958	11,907	23,905	35,812	60,320	322,096
2004	147,797	53,682	201,479	13,125	29,237	42,362	67,393	353,172
2005	143,856	58,248	202,104	13,693	30,717	44,410	73,518	391,864
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

Table 1.5. The dates, hours and zones for shotgun, archery and muzzleloader seasons (1990-present).

		Shotgun		Archery		Muzzleloader	
Year	Zones	Dates	Hours	Dates	Hours	Dates	Hours
1990	1-10e	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	"
1995	Statewide	Dec 9-17	"	Dec 18-Jan 10		Dec 18-Jan 10	"
1996	Statewide g	Dec 7-11	"	Oct 1-Dec 6&	"	Oct 12-Oct 20	"
1996	Statewide	Dec 14-22	"	Dec 23-Jan 10		Dec 23-Jan 10	"
1997	Statewide h	Dec 6-10	"	Oct 1-Dec 5&	"	Oct 11-Oct 18	"
1997	Statewide	Dec 13-21	"	Dec 22-Jan 10		Dec 22-Jan 10	"
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	1/2 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	1/2 hr after	Oct 1-Dec 5 &	"	Oct 11- Oct 19	"
2003	Statewide	Dec 13-21	sunset	Dec 22-Jan 10		Dec 22-Jan 10	"
2004	Statewide h	Dec 4-8	"	Oct 1-Dec 3 &	"	Oct 16- Oct 24	"
2004	Statewide	Dec 11-19	"	Dec 20-Jan 10		Dec 20-Jan 10	"
2005	Statewide h	Dec 3-7	"	Oct 1-Dec 2 &	"	Oct 15- Oct 23	"
2005	Statewide	Dec 10-18	"	Dec 19-Jan 10		Dec 19-Jan 10	"
2006	Statewide h	Dec 2-6	"	Oct 1-Dec 1 &	"	Oct 14- Oct 22	"
2006	Statewide	Dec 9-17	"	Dec 18-Jan 10		Dec 18-Jan 10	"
2007	Statewide *h*	Dec 1-5	"	Oct 1-Nov 30 &	"	Oct 13- Oct 21	"
2007	Statewide	Dec 8-16	"	Dec 17-Jan 10		Dec 17-Jan 10	"
2008	Statewide *h*	Dec 6-10	"	Oct 1-Dec 5 &	"	Oct 11- Oct 19	"
2008	Statewide	Dec 13-21	"	Dec 22-Jan 10		Dec 22-Jan 10	"
2009	Statewide *h*	Dec 5-9	"	Oct 1-Dec 4 &	"	Oct 17- Oct 25	"
2009	Statewide	Dec 12-20	"	Dec 21-Jan 10		Dec 21-Jan 10	"
2010	Statewide *h*	Dec 4-8	"	Oct 1-Dec 3 &	"	Oct 16-Oct 24	"
2010	Statewide	Dec 11-19	"	Dec 20-Jan 10		Dec 20-Jan 10	"
2011	Statewide *h*	Dec 3-7	"	Oct 1-Dec 2 &	"	Oct 15-Oct 23	"
2011	Statewide	Dec 10-18	"	Dec 19-Jan 10		Dec 19-Jan 10	"

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

i - 17 counties were buck-only during first 3 days of first season

Table 1.6. Results from controlled hunts in the special deer management zones for 2011-2012.

AREA	WEAPON	# ANTLERLESS LICENSES	LICENSES SOLD	HARVEST
Amana Colonies	Archery & Firearm	1000	184	109
Ames (City)	Archery	75	27	8
Ames (Perimeter)	Archery & Firearm	75	32	12
Backbone State Park	Firearms	200	157	90
Bettendorf & Riverdale (City)	Archery	300	105	40
Cedar Rapids (City)	Archery	700	269	177
Clinton (City)	Archery	300	82	55
Coralville (City)	Archery	400	209	87
Council Bluffs (City)	Archery	300	263	155
Davenport (City)	Archery	500	321	137
Denison (City)	Archery	50	20	12
Desoto NWR	Firearms	cancelled	-	-
Dubuque (City)	Archery	400	164	103
Dubuque (County)	Archery & Firearm	250	34	12
Eldora	Archery	50	13	8
Elk Rock State Park	Firearms	50	46	23
Geode State Park	Archery	25	19	8
Green Valley State Park	Firearms	60	59	37
Iowa Army Ammunition Plant	Archery & Firearm	950	367	236
Iowa Falls (Perimeter)	Archery & Firearm	50	3	1
Iowa Falls (City)	Archery	50	33	21
Jefferson County Park	Archery	50	17	7
Johnson County	Archery & Firearm	750	156	48
Kent Park	Archery & Firearm	160	138	46
Keokuk (City)	Archery	150	65	30
Knoxville (City)	Archery	50	11	4
Lacey-Keosauqua State Park	Archery	50	13	8
Lake Ahquabi	Firearms	45	36	21
Lake Darling	Firearms	cancelled	-	-
Lake Iowa	Archery & Firearm	200	52	18
Lake Keomah	Archery	50	17	8
Lake Macbride	Archery	150	76	44
Lake Manawa	Archery	cancelled	-	-
Lake of Three Fires	Firearms	45	41	29
Lake Wapello	Archery	25	0	0
Ledges State Park	Archery	50	19	4
Linn County	Archery & Firearm	750	176	64
Marshalltown (City & Perimeter)	Archery & Firearm	135	78	34
Muscatine (City)	Archery	200	80	46
Oskaloosa	Archery	200	59	36
Ottumwa (City)	Archery	300	112	62
Pikes Peak/McGregor (City)	Archery	15	6	3
Pine Lake State Park	Archery	50	41	12
Polk-Dallas Archery Zone	Archery	1200	887	511
Polk-Dallas Rural Zone	Archery & Firearm	400	42	13
Reichelt Area	Firearms	50	10	4
Riverside Park	Archery	45	6	0
Roberts Creek County Park	Archery	30	17	11
Rock Creek State Park	Firearms	30	28	8
Scott County Park	Firearms	50	48	23
Smith Wildlife Area	Firearms	9	3	0
Springbrook State Park	Firearm	105	97	66
Squaw Creek Park	Archery	100	59	27
Stone State Park	Archery	50	42	23
Viking Lake State Park	Firearms	50	49	23
Wapsi Environmental Center	Firearms	4	0	0
Washawtee	Archery & Firearm	50	37	17
Waterloo-Cedar Falls (City)	Archery	290	147	61
Depredation & Shooting Permits	Archery & Firearm	15,641	4,915	2,448
TOTALS		27,314	9,987	5,090

Table 1.7. Reported deer and ranking for each season by county for total kill during the 2011-2012 deer season.

	Harvest							Rank						
	Paid	Paid Muzzle.		Paid	Paid	Non-			Muzzleloader				Non-	
County	Shotgun	Early	Late	Archery	Youth	resident	Total	Shotgun	Early	Late	Archery	Youth	resident	Total
Clayton	2560	180	161	673	112	142	4729	1	1	9	2	2	11	1
Van Buren	1101	94	166	473	90	316	3656	8	6	8	7	3	3	2
Allamakee	1793	149	169	477	82	328	3616	2	2	6	6	4	2	3
Warren	1338	78	256	740	113	63	3285	5	9	1	1	1	25	4
Jackson	1502	102	136	444	58	144	2840	3	3	15	9	13	10	5
Madison	1040	43	196	521	65	114	2702	10	33	2	4	8	17	6
Taylor	875	24	121	220	37	332	2600	16	60	18	39	34	1	7
Winneshiek	1366	72	107	356	55	117	2558	4	10	27	14	16	16	8
Davis	826	50	117	310	62	205	2474	17	24	20	24	10	7	9
Lucas	888	49	190	368	43	122	2409	15	25	3	11	25	12	10
Appanoose	823	56	148	362	53	242	2389	18	15	12	12	17	5	11
Dubuque	1326	98	73	342	72	34	2304	6	4	43	16	6	40	12
Guthrie	915	45	153	507	63	119	2288	12	29	10	5	9	14	13
Linn	698	87	183	587	82	17	2227	26	7	4	3	5	62	14
Wayne	682	23	171	243	44	265	2179	27	62	5	34	24	4	15
Decatur	593	18	96	298	33	210	2124	37	72	34	25	39	6	16
Fayette	1107	96	119	331	55	48	2081	7	5	19	20	14	34	17
Johnson	891	80	108	456	55	37	2068	13	8	26	8	15	38	18
Jones	1056	68	110	311	48	35	2050	9	11	25	23	19	39	19
Lee	891	31	63	317	42	61	1980	14	48	52	22	27	28	20
Marion	951	56	149	349	52	52	1958	11	17	11	15	18	33	21
Monroe	633	48	126	294	39	179	1870	34	26	16	26	32	9	22
Washington	816	36	138	268	47	44	1778	19	41	14	28	20	35	23
Pottawattamie	620	39	146	397	34	38	1728	36	36	13	10	36	37	24
Clarke	652	37	78	253	40	83	1699	30	39	41	31	30	21	25
Ringgold	646	38	84	165	26	120	1663	31	38	40	47	56	13	26
Iowa	813	41	117	243	45	53	1633	20	34	21	33	22	31	27
Delaware	764	56	103	260	65	17	1629	21	16	29	29	7	61	28
Harrison	643	47	167	230	40	104	1519	32	27	7	36	31	18	29
Muscatine	758	47	98	334	16	17	1506	22	28	33	18	74	64	30
Cedar	744	51	101	252	33	30	1474	23	21	31	32	38	44	31
Jefferson	708	25	69	174	30	98	1472	25	58	46	46	46	19	32
Clinton	662	62	74	328	41	20	1434	28	12	42	21	28	58	33
Page	554	29	101	130	18	62	1420	40	53	32	59	71	26	34
Polk	349	34	45	334	35	4	1408	59	44	61	19	35	88	35
Monona	520	38	111	230	43	205	1394	44	37	23	37	26	8	36
Dallas	538	52	90	362	32	19	1381	42	20	37	13	40	60	37
Union	554	19	102	123	14	80	1358	41	71	30	65	80	22	38
Tama	634	34	126	196	31	62	1350	33	45	17	42	45	27	39
Woodbury	561	45	113	341	41	29	1343	39	30	22	17	29	46	40
Wapello	444	16	59	268	32	53	1339	51	79	54	27	41	32	41
Henry	577	35	53	159	21	59	1302	38	42	56	48	66	29	42
Adams	471	29	110	123	11	118	1289	49	51	24	63	86	15	43
Montgomery	512	8	87	132	22	71	1283	46	90	39	57	64	24	44
Keokuk	742	44	73	134	29	38	1275	24	32	44	56	47	36	45
Louisa	657	25	69	192	31	17	1264	29	59	47	43	44	63	46
Des Moines	444	19	52	214	27	33	1260	50	68	57	40	51	41	47
Bremer	500	50	62	222	60	15	1231	47	23	53	38	11	70	48
Mahaska	629	22	89	158	24	23	1194	35	64	38	49	62	53	49
Adair	488	25	95	155	19	55	1092	48	57	35	51	69	30	50
Jasper	535	22	94	188	26	11	1092	43	63	36	44	53	76	51
Fremont	319	9	104	156	25	84	1028	65	87	28	50	59	20	52
Chickasaw	514	51	34	153	46	16	1001	45	22	69	52	21	67	53
Mills	326	32	70	209	15	28	1000	63	47	45	41	78	47	54
Benton	437	57	65	239	28	8	968	52	13	50	35	49	82	55
Boone	347	57	66	185	38	30	931	60	14	48	45	33	43	56
Scott	256	33	52	257	25	1	899	68	46	58	30	60	97	57
Butler	427	39	34	105	58	16	892	53	35	68	67	12	66	58
Cass	417	19	66	99	17	71	845	55	67	49	69	72	23	59

Table 1.7 (cont.). Reported deer and ranking for each season by county for total kill during the 2011-2012 deer season.

	Harvest							Rank						
	Paid	Paid Muzzle.		Paid	Paid	Non-			Muzzleloader				Non-	
County	Shotgun	Early	Late	Archery	Youth	resident	Total	Shotgun	Early	Late	Archery	Youth	resident	Total
Marshall	405	27	51	137	29	21	834	56	56	59	55	48	57	60
Mitchell	317	30	38	80	45	27	826	66	50	66	73	23	49	61
Howard	325	44	42	124	31	20	798	64	31	64	62	43	59	62
Poweshiek	426	31	57	139	21	16	791	54	49	55	54	67	69	63
Hardin	329	36	64	130	19	32	783	61	40	51	58	70	42	64
Buchanan	378	29	17	116	21	8	727	57	52	82	66	65	83	65
Floyd	350	21	26	88	25	23	699	58	65	75	70	58	52	66
Webster	279	53	36	130	34	22	646	67	19	67	60	37	56	67
Black Hawk	246	55	29	127	25	2	637	70	18	71	61	57	91	68
Crawford	327	10	29	62	13	26	583	62	85	72	77	82	50	69
Plymouth	224	18	50	123	27	10	565	72	74	60	64	52	79	70
Greene	252	16	40	80	24	25	551	69	77	65	72	61	51	71
Cherokee	218	16	25	84	22	27	546	73	76	76	71	63	48	72
Story	151	29	43	153	28	5	492	83	54	63	53	50	86	73
Cerro Gordo	180	34	27	100	17	11	484	78	43	73	68	73	75	74
Shelby	225	9	30	75	11	11	420	71	89	70	74	89	77	75
Clay	163	23	24	55	31	29	404	80	61	77	80	42	45	76
Kossuth	196	16	44	72	8	14	392	74	78	62	75	93	72	77
Franklin	186	18	12	33	12	9	374	76	73	92	90	84	80	78
Carroll	161	14	26	59	15	8	333	81	80	74	79	75	84	79
Hamilton	142	20	11	63	10	22	331	84	66	95	76	90	55	80
Wright	189	10	12	52	12	11	328	75	86	94	81	85	78	81
O'Brien	130	19	13	42	26	16	313	87	69	91	84	55	68	82
Audubon	166	1	17	30	3	16	309	79	99	81	93	95	65	83
Palo Alto	184	9	15	29	5	12	309	77	88	86	94	94	73	84
Worth	139	14	21	61	10	15	293	86	81	78	78	91	71	85
Lyon	125	27	19	34	26	9	291	88	55	80	88	54	81	86
Sac	139	8	17	51	11	1	290	85	91	83	82	88	96	87
Sioux	151	19	14	42	21	1	279	82	70	89	85	68	98	88
Buena Vista	84	7	16	31	13	11	255	96	92	84	91	81	74	89
Hancock	101	17	14	44	14	3	224	91	75	88	83	79	90	90
Humboldt	105	4	12	37	15	5	219	89	93	93	87	77	85	91
Dickinson	99	13	20	31	15	1	216	93	82	79	92	76	94	92
Emmet	92	3	16	33	11	22	209	95	95	85	89	87	54	93
Winnebago	103	13	15	39	3	5	189	90	83	87	86	98	87	94
Ida	101	2	13	17	9	2	175	92	97	90	98	92	92	95
Osceola	71	11	10	21	13	2	140	98	84	96	95	83	93	96
Pocahontas	96	2	5	19	3	1	140	94	98	98	96	97	95	97
Calhoun	72	3	1	17	3	3	128	97	94	99	97	96	89	98
Grundy	70	3	7	16	1	0	123	99	96	97	99	99	99	99
Total	52,130	3,603	7,293	19,623	3,222	5,518	121,407							

Table 1.8. A summary of archery season dates, hours, success rates and other information (1985 - present).

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
1985	Oct 12-Dec 6	1/2 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 &	1/2 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
	Dec 18-Jan 10	"				statewide
1990	Oct 1-Nov 30 &	"	65	32	19	Bonus tag for antlerless early or
	Dec 17-Jan 10	"				anysex late,statewide
1991	Oct 1-Dec 6 &	"	73	28	17	Bonus tag for antlerless deer available
	Dec 23-Jan 10	"				only in zones 3a,4a,5a and 6. $25 fee.
1992	Oct 1-Dec 4 &	"	69	28	15	Bonus tag for antlerless deer available
	Dec 21 -Jan 10	"				only in bonus antlerless zone if no gun tag.
1993	Oct 1-Dec 3 &	"	73	32	17	Bonus tag for antlerless deer available
	Dec 20-Jan 10	"				only in bonus antlerless zone if no gun tag.
1994	Oct 1-Dec 2&	"	77	37	16	Bonus tag for antlerless deer available
	Dec 19-Jan 10	"				only in bonus antlerless zone if no gun tag.
1995	Oct 1-Dec 1&	"	76	39	17	Bonus tag for antlerless deer available
	Dec 18-Jan 10	"				only in bonus antlerless zone if no gun tag.
1996	Oct 1-Dec 6&	"	78	37	16	Bonus tag for antlerless deer available
	Dec 23-Jan 10	"				only in bonus antlerless zone if no gun tag.
1997	Oct 1-Dec 5&	"	71	42	17	Bonus tag for antlerless deer available only in
	Dec 22-Jan 10	"				bonus antlerless zone. Could get firearm license also.
1998	Oct 1-Dec 4&	"	76	34	15	Bonus tag for antlerless deer available only in
	Dec 21-Jan 10	"				bonus antlerless zone. Could get firearm license also.
1999	Oct 1-Dec 3&	"	79	37	16	Bonus tag for antlerless deer available only in
	Dec 20-Jan 10	"				bonus antlerless zone. Could get firearm license also.
2000	Oct 1-Dec 1&	"	80	44	17	Bonus tag for antlerless deer available only in
	Dec 18-Jan 10	"				bonus antlerless zone. Could get firearm license also.
2001	Oct 1-Nov 30&	"	75	37	17	Bonus tag for antlerless deer available in every county.
	Dec 17-Jan 10	"				Could get firearm license also.
2002	Oct 1-Dec 6 &	"	66	39	17	Bonus tag for antlerless deer available in every county.
	Dec 23-Jan 10	"				Could get firearm license also.
2003	Oct 1-Dec 5 &	"	54	44	18	Bonus tag for antlerless deer available in every county.
	Dec 22-Jan 10	"				Could get firearm license also.
2004	Oct 1-Dec 3 &	"	54	46	18	Bonus tag for antlerless deer available in every county.
	Dec 20-Jan 10	"				Could get firearm license also.
2005	Oct 1-Dec 2 &	"	54	53	17	Bonus tag for antlerless deer available in every county.
	Dec 19-Jan 10	"				Could get firearm license also.
2006	Oct 1-Dec 1 &	"	57	29[a]	NA	Tags for antlerless deer available in 79 counties.
	Dec 18-Jan 10	"				Could get firearm license also.
2007	Oct 1-Nov 30 &	"	59	28	NA	Tags for antlerless deer available in 77 counties.
	Dec 17-Jan 10	"				Could get firearm license also.
2008	Oct 1-Dec 5 &	"	58	26	NA	Tags for antlerless deer available in 77 counties.
	Dec 22-Jan 10	"				Could get firearm license also.
2009	Oct 1-Dec 4 &	"	58	26	NA	Tags for antlerless deer available in 77 counties.
	Dec 21-Jan 10	"				Could get firearm license also.
2010	Oct 1-Dec 3 &	"	60	24	NA	Tags for antlerless deer available in 72 counties.
	Dec 20-Jan 10	"				Could get firearm license also.
2011	Oct 1-Dec 2 &	"	60	25	NA	Tags for antlerless deer available in 72 counties.
	Dec 19-Jan 10	"				Could get firearm license also.

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

Table 1.9. A 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
	Dec 17 -Jan 10	"	50	45	8	Could hunt shotgun & late muzzleloader season.
1991	Oct 12-20	"	54	47	5	5000 A-S Quota
	Dec 23 -Jan 10	"	40	33	8	Could hunt shotgun & late muzzleloader season, but all 2nd tags valid for antlerless only in zones 3a,4a,5a&6.
1992	Oct 10-18	"	60	45	4	7500 Anysex license quota.
	Dec 21-Jan 10	"	40	36	8	All second licenses antlerless, Zones 4a,5a&6.
1993	Oct 9-17	"	71	34	5	7500 license quota, 65 counties buck-only.
	Dec 20-Jan 10	"	46	39	8	Antlerless in 14 counties, 35 counties buck-only.
1994	Oct 15-23	"	78	36	5	7500 license quota, 67 counties buck-only.
	Dec 19-Jan 10	"	52	39	8	Antlerless in 14 counties, 35 counties buck-only.
1995	Oct 14-22	"	73	43	5	7500 license quota, 69 counties buck-only.
	Dec 18-Jan 10	"	55	46	8	No antlerless tags, 29 counties modified buck-only.
1996	Oct 12-20	"	75	39	5	7500 license quota, 64 counties buck-only.
	Dec 23-Jan 10	"	49	46	7	Antlerless in 15 1/2 counties, 26 modified buck-only.
1997	Oct 11-19	"	55	62	4	7500 license quota, no counties buck only
	Dec 22-Jan 10	"	44	52	7	Antlerless in 19 1/2 counties, no counties buck-only.
1998	Oct 17-25	"	64	52	5	7500 license quota, no counties buck only
	Dec 21-Jan 10	"	54	50	7	Antlerless in 20 counties, no counties buck-only.
1999	Oct 16-24	"	60	57	4	7500 license quota, no counties buck only
	Dec 20-Jan 10	"	52	46	7	Antlerless in 21 counties, no counties buck-only.
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
	Dec 17-Jan 10	"	52	44	8	Antlerless in all counties, no counties buck-only.
2002	Oct 12- Oct 20	"	65	56	4	7500 license quota, no counties buck only
	Dec 23-Jan 10	"	41	46	6	Antlerless in all counties, no counties buck-only.
2003	Oct 11- Oct 19	"	54	55	4	7500 license quota, no counties buck only
	Dec 22-Jan 10	"	37	51	6	Antlerless in all counties, no counties buck-only.
2004	Oct 16- Oct 24	"	55	58	5	7500 license quota, no counties buck only
	Dec 20-Jan 10	"	37	48	6	Antlerless in all counties, no counties buck-only.
2005	Oct 15- Oct 23	"	53	58	4	7500 license quota, no counties buck only
	Dec 19-Jan 10	"	32	54	6	Antlerless in all counties, no counties buck-only.
2006	Oct 14-22	"	55	43[a]	NA	7500 license quota, no counties buck only
	Dec 18-Jan 10	"	41	27	NA	Antlerless in 79 counties, no counties buck-only.
2007	Oct 13-21	"	55	35	NA	7500 license quota, no counties buck only
	Dec 17-Jan 10	"	44	30	NA	Antlerless in 77 counties, no counties buck-only.
2008	Oct 11-19	"	53	35	NA	7500 license quota, no counties buck only
	Dec 22-Jan 10	"	43	28	NA	Antlerless in 77 counties, no counties buck-only.
2009	Oct 17-25	"	55	34	NA	7500 license quota, no counties buck only
	Dec 21-Jan 10	"	45	26	NA	Antlerless in 77 counties, no counties buck-only.
2010	Oct 16-24	"	57	32	NA	7500 license quota, no counties buck only
	Dec 20-Jan 10	"	46	25	NA	Antlerless in 72 counties, no counties buck-only.
2011	Oct 15-23	"	53	36	NA	7500 license quota, no counties buck only
	Dec 19-Jan 10	"	45	22	NA	Antlerless in 72 counties, no counties buck-only.

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

Table 1.10. The results of the deer population surveys (1976 - present).

	New Spotlight Survey		Aerial Survey			Traffic Kill Per Billion Vehicle Mi.	
Year	Mean Count	Percent Change	Weighted Count*	Percent Change	Traffic Kill	Number	Percent Change
1976			-	-	2,537	225	-1%
1977			-	-	2,929	252	12%
1978			-	-	2,872	241	-4%
1979			-	-	3,005	259	7%
1980			-	-	3,743	335	29%
1981			-	-	4,164	365	9%
1982			-	-	4,805	412	13%
1983			5,903	-	5,335	448	9%
1984			6,387	8%	6,177	500	12%
1985			7,607	19%	5,925	495	-1%
1986			9,790	29%	7,225	593	20%
1987			-	-	8,440	678	14%
1988			10,289	5%[a]	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%
2005			15,324	-15%	14,364	760	-5%
2006	54.6		12,565	-18%	14,940	783	3%
2007	59.2	8%	13,445	7%	13,730	720	-8%
2008	70.9	20%	13,427	0%	10,961	602	-16%
2009	68.3	-4%	13,528	1%	13,518	726	21%
2010	57.9	-15%	13,591	0%	10,153	547	-25%
2011	58.4	1%	13,707	1%	10,626	570	4%
2012	50.7	-13%	-	-			

*adjusted for missing counts

[a]change form 1986 to 1988

WILD TURKEYS

Historical Perspective

History: Iowa's primitive oak-hickory forests covered nearly 7 million acres (2.8 million ha) during the original land survey in 1859 (Thornton and Morgan 1959). Settlers' records indicate turkeys were associated with most of this timber. Although turkeys may not have been as numerous in Iowa as in their primary range east of the Mississippi River, they were still plentiful (Peterson 1943). Unfortunately, wild turkeys were eliminated from Iowa by the early 1900's due to habitat loss and partly because of uncontrolled subsistence 7 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 remnant forests now total 2.1 million acres (850,202 ha), just 5.7% of the State and only 30% of pre-settlement 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 burr 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 (IDNR) began experimenting with turkey restoration in 1920 using pen-reared birds. Releases were made over the next 18 years but all releases were uniform failures.

The first attempts at releasing transplanted wild turkeys were in the early 1960's. Rio Grande and Merriam's subspecies were released at several sites during the 1960's but ultimately their poor adaptation to Iowa's oak-hickory forest led to population failures for both subspecies.

The first release of eastern wild turkeys was in 1966 in Lee County. The population response of these turkeys was phenomenal – survival of released birds, reproduction, and poult survival were all excellent. The success of this 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; however the most recent stockings are still being evaluated. 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-turkey-only 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 established for multiple zones and seasons.

Annual licenses issued, hunters, and harvest increased gradually from 1974-87 (Fig. 2.1). During 1988-99, there were dramatic increases in license issue 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 (Fig. 2.2, a and b). Hunter numbers and timber acres with huntable turkey populations have increased proportionally, allowing hunter densities to remain at < 4 hunters/mi^2 of timber per season.

2012: Iowa's 39th modern spring hunting season recorded an estimated 10,457 turkeys harvested, with 45,159 licenses sold (Table 2.1 and 2.3). This was the 24th year the entire state was open to spring turkey hunting (Table 2.11). The 44-day season (7 April through 20 May, 2012) was partitioned into 5 separate seasons: a 9-day youth-only season, and 4 regular seasons (4, 5, 7, and 19-day seasons). An increase in the number (3,450) of licenses were sold for the youth-only season with 819 more youth licenses sold (Fig. 2.8). The 4-season format, with unlimited license quota an unlimited license quota for all the periods, resulted in 37,995 resident shotgun licenses issued. An additional 5,287 archery-only licenses were issued. Archery-only licenses harvested 802 turkeys, resulting in a 15.2% success rate in 2012.

Twenty-two percent of the resident hunters were successful in harvesting a gobbler in 2012 (Table 2.4). 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 (Fig. 2.4). Declines observed in spring hunter success rates during 1983 and 1984 (Fig. 2.4) can be partially explained by poor brood production during the summers of 1982 (Fig. 2.10). 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 number of turkeys harvested is likely due the change in survey methods. In spring of 2007, mandatory harvest reporting required successful hunters to report turkey harvested. 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%).

This was the 23rd spring that non-

residents were allowed to hunt turkeys in Iowa. Quotas filled in zone 4 (seasons 2-4), zone 5 (seasons 2-4), and Zone 8 (seasons 2 & 4) in 2012, leaving 346 licenses available. Non-resident hunters harvested 749 wild turkeys (Tables 2.3). Non-residents were more successful than residents in harvesting a spring gobbler (22% versus 40%, respectively) (Table 2.4).

Youth Turkey Season

Iowa's 8th youth spring turkey season has held in April 7-15, 2012. During the 9 day season, youth 15 and younger were allowed to participate with an accompanied licensed adult (adult licensed for one of the regular seasons). In 2005, the first year of the youth season, ages were limited to ages 12-15. Starting in 2006, ages 15 and younger could participate in the youth season. A total of 3,450 youth purchased licenses for the season (Fig. 2.8). Youth season license sales increased (819 fewer licenses sold) in 2012.

Since the inception of ELSI (Electronic Licensing System of Iowa) in 2001, hunter age and gender has been recorded (Fig. 2.8). From 2001-2006, youth spring turkey hunters (age 15 and under) increased each year. After the first youth season in 2006, youth licenses have varied slightly, but overall have remained similar. The total number of licenses sold has decreased each year since 2005 with a slight increase in 2009, and a decrease in 2010-12 (Fig. 2.8).

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 (Fig. 2.5, a and b). Fall zone boundaries in 1990 encompassed 9.7 times more area than in 1981, with 13.9 times more by 2005 (Table 2.12). 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 (Fig. 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 increase fall hunting opportunities and harvest. A harvest of fall turkeys similar to the number of spring gobblers harvested is the present goal.

The number of fall licenses issued, hunter numbers and harvest increased steadily from 1981-89 (Fig. 2.6 and Tables 2.5-2.7).

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 40 - 60% (Fig. 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 (Table 2.12). 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 recent 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, 1997, 1998 and 1999, but decreased slightly in 2000 and 2001. However, fall harvest levels continue to be below the levels observed in the mid-1980's.

2011: Wild turkey brood production in 2011 remained similar in Iowa compared to the previous year, with slight reduction (non-statistically significant) in poults per hen and hens with broods observed (Fig. 2.5) statewide. Fall turkey hunter success rates remained the same in 2011 from 2010 (Table 2.8), but 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 quota was 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 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). Shotgun/bow license issue (paid and free combined) decreased from 2010 to 8,172 for the 54-day season that ran from 10 October through 2 December, 2010 (Table 2.12). Forty-five percent of the fall licenses were issued free to landowners. An additional 1,913 archery-only licenses were issued for a season that ran from 1 October through 2 December, 2010 and 19 December, 2011 through 10 January, 2012. Estimated numbers of active hunters were undeterminable since there was no post card survey after the season (mandatory reporting eliminated the post card survey). Only 9.5% of hunters reported harvesting a turkey, which was a large decrease from 2005, likely due to the mandatory reporting and low compliance rates (Table 2.8), but was similar to 2006-11 success rates. Hunter success rates varied from 12.4% in zone 7 to 20.7% in Zone 8 (Table 2.8). Archery only licensed hunters reported a harvest of 112 turkeys in 2011 which increased from the 2010 archery-only license harvest. The 5.9% success rate for 2010 archery only licenses was similar to the previous year's success rates for archery-only hunters (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 rates are 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. Success rates are high for Iowa hunters when compared with surrounding states. 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 (1975a, 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: A list of cooperators has been established from IDNR personnel and rural residents living in selected portions of Iowa containing established turkey populations.

All rural residents 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 postcards which are 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 1976-2010 are summarized in Tables 2.9 and 2.10.

2011: Iowa's 2011 summer wild turkey brood survey showed similar reproduction of turkeys throughout the state based on poults observed with a hen and percent of hens observed with broods (Tables 2.9 & Table 2.10). In 2008, a new survey was developed that asked observers to also record toms seen, distinguishing them from hens. In previous years, observers were only asked to record hens observed. This may have influenced the percent of hens (Figure 2.10) observed with broods (i.e. observers may have recorded toms as turkeys/hens without broods in the past). It is unlikely that all regions increased in the percent of hens observed with broods with the weather conditions of 2008 (extremely wet with severe flooding). Thus, any interpretation on the brood survey should be limited to poults per hen and turkeys per flock in 2008.

In 2009, the brood survey used new regions (Figure 2.5) to analyze the data. To allow comparisons between years, 2008 was also analyzed using the new regions (Tables 2.9 & Table 2.10).

Statewide, the number of poults observed per hens was 10% lower than the previous year (Table 2.9) and 8% fewer hens were observed with broods, but neither were statistically significant. Regionally, the north central portion of the state was the only region that experienced a significant decrease in young observed per hen from the 2010 (18% fewer successful hens & 25% fewer poults/hen).

In other regions, reproduction trends were typically lower in 2011 than the previous year, with the majority very similar, and few with slight increases. However, no other regions other that north central experienced any statistically different trends in reproduction.

The similar reproduction rates were likely both years were average years, with similar weather patterns (dry early springs, wet June). Long range comparisons to previous years are difficult, since the survey methods changed in 2008, likely influencing the results in how the data was collected.

This year’s brood survey indicated an average reproduction across the state, but the turkey populations in Iowa are still good, especially when compared to other regions of the U.S. Hunter harvest success rates remaining similar over the past few years, indicating turkey hunters are not having difficulty in finding turkeys to harvest.

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Figure 2.1 Iowa spring turkey hunting statewide estimates, 1974-2012.

Active hunters unknown after 2006 due to survey changes.

Harvest estimation methods changed from mail surveys to mandatory reporting beginning 2007.

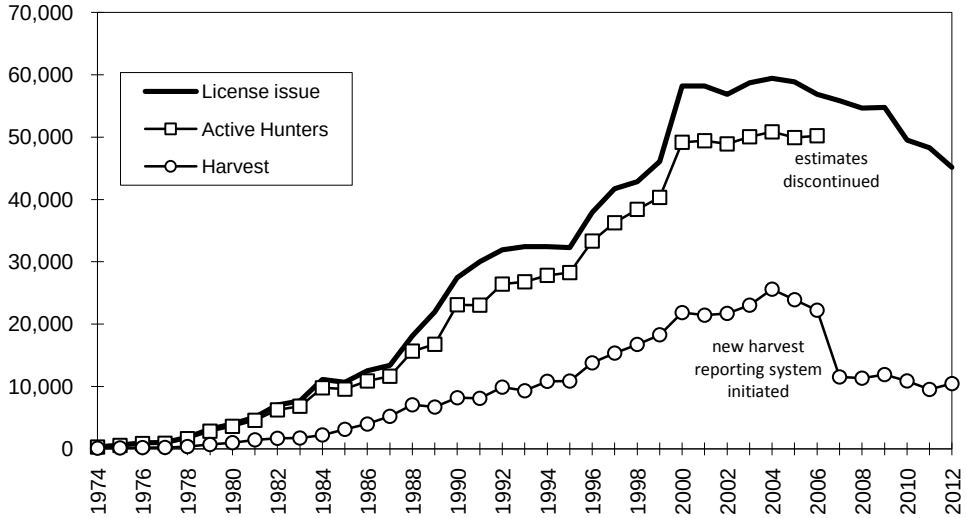


Figure 2.2 Spring turkey hunting zones, 1974 (Fig. a) and 2012 (Fig. b).

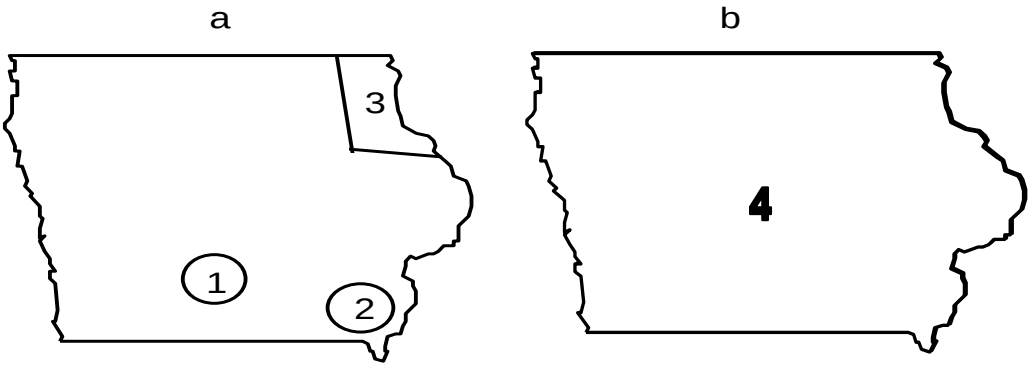


Figure 2.3 Iowa turkey harvest statewide success rates for residents, 1974-2012.

Sucsess estimation methods changed from mail surveys to mandatory reporting beginning Fall 2006.

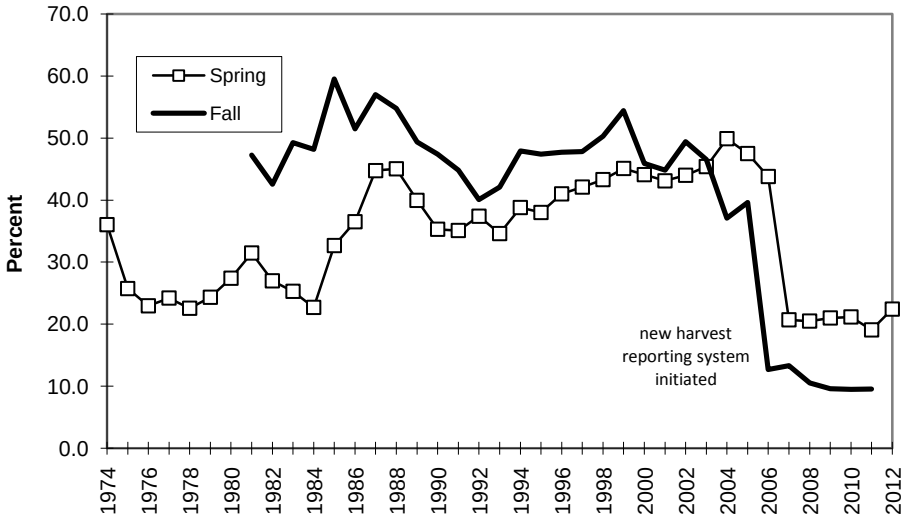


Figure 2.4 Iowa turkey brood survey statewide results, 1976-2011.

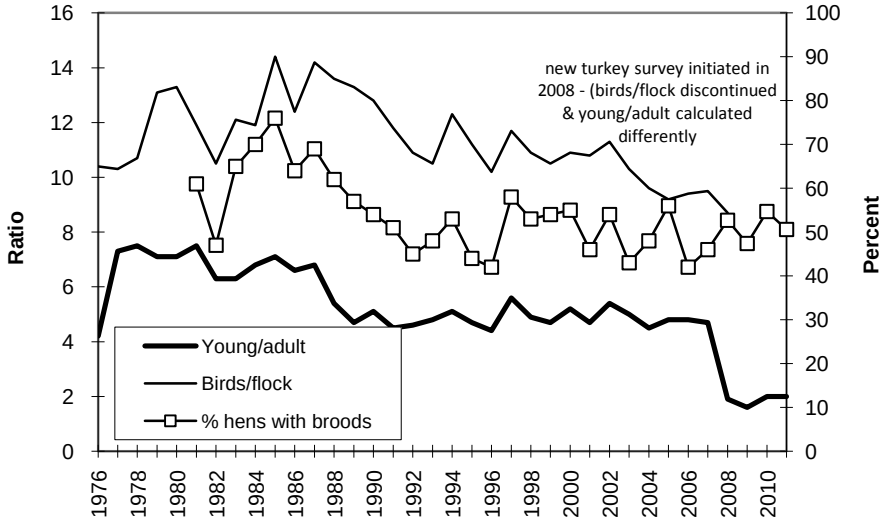
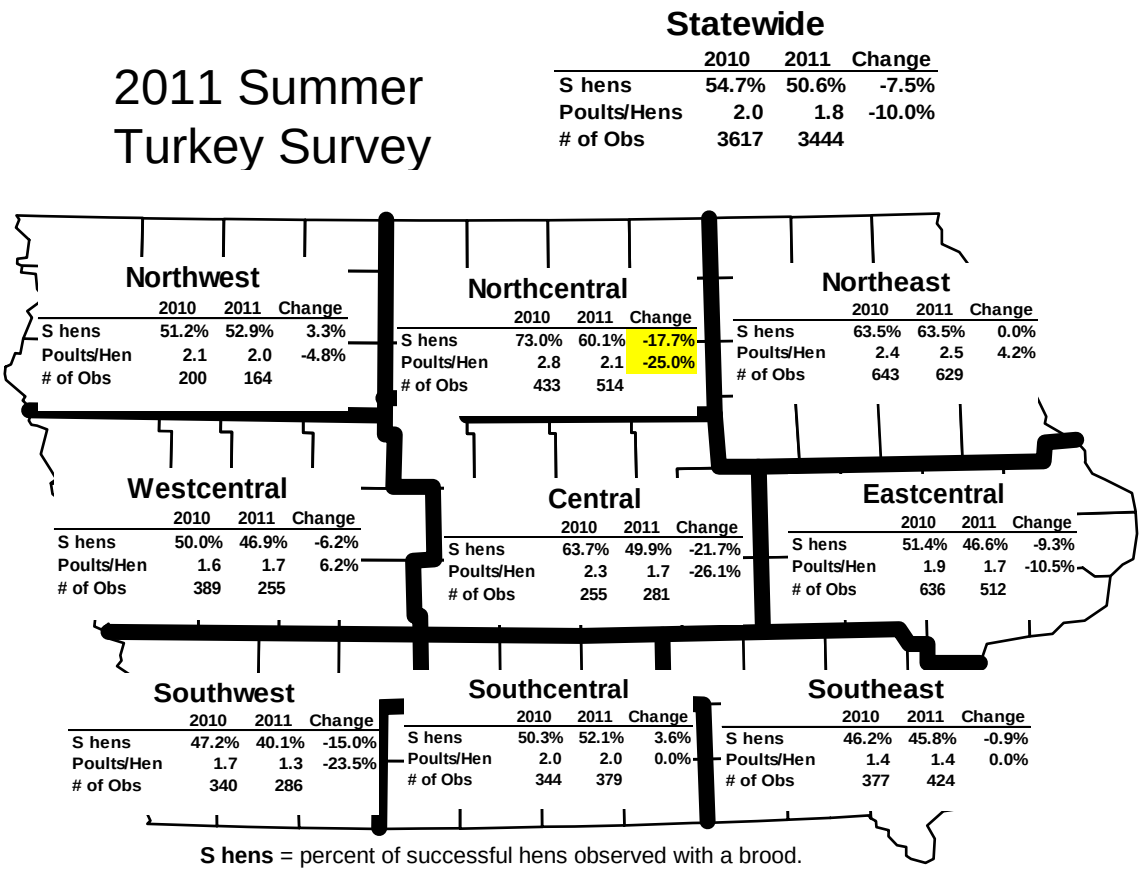


Figure 2.5 Iowa Summer Turkey Survey results, 2011.



S hens = percent of successful hens observed with a brood.
Poults/AH = number poults observed per all hens.
# of Obs = number times turkeys were observed by cooperators.
Percent change highlighted if statistically significant

Figure 2.6 Fall turkey hunting zones, 1981 and the present.

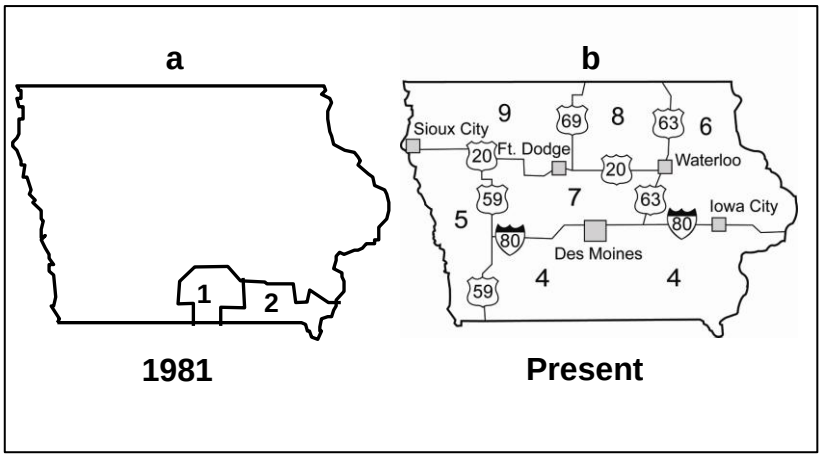


Figure 2.7 Iowa fall turkey hunting statewide estimates, 1981-2011.

Active hunters unknown after 2005 due to survey changes.

Sucsess estimation methods changed from mail surveys to mandatory reporting beginning 2006.

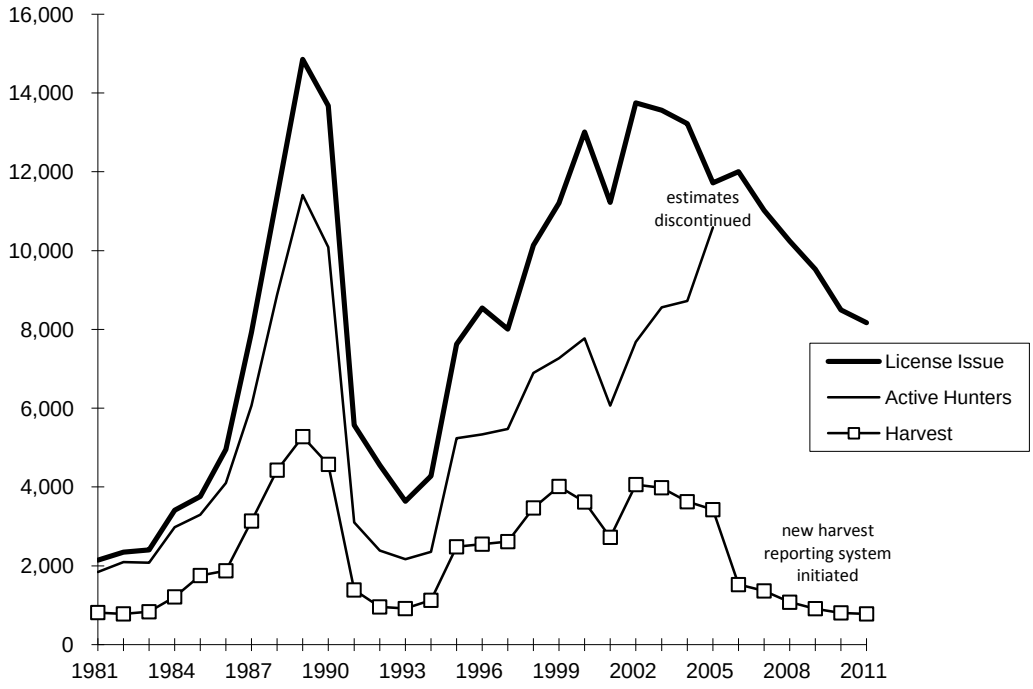


Figure 2.8 Iowa spring turkey license issue, 2001-2012.

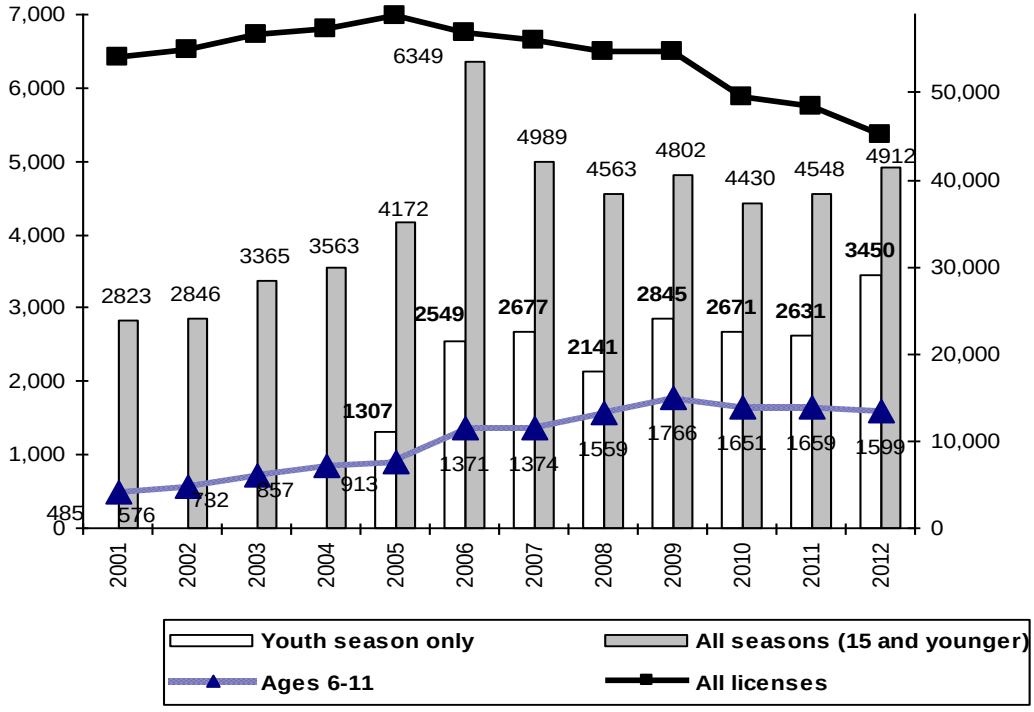


Figure 2.9 Present ruffed grouse distribution in Iowa.

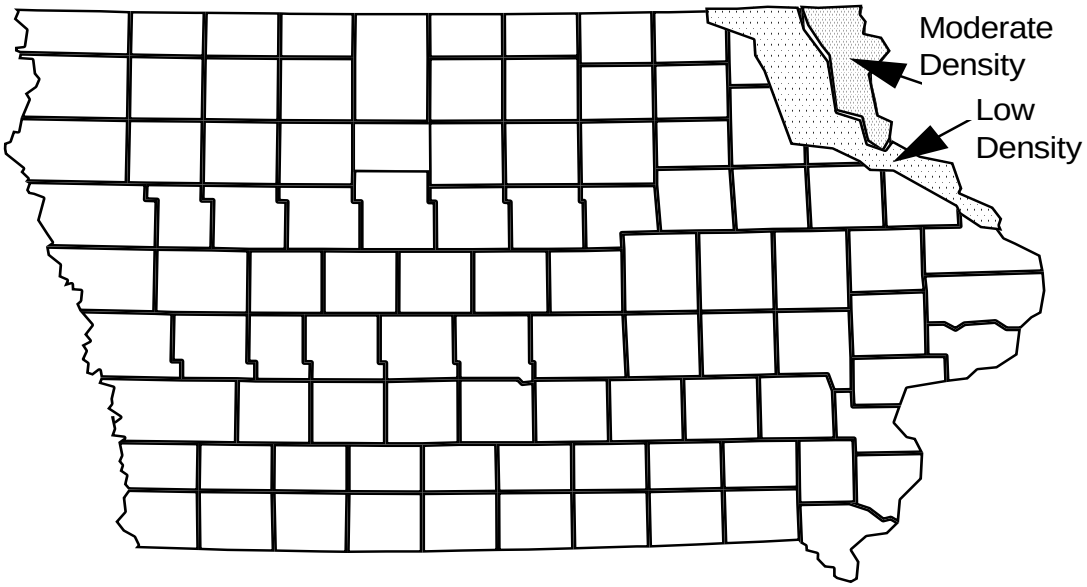


Table 2.1 Number of Iowa spring turkey-hunting licenses issued by zone, 1974-present.
Archery-only licenses included in totals licenses (not in resident total). Free landowner licenses included in totals.
Zone 5 was combined into Zone 4 in 1994. Zones 1-3 were combined into Zone 4 in 2007.

	ZONE					BOW	RESIDENT	NON-	TOTAL
YEAR	1	2	3	4	5	ONLY	TOTAL	RESIDENT	LICENSES
1974	105	113		82		-	300		
1975	168	184		248		-	600		
1976	143	273		558		-	974		
1977	235	276		494		-	1,005		
1978	280	323		1,212		-	1,815		
1979	195	298		2,662		-	3,155		
1980	195	225	357	3,227		-	4,004		
1981	195		420	4,374	67	-	5,056		
1982			297	6,592	135	-	7,024		
1983			300	7,231	165	-	7,696		
1984	259	416	325	9,849	277	-	11,126		
1985	259	449	320	9,379	277	-	10,684		
1986	273	493	339	11,032	356	-	12,493		
1987	289	507	357	11,828	404	-	13,385		
1988	268	471	324	16,438	632	-	18,133		
1989	268	505	338	20,091	736	-	21,938		
1990	261	500	322	25,331	1,030	-	27,444	184	28,658
1991	262	505	322	26,399	1,115	-	28,603	306	30,024
1992	260	487	320	28,220	1,083	-	30,370	445	31,898
1993	260	500	320	28,646	1,060	-	30,786	585	32,431
1994	262	508	324	30,714	-	-	31,808	602	32,410
1995	260	500	320	30,269	-	-	31,349	955	32,304
1996	260	487	302	35,740	-	-	36,789	1,124	37,913
1997	261	501	320	39,314	-	-	40,396	1,346	41,742
1998	260	500	320	39,783	-	-	40,863	2,005	42,868
1999	260	500	320	43,008	-	-	44,088	1,999	46,087
2000	257	392	242	55,290	-	-	56,181	2,013	58,194
2001	104	148	108	53,635	-	2,206	56,201	2,012	58,213
2002	121	207	158	51,940	-	2,491	54,917	1,944	56,861
2003	129	215	134	53,144	-	3,032	56,654	2,079	58,733
2004	132	191	128	53,404	-	3,469	57,324	2,133	59,457
2005	127	154	138	52,364	-	3,951	56,734	2,150	58,884
2006	235	315	238	49,113	-	4,739	54,640	2,245	56,885
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

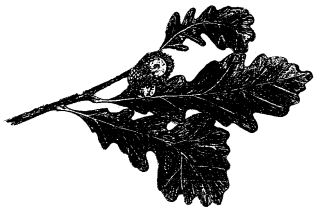


Table 2.2 Number of estimated active Iowa spring turkey hunters by zone 1974-present.
Starting in 2007, the post card survey was discontinued and active hunters undeterminable.
Archery-only licenses not surveyed.

	ZONE					RESIDENT	NON-	TOTAL
YEAR	1	2	3	4	5	TOTAL	RESIDENT	ACTIVE
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	61	4,572		
1982	493	447	270	4,911	123	6,244		
1983	447	441	263	5,523	161	6,835		
1984	233	371	260	8,676	243	9,783		
1985	232	403	292	8,395	249	9,571		
1986	232	445	308	9,581	319	10,885		
1987	236	440	327	10,283	355	11,641		
1988	246	429	298	14,152	547	15,672		
1989	225	442	319	15,193	588	16,767		
1990	231	456	301	21,085	862	22,935	174	23,109
1991	234	477	289	20,905	868	22,773	273	23,046
1992	200	351	213	24,321	919	26,004	418	26,422
1993	124	391	197	24,648	888	26,248	542	26,790
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 estimated spring turkeys harvested by zone, 1974-present.
Archery-only licenses not included from 1974-2006. Zone 5 was combined into Zone 4 in 1994.
Zones 1-3 were combined into Zone 4 in 2007.
In 2007, survey methods changed from a post-mailing survey to mandatory reporting,
with an estimated 74% compliance rate.

	ZONE						RESIDENT	NON-	TOTAL
YEAR	1	2	3	4	5	BOW ONLY	TOTAL	RESIDENT	HARVEST
1974	41	31		30			102		
1975	29	41		69			139		
1976	38	37		119			194		
1977	60	53		102			215		
1978	54	72		240			366		
1979	55	41		592			688		
1980	50	43	35	860			988		
1981	49	40	58	1,267	25		1,439		
1982	75	112	48	1,411	39		1,685		
1983	76	113	38	1,469	33		1,729		
1984	32	83	40	2,015	51		2,221		
1985	29	138	67	2,831	62		3,127		
1986	49	183	75	3,570	97		3,974		
1987	83	198	114	4,667	147		5,209		
1988	79	151	86	6,493	250		7,059		
1989	49	133	42	6,264	211		6,699		
1990	48	148	106	7,452	363		8,117	74	8,191
1991	58	144	78	7,414	274		7,968	128	8,096
1992	37	71	31	9,348	255		9,742	151	9,893
1993	26	97	39	8,638	293		9,093	217	9,310
1994	57	81	32	10,428	-		10,598	229	10,827
1995	20	81	32	10,275	-		10,408	459	10,867
1996	49	77	36	13,078	-		13,240	544	13,784
1997	8	68	28	14,647	-		14,751	605	15,356
1998	15	73	46	15,676	-		15,810	938	16,748
1999	30	71	28	17,231	-		17,360	930	18,290
2000	37	60	24	20,759	-		20,880	970	21,850
2001	34	49	29	20,383	-		20,495	941	21,436
2002	39	68	17	20,538	-		20,662	1,061	21,723
2003	51	46	29	21,743	-		21,869	1,172	23,041
2004	30	65	31	24,254	-		24,380	1,224	25,604
2005	35	61	49	22,586	-		22,731	1,187	23,918
2006	42	88	48	20,863	-		21,041	1,195	22,236
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

Table 2.4 Estimated success rate of active Iowa spring turkey hunters by zone, 1974-present. Archery-only hunters not surveyed prior to 2007.
In 2007, survey methods changed from a post-mailing survey to mandatory reporting.

	ZONE						RESIDENT	NON-
YEAR	1	2	3	4	5	BOW ONLY	TOTAL	RESIDENT
1974	44.6	31.3		32.6			36.0	
1975	19.5	24.4		30.9			25.7	
1976	30.6	15.6		24.6			23.0	
1977	29.7	21.1		23.4			24.2	
1978	21.2	24.9		22.3			22.6	
1979	31.6	15.1		24.9			24.3	
1980	28.4	20.2	11.4	29.6			27.4	
1981	27.8		15.3	32.0	41.0		31.5	
1982	15.2	25.1	17.8	28.7	31.7		27.0	
1983	17.0	25.6	14.4	26.6	20.5		25.3	
1984	13.7	22.4	15.4	23.2	21.0		22.7	
1985	12.5	34.2	22.9	33.7	24.9		32.7	
1986	21.1	41.1	24.4	37.3	30.4		36.5	
1987	35.2	45.0	34.9	45.4	41.4		44.7	
1988	32.1	35.2	28.9	45.9	45.7		45.0	
1989	21.8	30.1	13.2	41.2	35.9		40.0	
1990	20.8	32.9	35.0	35.3	42.1		35.3	40.0
1991	24.9	30.7	27.8	35.6	31.1		35.1	45.0
1992	19.1	21.0	16.0	38.5	27.9		37.4	36.0
1993	21.2	24.8	19.7	35.0	32.9		34.6	40.0
1994	36.3	22.2	14.7	39.3	-		38.8	43.5
1995	17.7	24.5	15.1	38.7	-		38.0	52.1
1996	27.5	23.2	21.3	41.4	-		41.0	51.5
1997	5.3	19.1	13.3	42.7	-		42.1	49.2
1998	8.6	18.5	20.4	43.8	-		43.3	50.5
1999	21.6	21.1	15.6	45.5	-		45.1	51.6
2000	20.2	20.9	15.1	44.4	-		44.1	52.7
2001	45.3	47.6	31.5	43.1	-		43.1	51.6
2002	55.7	50.0	18.3	44.0	-		44.0	59.1
2003	51.0	29.2	27.1	45.5	-		45.4	60.4
2004	39.5	37.8	35.6	50.0	-		49.9	61.1
2005	30.4	49.2	46.7	47.6	-		47.5	56.0
2006	37.2	44.0	33.8	43.8	-		43.8	55.6
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

Table 2.5 Number of licenses issued to Iowa fall turkey hunters by zone, 1981-present.
In 1984 and 2001-present landowners were not broken-down by zone but do appear in the total.
No non-resident licenses issued for fall turkey during 1991-present.
Zones 1-3 were eliminated in 2007.

	ZONE									RESIDENT	NON-
YEAR	1	2	3	4	5	6	7	8	9	BOW	TOTAL	RESIDENT
1981				1,946						193	2,139	
1982				1,995						353	2,348	
1983				1,873						529	2,402	
1984				1,999	214	612				552	3,414	
1985				2,143	295	784				540	3,762	
1986	121	190		2,403	296	1,206	74			663	4,953	
1987	107	149	105	3,934	340	2,264	148			877	7,924	
1988	103	203	106	4,861	524	4,054	282			1,243	11,376	
1989	102	200	100	6,194	891	5,792	554			1,022	14,855	157
1990	102	201	101	5,879	738	5,422	624			610	13,677	50
1991	0	0	50	0	0	4,575	0			942	5,567	0
1992	0	0	30	0	0	3,560	0			963	4,553	0
1993	0	0	30	0	0	3,118	0			488	3,636	0
1994	0	0	30	0	0	3,300	0			949	4,279	0
1995	50	50	50	2,593	330	3,518	320			715	7,626	0
1996	50	50	50	2,635	447	4,048	321			944	8,545	0
1997	50	50	50	2,156	425	4,287	224			768	8,010	0
1998	50	50	50	3,653	450	4,747	440			697	10,137	0
1999	50	50	50	3,778	433	4,894	422	212		1,317	11,206	0
2000	49	47	50	5,052	471	5,083	471	260		1,531	13,014	0
2001	44	29	38	2,500	300	2,401	200	75		1,496	11,225	0
2002	50	50	50	2,500	300	2,489	200	75		1,698	13,751	0
2003	50	50	50	3,502	450	2,402	201	75		1,674	13,566	0
2004	49	44	50	3,301	503	2,060	400	150		1,549	13,221	0
2005	50	37	50	3,091	501	1,684	400	150	202	1,512	11,722	0
2006	50	29	50	2,753	500	1,569	356	150	200	1,585	12,004	0
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

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

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

Table 2.7 Estimated harvest for Iowa fall turkey hunting by zone, 1981-present. Same problem
In 1984 and 2001-present, landowners were not broken-down by zone (UNK) but do appear in the total.
No non-resident licenses issued for fall turkey during 1991-present.
Zones 1-3 were eliminated in 2007.
In 2006, survey methods changed from a post-mailing survey to mandatory reporting.

	ZONE										RESIDENT	NON-
YEAR	1	2	3	4	5	6	7	8	9	UNK	BOW	TOTAL	RESIDENT
1981				808							5	813	
1982				769							10	779	
1983				813							20	833	
1984				882	77	198					36	1,210	
1985				1,215	108	376					54	1,753	
1986	29	69		1,041	127	536	28				43	1,873	
1987	24	40	35	1,842	99	961	33				102	3,136	
1988	57	106	36	1,950	171	1,799	159				149	4,427	
1989	18	127	26	2,208	287	2,442	104				66	5,278	67
1990	0	33	39	2,052	190	2,084	135				41	4,574	14
1991			18			1,368					?	1,386	
1992			13			943					?	956	
1993			2			912					?	914	
1994			2			1,122					?	1,124	
1995	10	2	10	912	137	1,358	52				?	2,481	
1996	4	5	12	787	176	1,472	93				?	2,549	
1997	1	14	4	883	145	1,480	86				?	2,613	
1998	3	8	4	1,384	176	1,773	120				?	3,468	
1999	4	10	3	1,619	156	1,943	150	66		63	?	4,014	
2000	2	15	8	1,701	179	1,527	93	56		38	?	3,619	
2001	3	15	2	852	100	912	61	37		168	?	2,722	
2002	3	14	10	1,076	157	1,038	87	31		386	?	4,061	
2003	11	6	10	1,284	273	1,030	62	28		373	?	3,981	
2004	8	7	4	988	194	602	96	60		338	?	3,626	
2005	3	3	1	1,067	243	592	36	70	37	460	?	3,424	
2006	9	6	10	553	111	307	50	42	35	399	105	1,522	
2007	-	-	-	427	131	298	45	38	34	389	105	1,362	
2008	-	-	-	286	104	245	48	44	27	321	123	1,075	
2009	-	-	-	202	84	224	29	33	17	323	103	912	
2010	-	-	-	192	66	185	25	51	18	268	99	805	
2011	-	-	-	170	50	197	31	31	24	276	112	779	

Table 2.8 Success rate (to harvest 1 bird) of active Iowa fall turkey hunters by zone, 1981-present. Bow hunters
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.
In 2006, survey methods changed from a post-mailing survey to mandatory reporting.

	ZONE									RESIDENT	NON-
YEAR	1	2	3	4	5	6	7	8	9	BOW	MEAN	RESIDENT
1974												
1975												
1976												
1977												
1978												
1979												
1980												
1981				47.3						3.7	47.3	
1982				42.6						3.5	42.6	
1983				49.3						4.7	49.3	
1984				50.0	41.6	37.4				7.6	48.2	
1985				63.7	43.2	53.8				12.2	59.5	
1986	32.6	41.1		53.3	50.6	52.3	41.2			8.0	51.5	
1987	31.6	29.2	38.0	62.1	37.5	56.5	37.9			13.9	57.0	
1988	57.0	52.2	39.6	54.5	40.9	56.7	63.9			14.0	54.8	
1989	22.6	68.1	32.5	47.2	49.1	53.4	28.0			7.9	49.3	48.0
1990	0.0	26.6	71.4	47.4	37.4	50.5	33.9			8.3	47.4	29.0
1991			53.2			44.7				?	44.8	
1992			62.2			39.9				?	40.1	
1993			16.7			42.3				?	42.1	
1994			17.0			48.1				?	47.9	
1995	33.3	18.2	30.3	46.9	66.3	49.6	20.2			?	47.4	
1996	28.6	35.7	75.0	45.6	53.9	48.5	47.6			?	47.7	
1997	4.8	77.8	36.4	56.2	43.2	44.9	39.4			?	47.8	
1998	27.3	29.7	36.4	52.0	52.2	50.1	40.4			?	50.3	
1999	18.1	35.5	14.6	59.2	45.1	52.8	49.9	40.7		?	54.4	
2000	18.2	57.7	34.1	51.3	50.5	42.1	30.2	32.9		?	45.9	
2001	16.1	73.7	20.0	46.4	45.3	50.4	39.3	55.7		?	44.8	
2002	27.3	56.0	39.7	55.2	59.0	52.0	55.6	52.7		?	49.4	
2003	84.3	55.6	65.9	47.3	71.0	52.1	42.8	44.8		?	46.5	
2004	50.0	30.0	13.6	39.2	53.0	36.9	31.3	49.5		?	37.1	
2005	10.7	21.1	8.3	39.5	56.8	43.8	13.8	53.9	30.2	?	39.6	
2006	18.0	20.7	20.0	20.1	22.2	19.6	14.0	28.0	17.5	6.6	12.7	
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	

Table 2.9 Iowa wild turkey brood survey results by region for birds/flock and young/adult, 1976-present.
Y/A=young per adult (italics) and B/F=birds per flock (≥ 4).

	NORTHEAST		SOUTHERN		CENTRAL		WESTERN		EAST-CENTRAL		NORTH-WEST		NORTH-CENTRAL		STATEWIDE	
YEAR	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F
1976			4.2	10.4											4.2	10.4
1977			7.3	10.3											7.3	10.3
1978			7.5	10.7											7.5	10.7
1979			7.1	13.1											7.1	13.1
1980			7.1	13.3											7.1	13.3
1981	8.2	15.5	7.3	10.7											7.5	11.9
1982	6.1	12.6	6.2	9.3	7.1	9.5	6.6	9.5							6.3	10.5
1983	6.0	13.2	6.3	11.3	6.2	11.4	6.6	11.7	6.0	11.7					6.3	12.1
1984	6.6	12.9	7.4	11.5	4.6	10.6	6.9	12.6	6.8	10.9					6.8	11.9
1985	7.2	16.7	7.4	14.3	6.1	11.4	7.1	11.3	6.8	14.2					7.1	14.4
1986	7.0	14.1	6.2	11.8	6.6	11.7	5.7	9.3	6.8	12.5					6.6	12.4
1987	7.0	17.3	6.5	12.2	7.4	13.5	5.9	12.5	7.0	14.5					6.8	14.2
1988	5.0	17.1	5.6	10.1	5.3	11.3	4.6	12.6	6.5	14.3					5.4	13.6
1989	4.1	16.1	5.1	10.0	4.4	10.7	5.5	13.0	5.3	14.5					4.7	13.3
1990	5.1	15.8	4.9	9.0	2.7	7.9	6.0	12.2	4.9	11.9	7.7	11.3	6.6	8.3	5.1	12.8
1991	*4.7*	14.0	*4.1*	9.7	*3.3*	9.5	*4.8*	14.5	*5.1*	11.5	*6.8*	10.2	*4.3*	7.4	*4.5*	11.8
1992	*4.9*	11.8	*4.3*	9.4	*3.0*	9.1	*6.0*	10.2	*4.5*	11.9	*3.0*	4.0	*10.0*	11.0	*4.6*	10.9
1993	*5.2*	11.8	*5.1*	9.1	*5.0*	10.1	*4.4*	9.6	*4.6*	11.1	*2.5*	10.5	*4.6*	6.9	*4.8*	10.5
1994	*5.3*	13.1	*5.1*	11.6	*4.1*	10.0	*5.1*	16.9	*4.9*	11.5	*5.1*	11.0	*6.2*	11.6	*5.1*	12.3
1995	*5.1*	12.8	*4.9*	10.0	*4.1*	10.1	*5.7*	13.9	*3.9*	10.3	*4.5*	10.4	*4.5*	9.3	*4.7*	11.2
1996	*4.6*	10.4	*4.5*	9.9	*3.9*	9.4	*4.4*	11.2	*4.5*	10.4	*3.1*	11.1	*4.4*	8.9	*4.4*	10.2
1997	*5.2*	12.3	*6.0*	11.9	*5.6*	11.4	*5.8*	14.5	*5.4*	11.0	*3.2*	7.2	*4.9*	7.5	*5.6*	11.7
1998	*5.1*	11.9	*5.3*	10.0	*5.9*	9.8	*4.6*	10.0	*4.5*	11.6	*4.0*	11.9	*4.4*	10.5	*4.9*	10.9
1999	*3.9*	10.1	*5.0*	10.3	*3.8*	8.5	*4.7*	13.7	*5.0*	10.3	*6.9*	13.1	*3.1*	6.5	*4.7*	10.5
2000	*4.9*	10.5	*5.3*	10.5	*3.8*	8.2	*5.1*	12.2	*5.3*	11.1	*6.1*	17.4	*3.8*	6.7	*5.2*	10.9
2001	*5.1*	11.9	*4.6*	9.3	*5.0*	10.3	*4.6*	13.0	*4.5*	11.5	*3.9*	10.9	*4.5*	9.3	*4.7*	10.8
2002	*4.9*	10.8	*5.6*	10.7	*5.4*	9.6	*5.1*	11.7	*5.5*	12.0	*5.9*	13.0	*5.6*	13.6	*5.4*	11.3
2003	*5.1*	11.4	*5.2*	11.1	*4.9*	10.3	*5.1*	11.0	*5.1*	11.9	*5.2*	13.5	*4.9*	10.0	*5.0*	10.3
2004	*4.3*	8.7	*4.7*	9.3	*3.8*	8.1	*5.0*	14.3	*4.3*	8.7	*5.0*	11.5	*4.2*	8.3	*4.5*	9.6
2005	*4.9*	10.0	*4.9*	8.3	*4.5*	8.1	*5.0*	11.9	*4.7*	8.6	*4.7*	11.2	*4.8*	8.8	*4.8*	9.2
2006	*4.8*	9.4	*4.7*	8.8	*4.3*	8.0	*4.5*	11.3	*5.9*	8.9	*4.7*	9.8	*4.7*	9.3	*4.8*	9.4
2007	*5.1*	10.2	*4.5*	8.2	*4.6*	9.7	*4.1*	9.3	*5.0*	9.7	*5.5*	10.0	*4.7*	10.2	*4.7*	9.5
2008	*4.5*	9.5	*4.5*	8.7	*4.8*	8.4	*4.3*	9.6	*4.1*	8.0	*4.5*	9.3	*3.9*	7.8	*4.3*	8.7

A new survey was initiated in 2008, with new regions and survey cards. 2008 was analyzed with the old and new regions to allow

Table 2.9 Iowa wild turkey brood survey results by region for birds/flock and young/adult, 1976-present.
Y/A=young per adult (italics) and B/F=birds per flock (≥ 4).

YEAR	NORTHEAST Y/A	NORTHEAST B/F	SOUTHERN Y/A	SOUTHERN B/F	CENTRAL Y/A	CENTRAL B/F	WESTERN Y/A	WESTERN B/F	EAST-CENTRAL Y/A	EAST-CENTRAL B/F	NORTH-WEST Y/A	NORTH-WEST B/F	NORTH-CENTRAL Y/A	NORTH-CENTRAL B/F	STATEWIDE Y/A	STATEWIDE B/F

comparisons between years. **Bold indicates changes that are statistically different.**

Y/SH = poults per successful hens (italics), and Y/AH = poults per all hens

YEAR	NORTHWEST Y/SH	NORTHWEST Y/AH	NORTH-CENTRAL Y/SH	NORTH-CENTRAL Y/AH	NORTHEAST Y/SH	NORTHEAST Y/AH	WESTCENTRAL Y/SH	WESTCENTRAL Y/AH	CENTRAL Y/SH	CENTRAL Y/AH	EAST-CENTRAL Y/SH	EAST-CENTRAL Y/AH	SOUTHWEST Y/SH	SOUTHWEST Y/AH	SOUTHCENTRAL Y/SH	SOUTHCENTRAL Y/AH	SOUTHEAST Y/SH	SOUTHEAST Y/AH	STATEWIDE Y/SH	STATEWIDE Y/AH
2008	*4.2*	2.6	*2.9*	1.5	*3.8*	1.9	*3.9*	1.9	*4*	1.9	*3.7*	1.9	*3.1*	1.9	*3.6*	2.1	*3.5*	1.7	*3.6*	1.9
2009	*3.7*	1.5	*3.3*	1.8	*3.8*	1.9	*3.1*	1.5	*3.1*	1.5	*3.4*	1.6	*3.5*	1.8	*3.5*	1.6	*2.9*	1.1	*3.3*	1.6
2010	*4.1*	2.1	*3.8*	2.8	*3.8*	2.4	*3.2*	1.6	*3.7*	2.3	*3.7*	1.9	*3.6*	1.7	*4.1*	2	*3.1*	1.4	*3.7*	2.0
2011	*3.9*	2	*3.5*	2.1	*3.9*	2.5	*3.7*	1.7	*3.5*	1.7	*3.7*	1.7	*3.3*	1.3	*3.9*	2	*3*	1.4	*3.6*	2.0
1 year % change	*-4.9*	*-4.8*	*-7.9*	***-25.0***	*2.6*	*4.2*	*15.6*	*6.2*	*-5.4*	*-26.1*	*0.0*	*-10.5*	*-8.3*	*-23.5*	*-4.9*	*0.0*	*-3.2*	*0.0*	*-2.7*	*0.0*

Table 2.10 Iowa wild turkey brood survey results by region for reports and percent hens with broods, 1976-present. #=total reports (italics) and % hens with broods.

	NORTHEAST		SOUTHERN		CENTRAL		WESTERN		EAST-CENTRAL		NORTHWEST		NORTH-CENTRAL		STATEWIDE	
YEAR	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1976			78													
1977			98													
1978			77	80												
1979			170	80												
1980			142	57												
1981	65	65	194	57											259	61
1982	*118*	62	*163*	60	*31*	42	*10*	23							*322*	47
1983	*117*	75	*148*	69	*34*	67	*40*	57	*77*	46					*416*	65
1984	*106*	78	*134*	78	*13*	84	*41*	54	*76*	53					*370*	70
1985	*133*	81	*229*	82	*42*	94	*47*	57	*165*	65					*616*	76
1986	*191*	74	*236*	63	*42*	55	*65*	64	*137*	55					*671*	64
1987	*266*	77	*353*	61	*79*	78	*70*	72	*138*	71					*906*	69
1988	*379*	72	*394*	45	*138*	79	*90*	69	*278*	60					*1,279*	62
1989	*364*	72	*408*	54	*92*	38	*137*	46	*303*	54					*1,304*	57
1990	*421*	66	*257*	46	*38*	59	*118*	38	*303*	49	*18*	46	*28*	14	*1,183*	54
1991	*368*	57	*418*	47	*78*	40	*105*	46	*346*	55	*22*	46	*9*	35	*1,346*	51
1992	*344*	59	*431*	44	*49*	28	*68*	25	*387*	44	*18*	5	*9*	14	*1,306*	45
1993	*265*	48	*290*	45	*37*	67	*75*	47	*330*	47	*12*	64	*28*	44	*1,037*	48
1994	*403*	53	*425*	49	*56*	61	*95*	62	*338*	56	*35*	42	*36*	46	*1,388*	53
1995	*325*	57	*385*	35	*175*	28	*146*	40	*319*	53	*24*	58	*28*	80	*1,403*	44
1996	*425*	48	*428*	38	*134*	25	*68*	43	*371*	46	*37*	43	*68*	48	*1,531*	42
1997	*310*	59	*589*	67	*67*	64	*141*	60	*356*	51	*27*	28	*82*	39	*1,572*	58
1998	*474*	59	*783*	49	*76*	37	*158*	48	*504*	53	*49*	78	*97*	61	*2,141*	53
1999	*411*	52	*805*	60	*62*	54	*188*	60	*517*	49	*45*	57	*86*	35	*2,114*	54
2000	*293*	53	*759*	56	*74*	50	*210*	59	*350*	51	*41*	84	*59*	53	*1,786*	55
2001	*429*	67	*803*	41	*73*	47	*228*	44	*486*	39	*61*	65	*105*	38	*2,185*	46
2002	*563*	64	*853*	51	*157*	56	*200*	57	*675*	45	*86*	71	*153*	77	*2,742*	54
2003	*1230*	51	*2930*	39	*344*	49	*581*	52	*1467*	39	*116*	70	*368*	53	*7,142*	43
2004	*735*	46	*1792*	50	*184*	47	*464*	55	*1005*	44	*75*	59	*262*	49	*4,517*	48
2005	*647*	55	*1457*	50	*316*	58	*627*	62	*823*	58	*144*	72	*447*	57	*4,564*	56
2006	*707*	47	*1503*	40	*279*	48	*820*	42	*828*	40	*165*	46	*460*	56	*4,879*	42
2007	*687*	53	*1492*	37	*301*	55	*675*	38	*909*	54	*157*	56	*538*	55	*4,833*	46
2008	*477*	55	*952*	58	*259*	54	*394*	54	*600*	55	*155*	68	*453*	56	3,289	57

Table 2.10 Iowa wild turkey brood survey results by region for reports and percent hens with broods, 1976-present. #=total reports (italics) and % hens with broods.

A new survey was initiated in 2008, with new regions and survey cards. 2008 was analyzed with the old and new regions to allow comparisons between years. **Bold indicates changes that are statistically different.**

	NORTHWEST		NORTH-CENTRAL		NORTHEAST		WESTCENTRAL		CENTRAL		EAST-CENTRAL		SOUTHWEST		SOUTHCENTRAL		SOUTHEAST		STATEWIDE	
YEAR	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
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
1 year % change		3.3		-17.7		0.0		-6.2		-21.7		-9.3		-15.0		3.6		-0.9		-7.5

Table 2.11 Iowa's Spring turkey hunting seasons, 1974-present.

	BAG POSSESSION		SEASON						SEASON	#	# SQ.	
YEAR	LIMIT	LIMIT	Youth	1	2	3	4	SPLITS	LENGTH	ZONES	MILES	MAJOR RULE CHANGES
1974	1	1/LICENSE		04 MAY-10 MAY	11 MAY-19 MAY				16	3	5,682	$ 10 FEE
1975	1	1/LICENSE		26 APR-02 MAY	03 MAY-09 MAY	10 MAY-18 MAY			23	3	2,749	THIRD SEASON ADDED
1976	1	1/LICENSE		24 APR-28 APR	29 APR-05 MAY	06 MAY-16 MAY			23	4	2,884	NE IOWA CLOSED FOR RESTOCKING
1977	1	1/LICENSE		21 APR-27 APR	28 APR-04 MAY	05 MAY-15 MAY			25	4	3,200	
1978	1	1/LICENSE		20 APR-26 APR	27 APR-03 MAY	04 MAY-14 MAY			25	6	3,683	
1979	1	1/LICENSE		19 APR-25 APR	26 APR-02 MAY	03 MAY-13 MAY		ZONES 1-5	25			
				26 APR-02 MAY	03 MAY-09 MAY	10 MAY-20 MAY		ZONES 6-8	25	8	9,958	$ 15, NE IOWA RE-OPENED
1980	1	1/LICENSE		24 APR-30 APR	01 MAY-07 MAY	08 MAY-18 MAY		ZONES 1-5	25			MUZZLELOADER LEGAL, W. IOWA OPEN,
				17 APR-23 MAY	24 APR-30 MAY	01 MAY-11 MAY		ZONES 6-9	25	9	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-09 MAY			27	8	21,506	
1983	1	1/LICENSE		12 APR-18 APR	19 APR-26 APR	27 APR-08 MAY			27	10	23,464	
1984	1	1/LICENSE		16 APR-19 APR	20 APR-24 APR	25 APR-01 MAY	02 MAY-13 MAY		28	12	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	01 MAY-12 MAY		28	13	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	15	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	13	40,202	
1988	1	1/LICENSE		11 APR-14 APR	15 APR-19 APR	20 APR-26 APR	27 APR-08 MAY		28	11	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-07 MAY		28	5	56,043	ENTIRE STATE OPEN
1990	1	1/LICENSE		09 APR-12 APR	13 APR-17 APR	18 APR-24 APR	25 APR-06 MAY		28	5	56,043	NONRESIDENTS ALLOWED
1991	1	1/LICENSE		15 APR-18 APR	19 APR-23 APR	24 APR-30 APR	01 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-09 MAY		28	5	56,043	
1994	1	1/LICENSE		18 APR-21 APR	22 APR-26 APR	27 APR-03 MAY	04 MAY-15 MAY		28	4	56,043	
1995	1	1/LICENSE		17 APR-20 APR	21 APR-25 APR	26 APR-02 MAY	03 MAY-14 MAY		28	4	56,043	
1996	1	1/LICENSE		15 APR-18 APR	19 APR-23 APR	24 APR-30 APR	01 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	
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-02 MAY	03 MAY-21 MAY		35	4	56,043	
2001	1	1/LICENSE		16 APR-19 APR	20 APR-24 APR	25 APR-1 MAY	02 MAY-20 MAY		35	4	56,043	
2002	1	1/LICENSE		15 APR-18 APR	19 APR-23 APR	24 APR-30 APR	01 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 STATE FOREST ZONES ELIMINATED

Table 2.12 Iowa's Fall turkey gun hunting seasons, 1981-present.
Archery only seasons same as deer seasons.

YEAR	BAG LIMIT	POSSESSION LIMIT	SEASON	SEASON LENGTH	# ZONES	# SQ. MILES	MAJOR RULE CHANGES
1981	1	1/LICENSE	21 OCT-01 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 & 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-08 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	09 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	LICENSES ISSUED FOR ZONES 3 & 6 ONLY (NE IOWA), $22 FEE
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	ZONE 8 ADDED, $22.50 FEE
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, A 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 STATE FOREST 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	

Table 2.13 Ruffed grouse small game license (general hunters) survey results, 2009-2012 in NE** Iowa.
* grouse detected while fall hunting other species (e.g. deer, squirrel, rabbit)

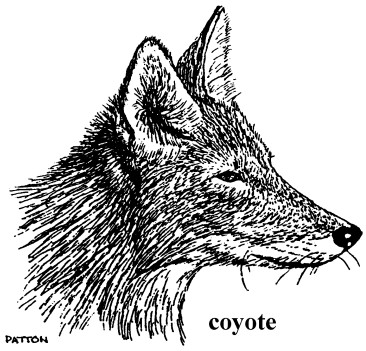
YEAR	Grouse observed per 1000 days of hunting*	Lower 95% CL	Upper 95% CL	# of days for a hunter to detect a grouse*	Lower 95% CL	Upper 95% CL
2008-2009	20.2	13.2	27.1	12.2	11.4	13.0
2009-2010	11.0	6.6	15.5	13.7	12.8	14.7
2010-2011	16.8	9.2	24.5	13.2	12.3	14.1
2011-2012	7.0	3.9	10.2	13.9	12.9	14.9

Table 2.14 Ruffed grouse hunters survey results, 2009-2012 in NE** Iowa.
* grouse flushed and harvested by grouse hunters, grouse hunters surveyed only in NE IA.

YEAR	Number of grouse hunters	Lower 95% CL	Upper 95% CL	# of days hunters spent grouse hunting	Lower 95% CL	Upper 95% CL	# of grouse flushed*	Lower 95% CL	Upper 95% CL	# of grouse harvested*	Lower 95% CL	Upper 95% CL
2008-2009	416.2	189.8	645.5	2565.8	448.3	4683.3	1236.7	113.5	2359.8	179.2	-11.0	369.4
2009-2010	369.1	160.7	577.5	2876.3	688.4	5064.3	369.5	-63.5	802.5	47.5	-45.1	141.0
2010-2011	205.1	37.7	372.5	1075.2	-222.4	2372.9	500.5	-79.5	1080.4	0.0	0.0	0.0
2011-2012	444.9	206.9	682.9	6143.0	1392.7	10893.3	523.3	0.8	1045.9	0.0	0.0	0.0

** NE Iowa counties surveyed included: Allamakee, Blackhawk, Bremer, Buchanan, Chickasaw, Clayton, Delaware, Dubuque, Fayette, Howard, Jackson, Jones, Linn, and Winneshiek.

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 (*Spilogle 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. Data such as harvest, road-kill, and spotlight survey indices have shown to positively correlate 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) April spotlight surveys, and 3) the Iowa Bowhunter Observation Survey.

Each year since 1930, the Iowa DNR collected harvest data for furbearer species from licensed fur dealers in Iowa. 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 verse 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 April spotlight surveys for raccoons and white-tailed deer (*Odocoileus virginianus*). Since 1978, the average raccoon harvest in Iowa has equaled the average total harvest of all other furbearer species combined. Raccoon pelt values compose a significant portion of the total harvest value in Iowa each year. Thus, the April spotlight survey provides additional and useful data for managing this highly important furbearer species in the state.

Population trend data for furbearer species have also been gathered annually since 2004 through the Iowa Bowhunter Observation Survey (see appendix, Bowhunter Observation Survey). Avid archers were identified *a priori* for survey

and provided statewide observation data for Iowa furbearers during more than 100,000 observation hours in 2011. Archers were considered ideal for collecting observation data because 1) avid archers may be considered experts at stand placement and concealment from wildlife, 2) avid archers are knowledgeable regarding species identification, 3) avid archers spend a great amount of time in-field each year, and 4) stand hunting methods for observing white-tailed deer lend well to observation of many furbearer species. Although this dataset is relatively new, it 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, beaver were extirpated by the turn of the century and populations were closed to harvest, statewide.

In the 1930s, muskrat, mink, skunk, and opossum composed the largest proportion of total furbearer harvest in Iowa (Figure 3.1). 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. By the end of the 1930s, the total skunk harvest in Iowa began to decline where as the red and gray fox harvests were growing.

In the 1930s and 1940s, the Iowa Conservation Commission (currently the Iowa DNR) initiated a beaver reintroduction program in Iowa. Beavers were live captured and transplanted throughout the state and by 1943, the harvest season for beaver was reopened. During the 1943-44 season, the total furharvest in the state reached an all-time high and 235 beavers were harvested (Figure 3.2).

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 (Table 3.1).

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

decade. Ultimately, raccoon and muskrat harvests remained stable and composed the greatest proportion of the total harvest in the 1950s.

During the 1960s, total harvest increased and relatively stabilized in Iowa. Beaver populations had continued to recover with stable 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 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 as low as 216,874 by 1990-91.

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 (Figure 3.3). Harvest in the late 2000s steadily declined in response to 5 consecutive harsh winters. By 2010-11, harvest rebounded for all species except weasels (which had not composed a significant portion of the total harvest since the 1930s). Total reported furharvest during the 2010-11 season increased to 368,856 but remained below the long-term average (457,878). In 2011-12, the total furharvest rebounded further (448,296) but continued to remain shy of the long-term average.

Number of Licensed Furharvesters

The average number of licensed furharvesters in Iowa fluctuates with recent fur markets. Generally, as fur prices increase, the number of furharvesters in the state increases in subsequent years, and vise versa (Figure 3.4). In 2011, the number of furharvesters in Iowa reached a 10-year high of 17,049, likely in response to increased fur market projections for the year (Table 3.2).

In 2012, the fur market is projected to grow further but due to extensive statewide drought in 2011, furbearer populations in the state may decline. The effect of statewide drought on furharvest license sales has yet to be determined.

Over the past 10 years, the number of licensed fur dealers in Iowa has slightly decreased from 51 in 2001 to 39 in 2011. The number of licensed fur dealers does not

appear to be affected by the value of the total harvest in Iowa. However, due to the 10-year total harvest value high observed in 2011, the number of licensed fur dealers in the state may increase in 2012 (Figure 3.5).

Current Fur Market in Iowa

The current fur market is strengthening with demand primarily out of Russia, China, and Korea. Fur market recovery has been slow and primarily limited by the European economy and the lack of a mass production capacity for fur products. Overall, the market outlook is positive. Prices for raccoon, mink, coyote, red fox, beaver, bobcat, and otter are expected to rise. Muskrat prices should remain solid, although below those of other important species. Demand for gray fox and skunk has slowly declined over recent years and expected to continue in that trend during the following year.

In 2011-12, furbearer prices and number of pelts sold in Iowa followed current furbearer market trends. Average pelt prices and the total number of pelts sold increased for raccoon, mink, beaver, coyote, red and gray fox, opossum, badger, bobcat, otter, and weasel in comparison with the previous season (Table 3.3). Muskrat, raccoon, and red fox prices were above the 5-year and long-term averages while mink were above the 5-year and below their long-term average (Table 3.1). Although gray fox showed increased average pelt prices in a weakening market, the maximum price paid per pelt was lower than in 2011-12 and should be expected to decrease in the future.

Muskrat showed a mild decrease in average pelt price reflective of the current market. However, decreased total muskrat harvest in 2011 was likely due to the effect of poor wetland conditions and statewide drought on populations, rather than a suppressed fur market.

Average pelt price for striped skunk also decreased in response to current market values. Inversely, the 2011 striped skunk harvest increased by 150 compared with the previous season. Although the skunk market has steadily decreased in recent years, the increased total harvest was likely a result of excellent statewide trapping conditions during the 2011-12 season.

2011-12 Furharvest Season in Iowa

Annual and long-term weather events significantly impact furbearer populations and harvest success in Iowa. Precipitation, water levels in wetlands and waterways, and time of freeze all affect aquatic furbearer harvests and trapping effort in the state. Muskrat and beaver populations are cyclic and historically shown to fluctuate following wet/dry periods; resulting in fluctuating annual harvests.

Terrestrial furbearer harvests are impacted by the severity of winters, level of snow cover, and the duration of extreme temperatures. The severity of harsh winter weather has also shown to limit hunter and trapper effort in some years. Typically, trapping and raccoon hunting success is greater during mild winters in which snow cover is minimal. Inversely, hunter success harvesting coyote and fox increases during years of extended snow cover. Ultimately, consideration of annual weather is important for analyzing harvest trends and developing sound management strategies for furbearers in Iowa.

The fall and winter of 2011-12 were exceptionally mild in comparison to the previous 5 years, statewide. Average temperatures were 3.1, 6.9, and 6.6º F above

normal for November and December, 2011, and January, 2012, respectively. December and January were 6.7º F above normal and ranked as the 8th warmest December-January period in the 139-year recording period. The previous 5 winters showed above average snowfall but in 2011-12, snowfall was below the long-term normal. November and January snowfall was 1.9 and 1.1 inches below normal, respectively. December was a particularly wet month in which precipitation was 0.8 inches above normal resulting in minimal snow cover, statewide.

The combination of mild temperatures and low snowfall during the 2011-12 furharvest season resulted in excellent furbearer trapping conditions, statewide. Mild weather allowed furharvesters to stay in-field for most of the harvest season and maintain trapping sets in good condition. The total harvest for raccoon, muskrat, mink, red fox, coyote, opossum, striped skunk, badger, and beaver were all above their 5-year averages and the gray fox harvest for 2011-12 was 3-times higher than the 2010-11 harvest (Table 3.4). Additionally, the percent of pelts purchased from trappers by Iowa fur dealers was above the 5-year average for raccoon, fox, and coyote; indicating higher quality trapping conditions occurred during the 2011-12 season in comparison to recent years (Table 3.5).

The total number of coyote harvested and the percent of total harvest taken by hunters during the 2011-12 season were lower than in 2010-11. The 2010-11 harvest season saw below average temperatures and above average snowfall. Cold weather and snow cover are more favorable for hunting coyote than mild winter conditions and likely resulted in the lower 2011-12 hunter harvest in comparison to the previous season.

Raccoon

Raccoon harvest in the 1930s was relatively low and comprised only 3% of the total harvest (Figure 3.6). 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 increase throughout the next two decades but remained relatively low until the early 1970s. During the 1970-71 season, raccoon harvest totaled approximately 94,000. By 1974, raccoon harvests had boomed, experiencing a 300% increase to 292,064. Although harvests had averaged nearly 100,000 for the pervious 2 decades, populations were steadily increasing. High harvest rates likely minimized disease outbreaks such as distemper, helping to maintain healthy populations. By the 1986-87 season, harvests reached a current, all-time high of 390,773. However, within 3 years, harvests crashed to 103,468 (a 378% decline) as a result of poor market prices and regional drought. Average harvest throughout the 1990s and mid-2000s remained around 129,000. In 2010-2011, harvests again peaked to 236,943, well above the 5-year (189,344) and long-term (122,395) averages.

In 2011-12, the raccoon harvest reached a 25-year high of 326,368; a number similar to the high harvests recorded during the 1980s (Table 3.4). Trapping and hunting season dates (5 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in 2010-11 (Table 3.6). The average raccoon pelt price in Iowa was $10.86 ($5.00-20.00), which was higher than the 2010-11 price ($10.75; Figure 3.7; Table 3.3). Trapping accounted for 63% of the total harvest and remained unchanged from the previous season (Table 3.5).

Hunting accounted for 28% of the total harvest which was an increase of 14% from 2010-11. The increase was likely due to increased hunter success resulting from mild winter conditions.

The 2011 Iowa Bowhunter Observation Survey indicated that statewide populations remained relatively stable throughout most of the state (Figure 3.8). Subsequently, 2012 April spotlight surveys indicated that statewide populations have slightly increased from the previous year and exceed the 5-year average (Figure 3.9; Table 3.7).

Muskrat

Since the 1930s, muskrat consistently composed the greatest proportion of the total annual harvest in Iowa. Average pelt prices have remained consistently low compared with species such as raccoon, mink, and red fox (Table 3.1). However, because of the high muskrat population in the state and high rate of harvest over time, muskrat furs have 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 (Figure 3.2). Muskrat populations in Iowa fluctuate greatly following wet and dry periods. Droughts in the 1930s, 1950s, and late 1980s suppressed muskrat populations in the state. However, in subsequent wet years, populations quickly rebounded due to the prolific reproductive capacity of the species.

In 1979-80, muskrat harvest in Iowa reached a current, all-time high of 741,403 (Figure 3.10). 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. Excessive precipitation and flooding in 1993 improved habitat and by the mid-1990s, populations had steadily rebounded. In the late 1990s, wetland conditions began to deteriorate as increasing/stable high water levels destroyed 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 was 2.2-times higher than the previous season's harvest and reached a decade high of 98,079.

In 2011-12, the muskrat harvest was 78,422, which was a decrease from the previous season (Table 3.4). Drought conditions in 2011 significantly decreased water levels in wetlands and subsequently suppressed muskrat populations and total harvest. Trapping season dates (5 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in 2010-11 (Table 3.6). The average muskrat pelt price in Iowa was $5.93 ($2.52-9.50), which was higher than the 2010-11 price ($5.31; Figure 3.11; Table 3.3).

Excessive statewide drought during 2012 is expected to maintain muskrat populations at low numbers in Iowa. Most wetlands and marshes experienced low or completely dry conditions, decreasing populations and creating unfavorable trapping conditions. The 2012-13 harvest is expected to be equal to or less than the 2011-12 harvest.

Coyote

Coyote harvest in the 1930s was nearly non-existent in Iowa and totaled only 517 animals throughout the entire decade

(Figure 3.12). 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 boomed and by 1976-77, reached a current, all-time high of 12,226. Since the late 1970s, harvests have steadily decreased in the state but remained high in comparison to previous decades. Except for a dramatic decline in the late 1980s, harvests through the late 2000s averaged 6,800, well above the long-term average (4,207). In 2009-10, harvests dipped below the long-term average but quickly rebounded to a 7-year high of 8,089 during the 2010-11 season.

In 2011-12, the coyote harvest was 7,765, which was a slight decrease from the previous season but above recent and long-term averages (Table 3.4). The regular Trapping and hunting season dates (5 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in 2010-11 (Table 3.6) with the coyote season open year round. The average coyote pelt price in Iowa was $12.08 ($5.00-28.00), which was higher than the 2010-11 price ($9.08; Table 3.3). Trapping accounted for 41% of the total harvest which was a significant increase from the previous season (Table 3.5). The increase was likely due to increased trapper success resulting from mild winter conditions. Hunting accounted for 43% of the total harvest, which was a slight decrease from the previous season. The remaining ~26% was data that did not specifiy whether harvest occurred from hunting vs trapping.

The 2011 Iowa Bowhunter Observation Survey indicated that statewide populations remained relatively stable or slightly increased throughout central and western portions and declined in southeast portions of the state (Figure 3.13). Statewide, coyote populations in 2010 and 2011 appear to be higher than those seen in the late 2000s and similar to those reported in the mid-2000s.

Red Fox

Red fox harvests through the mid-1940s averaged approximately 6,900 in Iowa (Figure 3.14). 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 declined and since the 2004-05 season, remained below the long-term average of 10,631.

In addition to depressed fur markets in the 1980s, recent red fox population declines in Iowa have been attributed to two occurrences. Since the early 1980s, mange has remained persistent in red fox populations and suppressed population recovery in the state. 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 2011-12, the red fox harvest was 4,209, which was a slight decrease from the previous season (Table 3.4). The 2011-12 harvest was above the 5-year average but below the long-term average. Trapping and hunting season dates (5 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in 2010-

11 (Table 3.6). The average red fox pelt price in Iowa was $17.74 ($4.00-45.00), which was higher than the 2010-11 price ($13.53; Figure 3.15; Table 3.3). Trapping accounted for 73% of the total harvest (red and gray fox), which was a significant increase from the previous season (Table 3.5). The increase was likely due to increased trapper success resulting from mild winter conditions. Hunting accounted for 15% of the total harvest (red and gray fox), which was a slight decrease from the previous season.

The 2011 Iowa Bowhunter Observation Survey indicated that populations in northern and central Iowa have remained stable and at relatively low numbers since 2004 (Figure 3.16). Populations in southeast Iowa may have significantly decreased since the mid-2000s, although observations indicate that numbers are similar to those recorded in other regions of the state.

Gray Fox

Gray fox harvests in Iowa have followed similar trends to those of red fox, although historically, populations have existed at a significantly lower numbers (Figure 3.17). During the 1930s and 1940s, harvests averaged around 1,300. Gray fox harvests dropped to 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. Where as red fox harvests remained high throughout the 1980s, gray fox harvests dramatically declined. Since 1996-97, gray fox harvests have remained below their long-term average of 866. In 2009-10, gray fox harvests reached an all-time low of 13 in Iowa.

In 2011-12, the gray fox harvest was 85, which was more than triple the previous season harvest but below the recent and long-term averages (Table 3.4). Trapping and hunting season dates (5 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in 2010-11 (Table 3.6). The average gray fox pelt price in Iowa was $15.04 ($12.00-18.08), which was higher than the 2010-11 price ($12.86; Table 3.3). Trapping accounted for 73% of the total harvest (red and gray fox), which was a significant increase from the previous season (Table 3.5). The increase was likely due to increased trapper success resulting from mild winter conditions. Hunting accounted for 15% of the total harvest (red and gray fox), which was a slight decrease from the previous season.

The 2011 Iowa Bowhunter Observation Survey indicated that populations in northern and central Iowa have remained stable and at relatively low numbers since 2004 (Figure 3.18). Observations in southeast Iowa showed trends similar to those of red fox and indicated that populations may have significantly decreased since the mid-2000s. Statewide, gray fox populations appeared highest in the south-central and southeastern regions and low in all other regions in 2011.

Beaver

By the early 20th century, beaver were extirpated from Iowa. Harvests 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 (Figure 3.19). 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. Harvests declined in the early 1990s although quickly stabilized, averaging 10,800 through the early 2000s. Harvests progressively declined in the 2000s and dropped below the long-term average (7,085) during the 2004-05 and 2006-07 through 2010-11 seasons.

In 2011-12, the beaver harvest reached an 18-year high of 11,652; a number similar to the high harvests recorded during the 1990s (Table 3.4). Trapping season dates were extended two weeks in April (5 Nov-15 Apr) and daily bag (no limit) and possession (no limit) limits remained unchanged from 2010-11 (Table 3.6). The average beaver pelt price in Iowa was $11.46 ($7.00-24.00), which was higher than the 2010-11 price ($7.96; Table 3.3).

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 steady decline although in 2010-11, topped the 5- and 10-year averages at 11,262.

The 2011-12 mink harvest was 12,977, which was a slight increase from the previous season (Table 3.4). The 2011 harvest was above the 5- and 10-year averages, but below the long-term average (Figure 3.20). The trapping season dates (5 Nov-31 Jan) and daily bag (no limit) and possession (no limit) limits remained similar to those in 2010-11 (Table 3.6). The average mink pelt price in Iowa was $12.62 ($4.59-21.00), which was higher than the 2010-11 price ($10.80; Figure 3.21; Table 3.3).

Opossum

During the 1933-34 harvest season, the opossum harvest reached a current, all-time high of 83,625 (Figure 3.22). 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-1930s and early 1940s. In the late 1980s, harvests crashed and remained below the long-term average (14,549) throughout the 1990s and 2000s. In 2010-11, harvests improved to 3,156, surpassing the previous 5-year average of 2,871.

The 2011-12 opossum harvest was 3,932, which was a slight increase from the previous season (Table 3.4). The 2011-12 harvest was above the 5- and 10-year averages but below the long-term average. Trapping and hunting season dates (5 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in 2010-11 (Table 3.6). The average opossum pelt price in Iowa was $1.00 ($0.25-2.50), which was higher than the 2010-11 price ($0.96; Table 3.3).

The 2011 Iowa Bowhunter Observation Survey indicated that statewide populations peaked in 2005 or 2006 and steadily declined in recent years (Figure 3.23). Populations stabilized in the late 2000s and remained low in the northern and central portions of the state, and relatively high in southern portions of the state. Observations in 2011 indicated that populations increased slightly throughout most portions of the state.

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 (Figure 3.24). 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 a current, all-time high of 3,274 during the 1979-80 season. Harvests remained high throughout the 1980s but ultimately crashed to below 500 by the early 1990s. Harvests fluctuated around the long-term average (670) throughout the 1990s and 2000s and in 2010-11, reached a 22-year high of 946.

In 2011-12, the badger harvest reached a 24-year high of 1,220; a number similar to the harvests reported in the mid-1970s and mid-1980s (Table 3.4). The 2011 harvest was above recent and long-term averages in Iowa. Trapping and hunting season dates (5 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in 2010-11 (Table 3.6). The average badger pelt price in Iowa was $11.73 ($7.00-27.00), which was slightly higher than the 2010-11 price ($11.23; Table 3.3).

The 2011 Iowa Bowhunter Observation Survey indicated that populations have remained stable throughout most central and eastern portions of the state (Figure 3.25). Populations in northwest and southeast Iowa have declined since the mid-2000s and remained low in 2011. Populations in southwest Iowa have remained significantly higher than the remainder of the state, although at slightly lower numbers in 2011.

Spotted Skunk

Spotted skunk (also called civet) 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 (Figure 3.26). In 1946-47, the spotted skunk harvest crashed, although similar trends were recorded for most furbearer species in the state (Table 3.4). Harvests stabilized around 1,700 in the 1950s and remained low throughout the decade. Where as most furbearer species began to show improvements in harvest numbers by the mid-1960s, spotted skunk populations began 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. Currently, spotted skunk are likely extirpated from the state and warrant further study.

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 steadily declined (Figure 3.27). By the early 1950s, harvests dropped below 10,000 and over the past 20 years, have averaged below 1,000.

In 2011-12, the striped skunk harvest was 858, which was an increase from the previous season (Table 3.4). The 2011 harvest was slightly above the 5-year average (850) and significantly below the long-term average (17,323). Trapping and hunting season dates (5 Nov-31 Jan), daily bag limits (no limit), and possession limits (no limit) remained similar to those in 2010-11 (Table 3.6). The average striped skunk pelt price in Iowa was $2.20 ($0.50-4.50), which was lower than the 2010-11 price ($2.39; Table 3.3).

The 2011 Iowa Bowhunter Observation Survey indicated that populations remained relatively stable throughout eastern, central, and southwest portions of the state and decreased in northwest and south-central portions during 2011 (Figure 3.28). Populations have remained high in western and south-central portions of the state and relatively lower in central and eastern portions since the mid-2000s. Although the observation survey indicates that decent numbers exist in Iowa, low market prices for skunk furs likely have kept harvest low in comparison to species (e.g., badger) which remain at low population numbers yet produce relatively high harvests due to good fur prices.

Weasel

Weasel harvests during the 1930s and 1940s were characterized by dramatic fluctuations (Figure 3.29). In 1936-37, just 4 years following a decade low harvest of 256, weasel harvests 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 did not occur until 2009-10. Harvests in 2009-10 and 2010-11 were 56 and 7, respectively, characteristic of the low harvests numbers reported throughout the 1960s and 1970s.

In 2011-12, the weasel harvest was at an all-time low of 3 animals (Table 3.4). Trapping season dates (5 Nov-31 Jan) and daily bag (no limit) and possession (no limit) limits remained similar to those in 2010-11 (Table 3.6). The average weasel pelt price in Iowa was $5.00 ($1.50-12.00), which was 2.6 times higher than the 2010-11 price ($1.90; Table 3.3).

Low harvest numbers may indicate that statewide populations have not recovered since the 1970s. However, it is likely that trappers have not yet targeted the species since the harvest season was reopened in 1988 due to the low value of weasel pelts. Additional information from trappers is necessary to identifying reasons for the low harvest rate in Iowa.

River Otter

Except for small remnant populations along the Mississippi River, the river otter was extirpated from Iowa by the early 20th century. In 1985, the Iowa DNR 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 and the Iowa DNR created the first regulated otter trapping season in Iowa (Table 3.6). The harvest quota was set at 400 animals (limit of 2 per licensed furharvester) and a 72-hour reporting grace period was established once 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.

In 2011, the harvest quota was set at 650 with a limit of 3 otters per licensed furharvester. A total of 770 otters were harvested (28 from unknown sources) which exceeded the quota due to inconsistencies in harvest reporting among individuals (Figure 3.30). The average otter pelt price in Iowa was $50.94 ($21.25-93.00), which was considerably higher than the 2010-11 price ($36.96; Table 3.3).

Since the trapping season was established in 2006, the sex ratio of harvested otters has remained relatively even (Figure 3.31). Foothold traps, conibear traps, and snares were the most common harvest method in the state (Figure 3.32; Table 3.9). The number of furharvesters intentionally targeting otters has remained relatively low as incidental captures appear to be the most common cause for capture in Iowa (Figure 3.33). Although the harvest season has been highly successful and the fur market for otter pelts is strong, the number of furharvesters intentionally targeting otters has remained relatively constant since 2006 (Figure 3.34).

The 2011 Iowa Bowhunter Observation Survey indicated that populations decreased in northern, east-central, and south-central portions of the state following the opening of the trapping season in 2006 (Figure 3.35). Populations appear to have stabilized in these regions despite the increased harvest quota in 2008. The remainder of the state showed that otter populations pre- and post-trapping have remained at stable numbers. Harveast data and observations suggest that 2011 populations were highest in central and eastern Iowa, although strong harvests numbers were also reported in portions of northwestern and south-central Iowa.

Despite exceeding quotas in 5 of the previous 6 seasons, our data indicates that otter populations appear to be increasing in some regions of the state (eastern, southern), and at the minimum have remained stable throughout the rest of the state. Therefore, in 2012, the harvest quota will increase to 850 otters.

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 extirpated for extended periods.

Since the early 1990s, bobcat sightings, road kills, and incidental captures by trappers have 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 and delisted the bobcat 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 trapping season in the state (Table 3.6). The harvest quota was set at 150 animals (limit of 1 per licensed furharvester) and a 24-hour reporting grace period was established once 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 during the 2008 and 2009 seasons with harvests totaling 232 and 231, respectively. Woodbury, Monona, Harrison, and Pottawattamie counties along the Missouri river were added to the open zone. In 2010, harvest quotas were further increased to 250 and a total of 263 bobcats were reported. The 2010 open zone was expanded to include the bottom 3 tiers of counties in Iowa plus Guthrie County in south-central Iowa.

In 2011, the harvest quota was set at 350 (limit of 1 per licensed furharvester) and the open harvest zone remained similar to the 2010 zone (Figure 3.36). A total of 391 bobcats were reported harvested (24 from unknown sources; Figure 3.37). The average bobcat pelt price in Iowa was $66.81 ($23.50-160.00), which was higher than the 2010-11 price ($51.99) and the highest value of all Iowa furbearer species (Table 3.3).

Since the trapping season was established in 2007, the sex ratio of harvested bobcats has remained relatively even (Figure 3.38). Snares, conibear traps, and foothold traps were the most common trapping method and archery the most common hunting method in the state (Figure 3.39; Table 3.11). The number of furharvesters intentionally targeting bobcats has remained relatively low as incidental captures appear to be the most common cause for capture in Iowa (Figure 3.40). Although the harvest season has been highly successful and the fur market for bobcat pelts is strong, the number of furharvesters intentionally targeting bobcats has remained relatively constant since 2006 (Figure 3.41).

The 2011 Iowa Bowhunter Observation Survey indicated that since regulated bobcat trapping began in 2007, populations have remained stable or increased throughout the state (Figure 3.43). Population numbers are highest throughout southern Iowa which is supported by trapping and road kill data. Populations appear higher in east-central Iowa along the Missouri River which is further supported by good harvest numbers in Woodbury and Harrison counties. Recovery in central and northern Iowa has been slow due to a lack of habitat when compared with southern Iowa, although populations have remained stable since 2004.

Despite exceeding quotas in 4 of the previous 5 seasons, bobcat populations

remained stable or increasing throughout the state. In 2012, the bobcat harvest quota will be increased to 450, signifying the growing population in the state.

Figure 3.1. Proportion of total harvest in Iowa by species (1930-1939).

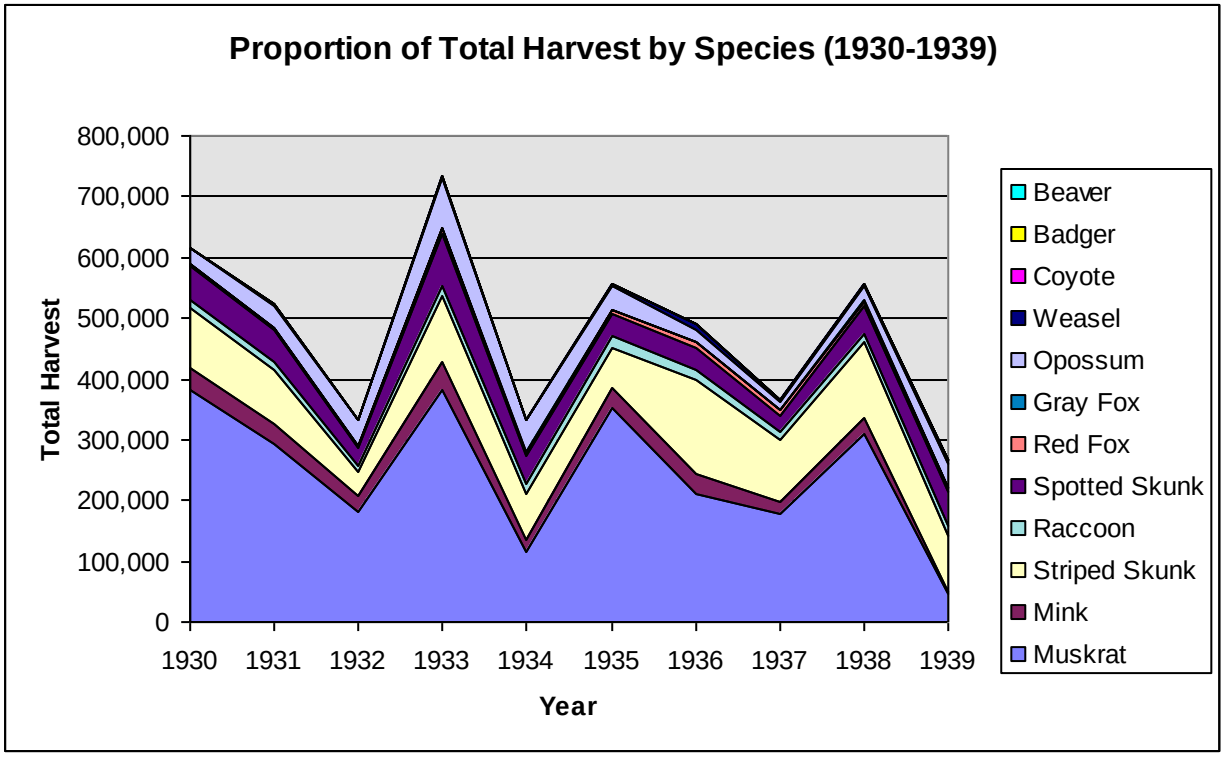


Figure 3.2. Proportion of total harvest in Iowa by species (1930-present).

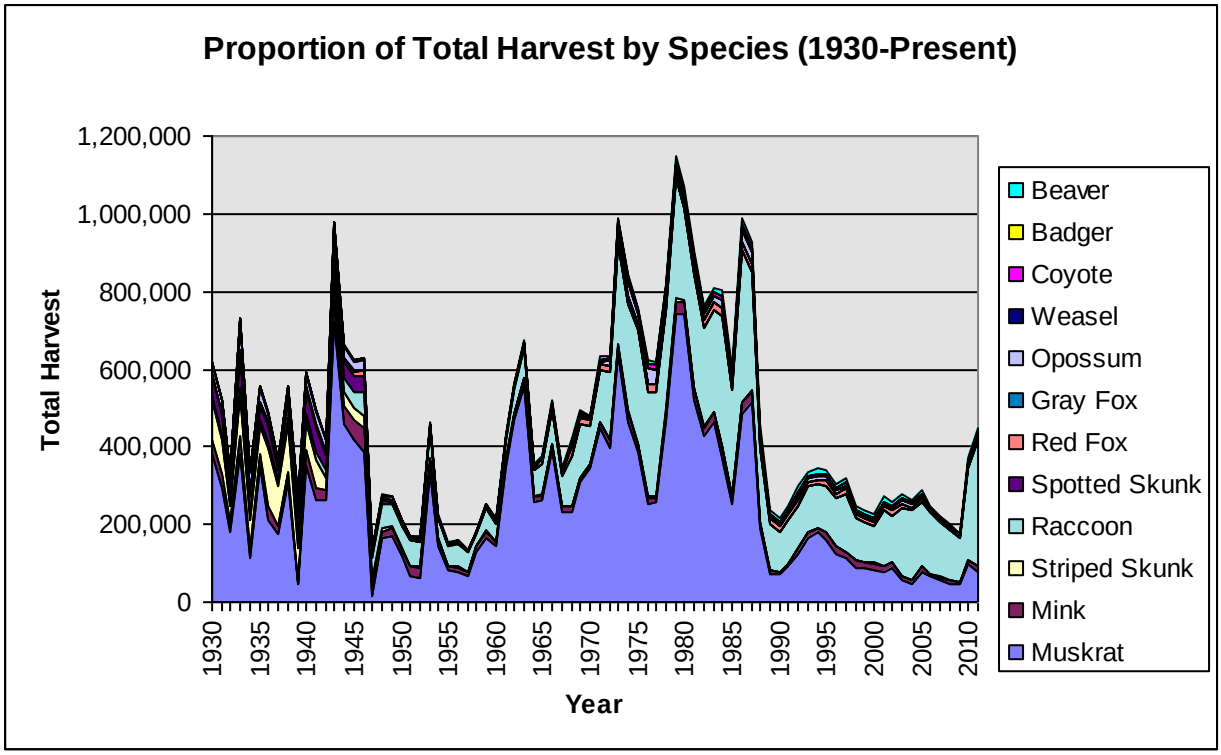


Figure 3.3. Proportion of total harvest in Iowa by species (2000-present).

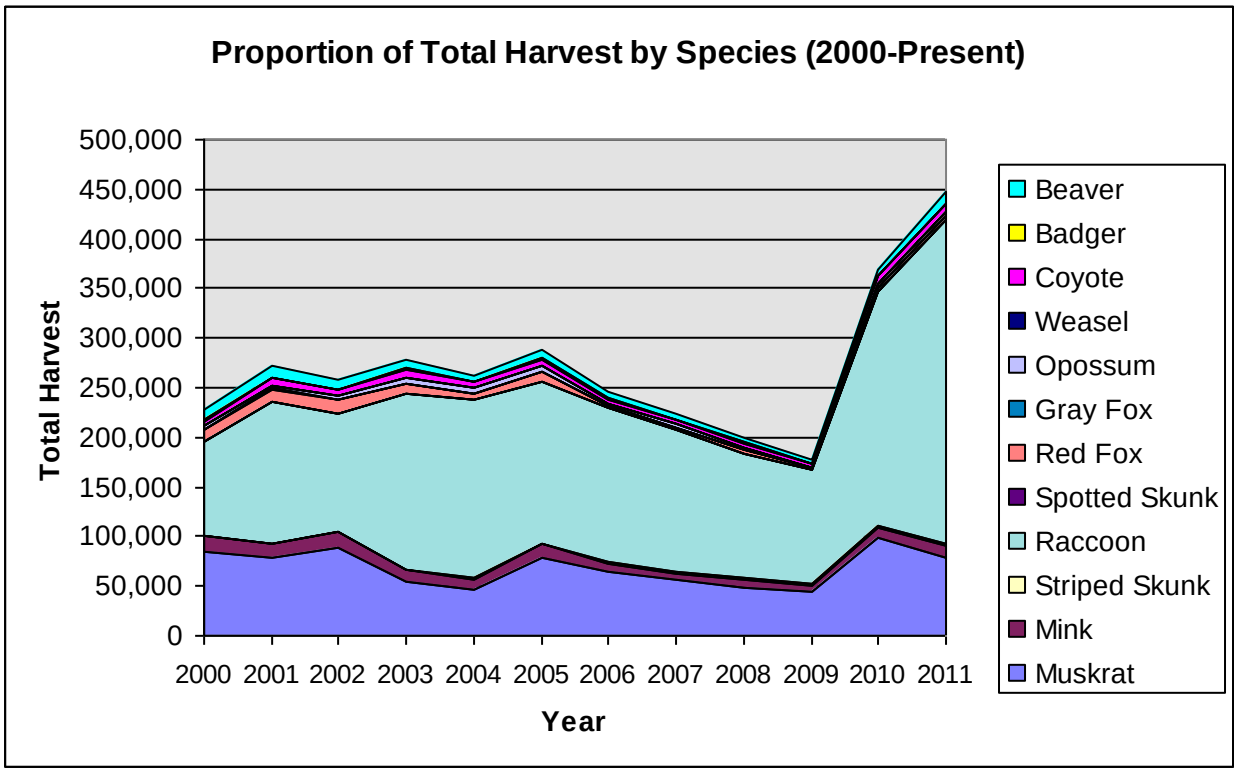


Figure 3.4. Number of licensed Iowa furharvesters and total harvest value in Iowa (2001-present).

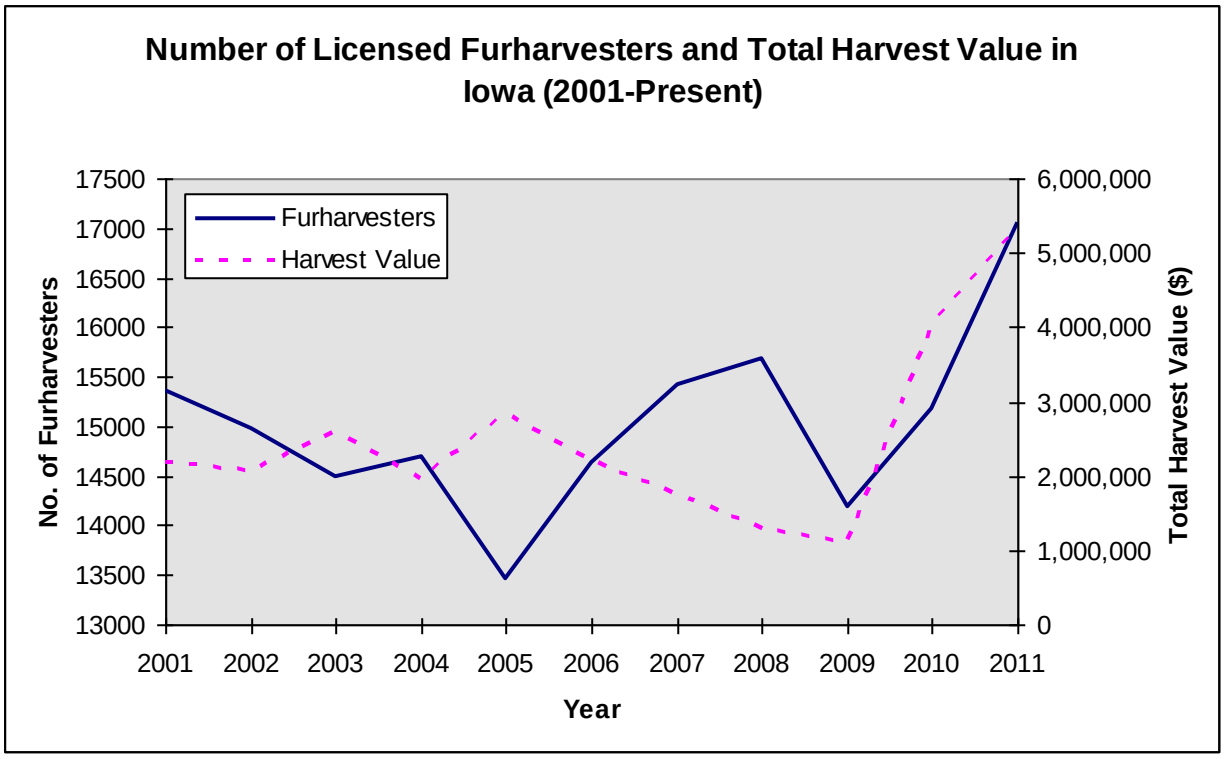


Figure 3.5. Number of licensed Iowa fur dealers and total harvest value in Iowa (2001-present).

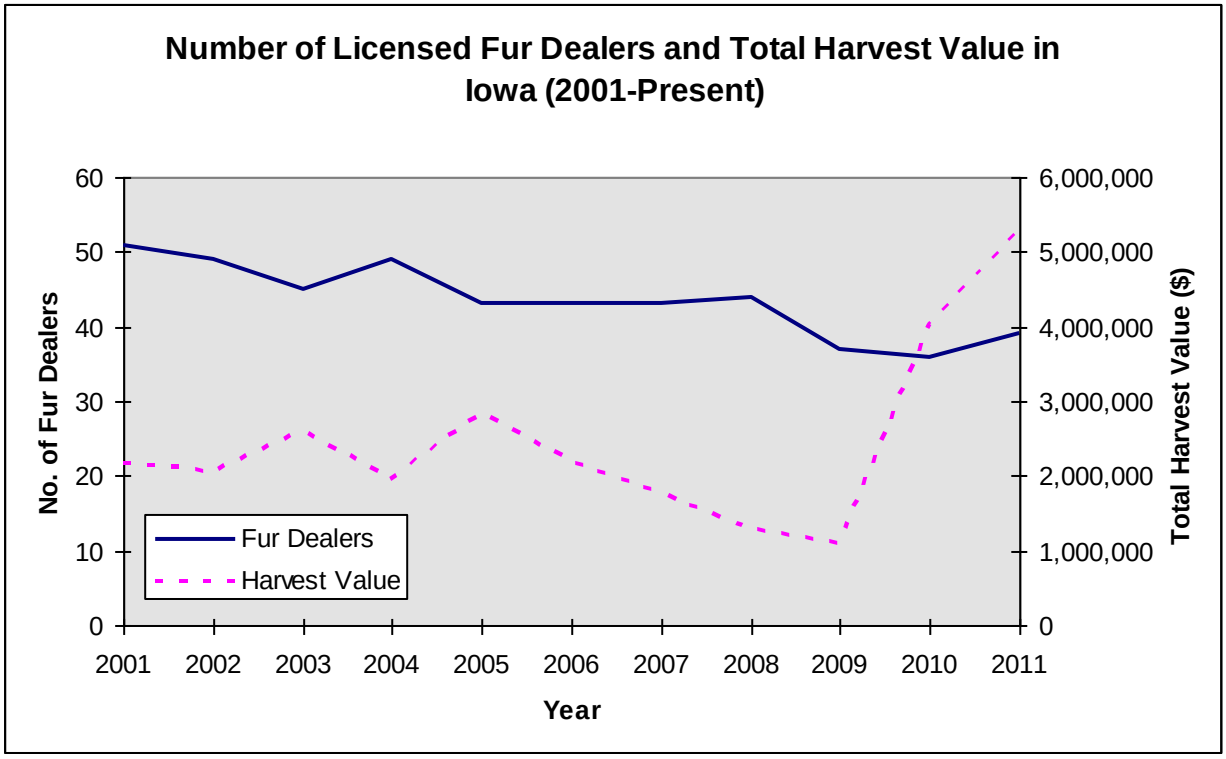


Figure 3.6. Annual raccoon harvests reported by licensed fur dealers in Iowa (1930-present).

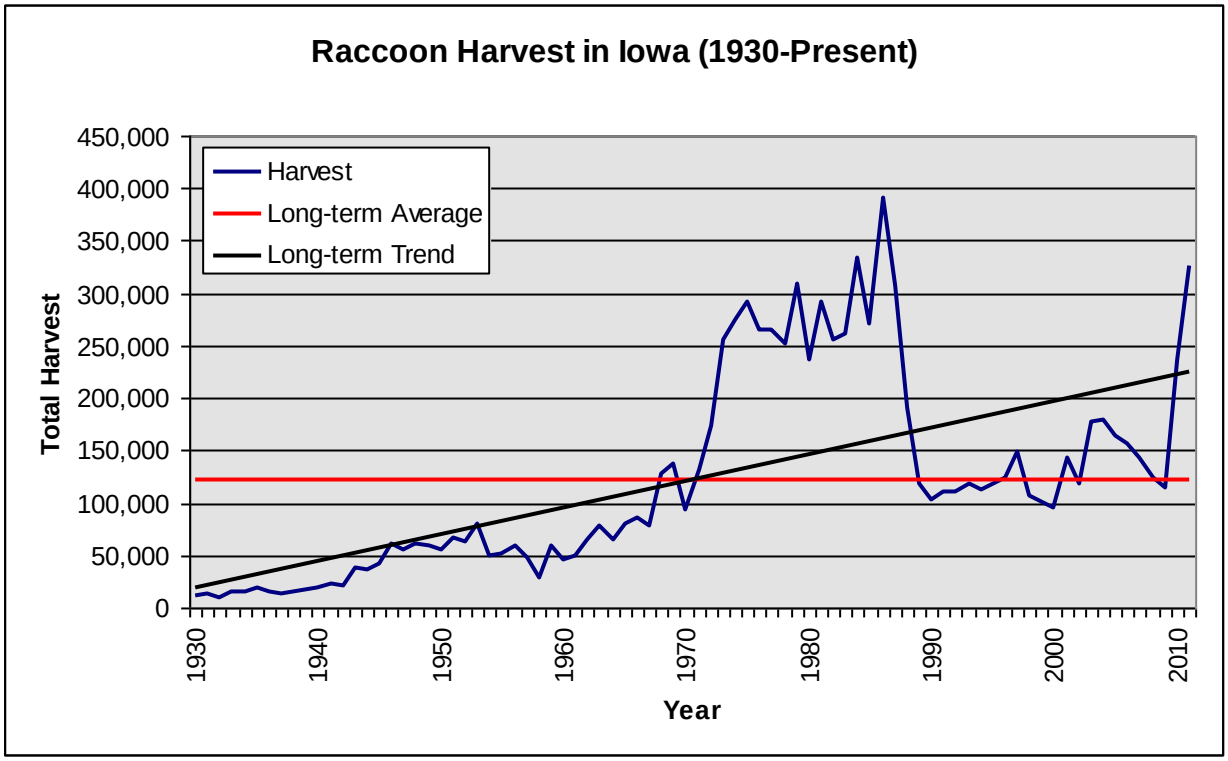


Figure 3.7. Raccoon harvest in Iowa and average pelt price paid by fur dealers (1977-present).

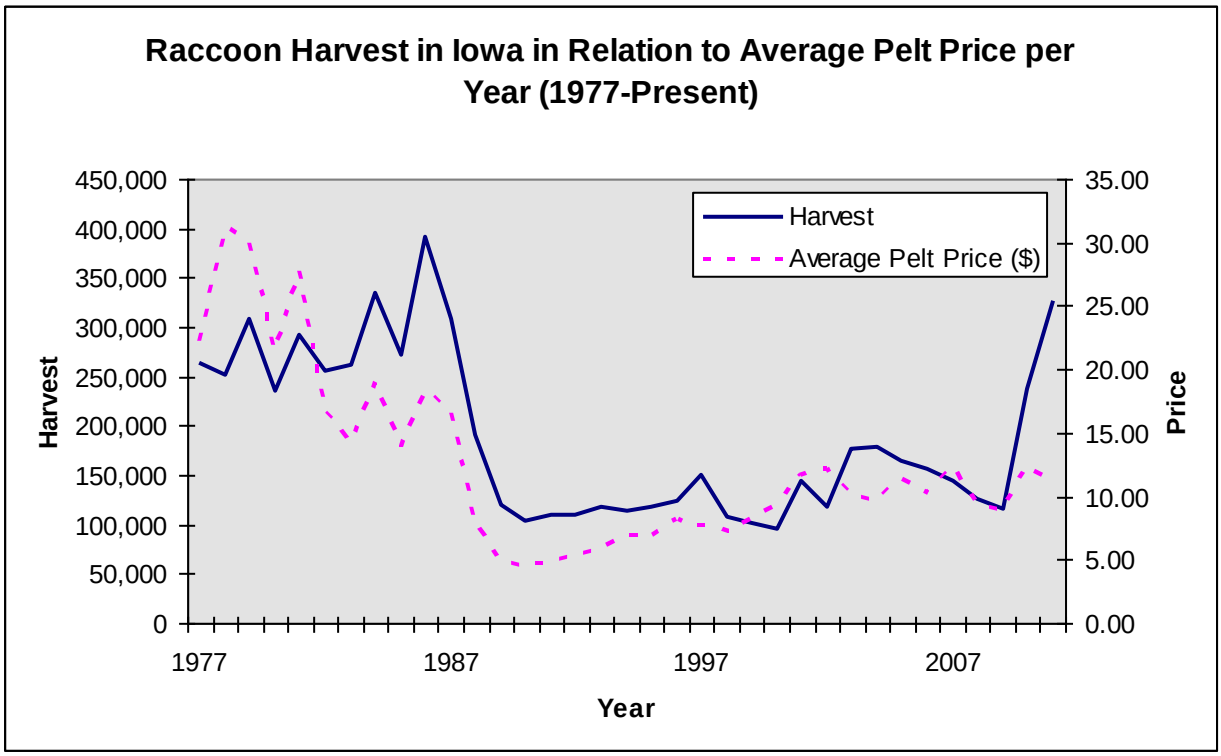


Figure 3.8. Results of raccoon Bowhunter Observation Survey in Iowa (2004-present).

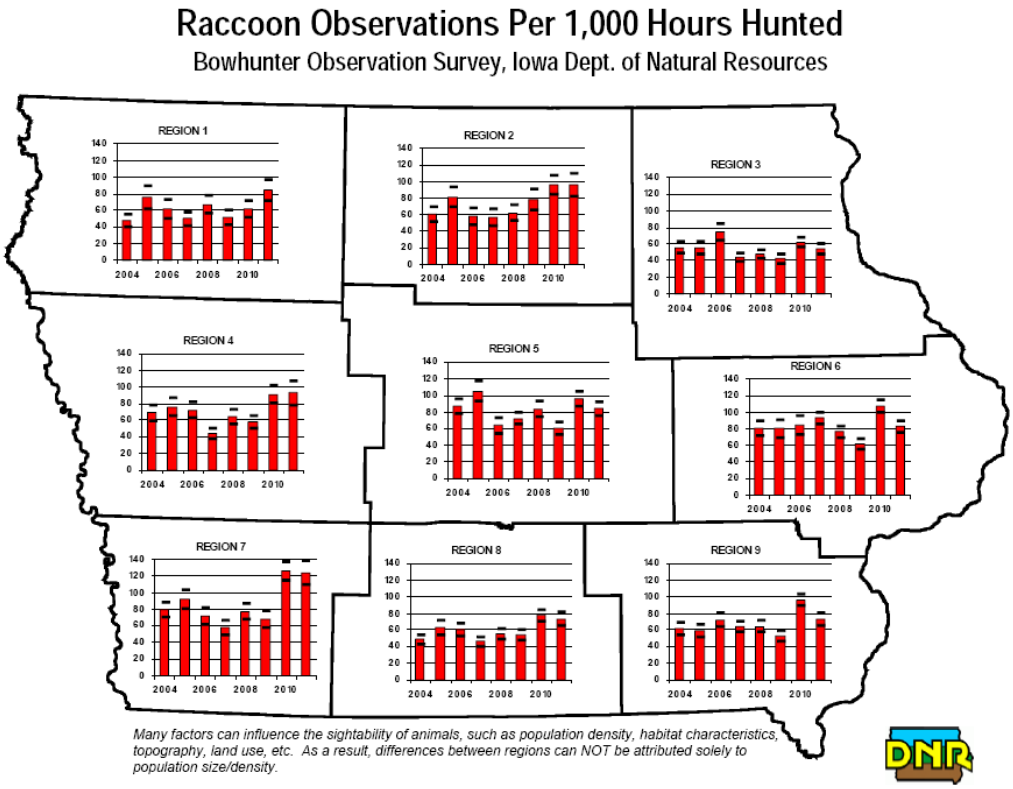


Figure 3.9. Results of April raccoon spotlight surveys in Iowa (1977-present).

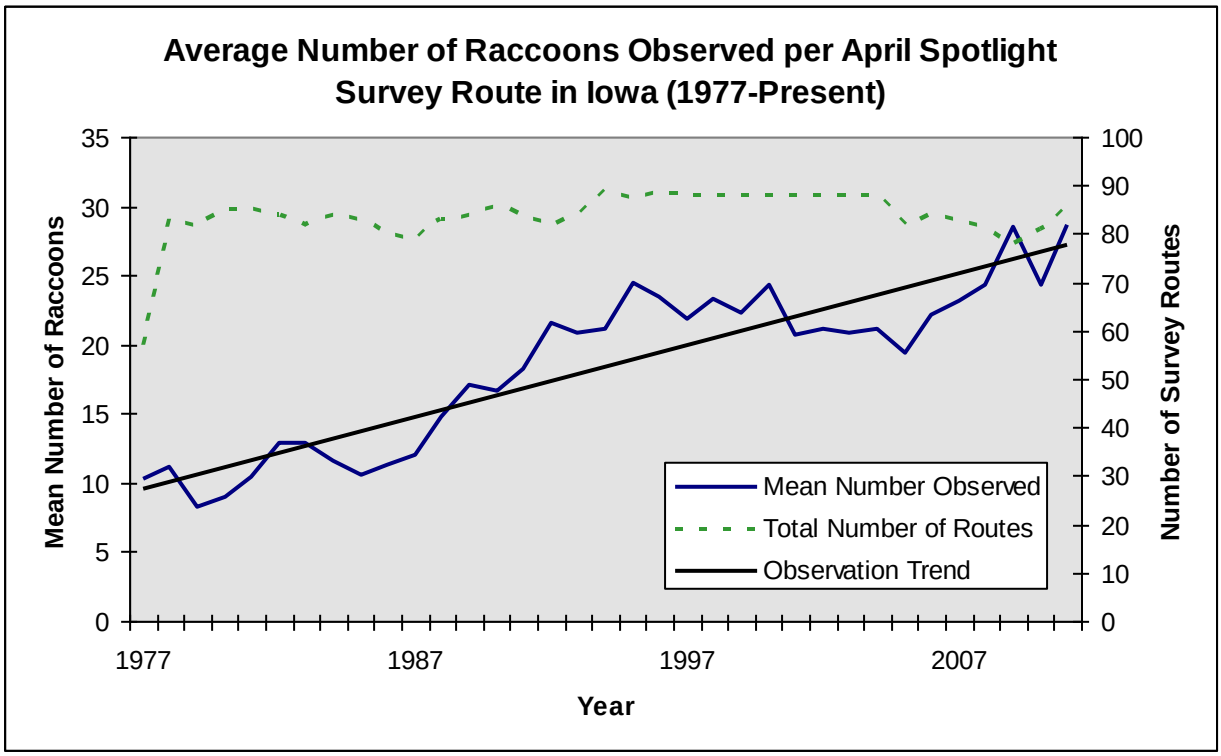


Figure 3.10. Annual muskrat harvests reported by licensed fur dealers in Iowa (1930-present).

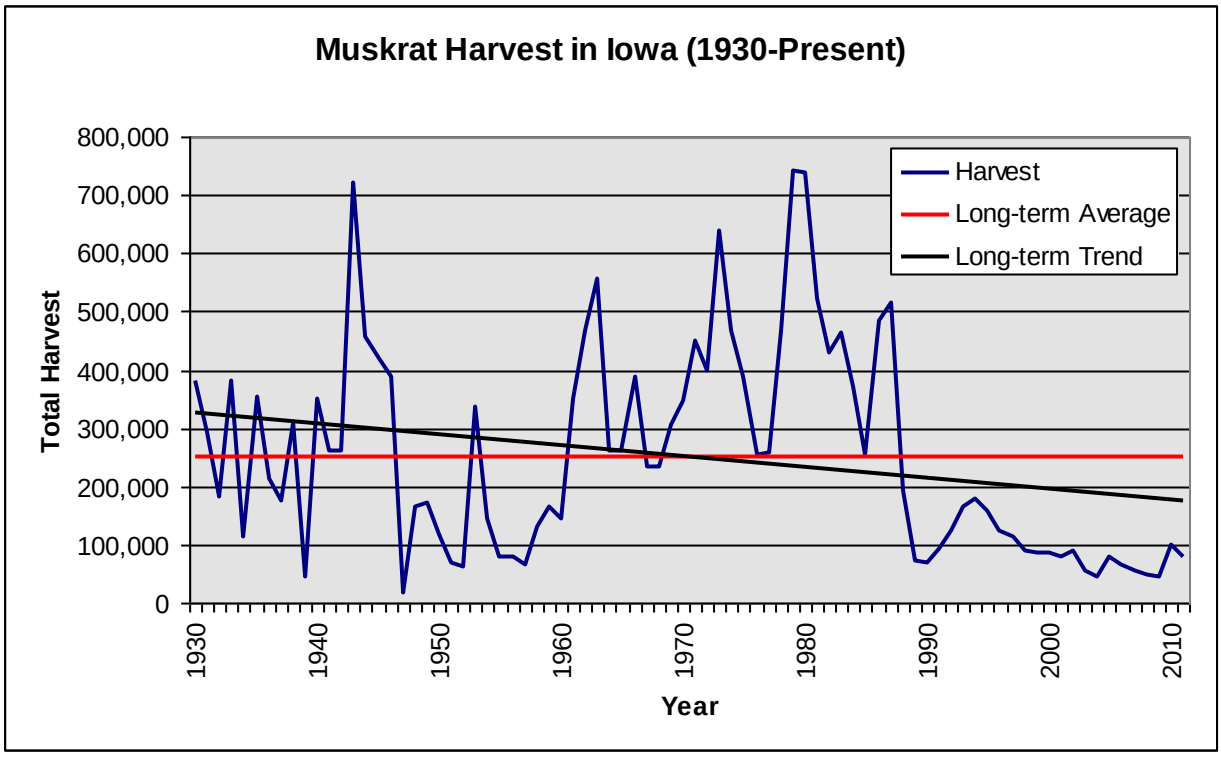


Figure 3.11. Muskrat harvest in Iowa and average pelt price paid by fur dealers (1977-present).

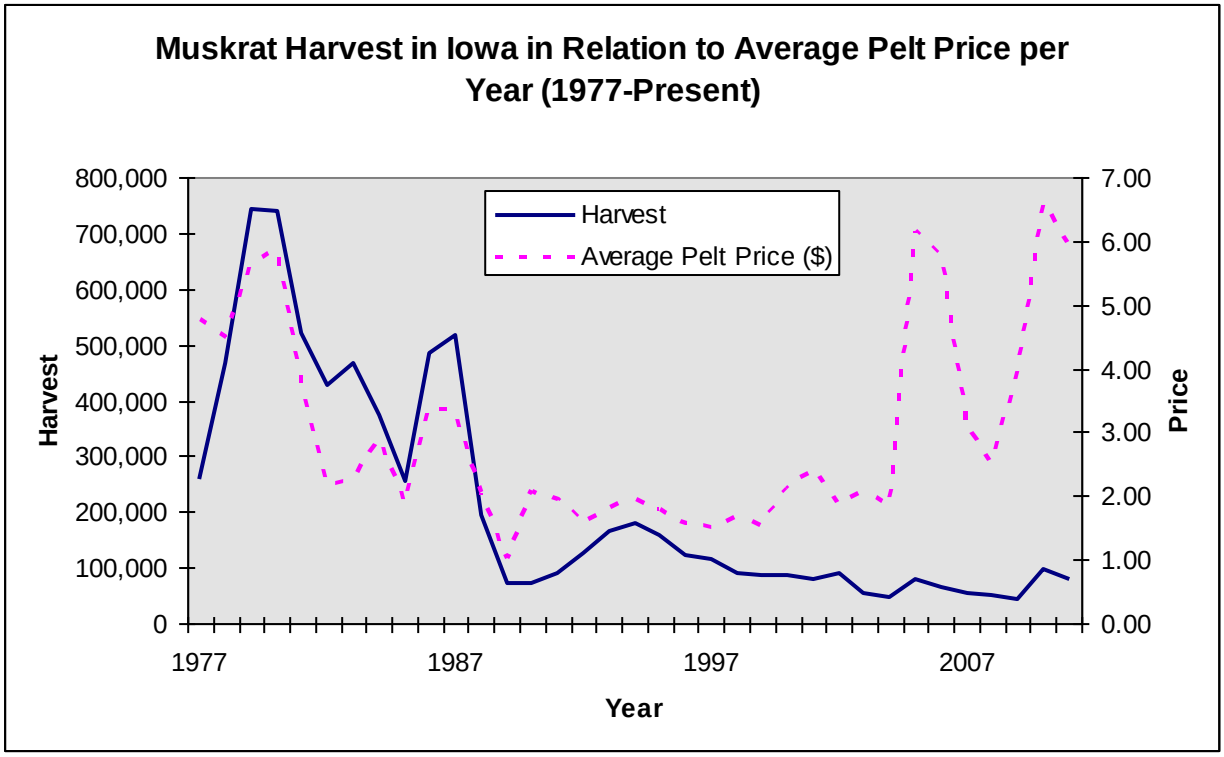


Figure 3.12. Annual coyote harvests reported by licensed fur dealers in Iowa (1930-present).

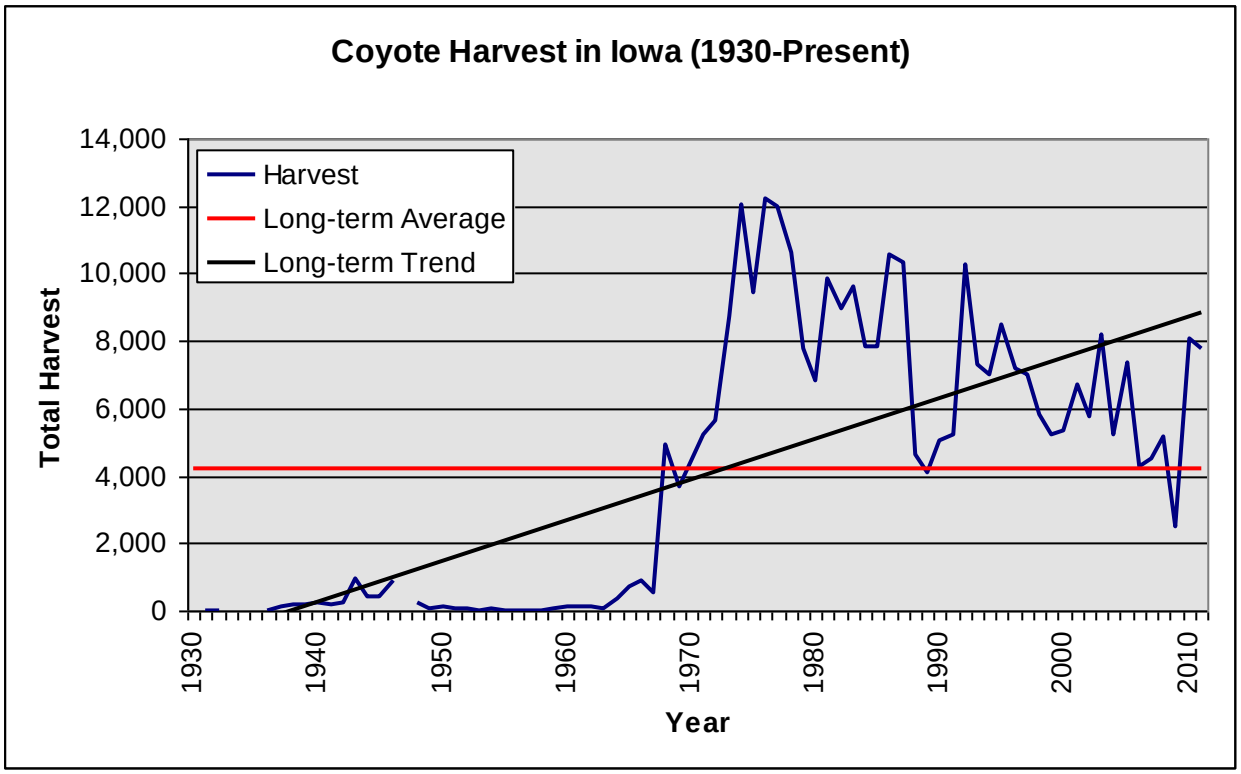


Figure 3.13. Results of coyote Bowhunter Observation Survey in Iowa (2004-present).

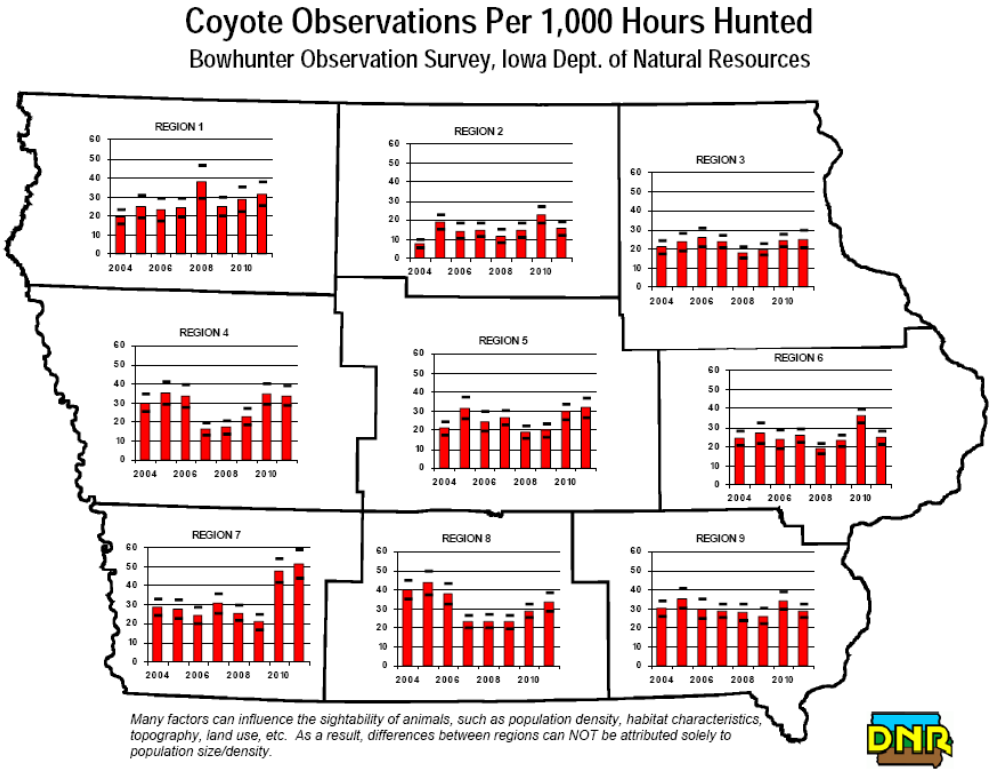


Figure 3.14. Annual red fox harvests reported by licensed fur dealers in Iowa (1930-present).

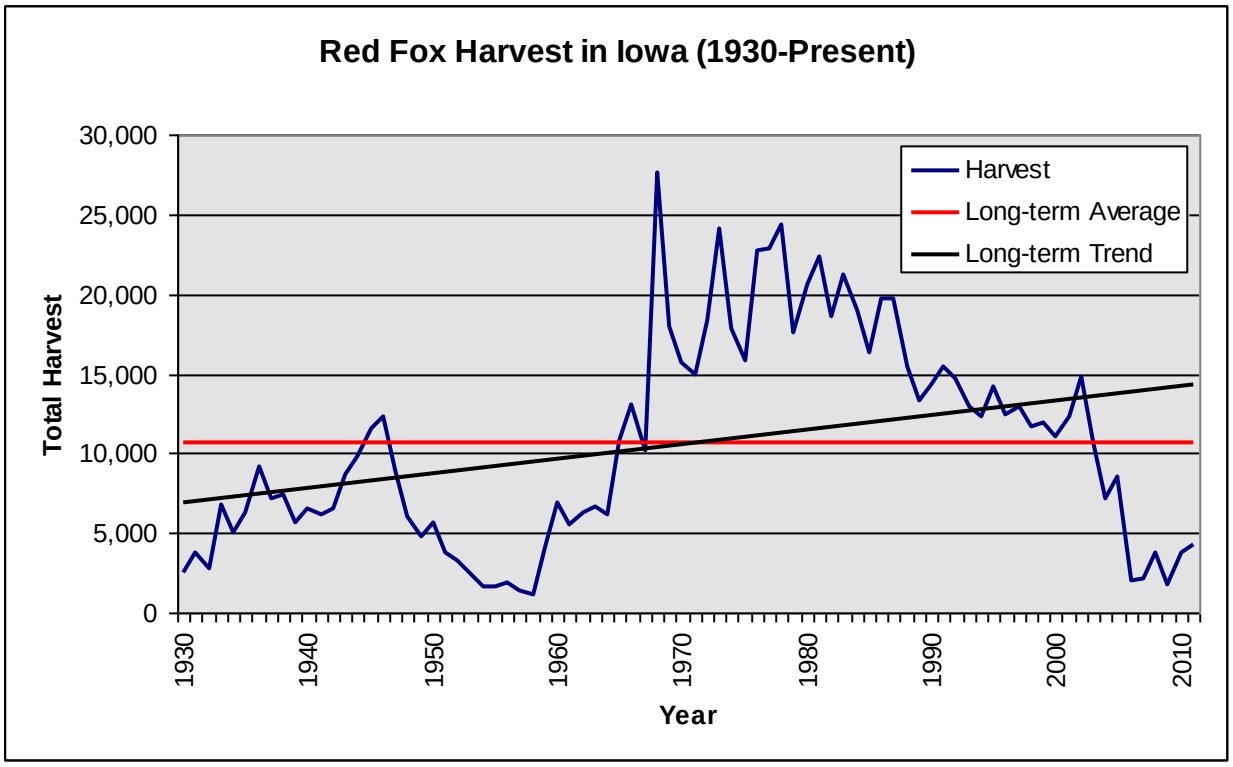


Figure 3.15. Red fox harvest in Iowa and average pelt price paid by fur dealers (1977-present).

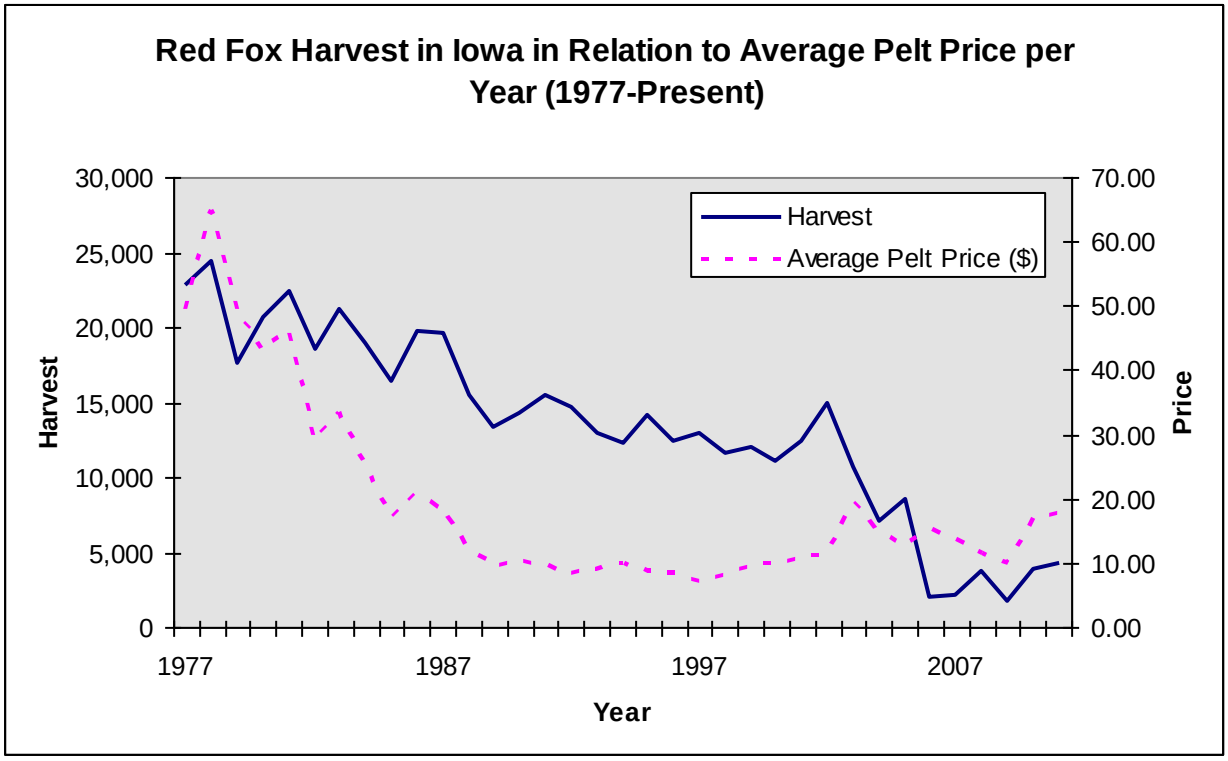


Figure 3.16. Results of red fox Bowhunter Observation Survey in Iowa (2004-present).

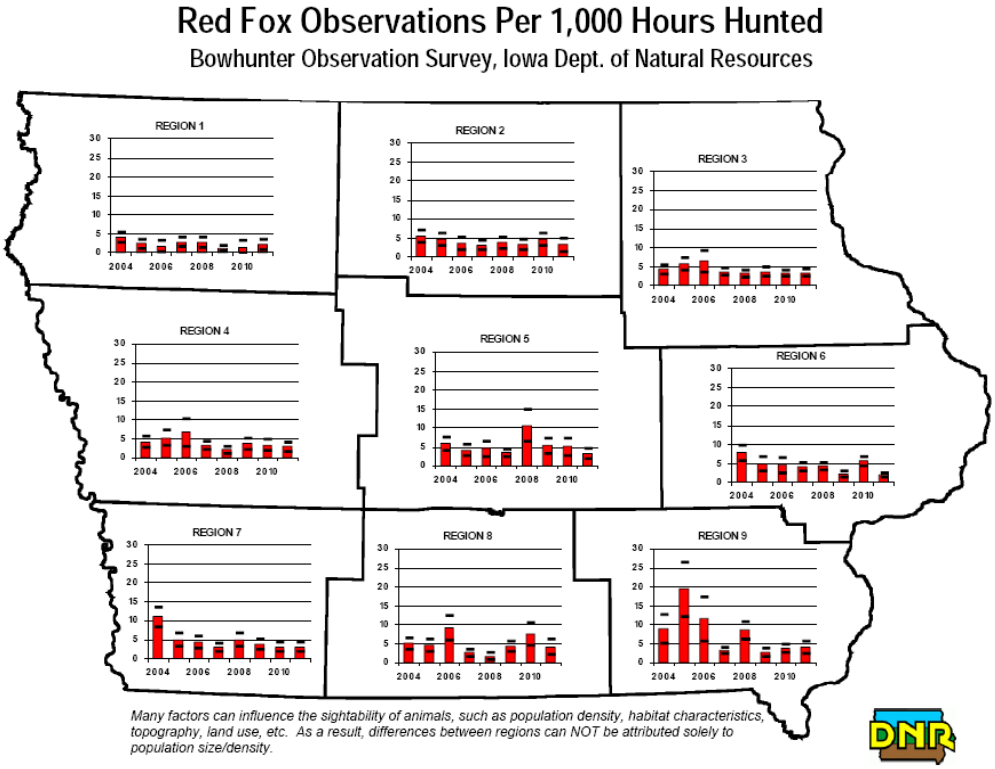


Figure 3.17. Annual gray fox harvests reported by licensed fur dealers in Iowa (1930-present).

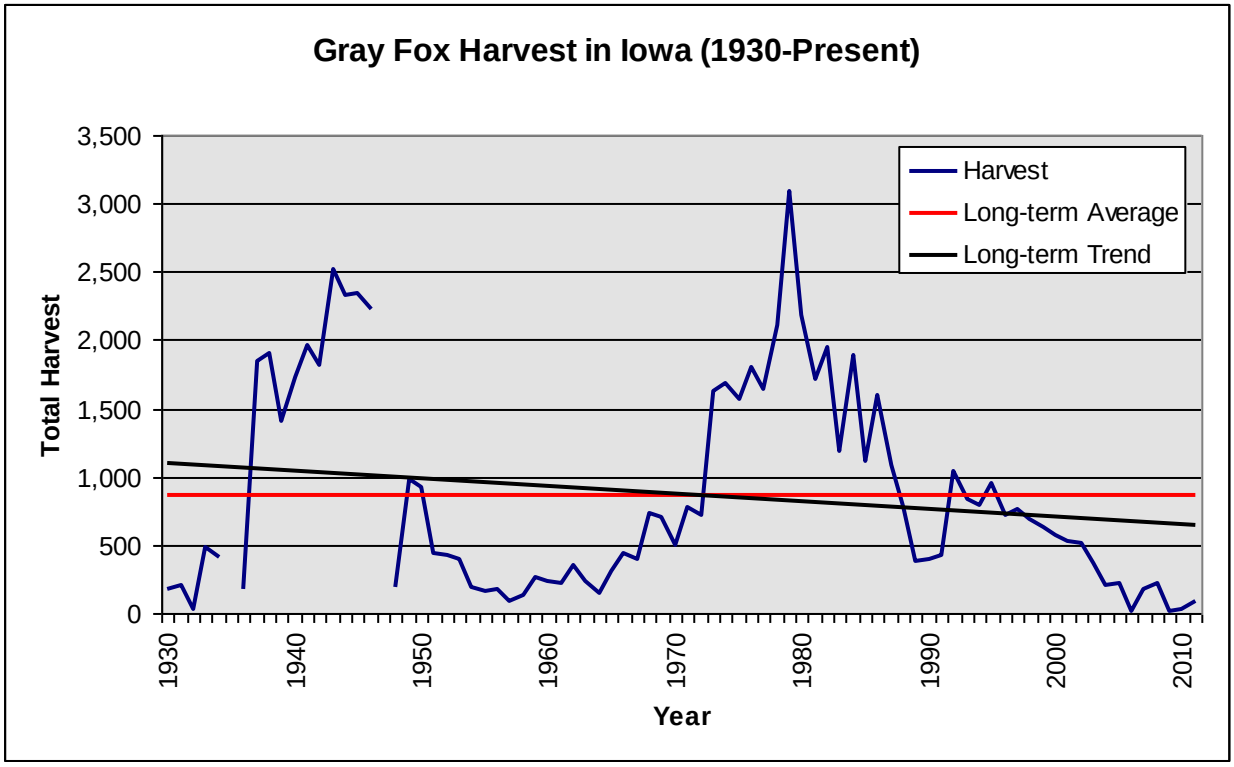


Figure 3.18. Results of gray fox Bowhunter Observation Survey in Iowa (2004-present).

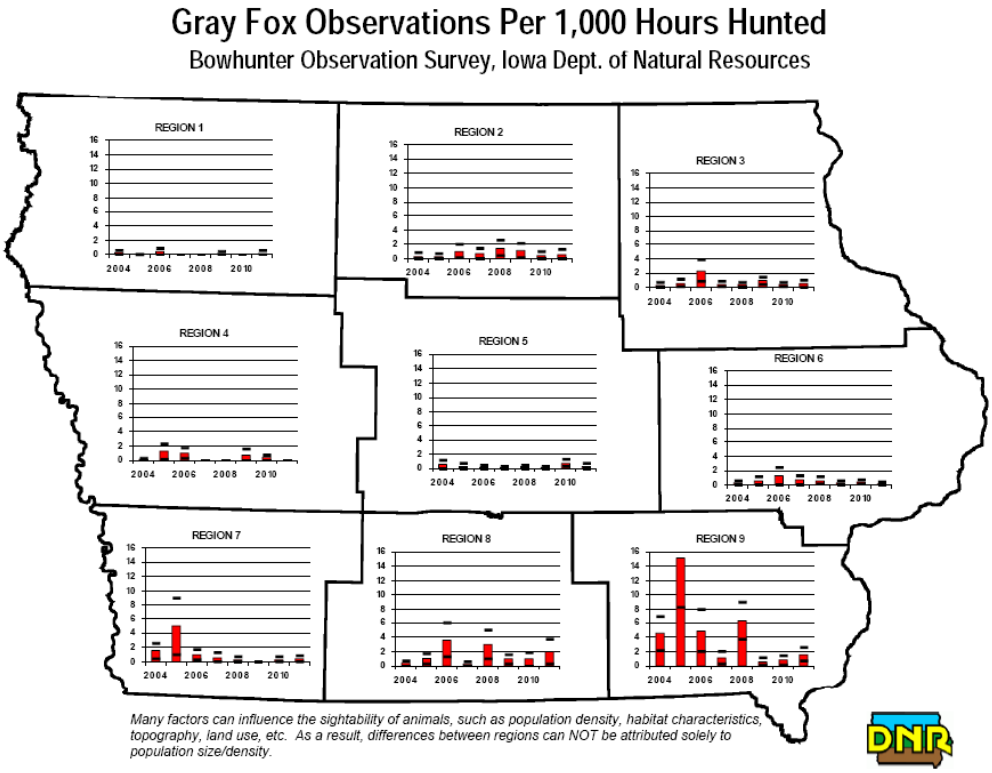


Figure 3.19. Annual beaver harvests reported by licensed fur dealers in Iowa (1930-present).

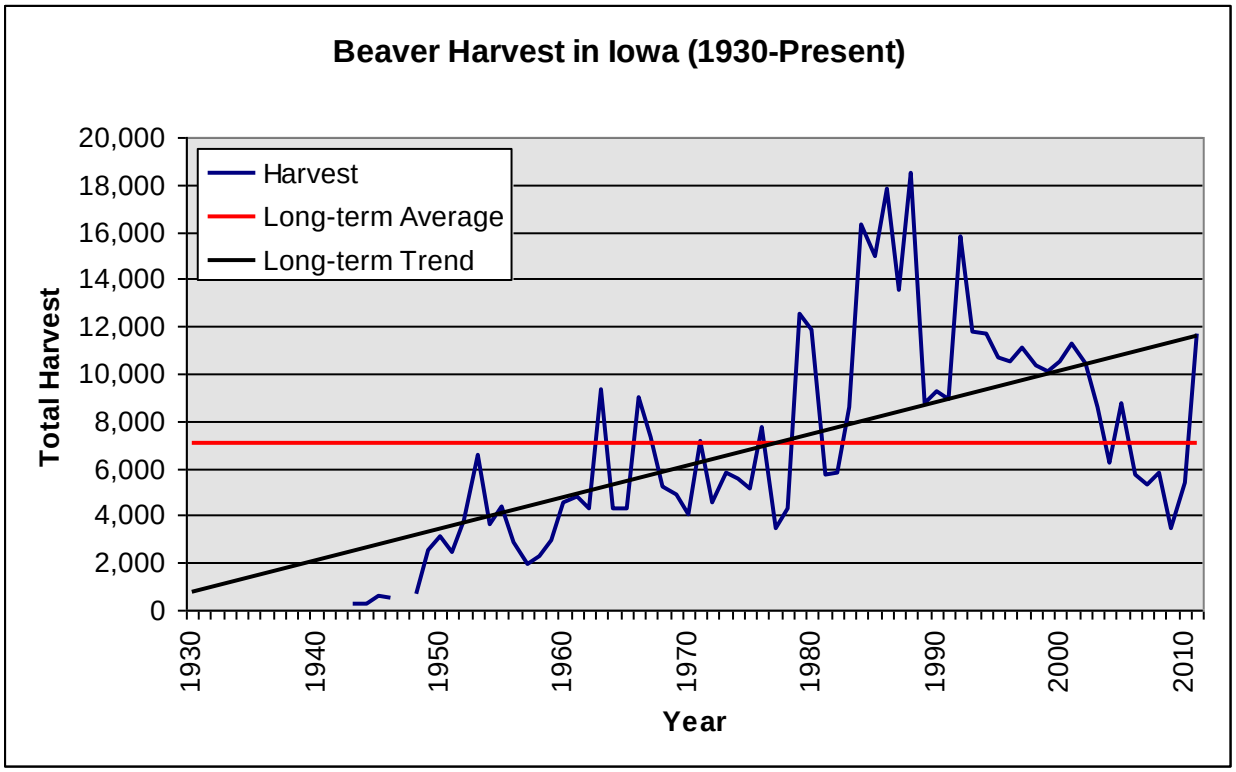


Figure 3.20. Annual mink harvests reported by licensed fur dealers in Iowa (1930-present).

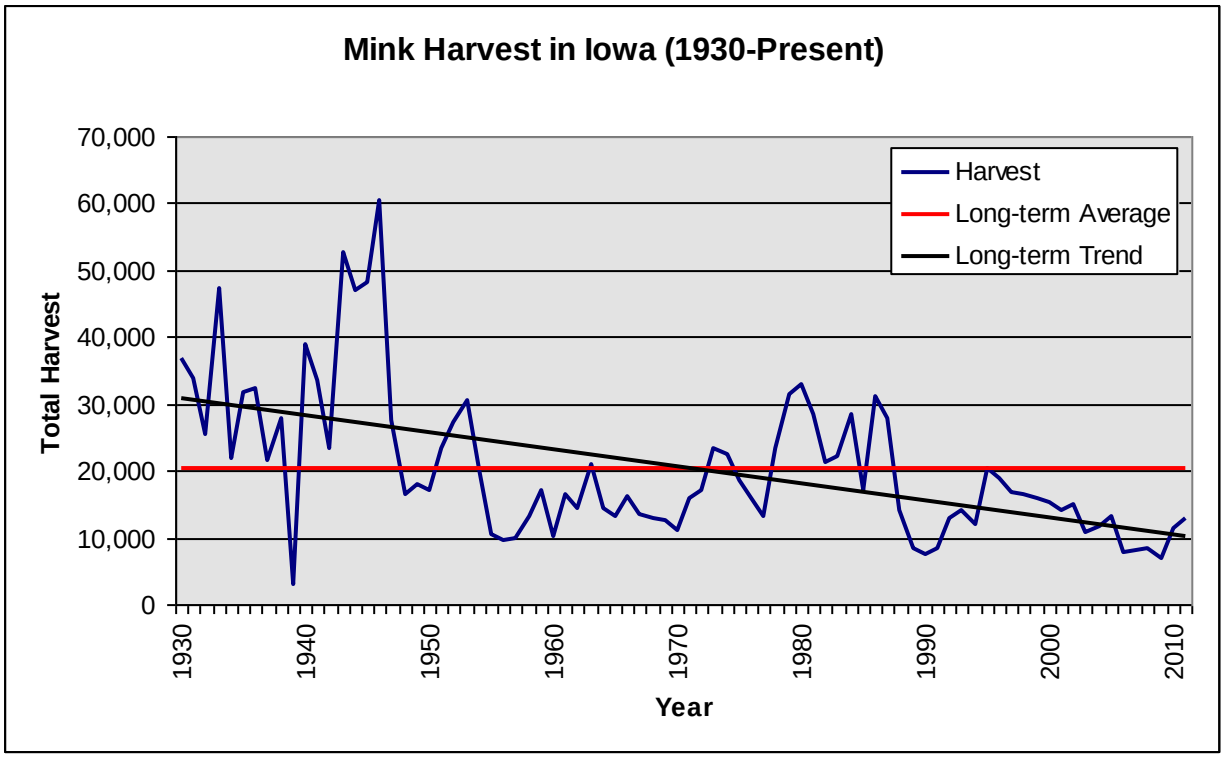


Figure 3.21. Mink harvest in Iowa and average pelt price paid by fur dealers (1977-present).

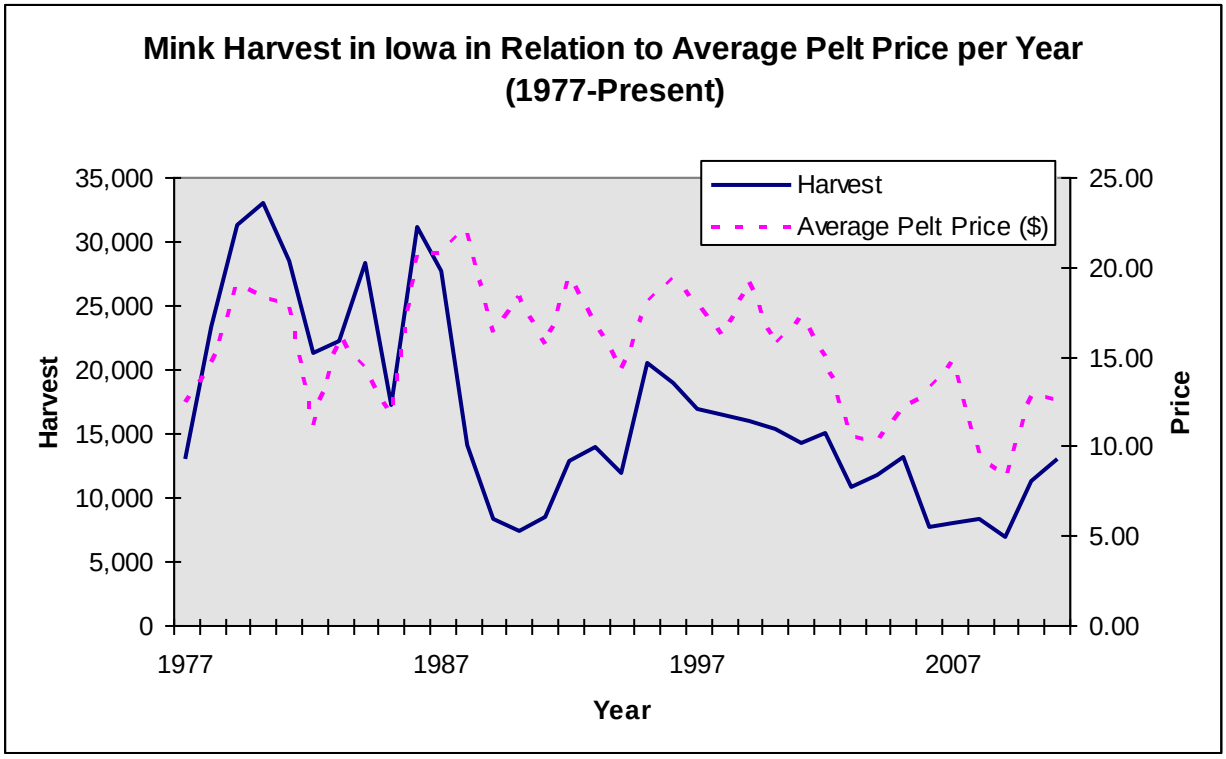


Figure 3.22. Annual opossum harvests reported by licensed fur dealers in Iowa (1930-present).

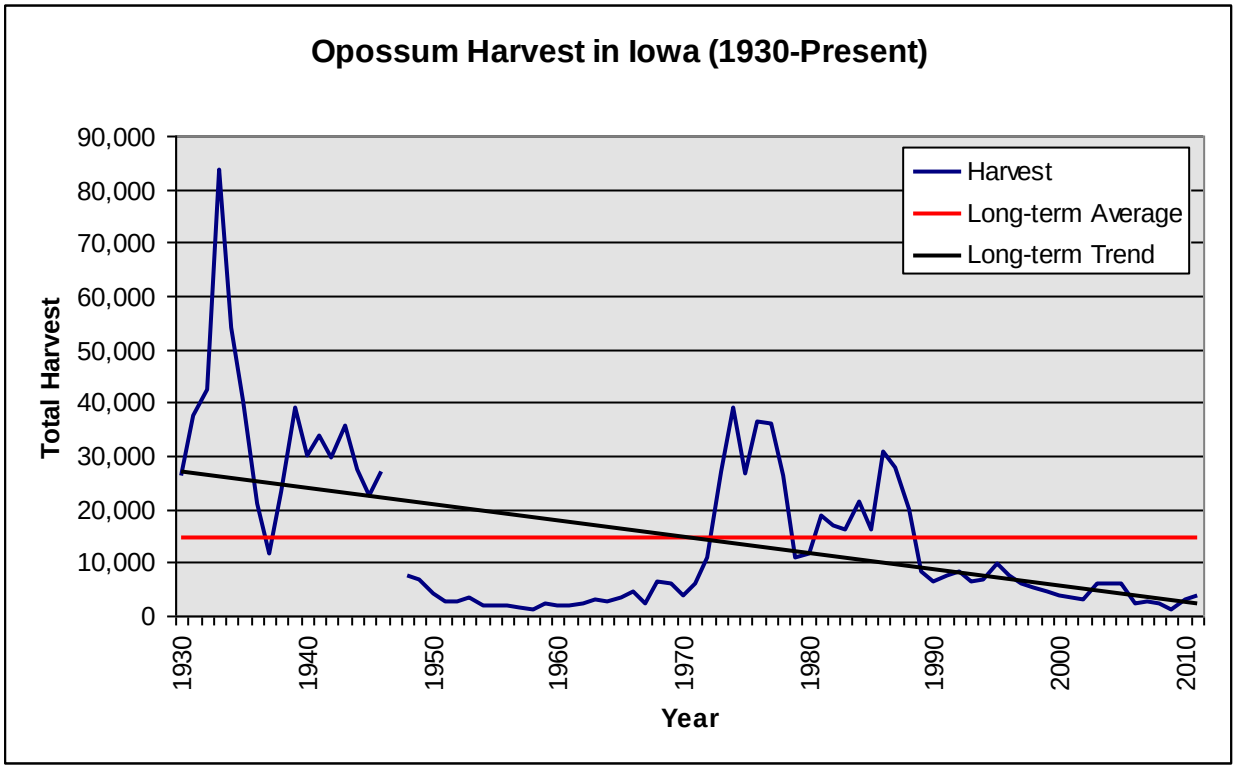


Figure 3.23. Results of opossum Bowhunter Observation Survey in Iowa (2004-present).

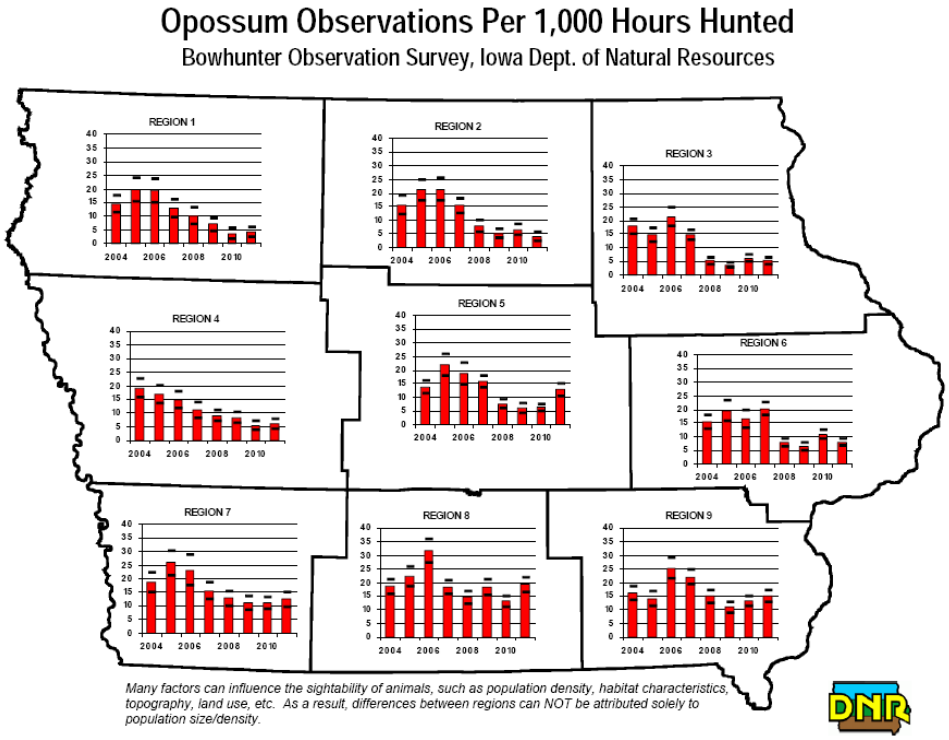


Figure 3.24. Annual badger harvests reported by licensed fur dealers in Iowa (1930-present).

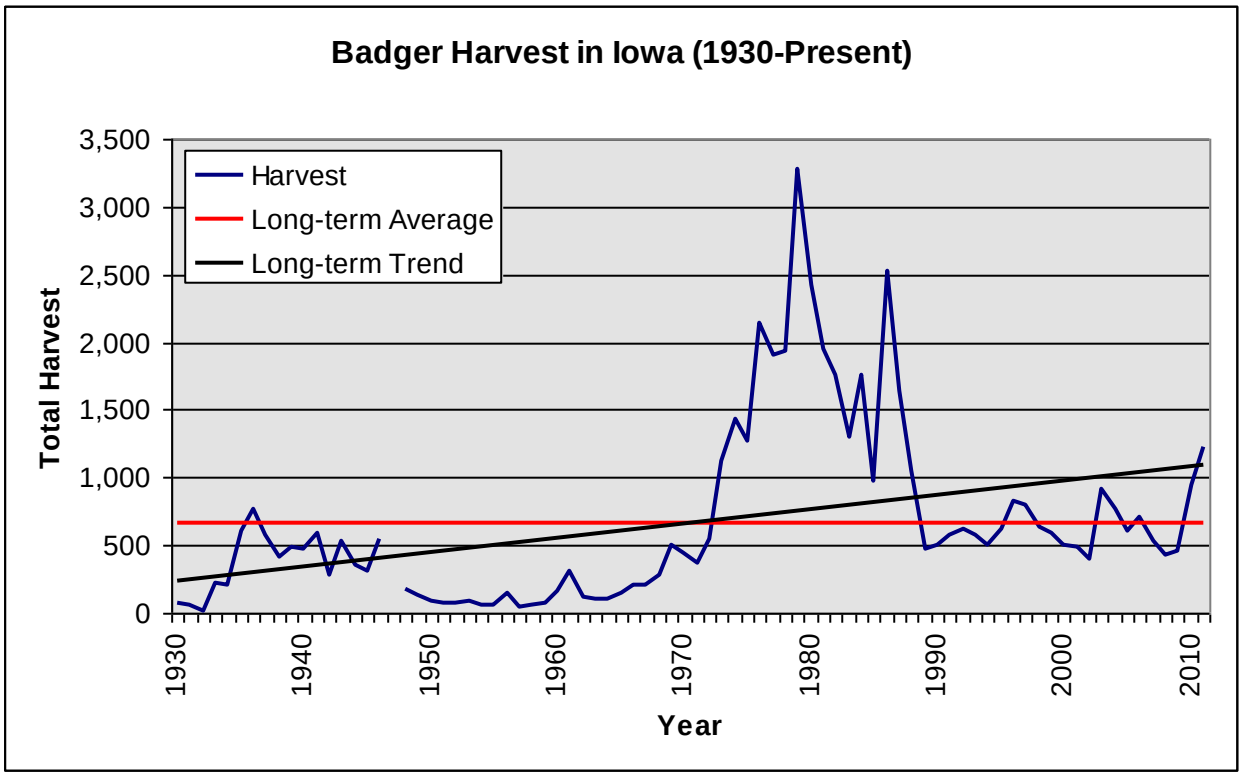
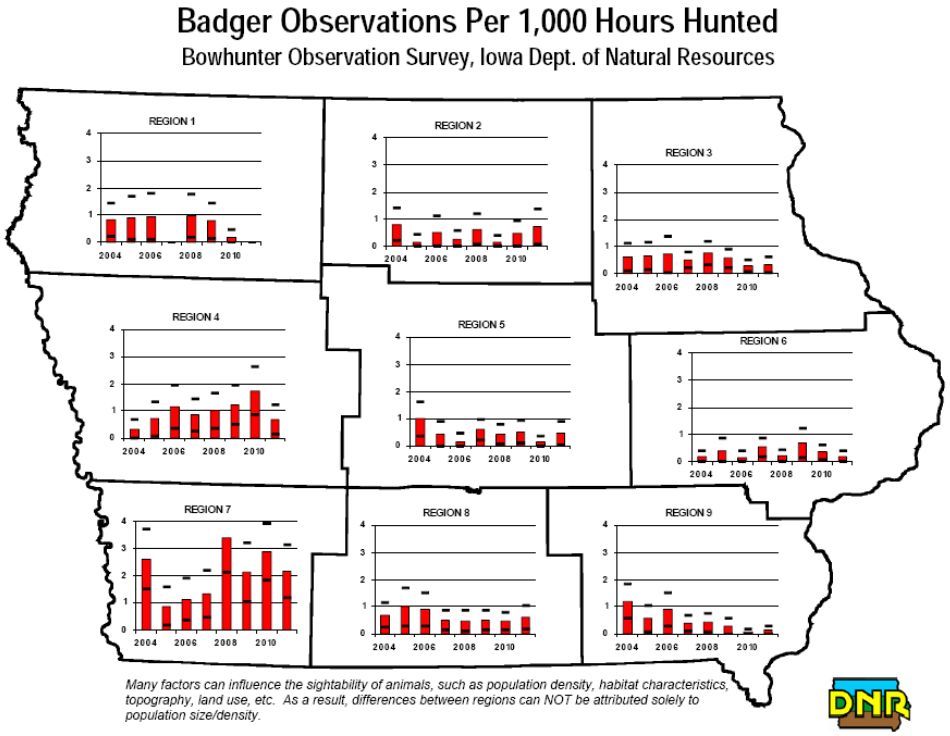


Figure 3.25. Results of badger Bowhunter Observation Survey in Iowa (2004-present).



Figre 3.26. Annual spotted skunk harvests reported by licensed fur dealers in Iowa (1930-present).

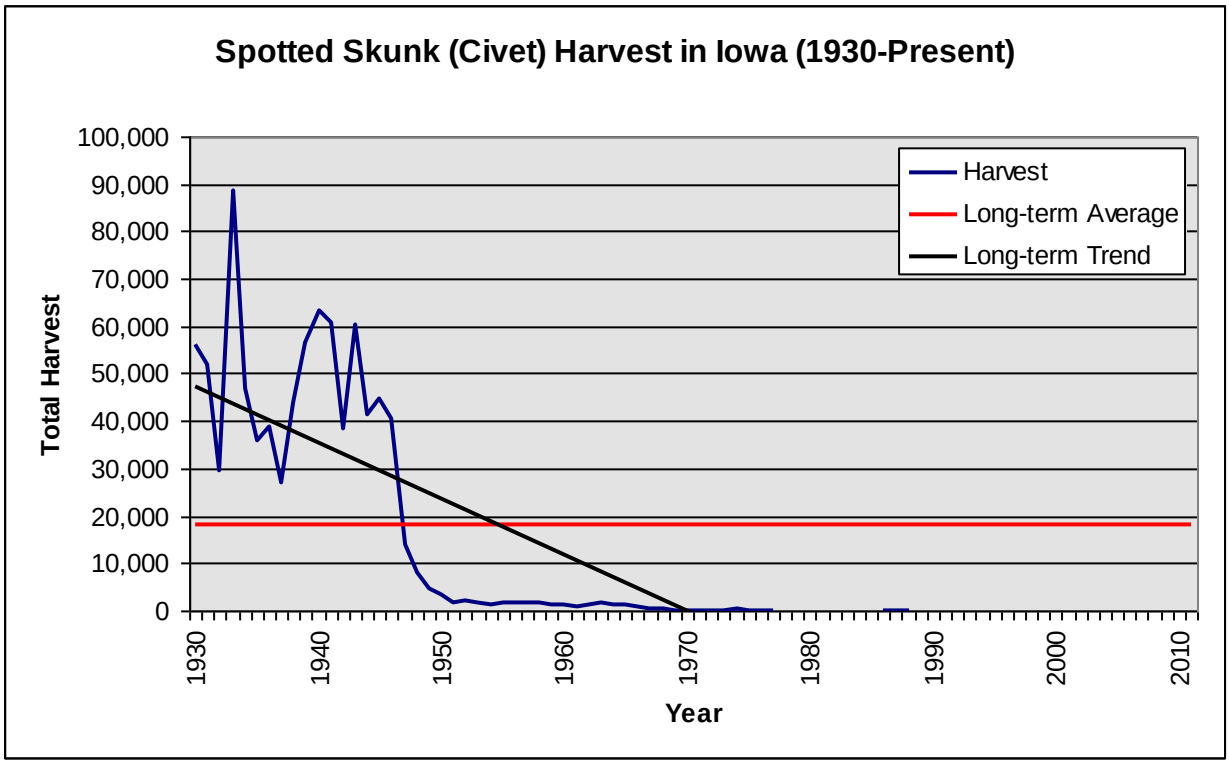


Figure 3.27. Annual striped skunk harvests reported by licensed fur dealers in Iowa (1930-present).

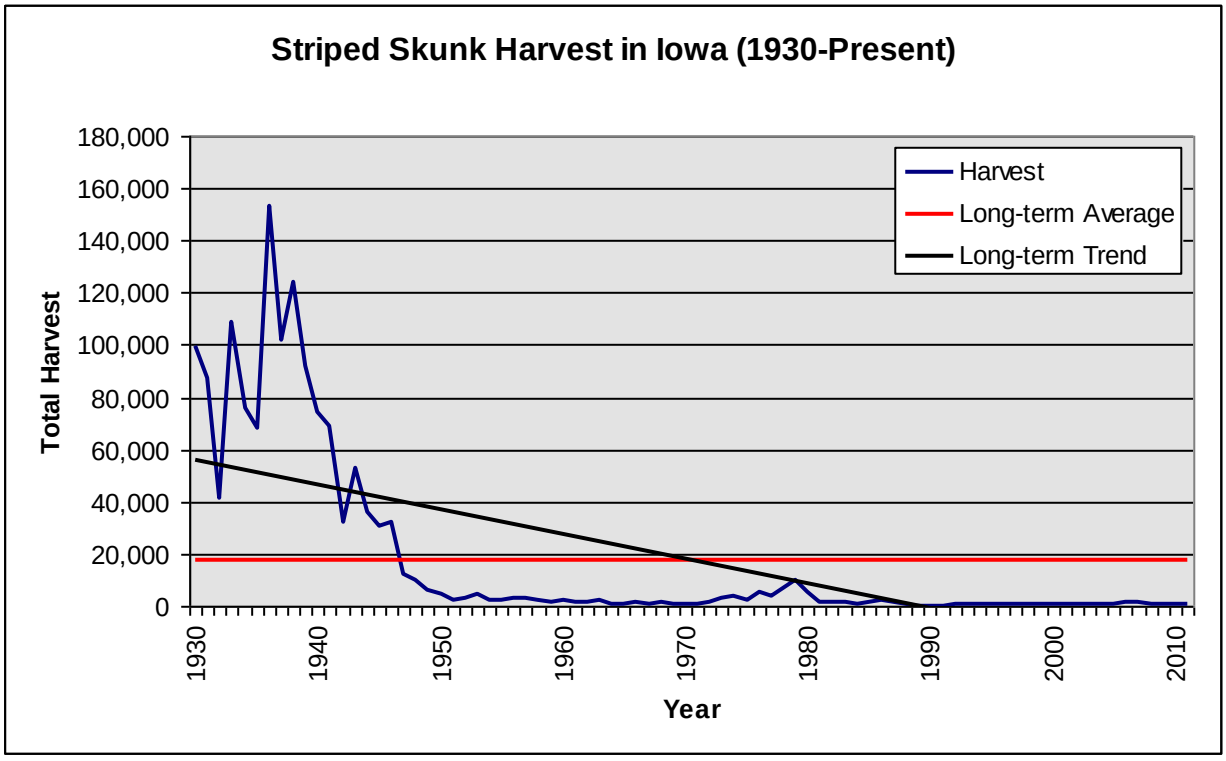


Figure 3.28. Results of striped skunk Bowhunter Observation Survey in Iowa (2004-present).

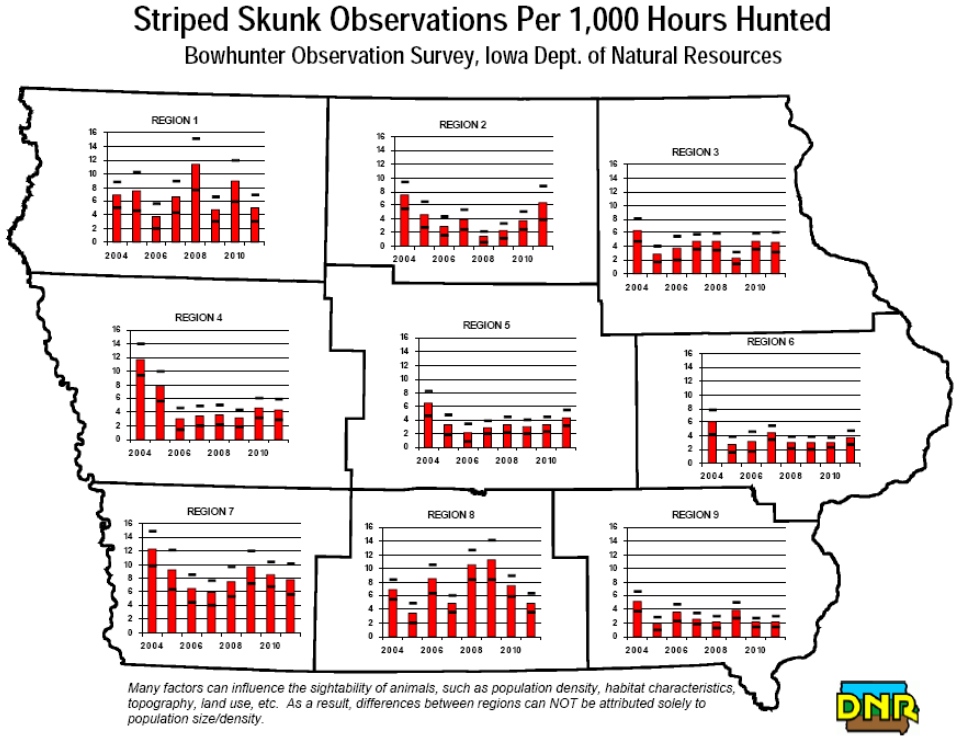


Figure 3.29. Annual weasel harvests reported by licensed fur dealers in Iowa (1930-present).

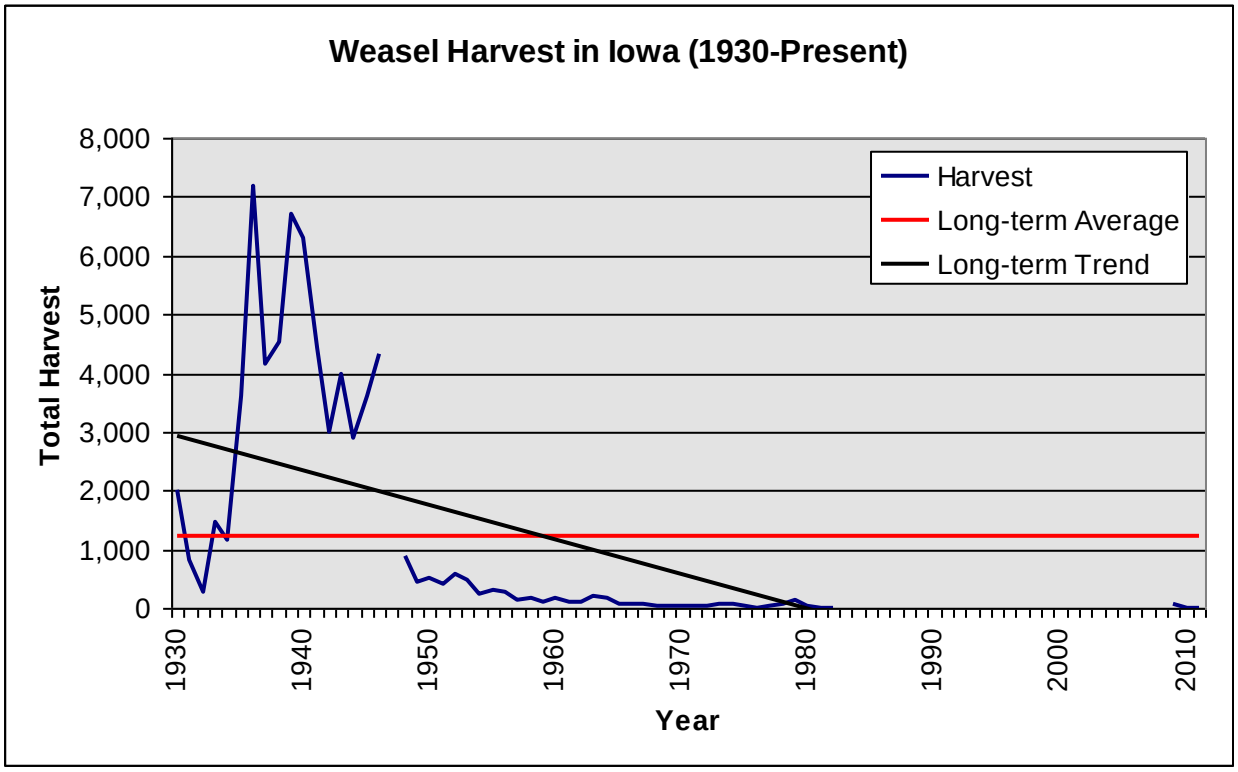


Figure 3.30. River otter harvest per county in Iowa, 2011.

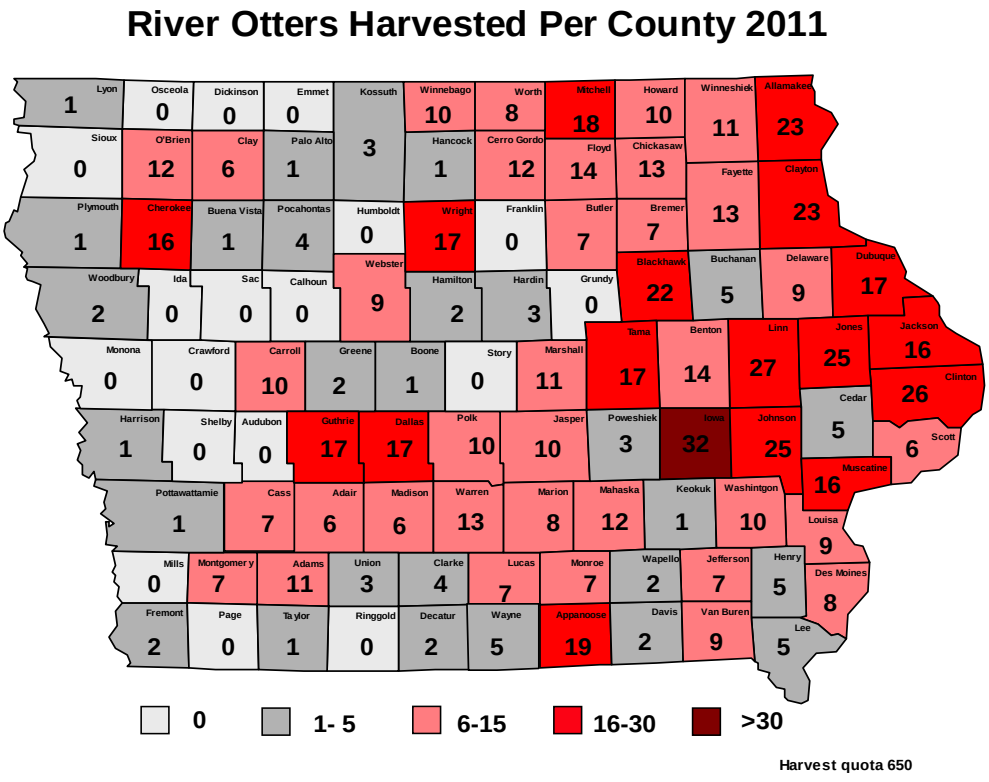


Figure 3.31. Sex ratio of harvested river otters in Iowa (2006-present).

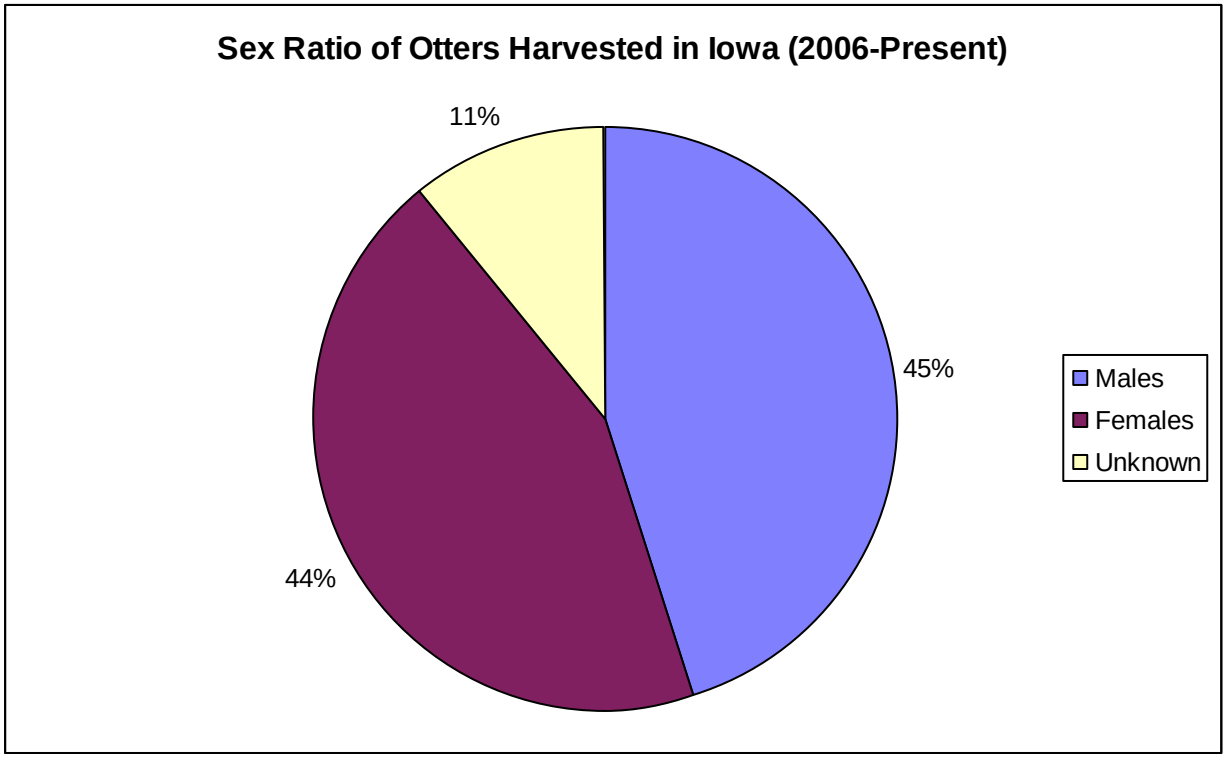


Figure 3.32. Harvest method of river otters in Iowa (2006-present).

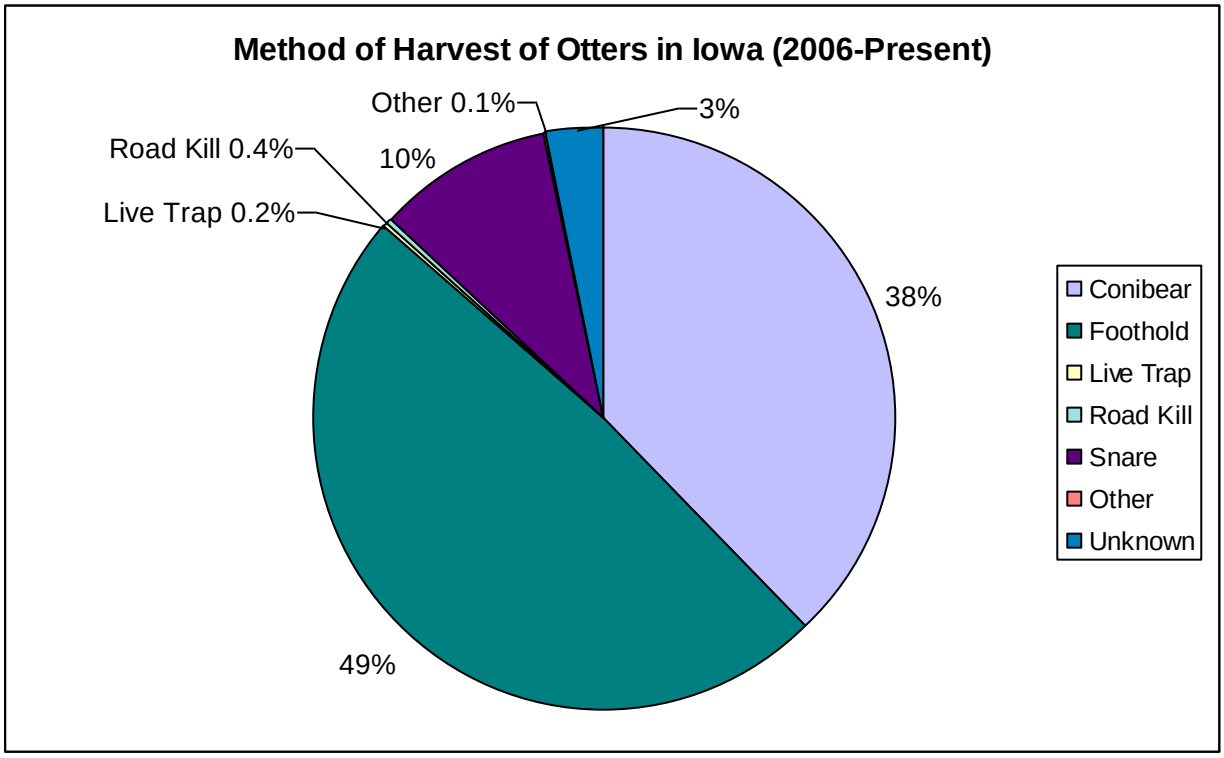


Figure 3.33. Percent of river otters intentionally and incidentally harvested in Iowa (2006-present).

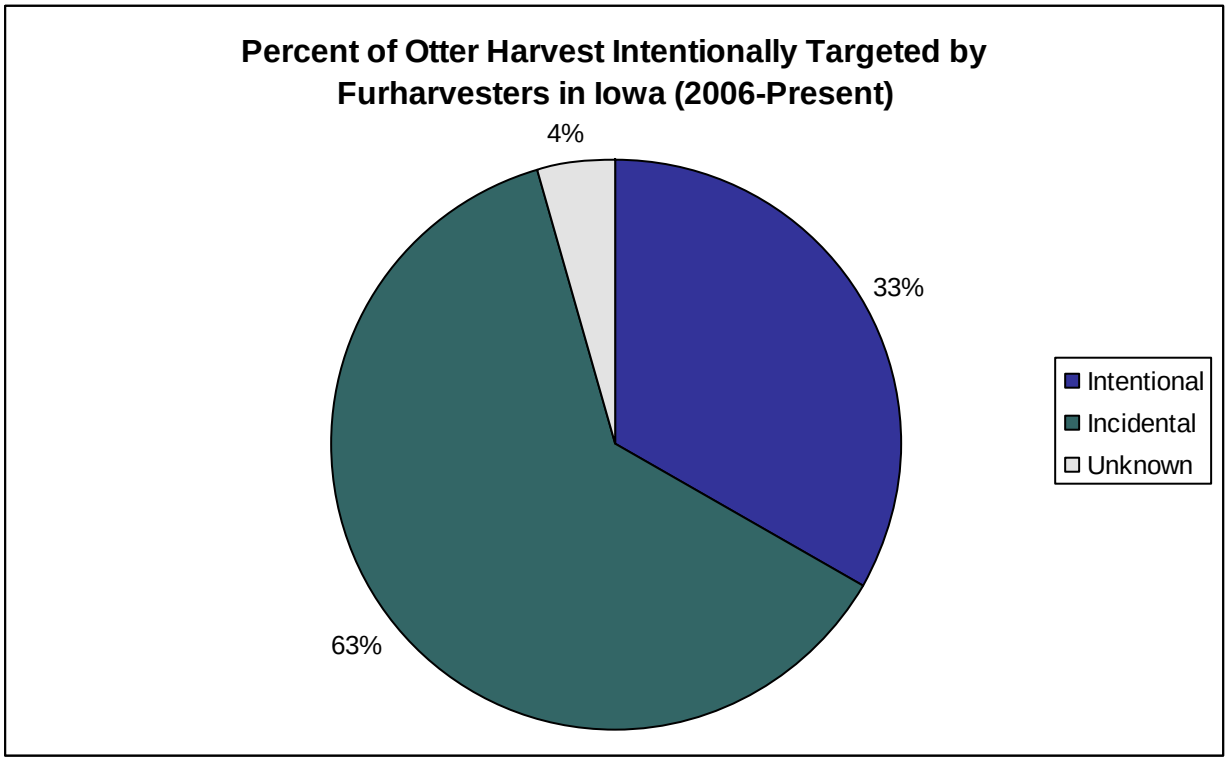


Figure 3.34. Trend for furharvesters intentionally targeting river otters in Iowa (2006-present).

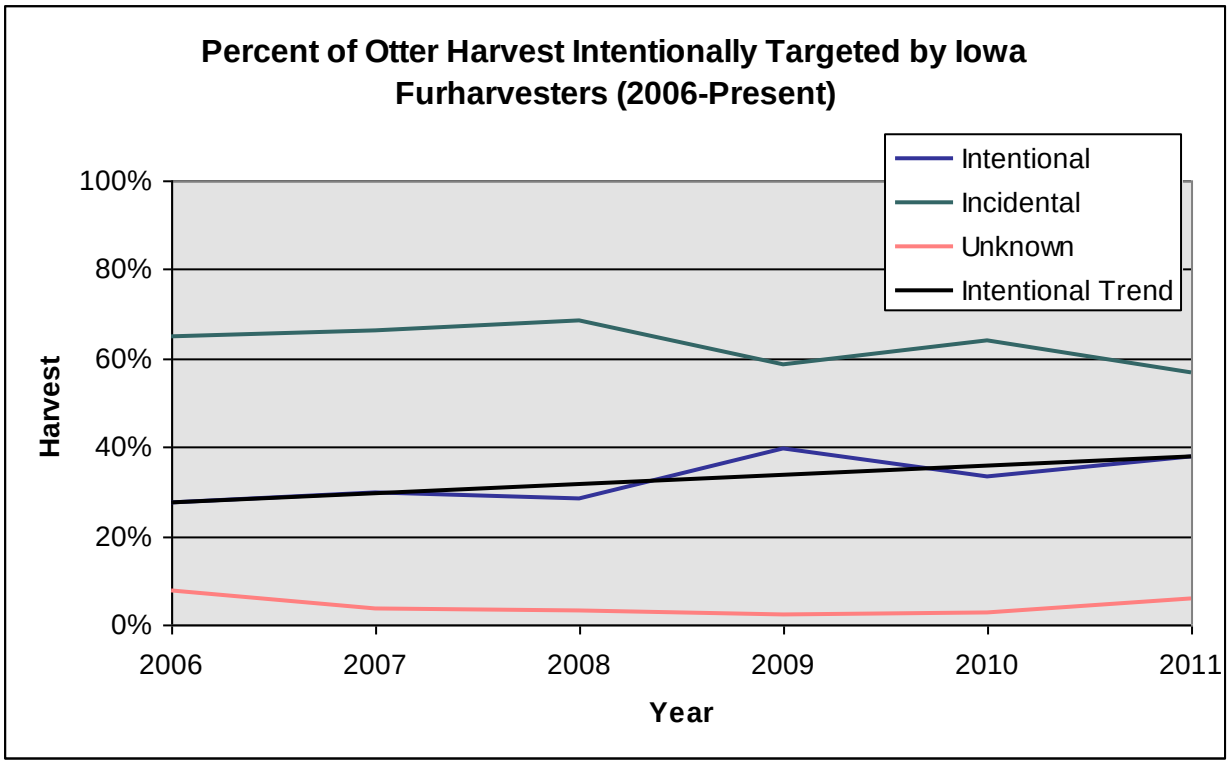


Figure 3.35. Results of river otter Bowhunter Observation Survey in Iowa (2004-present).

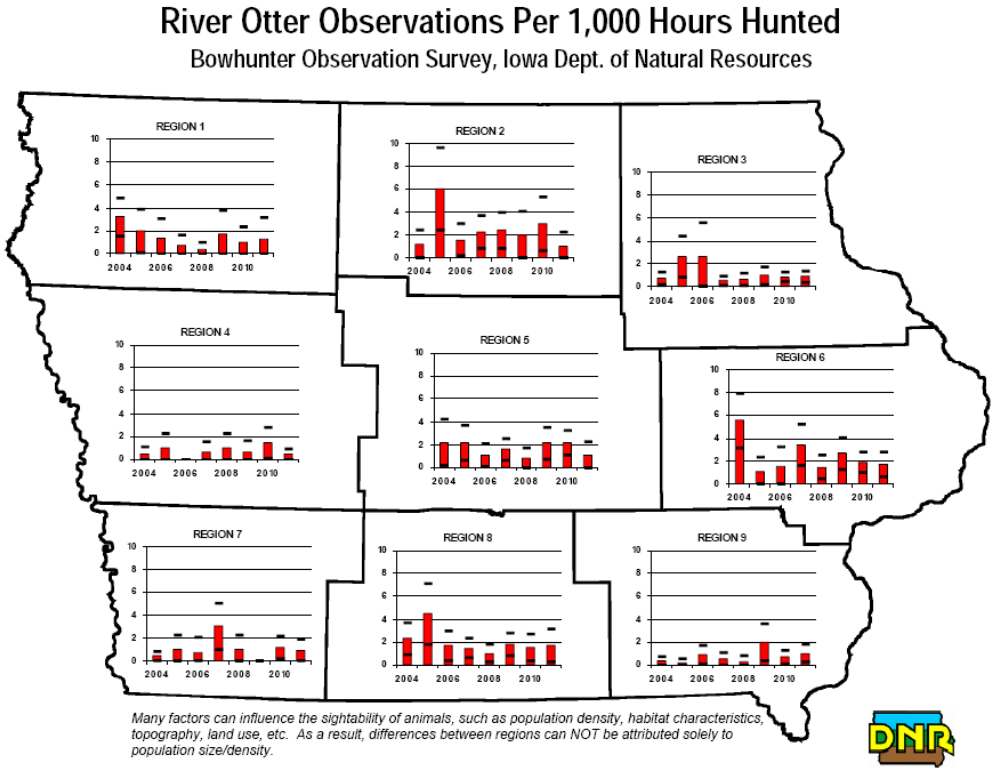
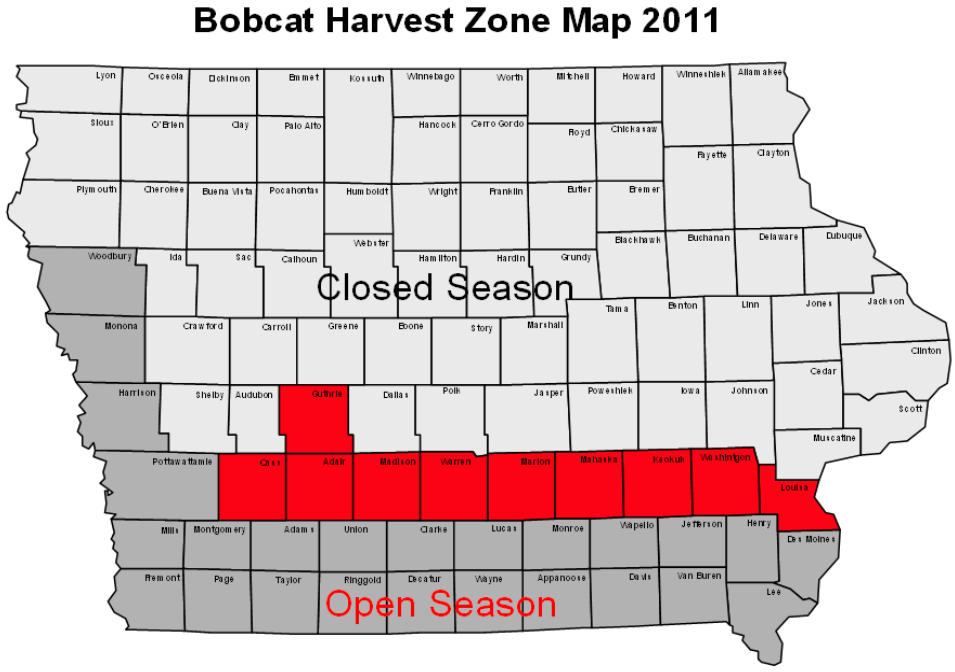


Figure 3.36. Open harvest zone for bobcat trapping season in Iowa, 2011.



* Red counties were added to open zone in 2010.

Figure 3.37. Bobcat harvest per county in Iowa, 2011.

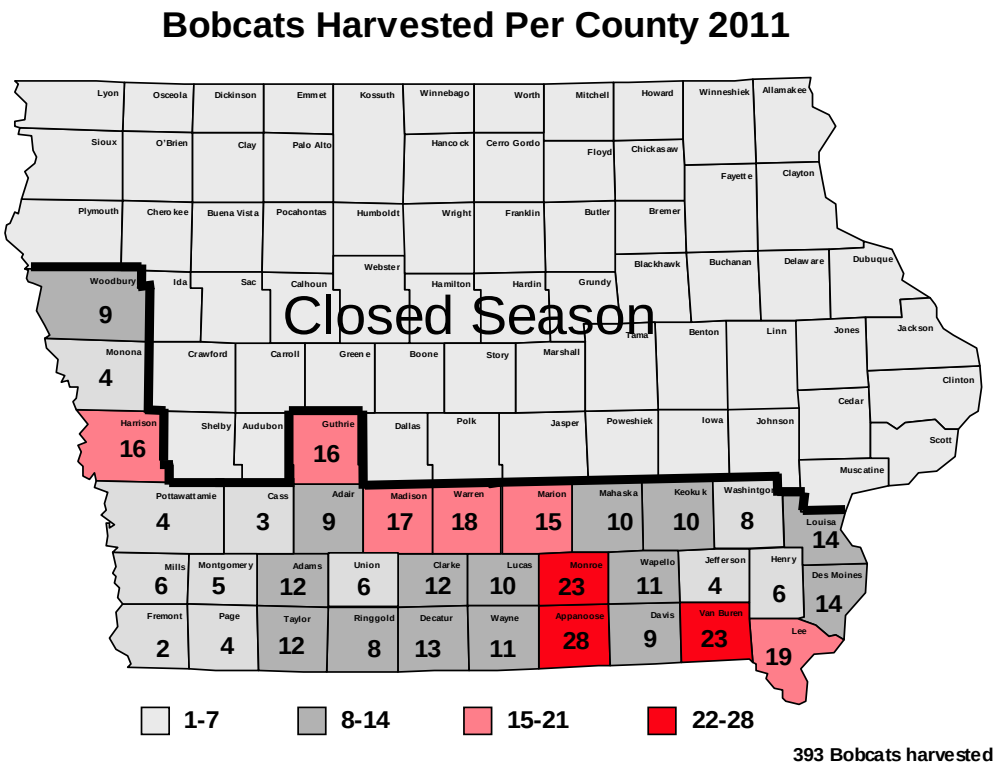


Figure 3.38. Sex ratio of harvested bobcats in Iowa (2007-present).

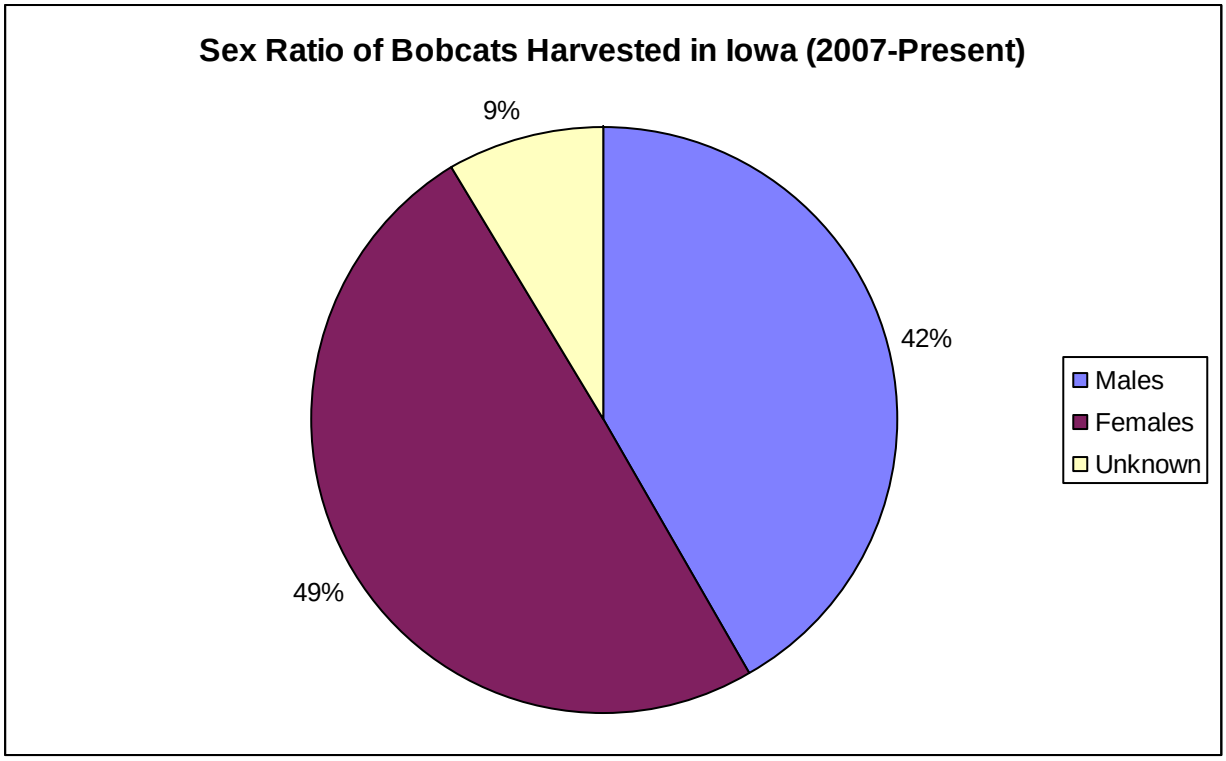


Figure 3.39. Harvest method of bobcats in Iowa (2007-present).

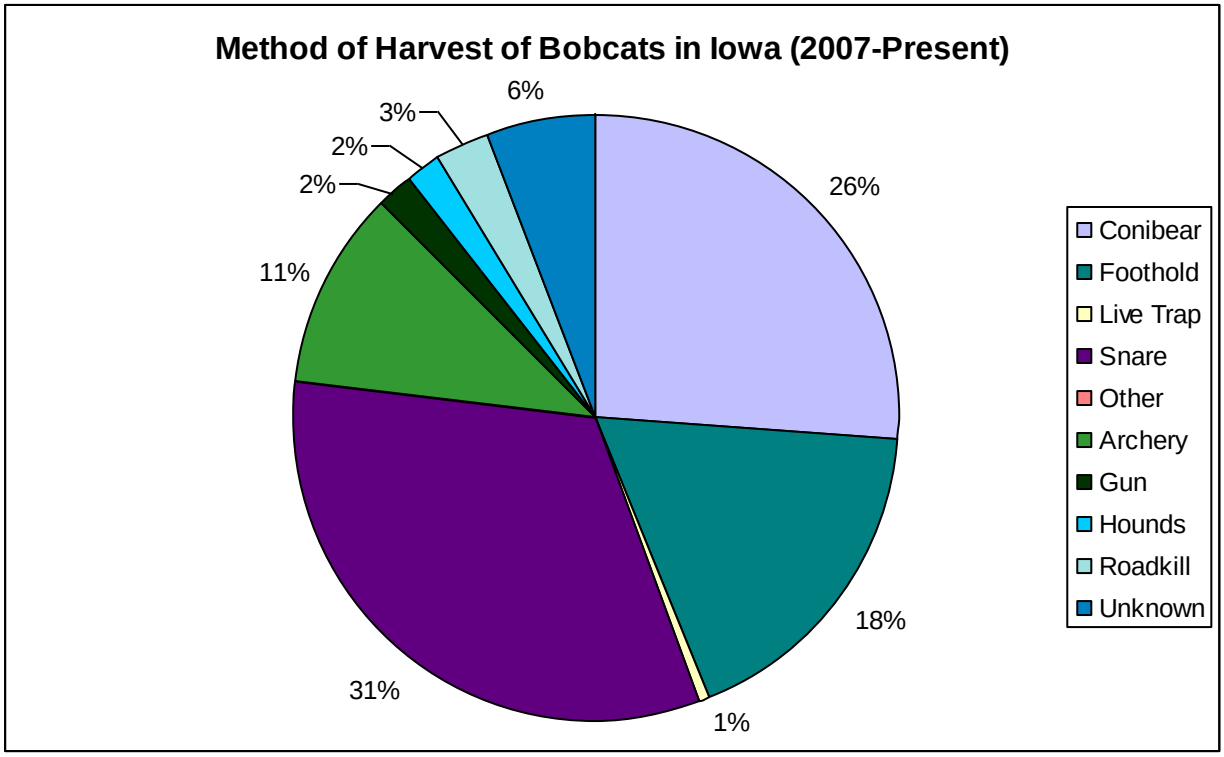


Figure 3.40. Percent of bobcats intentionally and incidentally harvested in Iowa (2007-present).

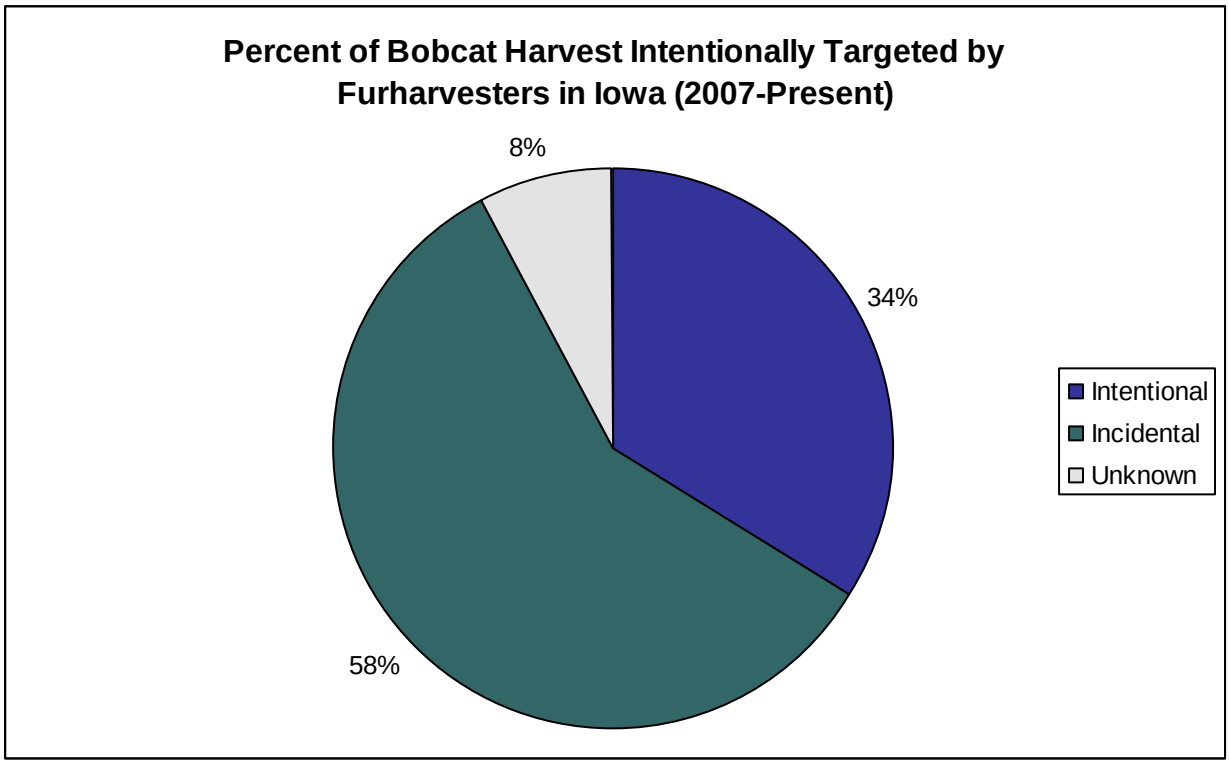


Figure 3.41. Trend for furharvesters intentionally targeting bobcats in Iowa (2007-present).

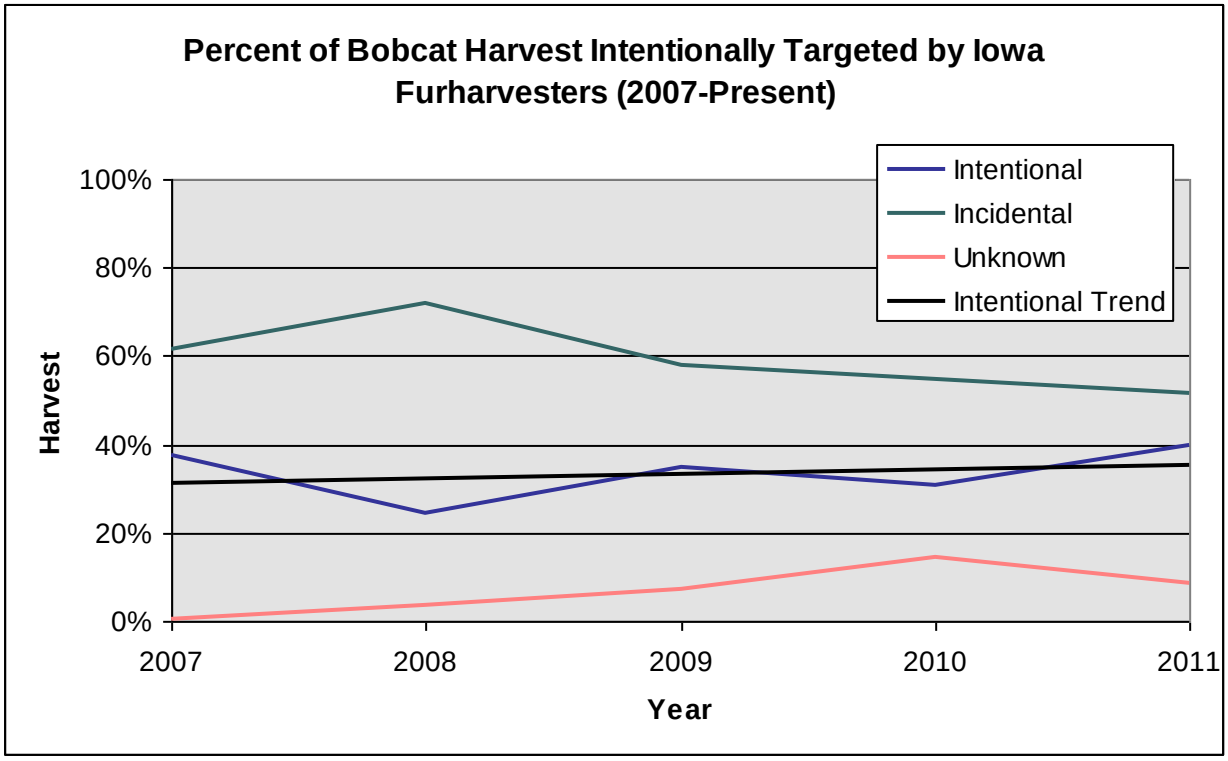


Figure 3.42. Results of bobcat Bowhunter Observation Survey in Iowa (2004-present).

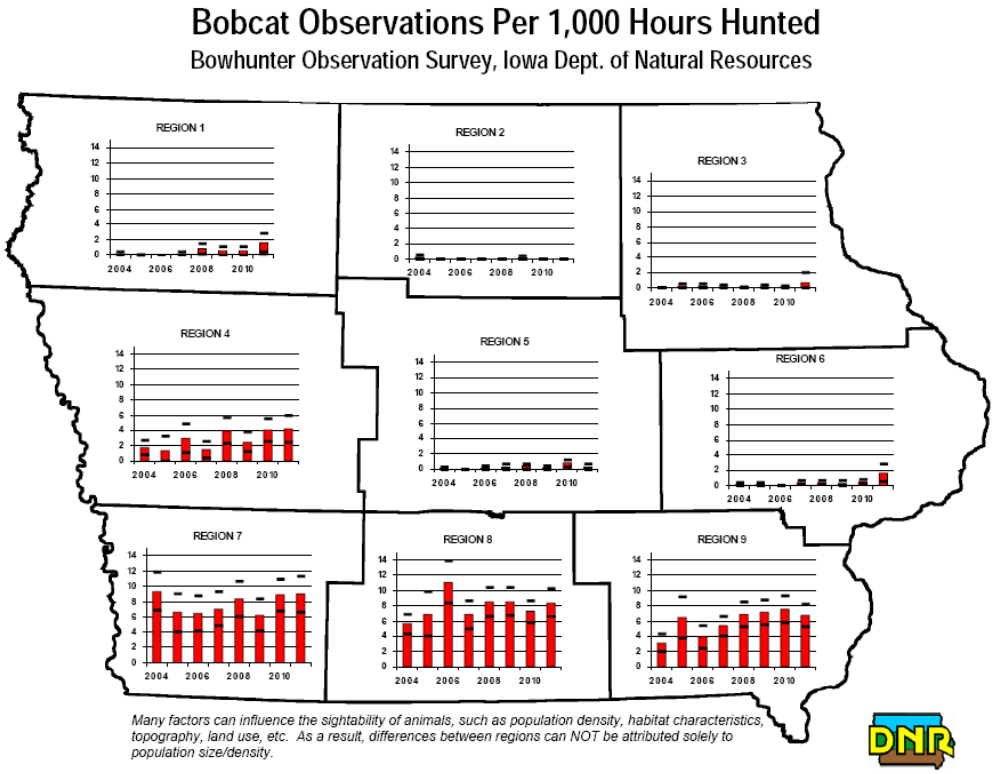


Table 3.1. Value ($) of pelts from important furbearer species harvested in Iowa (1930-present). Data for each year includes harvest from the winter of the succeeding year, e.g., 1930 = 1930+1931 (winter).

	Mink		Muskrat		Raccoon		Red Fox		All Species
Season	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
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

(Continued)

Table 3.1 (Continued). 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).

	Mink		Muskrat		Raccoon		Red Fox		All Species
Season	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Total Value
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
2011-12[a]	12.62	193,285	5.93	511,780	10.86	4,098,994	17.74	106,182	5,288,094
Average									
5-Year	11.58	112,017	4.41	315,993	10.75	2,024,184	13.94	45,773	2,542,546
10-Year	11.88	129,566	3.98	280,685	10.73	1,854,145	14.29	85,227	2,436,984
20-Year	14.61	197,610	2.89	247,079	9.31	1,393,214	11.65	99,346	1,998,245
50-Year	13.69	233,103	2.59	716,695	10.76	2,371,115	17.51	295,027	3,787,160
Long-term	13.03	264,844	2.01	549,585	7.69	1,485,472	11.67	186,422	2,627,881

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

[a] For 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 (e.g., two furharvesters reported purchasing 37 total red fox pelts but did not report the average price paid per pelt. Those 37 pelts were multiplied by the average price of $17.74 for estimating total values for those furharvesters).

Table 3.2. Number of licensed furharvesters and fur dealers in Iowa (2001-Present).

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Resident Furharvesters	15,274	14,879	14,404	14,607	13,376	14,542	15,279	15,523	14,098	15,033	16,928
Non-Resident Furharvesters	92	105	99	91	83	100	134	168	99	144	121
Total	15,366	14,984	14,503	14,698	13,459	14,642	15,413	15,691	14,197	15,177	17,049
Resident Fur Dealers	48	47	43	46	41	38	39	40	34	34	34
Non-Resident Fur Dealers	3	2	2	3	2	5	4	4	3	2	5
Total	51	49	45	49	43	43	43	44	37	36	39

Table 3.3. Total number of pelts sold in Iowa and average, minimum, and maximum prices paid per species by fur dealers (2010-Present).

		Price Paid per Pelt ($)		
	No. of Pelts Sold in Iowa	Average	Minimum	Maximum
Raccoon				
2010-11	236,531	10.75	5.82	19.00
2011-12	326,368	10.86	5.00	20.00
Muskrat				
2010-11	97,967	5.31	1.57	9.00
2011-12	78,422	5.93	2.52	9.50
Mink				
2010-11	11,254	10.80	3.50	16.00
2011-12	12,977	12.62	4.59	21.00
Beaver				
2010-11	5,382	7.96	4.40	17.00
2011-12	11,652	11.46	7.00	24.00
Coyote				
2010-11	8,088	9.08	1.25	17.00
2011-12	7,765	12.08	5.00	28.00
Red Fox				
2010-11	3,809	13.53	8.00	27.00
2011-12	4,209	17.74	4.00	45.00
Opossum				
2010-11	3,156	0.96	0.20	1.56
2011-12	3,932	1.00	0.25	2.50
Badger				
2010-11	944	11.23	5.00	23.00
2011-12	1,220	11.73	7.00	27.00
Striped Skunk				
2010-11	708	2.39	0.50	5.00
2011-12	858	2.20	0.50	4.50
River Otter				
2010-11	321	36.96	22.14	75.00
2011-12	587	50.94	21.25	93.00
Bobcat				
2010-11	127	51.99	15.00	125.00
2011-12	218	66.81	23.50	160.00
Gray Fox				
2010-11	26	12.86	5.00	19.00
2011-12	85	15.04	12.00	18.08
Weasel				
2010-11	7	1.90	1.00	2.50
2011-12	3	5.00	1.50	12.00

* Minimum and maximum prices paid per pelt are the minimum and maximum mean values paid among all licensed fur dealers in Iowa.

Table 3.4. 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		
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		

(Continued)

Table 3.4 (Continued). 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]
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		
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	149	416
2008-09	48,794	8,236	1,042	124,789		3,729	217	2,251		5,176	431	5,829	232	479
2009-10	44,436	6,905	388	115,349		1,792	13	1,261	56	2,501	454	3,431	221	508
2010-11	98,079	11,262	708	236,943		3,810	26	3,156	7	8,089	946	5,382	268	456
2011-12	78,422	12,977	858	326,368		4,209	85	3,932	3	7,765	1,220	11,652	391	770
Average														
5-Year	65,041	9,469	850	189,344		3,137	104	2,655	22	5,609	717	6,319	252	526
10-Year	56,986	10,557	867	174,188		5,888	183	3,639	22	5,880	697	7,121	252	516
20-Year	88,665	13,107	734	146,031		9,264	467	4,905	22	6,453	657	9,249	252	516
50-Year	261,763	16,391	1,595	176,373	513	13,888	857	11,056	59	6,384	923	8,674	252	516
Long-term[1]	249,887	20,383	17,323	122,395	18,327	10,631	866	14,549	1,211	4,207	670	7,085	252	516

[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 3.5. Percent of fox, raccoon, and coyote furs purchased from Iowa hunters and trappers reported in annual fur dealer reports (1975-present). Data for each year includes harvest from the succeeding year, e.g., 1975=1975+1976 (winter).

	Raccoon			Red and Gray Fox			Coyote		
	% Purchased From			% Purchased From			% Purchased From		
Season	Trapper	Hunter	Unknown	Trapper	Hunter	Unknown	Trapper	Hunter	Unknown
1975-76	28	60	12	45	48	7	18	72	10
1976-77	28	66	6	55	41	4	28	68	4
1977-78	24	68	8	36	55	9	18	72	10
1978-79	31	61	8	37	58	5	17	74	9
1979-80	30	58	12	53	32	15	30	59	11
1980-81	33	60	7	66	29	5	33	60	7
1981-82	42	46	12	38	46	16	20	74	6
1982-83	35	53	12	47	45	8	25	69	6
1983-84	37	50	13	33	59	8	17	67	16
1984-85	33	41	26	49	31	20	26	60	14
1985-86	37	52	11	39	54	7	23	65	12
1986-87	46	49	5	59	35	6	34	62	4
1987-88	49	47	4	53	43	4	32	62	6
1988-89	49	46	5	58	34	8	30	67	3
1989-90	35	45	20	48	28	24	24	61	15
1990-91	38	55	7	43	46	11	28	66	6
1991-92	41	51	8	44	49	7	25	67	8
1992-93	45	50	5	40	52	8	36	54	6
1993-94	43	52	5	43	50	7	34	57	9
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	46	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
2011-12	63	28	9	73	15	12	41	43	16
5-Year Average	53	36	11	48	39	12	33	54	13
10-Year Average	49	42	9	50	40	9	33	57	10
20-Year Average	47	45	8	46	45	8	33	58	9
Total Average	42	49	9	47	44	9	29	62	9

Table 3.6. Trapping and hunting furbearer harvest seasons in Iowa (2007-Present).

		Trapping Season Dates		Hunting Season Dates		Bag Limit	
Season	Species	Open	Close	Open	Close	Daily	Possession
2007-08	ra, op, rf, gf	Nov 3	Jan 31	Nov 3	Jan 31	No Limit	No Limit
	mi, mu, we, stsk, ba	Nov 3	Jan 31			No Limit	No Limit
	be	Nov 3	Apr 01			No Limit	No Limit
	co	Nov 3	Jan 31	Continuous Open Season		No Limit	No Limit
	ot[1, 9]	Nov 3	Jan 31			2	2
	bc[2, 9]	Nov 3	Jan 31	Nov 3	Jan 31	1	1
	spsk, gw	Continuous Closed Season		Continuous Closed Season			
2008-09	ra, stsk, ba, op, rf, gf	Nov 1	Jan 31	Nov 1	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 1	Jan 31			No Limit	No Limit
	be	Nov 1	Apr 01			No Limit	No Limit
	co	Nov 1	Jan 31	Continuous Open Season		No Limit	No Limit
	ot[3, 9]	Nov 1	Jan 31			2	2
	bc[4, 9]	Nov 1	Jan 31	Nov 1	Jan 31	1	1
	spsk, gw	Continuous Closed Season		Continuous Closed Season			
2009-10	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 01			No Limit	No Limit
	co	Nov 7	Jan 31	Continuous Open Season		No Limit	No Limit
	ot[3, 9]	Nov 7	Jan 31			2	2
	bc[5, 9]	Nov 7	Jan 31	Nov 7	Jan 31	1	1
	spsk, gw	Continuous Closed Season		Continuous Closed Season			
2010-11	ra, stsk, ba, op, rf, gf	Nov 6	Jan 31	Nov 6	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 6	Jan 31			No Limit	No Limit
	be	Nov 6	Apr 01			No Limit	No Limit
	co	Nov 6	Jan 31	Continuous Open Season		No Limit	No Limit
	ot[3, 9]	Nov 6	Jan 31			2	2
	bc[6, 9]	Nov 6	Jan 31	Nov 6	Jan 31	1	1
	spsk, gw	Continuous Closed Season		Continuous Closed Season			
2011-12	ra, stsk, ba, op, rf, gf	Nov 5	Jan 31	Nov 5	Jan 31	No Limit	No Limit
	mi, mu, we	Nov 5	Jan 31			No Limit	No Limit
	be	Nov 5	Apr 15			No Limit	No Limit
	co	Nov 5	Jan 31	Continuous Open Season		No Limit	No Limit
	ot[7, 9]	Nov 5	Jan 31			3	3
	bc[8, 9]	Nov 5	Jan 31	Nov 5	Jan 31	1	1
	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 400 animals, plus a 48-hour grace period. Season bag limit of two per licensed furharvester.

[2] First regulated bobcat harvest season. Quota of 150 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] State-wide quota of 500 animals, plus a 48-hour grace period. Season bag limit of two per licensed furharvester.

[4] 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.

[5] 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.

[6] 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.

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

[8] 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.

[9] CITES tag required.

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
5-Year Average	82	26	189,344	10.73
10-Year Average	84	23	174,187	10.72
20-Year Average	85	23	146,031	9.22
Total Average	84	18	189,039	12.51

Table 3.8. Otter harvest seasons and harvest data in Iowa (2006-Present).

	Harvest Season									
Season	No. of Counties[1]	Open Date	Close Date	Season Length	Average Catch Rate per Day	Male Harvest	Female Harvest	Unknown Sex Harvest	Total Harvest[2]	Quota
2006[a, b,d]	Statewide	4-Nov	17-Nov	14	33	196	191	79	466	400
2007[b,e]	Statewide	3-Nov	25-Nov	23	18	191	183	42	416	400
2008[b,e]	Statewide	1-Nov	27-Nov	25	19	222	217	40	479	500
2009[b,e]	Statewide	7-Nov	4-Dec	28	18	221	238	49	508	500
2010[b,e]	Statewide	6-Nov	24-Nov	19	24	199	206	51	456	500
2011[c,e]	Statewide	5-Nov	23-Nov	19	41	360	335	75	770	650
					Total	1389	1370	336	3095	2950

* Harvest data excludes known road-killed otters.

[a] First regulated otter harvest season in Iowa.

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

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

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

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

[1] State-wide 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).

	Harvest Method							
Season	Conibear	Foothold	Live Trap	Snare	Other[1]	Unknown[1]	Total Harvest	Harvest Quota
2006[a, b]	160	254	0	26	4	22	466	400
2007[c]	141	231	3	40	0	1	416	400
2008[c]	174	239	0	49	0	17	479	500
2009[c]	197	249	2	52	0	8	508	500
2010[c]	196	198	0	39	0	23	456	500
2011[c]	305	340	1	96	0	28	770	650
Total	1173	1511	6	302	4	99	3095	2950

[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).

	Harvest Season									
Season	No. of Counties	Open Date	Close Date	Season Length	Average Catch Rate per Day	Male Harvest	Female Harvest	Unknown Sex Harvest	Total Harvest[1]	Quota
2007[a]	21	3-Nov	21-Nov	19	8	68	71	10	149	150
2008	25	1-Nov	21-Nov	21	11	103	115	14	232	200
2009	25	7-Nov	30-Nov	24	9	101	100	20	221	200
2010	35	6-Nov	23-Nov	18	15	98	137	33	268	250
2011	35	5-Nov	29-Nov	25	16	158	206	27	391	350
					Total	528	629	104	1261	1150

* 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.

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

Table 3.11. Bobcat harvest methods by season in Iowa (2007-Present).

	Harvest Method									
Season	Conibear	Foothold	Live Trap	Snare	Archery	Gun	Hounds	Unknown[1]	Total Harvest	Harvest Quota
2007[a]	37	26	0	40	20	4	6	16	149	150
2008	72	35	3	85	23	3	7	4	232	200
2009	56	35	0	82	24	7	4	13	221	200
2010	58	50	1	92	38	6	4	19	268	250
2011	114	85	3	122	32	5	6	24	391	350
Total	337	231	7	421	137	25	27	76	1261	1150

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

[a] First regulated bobcat harvest season in Iowa

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

Waterfowl Management, Seasons, and Harvests in Iowa

Tables referenced in this document are separate Adobe Acrobat files.
Figures referenced in this document follow the text.

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, Fig. 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.

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

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

Giant Canada Goose Population

Giant Canada geese nested throughout Iowa prior to Euro-American settlement, but were extirpated from most of the Midwest, including Iowa, by 1900. The giant Canada goose restoration program initiated by the Iowa Conservation Commission in 1964, the forerunner to the Iowa Dept. of Natural Resources (IADNR), has successfully restored this species to most of its former nesting range in Iowa (see Giant Canada Goose Restoration). The giant Canada goose population in Iowa exhibited steady growth during 1965-2004, but has been stable in recent years (Fig. 4.2). Each summer, biologists and technicians 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 the aerial survey conducted during April 2011 indicated the population was 105,738 (±19,935) (± 95% Conf. Limit), numerically higher but not statistically different from the 2010 estimate 96,738 (±14,764). Prior to 2005, the population estimates made by wildlife biologists were nearly identical to the population estimates obtained from the aerial surveys. This indicates that the biologists' estimates accurately represented the growth rate and

size of this population for most of the 20th century.

Waterfowl Harvests

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

Iowa's duck harvests have fluctuated substantially since 1961. The lowest harvests of all ducks and mallards occurred in the early 1960's, years of 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.

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 "hutchies," that nest on Baffin Island in the Arctic). The combination of restrictive hunting regulations, receding floodwaters, and large-scale participation in the Farm Service Agency's 0/92 program, resulted in a substantial decrease in Iowa's Canada goose harvest in 1993. Canada goose harvests resumed their increasing trend in the mid 1990's, and recently peaked at 78,600 in 2005. The apparent drop in harvest in 1998 and 1999 may be more an artifact of how the estimates were calculated 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. Despite the Canada goose season being lengthened from 70 to 90 days in 2006, Canada goose harvests have not increased in recent years. The declines in harvests in recent years likely reflect the poor goose production in Iowa during those years.

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

ranged from 8,200 to 32,000 during 1999-2011. During the 1998-2010 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 (Tables 4.3 and 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 giant 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 giant Canada geese while limiting harvests of migrant geese from Arctic and sub-arctic regions.

Waterfowl Banding

Ducks and geese are captured and banded with leg bands to obtain information on survival rates, hunting mortality, migration patterns and timing, and the relationships of harvest areas to production areas. Banding is conducted at the request of the USFWS and the Mississippi Flyway Council (MFC). Both state and federal personnel band ducks in Iowa, but IADNR personnel band all the Canada geese and more than 95% of the wood ducks (Table 4.5). Over 250,000 ducks and geese have been banded by IADNR personnel since 1964.

The USFWS, in concert with the MFC, determines banding priorities. In the 1960's emphasis was placed on banding blue-winged teal to evaluate special teal seasons. Winter mallard banding was conducted in the 1970's to supplement breeding grounds bandings and examine hen mortality during spring and summer. Wood duck bandings have been used to evaluate Iowa's September duck seasons. Wood duck banding is also important to measure the effects of hunting on wood duck populations because spring surveys of wood ducks are not conducted. The IADNR has consistently cooperated with USFWS and MFC banding programs and has one of the top wood duck banding programs in the nation, accounting for 10% of all wood ducks banded in N. Am. in the last 10 years.

Canada goose banding has increased with the growth of the local giant 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 states and the USFWS attempt to assess the impacts of special harvest regulations on giant (resident) Canada goose populations, which have been increasing, and migrant Canada goose populations, which have been stable or decreasing.

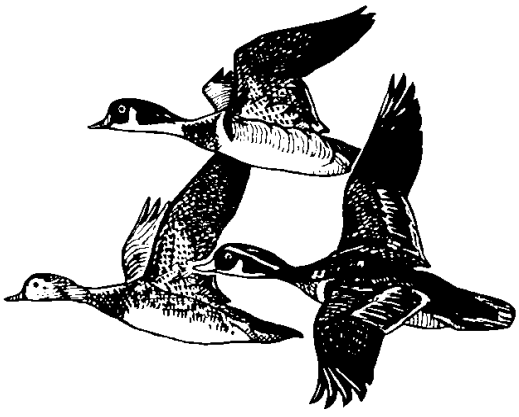
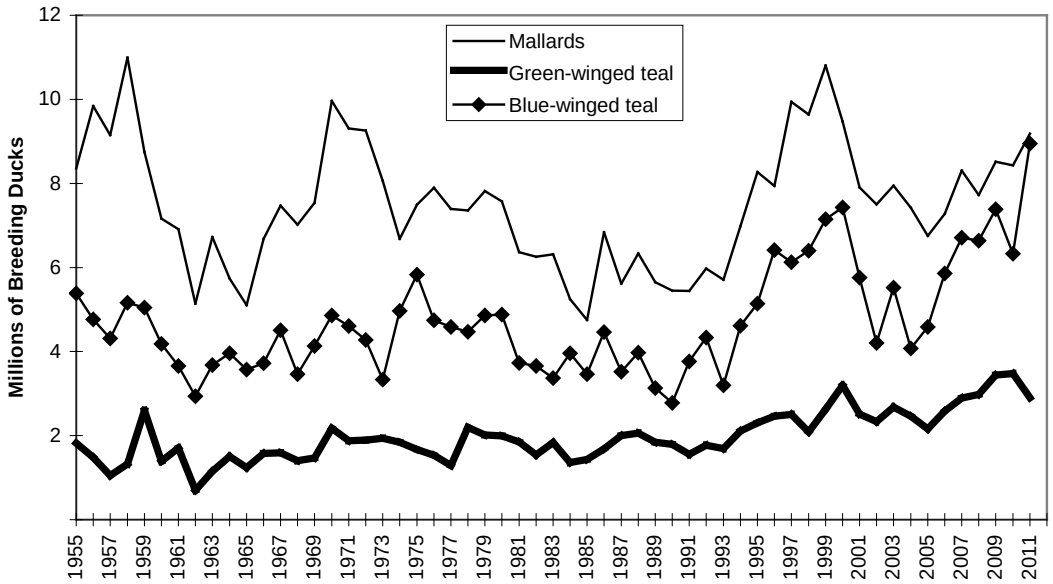
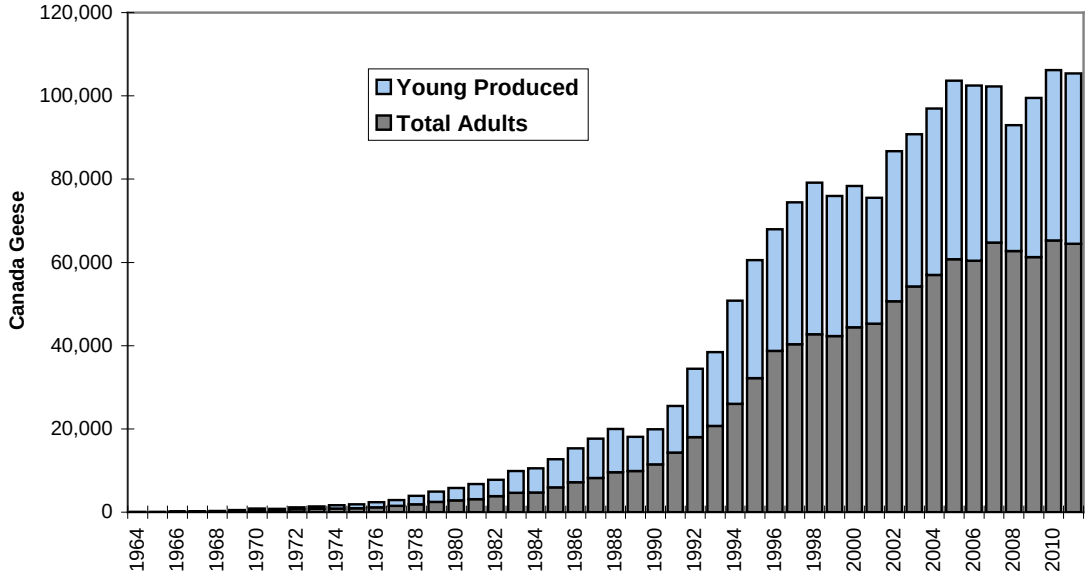


Figure 4.1 Breeding populations of important ducks to Iowa.



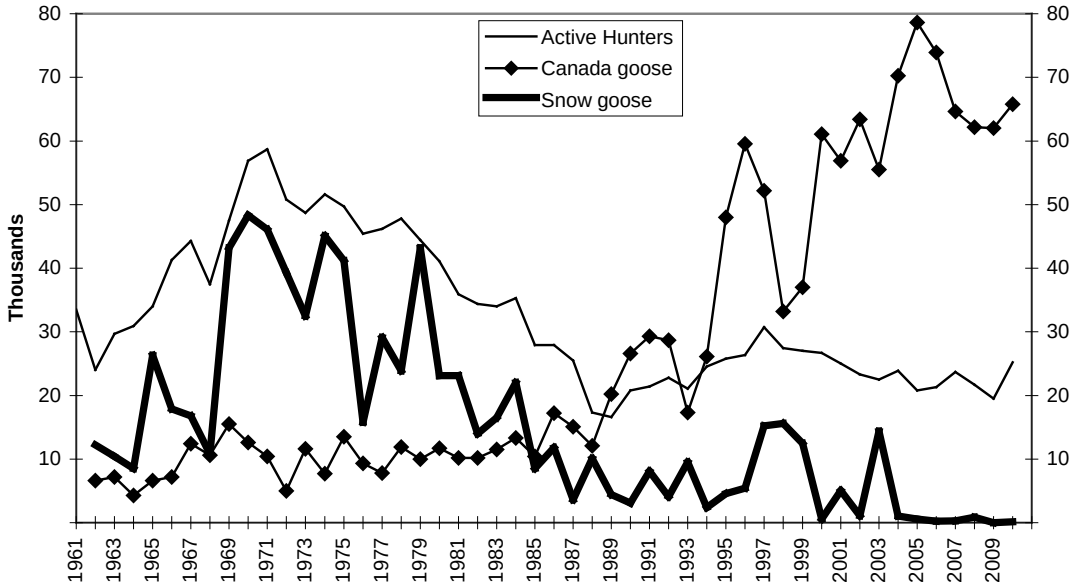
Source: USFWS

Figure 4.2 Iowa's giant Canada goose population.



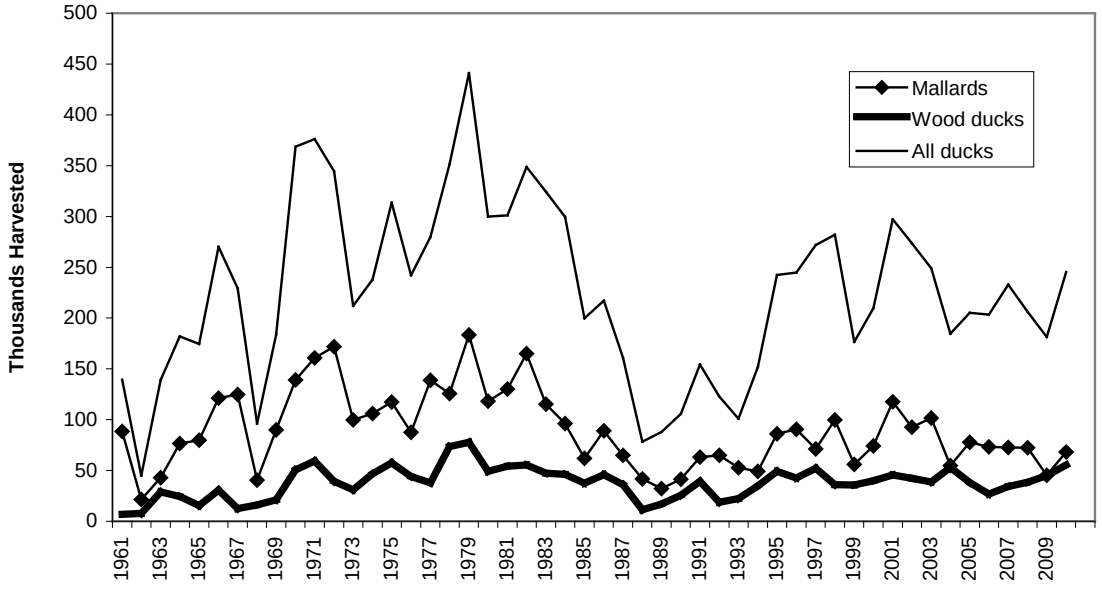
Source: Iowa DNR

Figure 4.3 Goose harvests & duck stamp sales in Iowa (1961 -present).



Source: USFWS

Figure 4.4 Duck harvests in Iowa (1961 - present).



Source: USFWS

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

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

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

YEAR	MALLARD	GAD-WALL	AMERICAN WIGEON	GREEN-WINGED TEAL	BLUE-WINGED TEAL	NORTHERN SHOVELER	NORTHERN PINTAIL	RED-HEAD	CANVAS-BACK	SCAUP
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
Percent Change in 2012 from:										
2011	15%	10%	3%	20%	3%	8%	-22%	-6%	10%	21%
1955-11 Av.	41%	96%	-16%	76%	95%	113%	-13%	89%	33%	4%
1955-2011 Statistics										
Average	7,550	1,859	2,561	2,001	4,823	2,402	3,964	683	574	5,019
Maximum	10,994	3,897	3,703	3,476	9,242	5,018	9,897	1,356	865	7,932
Minimum	4,754	454	1,706	700	2,776	1,183	1,790	319	354	3,247
NAWMP-Goals	8,700	1,600	3,300	2,300	5,300	2,100	6,300	760	580	7,600
Percent Difference from Goal										
2012	22%	124%	-35%	51%	74%	139%	-45%	67%	31%	-31%

Table 4.2 Waterfowl harvest and hunter activity estimates for Iowa. Source is USFWS.
Data for 2001 to the present are based on the Harvest Information Program.

	DAYS AND HARVEST (1,000's)								FEDERAL	AVE.	ACTIVE
YEAR	MALLARD	WOOD DUCK	B-W TEAL	G-W TEAL	ALL DUCKS	CANADA GEESE	SNOW GEESE	DAYS HUNTED	DUCK STAMPS	SEASONAL DUCK BAG	ADULT HUNTERS
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
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

Table 4.2 - continued: Waterfowl harvest and hunter activity estimates for Iowa. Source is USFWS.
Data for 2001to the present are based on the Harvest Information Program.

	DAYS AND HARVEST (1,000's)								FEDERAL	AVE.	ACTIVE
YEAR	MALLARD	WOOD DUCK	B-W TEAL	G-W TEAL	ALL DUCKS	CANADA GEESE	SNOW GEESE	DAYS HUNTED	DUCK STAMPS	SEASONAL DUCK BAG	ADULT HUNTERS
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
Percent Change in 2011 From:											
2010	5%	-22%	-50%	-3%	-18%	-21%	-6%	-9%		-3%	-1%
1961-10 Avg.	-19%	14%	-28%	-25%	-11%	85%	-99%	-52%		50%	-23%
1961-2011 Statistics											
Average	88.8	38.1	32.1	26.0	225.5	28.5	15.1	278.8	39,151	7.3	32,260
Maximum	183.3	77.8	74.0	45.2	441.0	78.6	48.3	536.5	68,401	12.3	58,700
Minimum	21.3	6.8	0.4	5.6	45.1	4.3	0.0	127.5	21,686	2.1	16,600
10-year 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	38.8	7.8	256.0	29,810	7.2	25,385
2001-10	77.5	42.1	35.1	27.8	226.7	64.6	2.2	158.3	28,870	11.1	22,891

Table 4.3 Duck and coot hunting regulations in Iowa.

YEAR	SEASON LENGTH	SEASON DATES	SHOOTING HOURS	LIMITS DUCK BAG/POSS	LIMITS COOT BAG/POSS	Additional Bag Limit Information
		STATEWIDE				
1917	227	Sep 1 - Apr 15	Unknown	?	?	
1918	107	Sep 16 - Dec 31	SR to SS	25 / none	25 /none	
1919	107	Sep 16 - Dec 31	SR to SS	25 / none	25 /none	
1920	107	Sep 16 - Dec 31	SR to SS	25 / none	25 /none	
1921	107	Sep 16 - Dec 31	SR to SS	25 / none	25 /none	
1922	107	Sep 16 - Dec 31	SR to SS	25 / none	25 /none	
1923	107	Sep 16 - Dec 31	SR to SS	25 / none	25 /none	
1924	107	Sep 16 - Dec 31	1/2 SR to SS	15 /50 WF	25 /none	WF = all waterfowl combined
1925	107	Sep 16 - Dec 31	1/2 SR to SS	15 /50 WF	25 /none	
1926	107	Sep 16 - Dec 31	1/2 SR to SS	15 /50 WF	25 /none	
1927	107	Sep 16 - Dec 31	1/2 SR to SS	15 /50 WF	25 /none	
1928	107	Sep 16 - Dec 31	1/2 SR to SS	15 /50 WF	25 /none	
1929	107	Sep 16 - Dec 31	1/2 SR to SS	15 /21 DC	25 /none	DC = all ducks combined
1930	107	Sep 16 - Dec 31	1/2 SR to SS	15 /21 DC	25 /none	
1931	30	Oct 20 - Nov 19	1/2 SR to SS	15 /21 DC	25 /none	
1932	61	Oct 1 - Nov 30	1/2 SR to SS	15 /21 *a	25 /none	*a) Closed season on Wd, Ru, & Bu.
1933	61	Oct 1 - Nov 30	1/2 SR to SS	12 /24 *a	25 /none	
1934	30	Oct 10 - Nov 18	SR to SS	12 /24 *a	25 /none	Live decoys limited to 25. Season included 10 rest days.
1935	30	Oct 21 - Nov 19	7 AM to 4 PM	10 /10 *a	15 /15	Use of live decoys prohibited.
1936	30	Nov 1 - Nov 30	7 AM to 4 PM	10 /10 *b	15 /15	*b) Closed sea. on Wd, Cb, Rh, Ru, & Bu.
1937	30	Oct 9 - Nov 7	7 AM to 4 PM	10 /10 *b	25 /25	
1938	45	Oct 15 - Nov 28	7 AM to 4 PM	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	7 AM to 4 PM	10 /20 *c	25 /25	
1940	60	Oct 16 - Dec 14	SR to 4 PM	10 /20 *c	25 /25	
1941	60	Oct 16 - Dec 14	SR to 4 PM	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 to SS	10 /20 *d	25 /25	
1943	70	Sep 25 - Dec 3	1/2 SR to SS	10 /20 *d	25 /25	
1944	80	Sep 20 - Dec 8	1/2 SR to 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	1/2 SR to SS	10 /20 *f	25 /25	*f) Only 1 Wd in poss. at any time 25 Cm or Rm or comb.
1946	45	Oct 26 - Dec 9	1/2 SR to 1/2 SS	7 /14 *f	25 /25	
1947	30	Oct 21 - Nov 19	1/2 SR to 1 SS	4 / 8 *f	15 /15	
1948	30	Oct 29 - Nov 27	1/2 SR to 1 SS	4 / 8 *f	15 /15	
1949	40	Oct 21 - Nov 29	1/2 SR to 1 SS	4 / 8 *f	15 /15	
1950	35	Oct 20 - Nov 23	1/2 SR to 1 SS	4 / 8 *f	15 /15	
1951	45	Oct 12 - Nov 25	1/2 SR to 1 SS	4 / 8 *f	10 /10	
1952	55	Oct 8 - Dec 1	1/2 SR to 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	1/2 SR to SS	4 / 8 *g	10 /10	

Table 4.3 continued: Duck and coot seasons in Iowa.

YEAR	SEASON LENGTH	SEASON DATES	SHOOTING HOURS	LIMITS DUCK BAG/POSS	LIMITS COOT BAG/POSS	Additional Bag Limit Information
1954	55	Oct 15 - Dec. 8	1/2 SR to 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	1/2 SR to 1/2 SS	4 / 8 *g	10 /10	
1956	70	Oct 6 - Dec 14	1/2 SR to 1/2 SS	4 / 8 *h	10 /10	
1957	70	Oct 5 - Dec 13	1/2 SR to SS	4 / 8 *i	10 /10	*i) Closed season on Wd. 5 mergansers, only 1 Hm.
1958	70	Oct 4 - Dec 12	1/2 SR to 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 to 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	1/2 SR to 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 to SS	2 / 4 *k	6 / 6	
1962	25	Oct 27 - Nov 20	SR to 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 to 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 to 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 to SS 1/2 SR to 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 to SS 1/2 SR to 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 to SS 1/2 SR to 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	1/2 SR to 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 to SS 1/2 SR to 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 to 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.
1971	50	Oct 2 - Nov 20	1/2 SR to 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 to 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.
1973	45	Oct 6-10 Oct 20 - Nov 28	SR to 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 to 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	1/2 SR to 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.

Table 4.3 continued: Duck and coot seasons in Iowa.

YEAR	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMITS DUCK BAG/POSS	LIMITS COOT BAG/POSS	Additional Bag Limit Information
1976	50	Oct 2-7 Oct 23 - Dec 5		1/2 SR to 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 to SS	PS *y	15 /30	
1978	50	Oct 1-8 Oct 21-Dec 1		1/2 SR to 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		1/2 SR to 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		1/2 SR to SS	PS *aa	15 /30	
1981	50	Sep 19-23 Oct 17 - Nov 30		1/2 SR to SS	PS *aa	15 /30	
1982	50	Sep 18-22 Oct 23 - Dec 6		1/2 SR to 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	1/2 SR to 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	1/2 SR to SS	PS *ab	15 /30	
1985	40	Sep 21-23 Oct 19 - Nov 24	Sep 21-23 Oct 26 - Dec 1	1/2 SR to 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	1/2 SR to 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.
		NORTH ZONE (2)	**SOUTH ZONE (2)**				
1987 **(*SH)**	40	Sep 19-23 Oct 17 - Nov 20	Sep 19-21 Oct 24 - Nov 29	1/2 SR to SS	PS *ad	15 /30	
1988	30	Oct 8 - 9 Oct 22 - Nov 18	Oct 22 - 28 Nov 5 - 27	SR to 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 to SS	3 / 6 *ae	15 /30	
1990	30	Oct 6 - 7 Oct 20 - Nov 16	Oct 20 - 26 Nov 3 - 25	1/2 SR to SS	3 / 6 *ae	15 /30	
1991	30	Oct 5 - 6 Oct 19 - Nov 16	Oct 19 - 25 Nov 9 - Dec 1	1/2 SR to SS	3 / 6 *ae	15 /30	
1992	30	Oct 10 - 13 Oct 24 - Nov 18	Oct 24 - 30 Nov 7 - 29	1/2 SR to SS	3 / 6 *ae	15 /30	

Table 4.3 continued: Duck and coot seasons in Iowa.

YEAR	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMITS DUCK BAG/POSS	LIMITS COOT BAG/POSS	Additional Bag Limit Information
		NORTH ZONE (2)	SOUTH ZONE (2)				
1993	30	Oct 2 - 4	Oct 23 - 29	1/2 SR to SS	3 / 6 *ae	15 /30	
		Oct 23 - Nov 18	Nov 6 - 28				
1994	40	Sept 17 - 19	Oct 1 - 3	1/2 SR to SS	3 / 6 *af	15 /30	*af) Only 2 Ma (1 Hn), 2 Wd, 1 Pt, 1 Rh,1 Bd, 1 Cb.
		Oct 15 - Nov 20	Oct 22 - Nov 27				5 merg., only 1 Hm.
1995	50	Sept 23 - 27	Sept 23 - 25	1/2 SR to SS	5 /10 *ag	15 /30	*ag) Only 4 Ma (1 Hn), 2 Wd, 1 Pt, 1 Rh,1 Bd, 1 Cb.
		Oct 15 - Nov 28	Oct 21 - Dec 6				5 merg., only 1 Hm.
1996	50	Sept 21 - 25	Sept 21 - 23	1/2 SR to SS	5 /10 *ah	15 /30	*ah) Only 4 Ma (1 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb.
		Oct 19 - Dec 2	Oct 19 - Dec 4				5 merg., only 1 Hm.
	Youth Day	Oct 5	Oct 5	1/2 SR to SS	5 /10 *ah		
1997	60	Sept 20 - 24	Sept 20 - 24	1/2 SR to SS	6 /12 *ai	15 /30	*ai) Only 4 Ma (2 Hn), 2 Wd, 3 Pt, 2 Rh,1 Bd, 1 Cb.
		Oct 11 - Dec 4	Oct 18 - Dec 11				5 merg., only 1 Hm.
	Youth Day	Sept 27	Sept 27	1/2 SR to SS	6 /12 *ai	15 /30	
1998	60	Sept 19 - 23	Sept 19 - 23	1/2 SR to SS	6 /12 *aj	15 /30	*aj) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb.
(*HIP)		Oct 10 - Dec 3	Oct 17 - Dec 10				5 merg., only 1 Hm.
	Youth Day	Sept 26	Sept 26	1/2 SR to SS	6 /12 *aj	15 /30	
1999	60	Sept 18 - 22	Sept 18 - 22	1/2 SR to SS	6 /12 *ak	15 /30	*ak) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb
		Oct 16 - Dec 9	Oct 16 - Dec 9				& 3 Sc. 5 merg., only 1 Hm.
	Youth Day	Oct 9	Oct 9	1/2 SR to SS	6 /12 *ak	15 /30	
2000	60	Sept 23 - 27	Sept 23 - 27	1/2 SR to SS	6 /12 *ak	15 /30	
		Oct 14 - Dec 7	Oct 14 - Dec 7				
	Youth Day	Oct 7 - 8	Oct 7 - 8	1/2 SR to SS	6 /12 *ak	15 /30	
2001	60	Sept 22 - 26	Sept 22 - 26	1/2 SR to SS	6 /12 *ak	15 /30	
		Oct 13 - Dec 6	Oct 13 - Dec 6				
	Canvasback	Oct. 27 - Nov 15	Nov 17 - Dec 6				
	Youth Day	Oct 6 - 7	Oct 6 - 7	1/2 SR to SS	6 /12 *ak	15 /30	
2002	60	Sept 21 - 25	Sept 21 - 23	1/2 SR to SS	6 /12 *al	15 /30	*al) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd,
		Oct 12 - Dec 5	Oct 19 - Dec 14				& 3 Sc. 5 merg., only 1 Hm. Closed sea. on Cb
	Pintail	Sept 21 - 25	Sept 21 - 23				
		Oct 12 - Nov 5	Oct 19 - Nov 14				
	Youth Day	Oct 5 - 6	Oct 5 - 6	1/2 SR to SS	6 /12 *al	15 /30	
2003	60	Sept 20 - 24	Sept 20 - 22	1/2 SR to SS	6 /12 *ak	15 /30	*ak) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb
		Oct 11 - Dec 4	Oct 18 - Dec 13				& 3 Sc. 5 merg., only 1 Hm.
	Pintail	Sept 20 - 24	Sept 20 - 22				
		Oct 11 - Nov 4	Oct 18 - Nov 13				
	Canvasback	Oct 18 - Nov 16	Oct 25 - Nov 23				
	Youth Day	Oct 4 - 5	Oct 4 - 5	1/2 SR to SS	6 /12 *ak	15 /30	
2004	60	Sept 18 - 22	Sept 25 - 26	1/2 SR to SS	6 /12 *ak	15 /30	
		Oct 16 - Dec 9	Oct 16 - Dec 12				
	Pintail	Sept 18 - 22	Sept 25 - 26				
		Oct 16 - Nov 9	Oct 16 - Nov 12				
	Canvasback	Oct 23 - Nov 21	Oct 23 - Nov 21				
	Youth Day	Oct 2 - 3	Oct 9 - 10	1/2 SR to SS	6 /12 *ak	15 /30	

Table 4.3 continued: Duck and coot seasons in Iowa.

YEAR	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMITS DUCK BAG/POSS	LIMITS COOT BAG/POSS	Additional Bag Limit Information
		NORTH ZONE (2)	**SOUTH ZONE (2)**				
2005	60	Sept 17 - 21	Sept 24 - 28	1/2 SR to SS	6 /12 *am	15 /30	*am) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb
		Oct 15 - Dec 8	Oct 22 - Dec 15				& 2 Sc. 5 merg., only 1 Hm.
	Canvasback	Oct 22 - Nov 20	Oct 29 - Nov 27				
	Youth Day	Oct 8 - 9	Oct 8 - 9	1/2 SR to SS	6 /12 *am	15 /30	
		NORTH ZONE (3)	**SOUTH ZONE (3)**				
2006	60	Sept 23 - 27	Sept 23 - 27	1/2 SR to SS	6 /12 *an	15 /30	*an) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb
		Oct 14 - Dec 7	Oct 21 - Dec 14				& 2 Sc. 5 merg., only 2 Hm.
	Youth Day	Oct 7 - 8	Oct 7 - 8	1/2 SR to SS	6 /12 *an	15 /30	
2007	60	Sept 22 - 26	Sept 22 - 26	1/2 SR to SS	6 /12 *ao	15 /30	*ao) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 2 Cb
		Oct 13 - Dec 6	Oct 20 - Dec 13				& 2 Sc. 5 merg., only 2 Hm.
	Youth Day	Oct 6 - 7	Oct 6 - 7	1/2 SR to SS	6 /12 *ao	15 /30	
2008	60	Sept 20 - 24	Sept 20 - 24	1/2 SR to SS	6 /12 *ap	15 /30	*ap) Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,1 Bd,
		Oct 18 - Dec 11	Oct 18 - Dec 11				& 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	1/2 SR to SS	6 /12 *ap	15 /30	
2009	60	Sept 19 - 23	Sept 19 - 23	1/2 SR to SS	6 /12 *aq	15 /30	*aq) Only 4 Ma (2 Hn), 3 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb,
		Oct 10 - Dec 3	Oct 17 - Dec 10				& 2 Sc. 5 merg., only 2 Hm.
	Youth Day	Oct 3 - 4	Oct 3 - 4	1/2 SR to SS	6 /12 *aq	15 /30	
2010	60	Sept 18 - 22	Sept 18 - 22	1/2 SR to SS	6 /12 *ar	15 /30	*ar) Only 4 Ma (2 Hn), 3 Wd, 2 Pt, 2 Rh,1 Bd, 1 Cb,
		Oct 16 - Dec 9	Oct 23 - Dec 16				& 2 Sc. 5 merg., only 2 Hm.
	Youth Day	Oct 2 - 3	Oct 9 - 10	1/2 SR to SS	6 /12 *ar	15 /30	
		NORTH ZONE (4)	**SOUTH ZONE (4)**				
2011	60	Sept 17 - 21	Sept 17 - 21	1/2 SR to SS	6 /12 *ar	15 /30	
		Oct 15 - Dec 8	Oct 22 - Dec 15				
	Youth Day	Oct 1 - 2	Oct 8 - 9	1/2 SR to SS	6 /12 *ar	15 /30	

Table 4.3 continued: Duck and coot seasons in Iowa.

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, 1/2 SR to SS = 1/2 hour before sunrise to sunset, 1/2 SR to 1/2 SS = 1/2 hour before sunrise to 1/2 hour before sunset, 1/2 SR to 1 SS = 1/2 hour before sunrise to 1 hour before sunset.
Shooting hours began at 12:00 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(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 State Hwy 175, east to State Hwy 37, southeast to U.S. 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 State Hwy 175, east to State Hwy 37, southeast to State Hwy 183, northeast to State Hwy 141, east to U.S. Hwy 30, and along U.S. Hwy 30 to the Iowa-Illinois border.

DUCK 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 State Highwy 175, east to State Highway 37, southeast to State Highway 183, northeast to State Hwy 141, east to U.S. Hwy 30, and along U.S. Hwy 30 to the Iowa-Illinois border.

(*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 lands or waters under the jurisdiction of the State Conservation Commission, the U.S. 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 occuring 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 nickle 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 to SS	8 / none	
1919	Ca/Sn/Wf	107	Sep 16 - Dec 31	SR to SS	8 / none	
1920	Ca/Sn/Wf	107	Sep 16 - Dec 31	SR to SS	8 / none	
1921	Ca/Sn/Wf	107	Sep 16 - Dec 31	SR to SS	8 / none	
1922	Ca/Sn/Wf	107	Sep 16 - Dec 31	SR to SS	8 / none	
1923	Ca/Sn/Wf	107	Sep 16 - Dec 31	SR to SS	8 / none	
1924	Ca/Sn/Wf	107	Sep 16 - Dec 31	1/2 SR to SS	8 / 50 WF	WF = all waterfowl combined
1925	Ca/Sn/Wf	107	Sep 16 - Dec 31	1/2 SR to SS	8 / 50 WF	
1926	Ca/Sn/Wf	107	Sep 16 - Dec 31	1/2 SR to SS	8 / 50 WF	
1927	Ca/Sn/Wf	107	Sep 16 - Dec 31	1/2 SR to SS	8 / 50 WF	
1928	Ca/Sn/Wf	107	Sep 16 - Dec 31	1/2 SR to SS	8 / 50 WF	
1929	Ca/Sn/Wf	107	Sep 16 - Dec 31	1/2 SR to SS	8 / 50 WF	
1930	Ca/Sn/Wf	107	Sep 16 - Dec 31	1/2 SR to SS	4 / 8	
1931	Ca/Sn/Wf	30	Oct 20 - Nov 19	1/2 SR to SS	4 / 8	
1932	Ca/Sn/Wf	61	Oct 1 - Nov 30	1/2 SR to SS	4 / 8	
1933	Ca/Sn/Wf	61	Oct 1 - Nov 30	1/2 SR to SS	4 / 8	
1934	Ca/Sn/Wf	30	Oct 10 - Nov 18	SR to SS	4 / 8	(included 10 rest days)
1935	Ca/Sn/Wf	30	Oct 21 - Nov 19	7 AM to 4 PM	4 / 4	
1936	Ca/Sn/Wf	30	Nov 1 - Nov 30	7 AM to 4 PM	4 / 4	
1937	Ca/Sn/Wf	30	Oct 9 - Nov 7	7 AM to 4 PM	5 / 5	
1938	Ca/Sn/Wf	45	Oct 15 - Nov 28	7 AM to 4 PM	5 /10	
1939	Ca/Sn/Wf	45	Oct 22 - Dec 5	7 AM to 4 PM	4 / 8	
1940	Ca/Sn/Wf	60	Oct 16 - Dec 14	SR to 4 PM	3 / 6	
1941	Ca/Sn/Wf	60	Oct 16 - Dec 14	SR to 4 PM	3 / 6	
1942	Ca/Sn/Wf	70	Oct 15 - Dec 23	SR to SS	2 / 4	
1943	Ca/Sn/Wf	70	Sep 25 - Dec 3	1/2 SR to SS	2 / 4	
1944	Ca/Sn/Wf	80	Sep 20 - Dec 8	1/2 SR to SS	2 / 4 *a	*a) Sn goose poss. limit = 8.
1945	Ca/Sn/Wf	80	Sep 20 - Dec 8	1/2 SR to SS	2 / 4 *a	
1946	Ca/Sn/Wf	45	Oct 26 - Dec 9	1/2 SR to 1/2 SS	4 / 4 *b	*b) Closed Ca goose season.
1947	Ca/Sn/Wf	30	Oct 21 - Nov 19	1/2 SR to 1 SS	4 / 4 *c	*c) Only 1 Ca or 1 Wf goose in bag.
1948	Ca/Sn/Wf	30	Oct 29 - Nov 27	1/2 SR to 1 SS	4 / 4 *c	
1949	Ca/Sn/Wf	40	Oct 21 - Nov 29	1/2 SR to 1 SS	4 / 4 *c	
1950	Ca/Sn/Wf	35	Oct 20 - Nov 23	1/2 SR to 1 SS	4 / 4 *c	
1951	Ca/Sn/Wf	45	Oct 12 - Nov 25	1/2 SR to 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	1/2 SR to 1 SS	5 / 5 *d	
1953	Ca/Sn/Wf	55	Oct 8 - Dec 1	1/2 SR to SS	5 / 5 *d	
1954	Ca/Sn/Wf	55	Oct 15 - Dec 8	1/2 SR to 1 SS	5 / 5 *d	
1955	Ca/Sn/Wf	70	Oct 8 - Dec 16	1/2 SR to 1/2 SS	5 / 5 *d	
1956	Ca/Sn/Wf	70	Oct 6 - Dec 14	1/2 SR to 1/2 SS	5 / 5 *d	
1957	Ca/Sn/Wf	70	Oct 5 - Dec 13	1/2 SR to SS	5 / 5 *d	
1958	Ca/Sn/Wf	70	Oct 4 - Dec 12	1/2 SR to SS	5 / 5 *d	
1959	Ca/Sn/Wf	70	Oct 7 - Dec 15	SR to SS	5 / 5 *d	
1960	Ca/Sn/Wf	70	Oct 8 - Dec 16	1/2 SR to SS	5 / 5 *d	
1961	Ca/Sn/Wf	70	Oct 7 - Dec 15	SR to SS	5 / 5 *d	
1962	Ca/Sn/Wf	70	Oct 6 - Dec 14	SR to SS	5 / 5 *d	

Table 4.4 continued: Goose seasons in Iowa.

YEAR	GOOSE SPECIES	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMIT BAG/POSS	Additional Bag Limit Information
			STATEWIDE				
1963	Ca/Sn/Wf	70	Oct 5 - Dec 13		SR to SS	5 / 5 *d	
1964	Ca/Sn/Wf	70	Oct 3 - Dec 11		SR to SS	5 / 5 *d	
1965	Ca/Sn/Wf	70	Oct 2 - Dec 10		1/2 SR to SS	5 / 5 *d	
1966	Ca/Sn/Wf	70	Oct 1 - Dec 9		1/2 SR to SS	5 / 5 *d	
1967	Ca/Sn/Wf	70	Sep 30 - Dec 8		1/2 SR to SS	5 / 5 *d	
1968	Ca/Sn/Wf	70	Sep 28 - Dec 6		1/2 SR to SS	5 / 5 *d	
1969	Ca/Sn/Wf	70	Oct 4 - Dec 12		1/2 SR to SS	5 / 5 *d	
1970	Ca	23	Oct 3 - Nov 26		SR to SS	1 / 1 *e	*e) Bag & pos. lim.= 5 w/ only 1 Ca,
	Sn/Wf	70	Oct 3 - Dec 11			5 / 5 *e	1 Ca + 1 WF, or 2 Wf.
1971	Ca	23	Oct 9 - Oct 31		1/2 SR to SS	1 / 1 *e	
	Sn/Wf	70	Oct 2 - Dec 10			5 / 5 *e	
1972	Ca	23	Oct 1 - Nov 9		SR to SS	1 / 2 *f	*f) Bag lim.= 5 w/ only 1 Ca,
	Sn/Wf	70	Oct 7 - Dec 15			5 / 5 *f	1 Ca + 1 WF, or 2 Wf.
							Pos. lim.= 5 w/ only 2 Ca,
							1 Ca + 1 WF, or 2 Wf.
1973	Ca	40	Oct 1 - Nov 9		SR to SS	1 / 2 *g	*g) Bag lim.= 5 w/ only 1 Ca & 2 Wf.
	Sn/Wf	70	Oct 1 - Dec 9			5 / 5 *g	Pos lim.= 5 w/ only 2 Ca & 2 Wf.
1974	Ca	45	Oct 1 - Nov 14		SR to SS	1 / 2 *g	
	Sn/Wf	70	Oct 1 - Dec 9			5 / 5 *g	
1975	Ca	45	Oct 1 - Nov 14		1/2 SR to SS	2 / 2 *h	*h) Bag lim.= 5 w/ only 2 Ca & 2 Wf.
	Sn/Wf	70	Oct 1 - Dec 9			5 / 5 *h	Pos lim.= Bag lim.
1976	Ca	45	Oct 1 - Nov 14		1/2 SR to SS	2 / 4 *h	
	Sn/Wf	70	Oct 1 - Dec 9			5 /10 *h	
1977	Ca	45	Oct 1 - Nov 14		SR to SS	2 / 4 *h	
	Sn/Wf	70	Oct 1 - Dec 9			5 /10 *h	
1978	Ca/Sn/Wf	70	Oct 1 - Dec 9		1/2 SR to SS	5 /10 *h	
1979	Ca/Sn/Wf	70	Sep 29 - Dec 7		1/2 SR to SS	5 /10 *h	
1980	Ca/Sn/Wf	70	Oct 4 - Dec 12		1/2 SR to 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		1/2 SR to SS	5 /10 *i	
1982	Ca/Sn/Wf	70	Oct 2 - Dec 10		1/2 SR to SS	5 /10 *i	
1983	Ca/Sn/Wf	70	Oct 1 - Dec 9		1/2 SR to SS	5 /10 *i	
			MOST OF STATE	**SW ZONE(1)**			
1984	Ca/Sn/Wf	70	Sep 29 - Dec 7	Oct 13 - Dec 21	1/2 SR to SS	5 /10 *i	
1985	Ca/Sn/Wf	70	Sep 28 - Dec 6	Oct 12 - Dec 20	1/2 SR to SS	5 /10 *i	
1986	Ca/Sn/Wf	70	Oct 4 - Dec 12	Oct 18 - Dec 26	1/2 SR to SS	5 /10 *i	
1987	Ca	45	Oct 3 - Nov 16	Oct 17 - Nov 30	1/2 SR to 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 to 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 to SS	2 / 4 *j	*j) Bag lim.= 7 w/ only 2 Ca & 2 Wf.
	Sn/Br	80	Sep 30 - Dec 18	Oct 14 - Jan 1		7 /14 *j	Pos lim.= 14 w/ only 4 Ca & 4 Wf.
	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	1/2 SR to SS	2 / 4 *j	
	Sn	80	Sep 29 - Dec 17	Oct 13 - Dec 31		7 /14 *j	

Table 4.4 continued: Goose seasons in Iowa.

YEAR	GOOSE SPECIES	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMIT BAG/POSS	Additional Bag Limit Information
			MOST OF STATE	**SW ZONE(2)**			
1991	Ca/Wf/Br	70	Sep 28 - Dec 6	Oct 12 - Dec 20	1/2 SR to 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	1/2 SR to 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	1/2 SR to SS	2 / 4 *j	
	Sn	80	Oct 9 - Dec 27	Oct 23 - Jan 10, 1994		7 /14 *j	
1994	Ca/Wf/Br	55	Oct 8 - Dec 1	Oct 22 - Dec 15	1/2 SR to SS	2 / 4 *j	
	Sn	102	Oct 1 - Dec 10	Oct 1 - Jan 10, 1995		7 /14 *j	
1995	Ca/Wf/Br	70	Sep 30 - Dec 8	Oct 14 - Dec 22	1/2 SR to SS	2 / 4 *k	*k) Bag lim.= 10 w/ only 2 Ca & 2 Wf.
	Sn	107	Sep 30 - Jan 10	Oct 14 - Jan 10, 1996		10 /20 *k	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	1/2 SR to SS	2 / 4 *l	*l) Bag lim.= 2 Ca.
	Ca/Wf/Br	70	Sep 28 - Dec 6	Oct 5 - Oct 13	1/2 SR to SS	2 / 4 *m	*m) Bag lim.= 2 Ca , 2 Wf, & 2 Br .
				Oct 19 - Dec 18			Pos lim.= 4 Ca, 4 Wf, & 4 Br.
	Sn	107	Oct 12 - Jan 10, 1997		1/2 SR to SS	10 /30	
			Feb 22 - Mar 9, 1997				
1997	Ca	2	Sep 13 - 14	None	1/2 SR to SS	2 / 4 *l	
	Ca/Wf/Br	70	Oct 4 - Dec 12	Oct 4 - Oct 12	1/2 SR to SS	2 / 4 *m	
				Oct 18 - Dec 17			
	Sn/Ro	107	Oct 4 - Dec 31		1/2 SR to SS	10 /30	
			Feb 21 - Mar 10, 1998				
1998	Ca	2	Sep 12 - 13[b]	None	1/2 SR to SS	2 / 4 *l	
(*HIP)	Ca/Wf/Br	70	Oct 3 - Dec 11	Oct 3 - Oct 11	1/2 SR to SS	[a] 2 / 4 *m	
				Oct 17 - Dec 16			
	Sn/Ro	107	Oct 3 - Dec 31		1/2 SR to SS	20 /none	
			Feb 20 - Mar 10, 1999				
	Sn/Ro	[c]Cons. Or.	March 11-April 16, 1999		1/2 SR to SS1/2	20 /none	
1999	Ca	2	Sep 11 - 12[b]	None	1/2 SR to SS	2 / 4 *l	
	Ca/Wf/Br	70	Oct 2 - Dec 10	Oct 2 - Oct 10	1/2 SR to SS	2 / 4 *m	
				Oct 16 - Dec 15			
	Sn/Ro	107	Oct 2 - Dec 26		1/2 SR to SS	20 /none	
			Feb 19 - Mar 10, 2000				
	Sn/Ro	[c]Cons. Or.	March 11-April 16, 2000		1/2 SR to SS 1/2	20 /none	
2000	Ca	2	Sep 9 - 10[b]	None	1/2 SR to SS	2 / 4 *l	
	Ca/Wf/Br	70	Sep 30 - Dec 8	Sep 30 - Oct 15	1/2 SR to SS	2 / 4 *m	
				Nov 4 - Dec 27			
	Sn/Ro	107	Sep 30 - Jan 14, 2001		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Feb 15 - April 15, 2001		1/2 SR to SS 1/2	20 /none	
2001	Ca/Wf/Br	70	Sep 29 - Dec 7	Sep 29 - Oct 21	1/2 SR to SS	2 / 4 *m	
				Nov 10 - Dec 26			
	Sn/Ro	107	Sep 29 - Jan 13, 2002		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Feb 2 - April 15, 2002		1/2 SR to SS 1/2	20 /none	

Table 4.4 continued: Goose seasons in Iowa.

YEAR	GOOSE SPECIES	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMIT BAG/POSS	Additional Bag Limit Information
			NORTH ZONE(1)	SOUTH ZONE(1)			
2002	Ca/Wf/Br	70	Sep 28 - Dec 6	Sep 28 - Oct 20	1/2 SR to SS	2 / 4 *m	*m) Bag lim.= 2 Ca , 2 Wf, & 2 Br .
				Nov 9 - Dec 25			Pos lim.= 4 Ca, 4 Wf, & 4 Br.
	Sn/Ro	107	Sep 28 - Jan 12, 2003		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Feb 1 - April 15, 2003		1/2 SR to SS 1/2	20 /none	
2003	Ca	15	Sep 1 - 15 in metro zones[d]		1/2 SR to SS	3 / 6 *n	*n) Bag lim.= 3 Ca.
	Ca & Br	70	Sep 27 - Dec 5	Sep 27 - Oct 19	1/2 SR to SS	2 / 4 *o	*o) Bag lim.= 2 Ca & 2 Br .
				Nov 8 - Dec 24			Pos lim.= 4 Ca & 4 Br.
	Wf	86	Sept 27 - Dec 21	Sept 27 - Dec 21	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Sep 27 - Jan 11, 2004		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 12 - April 15, 2004		1/2 SR to SS 1/2	20 /none	
			NORTH ZONE(2)	SOUTH ZONE(2)			
2004	Ca	15	Sep 1 - 15 in metro zones[d]		1/2 SR to SS	3 / 6 *n	
	Ca	2	Sep 11-12	None	1/2 SR to SS	2 / 4 *l	*l) Bag lim.= 2 Ca.
	Ca & Br	60	Sep 25 - Oct 3	Oct 2 - 10	1/2 SR to SS	2 / 4 *o	
			Oct 16 - Dec 5	Oct 30 - Dec 19			
	Wf	86	Sept 25 - Dec 19	Oct 2 - Dec 26	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Sep 25 - Jan 9, 2005		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 10 - April 15, 2005		1/2 SR to SS 1/2	20 /none	
2005	Ca	15	Sep 1 - 15 in metro zones[d]		1/2 SR to SS	3 / 6 *n	
	Ca	2	Sep 10-11	Sep 10-11	1/2 SR to SS	2 / 4 *l	
	Ca & Br	70	Oct 1-9	Oct 1-9	1/2 SR to SS	2 / 4 *o	
			Oct 15 - Dec 4	Oct 22 - Dec 4			
			Dec 24 - Jan 2, '06	Dec 24 - Jan 9, '06			
	Wf	72	Oct 1 - Dec 11	Oct 1 - Dec 11	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Oct 1 - Jan 15, 2006		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 16 - April 15, 2006		1/2 SR to SS 1/2	20 /none	
2006	Ca	15	Sep 1 - 15 in metro zones[d]		1/2 SR to SS	3 / 6 *n	
	Ca	2	Sep 9-10	Sep 9-10	1/2 SR to SS	2 / 4 *l	
	Ca & Br	90	Sep 30 - Dec 10	Sep 30 - Oct 8	1/2 SR to SS	2 / 4 *p	*p) Bag lim.= 2 Ca & 1 Br .
			Dec 16 - Jan 2, '07	Oct 21 - Jan 9, '07			Pos lim.= 4 Ca & 2 Br.
	Wf	72	Sep 30 - Dec 10	Sep 30 - Dec 10	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Sep 30 - Jan 14, 2007		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 15 - April 15, 2007		1/2 SR to SS 1/2	20 /none	
2007	Ca	15	Sep 1 - 15 in metro zones[d]		1/2 SR to SS	5 / 10 *q	*q) Bag lim.= 5 Ca.
	Ca	2	Sep 8-9	Sep 8-9	1/2 SR to SS	2 / 4 *l	
	Ca & Br	90	Sep 29 - Dec 9	Sep 29 - Oct 7	1/2 SR to SS	2 / 4 *p	*p) Bag lim.= 2 Ca & 1 Br .
			Dec 15 - Jan 1, '08	Oct 20 - Jan 8, '08			Pos lim.= 4 Ca & 2 Br.
	Wf	72	Sep 29 - Dec 9	Sep 29 - Dec 9	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Sep 29 - Jan 13, 2008		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 14 - April 15, 2008		1/2 SR to SS 1/2	20 /none	
2008	Ca	15	Sep 1 - 15 in metro zones[e]		1/2 SR to SS	5 / 10 *q	
	Ca & Br	90	Sep 27 - Oct 5	Sep 27 - Oct 5	1/2 SR to SS	2 / 4 *p	
			Oct 18 - Dec 21	Oct 18 - Dec 21			
			Dec 27 - Jan 11, '09	Dec 27 - Jan 11, '09			
	Wf	72	Sep 27 - Dec 7	Sep 27 - Dec 7	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Sep 27 - Jan 11, 2009		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 12 - April 15, 2009		1/2 SR to SS 1/2	20 /none	

Table 4.4 continued: Goose seasons in Iowa.

YEAR	GOOSE SPECIES	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMIT BAG/POSS	Additional Bag Limit Information
			NORTH ZONE(3)	**SOUTH ZONE(3)**			
2009	Ca	15	Sep 1 - 15 in metro zones[e]		1/2 SR to SS	5 / 10 *q	
	Ca & Br	90	Sep 26 - Oct 4	Sep 26 - Oct 4	1/2 SR to SS	2 / 4 *p	
			Oct 10 - Dec 13	Oct 17 - Dec 13			
			Dec 19 - Jan 3, '10	Dec 19 - Jan 10, '10			
	Wf	72	Sep 26 - Dec 6	Sep 26 - Dec 6	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Sep 26 - Jan 10, 2010		1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 11 - April 15, 2010		1/2 SR to SS 1/2	20 /none	
2010	Ca	9	Sep 4 - 12 in metro zones[e]		1/2 SR to SS	5 / 10 *q	
	Ca & Br	98	Sep 25 - Oct 10	Oct 2 - Oct 17	1/2 SR to SS	2-3 / 4-6 *r	*r) Bag lim.= 2 Ca & 1 Br through Oct. 31
			Oct 16 - Jan 5, '11	Oct 23 - Jan 12, '11			and 3 Ca & 1 Br thereafter.
	Wf	72	Sep 25 - Dec 5	Oct 2 - Dec 12	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Sep 25 - Jan 9, '11	Oct 2 - Jan 14, '11	1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 15 - April 15, 2011		1/2 SR to SS 1/2	20 /none	
			NORTH ZONE (4)	**SOUTH ZONE (4)**			
2011	Ca	9	Sep 3 - 11 in metro zones[e]		1/2 SR to SS	5 / 10 *q	
	Ca & Br	98	Sep 24 - Oct 9	Oct 1 - Oct 16	1/2 SR to SS	2-3 / 4-6 *r	
			Oct 15 - Jan 4, '12	Oct 22 - Jan 11, '12			
	Wf	74	Sep 24 - Dec 6	Oct 1 - Dec 13	1/2 SR to SS	2 / 4	
	Sn/Ro	107	Sep 24 - Jan 8, '12	Oct 1 - Jan 13, '12	1/2 SR to SS	20 /none	
	Sn/Ro	[c]Cons. Or.	Jan 14 - April 15, 2012		1/2 SR to SS 1/2	20 /none	

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

SHOOTING HOURS: SR to SS = sunrise to sunset, 1/2 SR to SS = 1/2 hour before sunrise to sunset, 1/2 SR to 1/2 SS= 1/2 hour before sunrise to 1/2 hour before sunset, 1/2 SR to 1 SS = 1/2 hour before sunrise to 1 hour before sunset. 1/2 SR to SS/1 = 1/2 hour before sunrise to sunset in all of state except SW Zone where shooting hours were 1/2 hour before sunrise to 1:00 PM until Dec. 1 in 1991 and until Nov. 29 in 1992, then 1/2 hour before sunrise to sunset thereafter. 1/2 SR to SS 1/2 = 1/2 hour before sunrise to 1/2 hour after sunset.

LIMIT: BAG = Daily bag limit,**POSS** = Possesion 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 state 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 U.S. Hwy 71 to I-80, west on I-80 to U.S. Hwy 59, north on U.S. Hwy 59 to State Hwy 37, then NW on Hwy 37 to State 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 state Hwy 175, southeast to State Hwy 37, east to U.S. 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 state 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 State Hwy 175, east to State Hwy 37, southeast to State Hwy 183, northeast to State Hwy 141, east to U.S. Hwy 30, and along U.S. Hwy 30 to the Iowa-Illinois border. The duck and goose zone bounaries were identical from 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 State Highwy 175, east to State Highway 37, southeast to State Highway 183,

northeast to State Hwy 141, east to U.S. Hwy 30, and along U.S. Hwy 30 to the Iowa-Illinois border.

(*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 1/2 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
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
Totals	98,371	36,101	117,689	35,810	1,052	2,236	291,259	14,654

Table 4.6 Giant Canada goose production and populations in Iowa.

YEAR	YOUNG PRODUCED	NESTING ADULTS	NONBREEDING 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%
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%

UPLAND WILDLIFE

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

August Roadside Survey is conducted each year by IDNR Enforcement and Wildlife Bureau personnel throughout the state of Iowa during the first half of August. The survey generates data from 215 30-mile routes on ring-necked pheasants, bobwhite quail, gray partridge, cottontail rabbits, and white-tailed jackrabbits. Counts are conducted on sunny, cool mornings with heavy dew. All comparisons are based on total routes run.

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 where they hunted, 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 annual August roadside survey report can be found on the DNR's website at http://www.iowadnr.gov. The results of the annual small game harvest survey can be found at the end of this report.

HISTORICAL SUMMARY OF POPULATIONS AND 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.

The ring-necked pheasant was first successfully introduced into the United States in the Willamette Valley of Oregon by Owen Denny 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 wind storm of approximately 2,000 birds from the William Benton game farm in Cedar Falls. The source of Mr. Benton's birds is not known with certainty, but reports say they were from an importer in Tacoma,

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

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

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

" *The old policy of stocking birds without paying attention to the environment 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."*

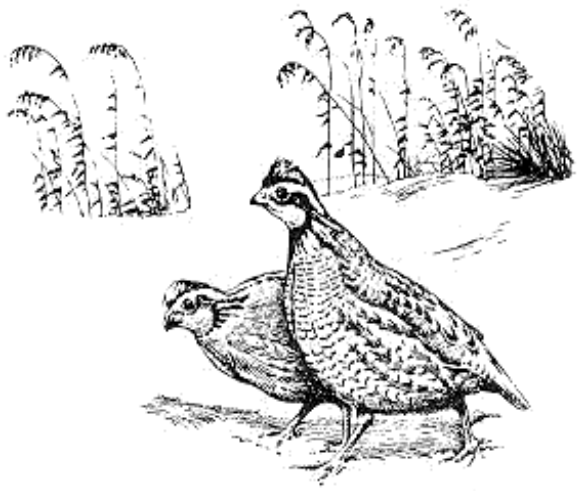
The state game farms were shut down in 1932, but following several bad weather years it was re-established in 1938. Populations recovered with good weather in the 1940's and stocking was greatly reduced, approximately 4,000 chicks and spent adults in 1943. The state game farm operated at approximately the same level until 1961. Through the 1940-50's it became increasingly evident that pen raised birds were not contributing to wild pheasant numbers. Similar to what had been done in 1924-25, in 1955 a new policy of trap and transfer of wild birds was started in southern Iowa. Increasing 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, VanBuren counties) thru 1973. The state game farm was closed in late 1970's and dismantled.

Iowa's first pheasant season was held October 20-22, 1925 in Kossuth, Humboldt, Winnebago, Hancock, Wright, Cerro Gordo, Franklin, Mitchell, Floyd, Butler, Grundy, Blackhawk and Bremer counties. The hunting season opened 1/2 hour before sunrise and ended at noon with a bag limit of 3 cocks. It appears the decision to open counties to hunting in these early years was based largely on pheasant crop depredation complaints as annual pheasant censuses, predecessor to the August Roadside Survey, were not begun

until 1935. Flush count records show 7 men flushed 850 pheasants in 5 hours in Hancock county in 1931. By 1945 most of northern Iowa was open to hunting and by 1965 all of Iowa, except a few southeastern counties, was open to pheasant hunting. The entire state was opened to hunting in 1976. Historically (1930-50's), the NW, NC, and C regions had Iowa's highest pheasant densities (Fig. 5.1). However, intensified agriculture has led to a decline in pheasant populations since the 1960's (Fig. 5.2). Regionally, the greatest declines have occurred in the NC, C, and SW regions (Fig. 5.7). By the early 1970's southern Iowa had become the states premiere pheasant range.

Populations have declined following severe winter weather in 1964-65, 1966-67, 1978-79, 1981-82, 2000-01, and 2007-10, 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 (Fig. 5.3), the all-time lows recorded in 1983, 1984, 1993, 1999, 2001, and 2007-10 were the results of very cool and/or wet conditions during spring and early summer (Table 5.2; Fig. 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; Fig. 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 (Fig 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 a.m. to 4:30 p.m. Iowa's first youth pheasant season was held during the 1997-98 hunting season. Youth hunting was 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).

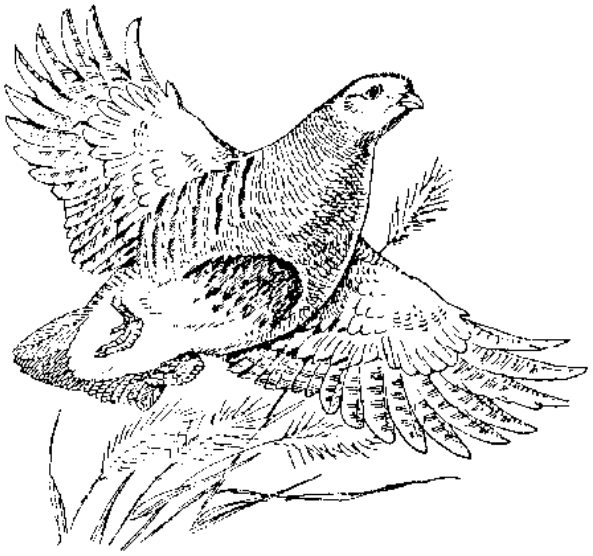
Bobwhite Quail



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 1/4 section at a time, but early settlers lacked timber and wire to make fences, so they planted Osage hedges instead. Three to 6 miles of some of the finest quail cover ever grown in ever 1/4 section, all within spitting distance of newly planted "weedy" grain fields. Quail populations exploded like never seen before or likely to be seen again. Quail could be found in every county, but these conditions could not last. By 1920 reports

show quail populations beginning to decline as farming practices improved and hedgerows were replaced with barbed wire fence. The 1931-32 winter quail survey reported population densities of 1 quail per 20-40+ acres in the northern third of the state, 1 quail/6-20 ac. in the central third and 1 quail/1-6 ac. in the southern third of the state. However, quail populations have declined steadily, both nationally and in Iowa since the 1930's. Large scale landscape changes and clean farming practices are considered the major factors in this decline. Since survey procedures were standardized in the early 1960's the mean number of quail/30 miles sighted on the August roadside survey has fluctuated over the years with significant declines occurring since 1977 (Fig. 5.6). This decline, along with the severe fluctuations in SW and SC Iowa in recent years, are related to losses in shrubby habitat and clean farming practices that have occurred since row-crop agriculture expanded in the mid 70's and early 80's (Fig. 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 2007-10. (Fig. 5.8).

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 a.m. to 4:30 p.m. (Table 5.11).



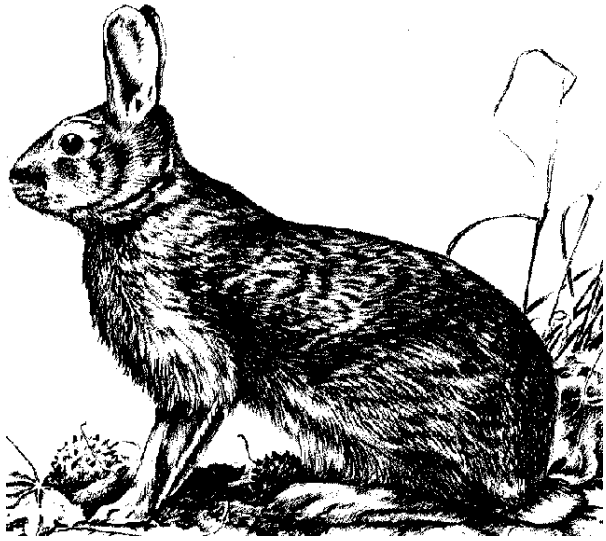
Gray Partridge

Senator H.W. Grant of Waterloo made the first release of Hungarian or gray partridge in Iowa in Blackhawk county in 1902, but all 50 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 (Fig. 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 (Fig. 5.9). While losses of woody cover and nesting cover have created less favorable conditions for pheasant and quail, partridge have been 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 (Fig. 5.6). Huns were imported to this country 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. Standardized hunting seasons were established in 1963. Partridge season 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 a.m. to 4:30 p.m. (Table 5.12).



Eastern Cottontail

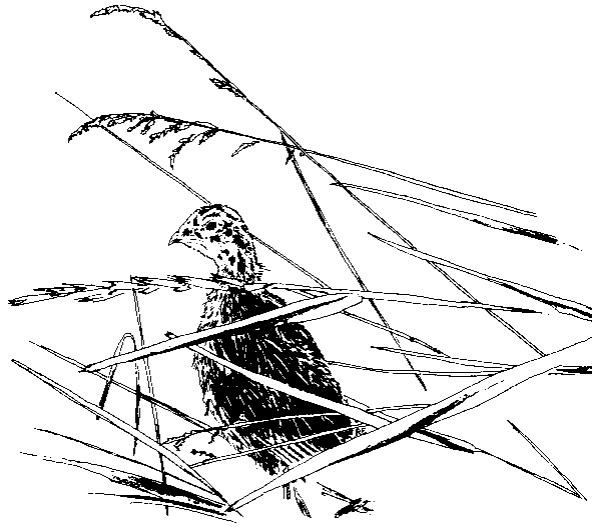
Little is known about the presettlement distribution of cottontail rabbits in Iowa. Cultivation by man no doubt favored rabbits much the same way it favored quail at the turn of the century. Cottontails prefer habitats similar to quail, favoring shrubby-grassy edge habitats. Cottontails may have up to 6 litters a year in Iowa and reproduce best during warm moderately wet springs. Numbers of cottontail rabbits observed on the August roadside survey have fluctuated with changing land use and weather conditions (Fig. 5.6). Hunter interest has declined in recent years (Fig 5.12). Cottontails have been hunted in Iowa since settlers first arrived. The cottontail season was standardized in 1978 and opens the first Saturday in September and runs 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.

White-tailed Jackrabbit

Before settlement white-tailed jackrabbits could be found everywhere in Iowa, except for a few southeastern counties. They appear in greatest abundance 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 acreage's. Because of this downward trend the bag/possession limit was reduced from 2/4 to 1/2 following the 2005-06 hunting season.

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. The jackrabbit season opens the last Saturday in October and runs through December 1st, statewide, with a bag/possession limit of 1/2 rabbits. Shooting hours are sunrise to sunset (Table 5.13). Harvests have tended to decline (Fig. 5.6) with the decline in jackrabbit numbers and declining hunter interest.



2010 Small Game Harvest Survey Results

A random survey of licensed hunters was conducted following the 2011 small game season to determine the size and distribution of Iowa's small game harvest. Survey questionnaires were mailed to 8,233 license holders. Survey participants were asked which species they hunted, how many days they hunted, and how many of each species they harvested. Survey participants returned 3,411 usable questionnaires for a response rate of 41%. Based on these returns Iowa had 203,927 licensed hunters in 2011-12 and of these 59,154 indicated they hunted small game (pheasant, quail, partridge, cottontail, or squirrels). This is a 22% decrease in small game hunters compared to the year before.

By residency, the number of resident small game hunters decreased 23%, from 66,500 in 2010 to 52,507 in 2011, while the number nonresident small game hunters fell 25% from 9,327 in 2010 to 7,079 in 2011. Pheasant were the most commonly reported species hunted by small game hunters (76%), while squirrels where the second most sought after species with 34% of small game hunters indicating they hunted squirrels.

Hunters from 43 different states visited Iowa last fall to hunt. Over 53% of Iowa's nonresident hunters came from 4 states, Minnesota, Wisconsin, Michigan, and Illinois in that order. The typical small game hunter reported hunting a little over 8 days last fall.

Ring-necked Pheasant – An estimated 45,975 pheasant hunters (23% of licensed hunters, 76% of small game hunters) took to Iowa's fields last fall and harvested 108,905 roosters (Table 5.6 and 5.9). The number of pheasant hunters declined -23%, while total harvest declined -54% compared to 2010 estimates. Roadside counts showed populations were down 40% compared to 2010, so the decline in hunters and harvest was expected.

An estimated 6,460 nonresident hunters contributed to Iowa's total estimate of pheasant hunters. Iowa's peak year for nonresident pheasant hunters was 1997 with 50,349 (Table 5.7). Resident hunter numbers declined -23% while the number of nonresident pheasant hunters declined -27%. This year estimate of 45,975 pheasant hunters (77% below the historic average) sets a new all time low for pheasant hunter numbers in Iowa(Table 5.9).

Resident hunters hunted an average of 5.6 days last fall and harvested 2 birds during the season. Nonresident pheasant hunters averaged 5.1 days afield and harvested 5 birds for the season. Hunter success (harvest/day) was highest through the first 2 weekends of the season. Approximately 36% of the total pheasant harvest occurred in the first 9 days of the 2011 season. Sixty-six percent of pheasant hunters reported hunting 5 days or less. Resident hunters accounted for 70% of the total pheasant harvest.

This year's harvest estimate is the lowest ever recorded for Iowa since standardized estimates began in 1962. The harvest estimate was -81% below the 10-year average, and -91% below the historic average harvest of 1.2 million roosters (Table 5.6). This marks the fifth time Iowa's total pheasant harvest has fallen under 500,000 roosters (2001, 08, 09, 10, 11). Five consecutive winters with statewide snowfall of 30 inches or more have decimated Iowa's pheasant numbers. Above normal rainfall in 2011 also reduced nest success. This sequence of poor weather and declining CRP habitat has Iowa's pheasant numbers at all time lows. Iowa's unprecedented string of 5 consecutive severe winters and poor springs seems to have come to an end in 2012, it appears Iowa's pheasants will see the first increase in populations since 2005.

Bobwhite Quail - Approximately 9,436 quail hunters (5% of licensed hunters, 16% of small game hunters) harvested 4,539 quail during the 2011 quail season (Table 5.6 & 5.9). Hunter numbers declined -11% and harvest declined -61% compared to 2010 estimates. This is another new all time low quail harvest for Iowa. Quail hunters averaged 6 days a field and harvested half a bird for the season.

Fifty percent of the quail harvest occurred in the first month of the 2011 season. Fifty-eight percent of quail hunters hunted 5 days or less. Resident quail hunters accounted for 81% of the total quail harvest. Roadside counts showed quail numbers had declined 36% over 2010 estimates (Table 5.3), caused by the severe winter of 2010-11 across Iowa's southern quail range, thus the decline in hunter harvest was expected (Table 5.7).

Gray Partridge, Eastern Cottontail and White-tailed Jackrabbit – Hunter trends, season dates, and harvest for these species can be found in Tables (5.6, 5.9, 5.12, and 5.13) and Figures (5.6, 5.9, 5.10, and 5.12).

Table 5.1. Mean number of pheasants counted/30-mile route on the August roadside survey regionally and statewide (1962-present). Severe winter weather preceded the August counts in 1965, 69, 75, 79, 82, 01 & 08. Abnormally wet weather occurred during 1974, 83, 84, 93, 99, 04 & 08 nes seasons. Winter sex ratio and cock harvest data are statewide estimates. Sex ratio counts were done the year succeeding the year listed.

YEAR	NORTH WEST	NORTH CENTRAL	NORTH EAST	WEST CENTRAL	CENTRAL	EAST CENTRAL	SOUTH WEST	SOUTH CENTRAL	SOUTH EAST	STATEWIDE	SEX[a] RATIO	COCK[b] HARVEST
1962	84.7	95.5	85.3	85.0	74.6	32.3	44.4		12.8	65.9		
1963		200.4	40.8		60.3		200.4		19.8	52.6	2.9	66%
1964	99.9	138.0		101.6	54.4	53.9	92.6	26.3	18.3	79.4	4.3	77%
1965	46.0	67.5	47.8	64.7	36.2	43.9	97.6	44.6	22.8	49.9	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%
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		
Statistics:												
10 Year Avg.	46.1	32.4	13.6	23.0	32.9	19.1	16.0	9.4	16.5	24.5		
Long-term Av	39.8	47.5	41.3	47.6	45.4	44.5	56.7	35.3	26.7	42.1	3.4	69%
Percent Change from:												
2011	-62.5	-54.6	-50.2	-37.1	-12.9	10.4	3.5	57.1	-28.8	-39.0		
10 Year Avg.	-75.9	-77.3	-82.7	-76.0	-69.0	-69.3	-60.8	-69.4	-71.6	-73.0		
Long-term Av	-72.1	-84.5	-94.3	-88.4	-77.5	-86.8	-89.0	-91.9	-82.4	-84.3		

[a] Hens per cock.

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

	NORTH WEST		NORTH CENTRAL		NORTH EAST		WEST CENTRAL		CENTRAL		EAST CENTRAL		SOUTH WEST		SOUTH CENTRAL		SOUTH EAST		STATEWIDE	
	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER	BROODS PER	CHICKS PER
YEAR	30 MI	BROOD	30 MI	BROOD	30 MI	BROOD	30 MI	BROOD	30 MI	BROOD	30 MI	BROOD	30 MI	BROOD	30 MI	BROOD	30 MI	BROOD	30 MI	BROOD
1962	10.1	5.1	11.5	5.7	10.1	6.3	9.6	7.7	8.0	7.5	4.2	5.4	5.5	5.8			1.0	7.3	7.7	6.3
1963	17.2		16.6		11.7	5.2	12.3		8.4	5.9	5.8		15.4	5.4	3.4		2.6	5.4	10.4	5.4
1964	12.1	5.2	17.0	6.1	22.7	7.3	13.0	5.8	7.3	5.3	6.5	6.2	12.1	6.4	3.1	8.7	1.8	6.3	9.8	6.1
1965	5.9	5.9	8.0	6.2	5.7	5.7	8.7	5.0	4.7	5.8	4.8	7.6	13.3	5.8	5.9	6.0	2.5	6.0	6.2	6.0
1966	5.5	5.6	9.2	5.9	7.7	4.5	8.1	5.9	6.2	6.4	7.7	6.3	19.0	6.3	5.1	6.2	1.8	7.4	7.2	6.0
1967	3.9	4.6	6.7	5.3	7.1	5.4	5.3	4.8	7.0	5.0	7.5	5.5	13.9	5.4	6.0	5.6	2.3	5.1	6.3	5.2
1968	5.2	5.1	6.4	6.2	6.3	6.3	7.3	5.1	7.1	5.8	8.5	5.6	16.8	5.8	5.5	5.9	2.3	6.4	6.8	5.8
1969	2.3	4.9	5.4	6.0	7.5	6.7	5.2	5.8	7.0	5.6	8.7	5.0	10.8	5.4	6.4	5.5	3.3	5.4	6.0	5.5
1970	5.4	5.9	7.0	5.7	7.7	6.1	7.4	5.7	12.3	5.9	11.7	6.2	18.0	6.4	8.8	5.9	4.6	6.4	8.8	6.0
1971	4.2	5.5	6.3	5.4	6.8	5.0	9.6	4.9	10.7	6.2	14.0	5.8	15.0	5.7	7.4	5.4	6.8	5.8	8.5	5.5
1972	5.2	5.3	5.9	5.7	8.6	5.4	8.1	5.0	9.8	5.9	11.2	6.0	15.1	6.1	7.7	5.7	3.8	4.8	8.0	5.6
1973	6.4	4.6	7.2	5.6	8.8	5.5	8.6	4.7	11.8	5.1	13.0	5.6	9.7	5.4	7.5	5.9	4.1	5.5	8.6	5.3
1974	6.7	4.6	7.3	4.8	6.9	5.5	8.5	5.0	5.4	4.7	8.3	4.4	12.1	5.4	7.8	5.0	2.2	5.2	7.0	4.9
1975	1.4	5.4	4.1	5.0	8.3	4.9	4.7	5.3	6.4	4.8	9.1	5.1	7.4	5.4	6.5	5.8	4.4	5.2	5.7	5.2
1976	2.3	5.1	6.0	5.1	9.7	5.1	6.3	5.2	8.9	4.6	11.3	5.3	9.7	5.2	7.8	5.4	3.9	4.9	7.2	5.1
1977	4.6	4.9	6.4	5.7	12.8	5.6	10.7	4.6	7.7	4.7	13.1	4.8	12.3	5.2	7.1	5.1	4.1	4.7	8.3	5.0
1978	5.9	5.2	3.5	5.4	9.1	5.4	9.9	5.0	6.9	5.4	8.8	5.5	11.1	5.5	7.4	5.5	4.0	5.8	7.1	5.4
1979	6.7	4.5	4.0	5.7	5.5	5.3	7.3	5.4	5.4	5.9	6.1	5.0	11.1	5.8	8.7	5.2	3.3	5.0	6.3	5.3
1980	8.1	4.9	9.4	5.2	12.1	5.2	16.6	4.9	11.3	5.0	9.9	4.8	13.5	4.5	11.6	5.3	5.8	5.2	10.7	5.0
1981	11.4	4.4	8.7	4.9	11.2	5.4	15.5	4.8	10.0	4.6	11.5	5.0	16.9	4.4	8.8	5.2	5.5	4.7	10.7	4.8
1982	4.4	4.3	4.1	5.3	6.2	4.9	8.9	4.7	3.6	5.6	3.0	4.5	6.9	4.3	6.8	5.4	2.9	4.2	5.0	4.9
1983	1.6	4.7	1.9	4.9	3.1	5.2	2.8	4.9	1.8	5.4	3.6	5.4	5.9	5.3	7.5	5.9	3.8	5.8	3.4	5.3
1984	1.3	5.9	1.5	5.7	2.8	5.3	3.5	5.2	2.3	5.0	3.6	5.1	3.6	4.4	5.8	5.2	4.1	4.8	3.1	5.2
1985	3.5	5.4	4.2	5.3	4.9	6.1	5.8	5.3	5.4	5.5	3.9	5.4	8.9	5.7	12.2	5.3	5.7	6.1	6.0	5.5
1986	3.9	5.9	2.9	5.0	7.1	5.5	5.6	3.8	4.1	4.7	4.9	4.4	8.1	4.9	10.3	5.3	3.8	4.9	5.4	5.0
1987	5.8	6.2	5.0	6.2	8.5	5.8	9.3	5.1	6.3	4.9	4.8	5.6	9.9	5.0	10.5	5.4	5.7	5.4	7.1	5.5
1988	5.3	5.1	5.0	5.6	5.8	6.6	9.7	5.1	4.0	6.1	3.5	5.8	7.8	4.9	8.5	4.9	4.3	5.5	5.7	5.5
1989	3.8	5.2	5.0	5.9	8.2	5.1	10.9	5.3	8.1	5.4	5.5	5.4	6.9	4.6	6.5	5.2	5.5	5.9	6.5	5.4
1990	5.2	5.0	6.9	5.4	9.6	5.4	9.8	4.5	6.6	4.9	3.9	4.7	7.3	4.9	5.8	4.4	4.1	5.2	6.4	4.9
1991	5.8	4.7	6.4	5.4	7.7	5.4	12.5	4.8	7.1	4.3	4.9	5.0	11.5	4.2	7.9	5.1	6.6	5.2	7.5	4.9
1992	4.3	4.0	7.1	5.6	4.6	4.9	6.9	4.4	6.8	4.4	5.7	5.2	5.1	4.1	4.2	3.9	5.6	4.7	5.7	4.6
1993	2.4	4.8	3.4	5.4	2.3	4.9	8.9	5.1	3.8	5.2	3.6	5.4	5.8	4.3	3.7	5.5	4.2	5.2	4.0	5.1
1994	7.5	4.6	11.2	5.5	5.7	4.5	14.2	4.5	9.4	4.8	10.0	5.4	8.9	4.1	6.8	5.4	8.7	5.4	9.1	5.0
1995	4.8	4.6	10.1	5.0	5.7	5.4	8.1	4.5	9.4	4.5	7.4	6.1	7.3	4.6	4.3	5.5	6.1	5.6	7.2	5.1
1996	9.1	4.6	9.6	5.0	4.8	4.5	7.4	4.6	8.5	4.9	8.9	5.6	5.6	4.0	3.7	3.7	4.0	4.8	7.1	4.7
1997	6.8	5.7	9.1	5.1	6.7	5.1	5.9	5.0	8.6	5.1	7.0	5.4	5.7	3.7	3.8	6.9	6.1	6.3	6.8	5.4
1998	14.1	4.2	9.6	4.7	6.7	5.4	6.1	4.7	8.3	4.6	8.8	5.2	4.3	3.2	2.7	4.3	6.3	5.1	7.7	4.6
1999	7.2	4.5	5.5	4.1	3.5	4.6	3.5	4.2	6.1	4.6	4.7	5.8	3.1	3.8	1.9	5.2	4.1	5.9	4.6	4.7
2000	11.3	4.7	5.5	4.9	2.4	4.7	4.7	5.3	8.8	4.2	5.7	5.2	4.4	4.3	3.5	3.7	3.3	5.2	5.8	4.7
2001	3.3	4.6	2.7	4.6	0.9	5.4	1.6	3.2	3.3	4.9	2.9	5.6	2.3	3.8	1.2	4.4	0.7	3.4	2.2	4.5
2002	7.4	5.1	7.8	5.0	2.4	4.7	5.3	4.8	7.9	5.0	4.5	5.9	3.5	3.4	1.8	5.5	3.6	5.5	5.2	5.1
2003	13.9	4.5	10.3	5.4	4.1	3.7	5.6	5.4	10.3	4.6	5.6	5.3	4.7	4.9	3.5	4.6	4.1	5.3	7.3	4.9
2004	9.5	4.1	6.0	4.0	2.7	4.5	4.1	3.4	6.2	4.1	3.5	5.0	4.8	3.7	3.4	4.4	4.6	4.2	5.2	4.1
2005	11.7	4.2	7.2	4.3	4.2	4.7	6.1	3.9	8.3	4.6	3.5	5.2	4.9	4.2	2.1	4.8	3.9	5.1	6.0	4.6
2006	7.7	4.8	7.1	4.1	3.4	4.0	4.7	4.0	6.6	4.3	4.0	4.1	4.1	3.9	1.4	4.5	3.1	5.1	4.8	4.3
2007	7.7	4.2	6.1	4.3	3.4	4.1	4.7	4.7	6.4	4.3	4.5	4.3	2.4	3.6	0.8	4.2	3.3	5.1	4.6	4.3
2008	8.6	4.6	4.0	4.2	1.5	3.4	2.9	4.9	2.7	4.4	1.1	5.0	0.8	3.5	0.7	4.3	0.8	3.9	2.7	4.4
2009	5.5	4.4	2.9	3.4	0.6	2.2	3.9	4.6	2.7	5.1	1.2	6.4	1.9	4.1	0.8	4.6	2.2	3.6	2.5	4.4
2010	4.9	4.0	2.7	4.5	1.0	4.0	1.8	3.8	2.1	3.9	0.8	5.0	0.9	4.8	0.5	2.5	1.2	4.2	1.9	4.0
2011	1.7	4.1	1.2	4.2	0.4	4.8	0.9	4.0	1.8	4.0	1.0	4.9	1.1	5.0	0.4	2.0	0.7	3.0	1.1	4.8
Statistics:																				
10 Year Avg.	7.9	4.4	5.5	4.4	2.4	4.0	4.0	4.4	5.5	4.4	2.9	5.1	2.9	4.1	1.5	4.1	2.8	4.5	4.1	4.5
Long-term Avg	6.4	4.9	6.6	5.2	6.3	5.1	7.4	4.9	6.8	5.1	6.3	5.3	8.3	4.8	5.4	5.1	3.9	5.2	6.3	5.1
Percent Change from:																				
2011	-64.8	2.2	-56.0	-7.0	-58.8	21.5	-51.9	6.1	-12.3	4.8	18.8	-2.6	20.0	3.4	-3.9	-19.8	-39.8	-28.3	-42.5	18.0
10 Year Avg.	-78.0	-6.0	-78.5	-2.7	-82.6	19.5	-78.5	-8.1	-66.9	-8.9	-66.0	-4.7	-63.3	21.1	-71.4	-50.8	-73.1	-32.5	-73.7	6.0
Long-term Avg	-73.0	-15.3	-81.9	-18.3	-93.5	-6.6	-88.4	-17.8	-73.3	-20.2	-84.2	-9.0	-87.2	3.6	-91.9	-60.1	-80.9	-41.9	-82.7	-6.8

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

	QUAIL PER ROUTE										JACK-
	NORTH	NORTH	NORTH	WEST		EAST	SOUTH	SOUTH	SOUTH		RABBITS
YEAR	WEST	CENTRAL	EAST	CENTRAL	CENTRAL	CENTRAL	WEST	CENTRAL	EAST	STATEWIDE	STATEWIDE
1962	0.00	0.00	0.00	2.22	0.25	0.18	0.88		2.00	0.62	0.45
1963	0.00	0.29	0.08	0.50	0.47	0.13	0.54	5.58	3.20	1.12	0.41
1964	0.00	0.00	0.29	0.64	0.50	0.60	0.83	4.69	4.47	1.39	0.53
1965	0.81	0.04	0.32	0.28	0.25	0.81	2.08	6.76	8.27	2.21	0.35
1966	0.22	0.00	0.12	0.11	0.44	3.05	2.58	6.65	7.59	2.29	0.35
1967	0.38	0.00	0.16	0.56	0.20	1.81	2.17	5.48	8.09	2.10	0.60
1968	0.00	0.00	0.28	0.17	0.65	2.68	3.46	5.81	5.55	2.06	0.28
1969	0.00	0.00	0.00	0.06	1.68	3.00	6.83	8.58	5.40	2.60	0.31
1970	0.00	0.00	0.00	0.00	0.17	1.64	10.75	10.15	7.36	2.95	0.15
1971	0.00	0.00	0.00	0.06	0.52	1.35	11.42	6.82	6.79	2.64	0.35
1972	0.00	0.00	0.00	0.26	0.25	1.13	10.27	6.84	3.80	2.26	0.30
1973	0.00	0.00	0.00	0.21	1.24	1.29	13.31	6.58	5.55	2.54	0.20
1974	0.00	0.00	0.11	0.25	0.13	1.00	8.07	6.39	5.13	2.11	0.07
1975	0.00	0.00	0.00	2.00	0.30	0.92	7.64	3.78	5.64	1.98	0.11
1976	0.00	0.00	2.00	2.21	0.16	2.04	2.40	7.39	4.68	2.19	0.11
1977	0.00	0.00	0.41	0.21	0.68	1.55	5.40	12.63	3.96	2.69	0.08
1978	0.00	0.00	1.06	1.37	0.17	0.50	2.73	8.42	3.40	1.87	0.14
1979	0.04	0.00	0.88	0.00	0.35	0.32	2.75	2.00	0.30	0.66	0.16
1980	0.36	0.00	0.00	0.68	1.39	1.00	5.27	7.88	2.61	2.05	0.15
1981	0.40	0.00	1.00	0.21	0.10	1.64	7.00	11.84	2.43	2.60	0.31
1982	0.00	0.00	0.67	0.05	0.00	0.14	0.87	2.64	2.83	0.79	0.10
1983	0.08	0.08	0.28	0.16	0.50	0.57	1.64	7.32	1.87	1.44	0.05
1984	0.00	0.00	0.22	0.80	0.03	0.00	1.13	2.40	1.57	0.66	0.08
1985	0.00	0.00	1.44	0.00	0.10	0.00	1.27	6.24	3.30	1.37	0.07
1986	0.00	0.00	0.00	0.37	0.03	0.14	1.73	8.16	2.09	1.42	0.12
1987	0.00	0.00	0.33	0.47	0.00	0.74	3.93	14.52	4.17	2.70	0.12
1988	0.00	0.00	0.44	0.94	0.00	0.00	4.87	8.46	4.13	1.96	0.17
1989	0.04	0.00	0.33	1.06	0.10	0.70	6.07	7.67	3.17	1.91	0.22
1990	0.00	0.00	1.00	0.72	0.13	1.04	2.93	6.25	2.21	1.48	0.19
1991	0.08	0.00	0.47	0.72	0.13	0.52	3.13	5.54	2.33	1.34	0.07
1992	0.12	0.00	0.22	1.50	0.07	0.96	2.43	2.83	2.71	1.07	0.14
1993	0.00	0.00	0.37	0.50	0.03	0.78	5.07	2.13	1.61	0.96	0.03
1994	0.08	0.00	0.00	0.65	0.00	0.87	9.19	3.21	3.04	1.58	0.15
1995	0.08	0.00	0.63	0.17	0.06	0.86	2.53	5.54	3.22	1.37	0.06
1996	0.08	0.00	0.21	0.28	0.09	0.71	2.73	0.88	0.65	0.51	0.09
1997	0.00	0.00	0.00	0.00	0.07	1.24	4.27	2.25	0.50	0.77	0.10
1998	0.00	0.00	0.00	0.00	0.07	1.48	1.20	2.30	1.81	0.72	0.09
1999	0.00	0.00	0.05	0.00	0.00	0.13	1.07	2.50	1.50	0.57	0.06
2000	0.00	0.00	0.00	0.20	0.47	0.17	4.40	0.83	0.41	0.57	0.03
2001	0.00	0.00	0.00	0.00	0.09	0.76	1.31	0.50	0.32	0.29	0.05
2002	0.00	0.00	0.00	0.70	0.03	0.27	1.06	0.88	0.96	0.39	0.03
2003	0.00	0.00	0.00	0.00	0.22	0.14	3.27	3.92	1.36	0.89	0.03
2004	0.00	0.00	0.50	0.05	0.19	0.55	2.19	2.64	3.19	0.93	0.03
2005	0.00	0.00	0.00	0.09	0.53	0.00	1.71	2.52	1.64	0.69	0.02
2006	0.00	0.00	0.00	0.32	0.03	0.52	1.65	2.16	3.22	0.82	0.05
2007	0.04	0.00	0.00	0.78	0.00	1.40	0.63	1.52	3.30	0.81	0.02
2008	0.00	0.00	0.00	0.13	0.00	0.00	2.00	1.04	1.26	0.45	0.00
2009	0.58	0.00	0.00	0.67	0.00	0.18	1.22	2.24	1.67	0.72	0.01
2010	0.00	0.00	0.56	0.30	0.00	0.05	0.44	0.50	1.32	0.33	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.35	0.07	1.28	0.22	0.22	0.02
Statistics:											
10 Year Avg.	0.06	0.00	0.11	0.30	0.10	0.35	1.42	1.87	1.81	0.62	0.02
Long-term Avg.	0.07	0.01	0.29	0.47	0.26	0.84	3.65	5.00	3.16	1.41	0.15
Percent Change from:											
2011			-100.0	-100.0		556.6	-84.9	156.0	-83.5	-32.3	
10 Year Avg.	-100.0		-100.0	-100.0	-100.0	0.5	-95.3	-31.6	-88.0	-64.8	-11.2
Long-term Avg.	-100.0	-100.0	-100.0	-100.0	-100.0	-58.5	-98.2	-74.4	-93.1	-84.4	-87.5

Table 5.4 Mean number of gray partridge counted/30-mile route on the August roadside survey, regionally and statewide, (1963-present).

YEAR	NORTH WEST	NORTH CENTRAL	NORTH EAST	WEST CENTRAL	CENTRAL	EAST CENTRAL	SOUTH WEST	SOUTH CENTRAL	SOUTH EAST	STATEWIDE
1962	6.27	0.82	0.00	1.00	0.08	0.00	0.00		0.00	1.13
1963	4.67	2.71	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.92
1964	4.93	2.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85
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
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
Statistics:										
10 Year Avg.	4.45	3.02	1.88	1.69	3.09	0.80	0.00	0.04	0.10	1.84
Long-term Avg.	11.59	9.22	2.91	2.92	4.27	1.12	0.09	0.13	0.18	3.95
Percent Change from:										
2011	113.3	147.3	-74.3	-71.2	-17.4	-51.8				23.7
10 Year Avg.	-44.7	38.5	-75.0	-85.9	-62.6	-23.5		-100.0	-100.0	-37.3
Long-term Avg.	-78.8	-54.6	-83.8	-91.8	-72.9	-45.8	-100.0	-100.0	-100.0	-70.8

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

YEAR	NORTH WEST	NORTH CENTRAL	NORTH EAST	WEST CENTRAL	CENTRAL	EAST CENTRAL	SOUTH WEST	SOUTH CENTRAL	SOUTH EAST	STATEWIDE
1962	3.6	1.5	4.3	10.1	5.3	6.2	6.0		5.6	5.2
1963	8.9	4.8	4.2	10.8	5.0	6.9	8.0	9.9	12.7	7.9
1964	2.3	2.3	1.7	11.1	6.6	3.1	10.2	19.4	13.7	7.9
1965	3.1	3.0	3.7	7.9	2.8	4.0	16.2	24.3	11.2	8.1
1966	2.0	3.2	6.5	9.7	5.9	5.0	30.2	31.7	9.5	10.3
1967	2.8	2.4	4.4	6.9	6.1	4.0	18.8	16.3	10.9	7.5
1968	1.9	3.3	4.0	6.9	5.3	5.7	17.7	17.5	8.5	7.4
1969	2.0	2.2	5.0	3.4	2.5	5.6	16.6	18.0	6.8	6.3
1970	1.4	2.0	4.3	2.7	1.7	3.6	12.5	11.3	4.7	4.4
1971	1.9	1.4	3.9	3.7	2.8	4.2	14.8	16.5	5.6	5.4
1972	2.8	1.7	2.7	3.9	2.3	6.4	11.7	14.8	4.7	5.5
1973	2.2	2.6	3.7	3.9	4.2	6.0	13.8	14.3	6.1	5.8
1974	2.1	1.9	4.4	3.6	2.0	3.9	5.8	8.4	6.0	4.1
1975	1.3	1.2	2.5	2.6	1.4	3.6	5.1	7.0	5.2	3.2
1976	1.3	1.6	5.9	7.3	4.2	5.5	9.3	16.4	8.9	6.4
1977	1.4	1.2	4.0	2.2	1.9	5.1	7.9	11.7	5.4	4.3
1978	3.8	2.0	6.9	4.7	3.7	5.5	12.7	14.0	5.2	6.2
1979	3.2	1.7	3.3	4.1	2.7	2.3	5.6	8.2	2.5	3.6
1980	2.3	3.0	2.1	4.2	4.2	1.8	5.5	9.8	4.9	4.2
1981	3.4	4.6	6.4	5.2	3.2	7.4	11.1	21.1	9.0	7.8
1982	2.4	2.3	2.7	4.4	2.5	4.9	7.7	19.5	11.7	6.4
1983	3.1	2.5	6.4	4.2	3.1	5.0	7.2	17.6	12.7	6.8
1984	2.0	1.4	3.0	4.2	2.6	4.0	3.5	14.7	14.0	5.6
1985	3.2	2.7	3.9	3.8	4.4	5.5	7.1	22.9	12.0	7.4
1986	3.0	2.6	4.6	4.3	3.8	3.8	9.7	25.2	12.7	7.7
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
Statistics:										
10 Year Avg.	3.1	2.4	4.1	4.5	4.2	4.9	7.3	12.6	7.8	5.6
Long-term Avg.	2.7	2.5	4.2	5.0	3.7	5.0	9.2	15.4	8.4	6.0
Percent Change from:										
2011	-63.2	19.2	-2.2	-7.8	51.6	-27.1	-56.4	-15.8	-69.4	-29.7
10 Year Avg.	-65.4	-59.2	-31.5	-43.9	-43.2	-60.0	-74.6	-66.1	-78.3	-61.3
Long-term Avg.	-60.8	-60.9	-33.0	-49.3	-36.2	-60.7	-79.8	-72.3	-79.7	-64.4

Table 5.6 Small game harvest estimates from the Iowa small-game survey (1963-present). Resident and NR hunter harvests combined.

YEAR	PHEASANT	QUAIL	COTTONTAIL	JACKRABBIT	SQUIRREL	HUNS	RUFFED GROUSE
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	2,110
1970	1,788,500	1,178,685	1,725,535	71,705	1,115,410	28,300	4,085
1971	1,817,000	1,037,957	1,305,083	41,468	1,172,742	31,100	3,880
1972	1,396,900	657,300	1,148,100	31,200	1,048,000	16,800	8,500
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	24,400
1977	1,357,862	849,183	1,322,263	19,975	1,283,043	48,991	17,022
1978	1,428,708	660,625	856,999	26,077	815,562	108,473	9,166
1979	1,200,709	312,410	461,285	13,713	696,363	55,414	7,717
1980	1,429,617	524,450	588,363	7,932	844,999	70,764	17,305
1981	1,447,969	563,569	1,134,781	22,860	949,681	69,698	23,940
1982	972,556	302,648	712,227	5,237	759,438	52,782	9,279
1983	1,047,027	270,690	720,012	8,845	669,490	91,035	5,894
1984	724,192	190,708	636,209	6,376	529,316	33,306	13,308
1985	852,716	189,236	717,631	2,108	673,665	62,931	8,336
1986	855,894	339,000	472,585	6,082	506,769	60,018	12,701
1987	1,412,082	397,633	690,091	8,830	532,001	109,061	5,254
1988	1,139,599	289,592	424,561	3,907	510,065	104,094	13,039
1989	1,441,990	426,302	435,791	3,025	583,183	118,282	13,335
1990	1,407,002	321,493	608,805	4,463	466,140	147,922	9,338
1991	1,138,463	231,818	437,144	3,171	407,172	45,541	5,764
1992	925,123	179,825	311,607	2,113	328,644	37,328	3,794
1993	1,226,010	201,461	334,667	3,212	439,477	24,577	1,606
1994	1,245,580	178,589	288,982	262	395,232	22,331	2,189
1995	1,443,010	220,999	335,862	6,280	377,714	6,677	2,630
1996	1,367,060	81,039	331,047	2,666	302,908	36,358	3,011
1997	1,340,050	181,025	340,661	5,063	265,874	38,045	3,402
1998	1,237,980	100,594	255,149	10,008	319,081	25,613	0
1999[a]	899,174	110,128	237,409	8,777	242,224	20,200	1,373
2000[b]	1,001,867	140,828	350,739	1,626	217,116	19,258	489
2001	470,116	32,226	196,483	3,840	248,833	5,814	903
2002	729,460	63,872	167,284	1,637	152,825	5,130	265
2003	1,080,466	114,067	243,699	738	202,729	8,204	1,083
2004	756,184	68,256	259,327	151	233,530	12,535	152
2005	806,601	40,675	210,591	671	132,195	14,674	5,424
2006	748,025	75,276	155,892	999	165,255	10,724	9,160
2007	631,638	54,444	131,250	1,262	169,478	4,885	3,809
2008[c]	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	
Statistics:							
10 Year Avg.	575,370	45,828	154,386	680	157,442	6,432	
Long-term Avg.	1,158,995	379,890	752,935	22,127	641,984	37,017	
Percent Change from:							
2011	-54.3	-60.9	-30.0		-9.0	-1.0	
10 Year Avg.	-81.1	-90.1	-66.4		-30.9	-83.7	
Long-term Avg.	-90.6	-98.8	-93.1		-83.1	-97.2	

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

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

[c] Ruffed grouse dropped from small game survey and estimated with it's own survey beginning in 2008.

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

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

	Pheasant				Quail			
	Resident		Non Resident		Resident		Non Resident	
YEAR	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest
1987	178,203	1,129,395	33,915	251,613	70,026	181,378	13,727	64,760
1988	170,323	902,226	33,682	237,373	59,230	212,646	13,792	76,946
1989	173,017	1,122,951	38,569	319,039	69,591	381,321	10,380	44,981
1990	171,016	1,047,529	39,829	359,473	61,219	269,896	11,667	51,597
1991	161,741	852,158	40,578	286,305	49,713	184,195	11,271	47,623
1992	139,681	677,670	36,749	247,453	47,641	155,919	8,646	23,906
1993	138,619	999,149	27,642	226,857	43,027	175,793	6,318	25,667
1994	147,841	876,365	41,824	369,216	41,504	156,413	8,754	22,176
1995	155,308	1,118,638	44,995	324,368	39,653	193,544	11,185	27,454
1996	155,889	1,059,385	49,704	307,675	33,996	62,438	10,978	18,601
1997[a]	154,855	1,037,620	50,349	302,432	24,927	134,418	10,546	46,607
1998	141,838	936,181	42,748	301,797	26,393	83,067	5,985	17,527
1999[b]	142,521	684,596	39,152	214,578	32,306	86,058	8,811	24,070
2000	134,873	781,143	32,648	220,724	33,114	114,110	6,843	26,718
2001[c]	99,125	352,469	23,781	117,620	20,459	24,812	4,132	7,414
2002	97,842	548,413	29,757	181,047	16,194	43,492	4,693	20,380
2003	108,819	849,898	33,414	230,568	19,937	99,971	4,958	14,096
2004	99,753	586,632	31,009	169,552	17,139	57,486	5,197	10,770
2005	107,255	641,957	28,937	164,644	15,277	33,714	3,301	6,961
2006	91,642	558,369	27,038	189,656	17,787	49,783	4,769	25,493
2007	85,803	481,754	23,426	149,884	14,227	42,799	4,007	11,645
2008[d]	69,640	299,875	16,231	83,208	12,114	10,716	1,791	2,675
2009	60,708	217,816	13,309	53,310	8,237	11,098	1,942	1,038
2010	51,258	197,266	8,800	40,942	9,150	9,572	1,454	2,048
2011	39,515	75,897	6,460	33,008	8,574	3,664	862	875
Statistics:								
10 Year Avg.	81,224	445,788	21,838	129,582	13,864	36,230	3,297	9,598
Long-term Avg.	123,083	721,414	31,782	215,294	31,657	111,132	7,040	24,881
Percent Change from:								
2011	-22.9	-61.5	-26.6	-19.4	-6.3	-61.7	-40.7	-57.3
10 Year Avg.	-51.4	-83.0	-70.4	-74.5	-38.2	-89.9	-73.9	-90.9
Long-term Avg.	-67.9	-89.5	-79.7	-84.7	-72.9	-96.7	-87.8	-96.5

[a] Iowa lost 800,000 acres of whole field enrollment CRP.

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

[c] Fourth worst winter in Iowa records for total snowfall.

[d] Tenth snowiest winter and wettest Jan-June in state history.

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

	RESIDENT					NON-RESIDENT					
	FURHARVESTER			RESIDENT	LIFETIME	HUNTING		TOTAL	HABITAT	IA DUCK	HUNT
YEAR[a]	over 16[b]	under 16	TOTAL[c]	HUNT[d]	over 65	over 18	under 18	LICENSE[e]	STAMP[f]	STAMP[g]	PRESERVE[h]
1942				226,046				447			
1943				193,270				612			
1944				211,657				1,163			
1945				245,609				998			
1946				326,128				1,646			
1947				273,242				632			
1948				332,019				1,727			
1949				349,734				2,256			
1950				338,111				2,393			
1951				329,320				2,371			
1952				340,935				2,391			
1953				343,982				3,115			
1954				346,435				3,203			
1955				369,493				3,936			
1956				364,985				4,544			
1957				339,389				4,422			
1958				355,658				5,521			
1959				320,246				4,535			
1960				313,851				5,352			
1961				301,809				5,448			
1962				288,087				5,470			
1963				307,475				7,531			
1964				301,964				8,370			
1965				275,640				6,505			
1966				292,745				9,638			
1967				295,276				11,244			
1968				309,424				12,223			
1969				303,602				17,326			
1970				322,509				21,898			
1971				328,542				30,264			
1972				277,317				28,559		70,446	
1973				291,755				34,497		67,323	
1974				318,930				42,224		70,797	
1975				302,436				36,382		70,814	
1976				306,489				41,849		66,120	
1977				296,940				39,032		69,023	
1978				295,696				32,848		67,041	
1979	17,602	4,813	22,415	257,676				27,302	279,621	52,865	768
1980	19,366	5,529	24,895	266,655				30,793	296,667	50,202	822
1981	19,116	4,990	24,106	266,053				31,379	297,297	45,751	742
1982	17,505	4,248	21,753	245,969				24,002	269,290	44,391	751
1983	14,964	3,699	18,663	237,851				23,206	261,340	42,981	766
1984	14,537	3,329	17,866	221,519				21,927	243,154	44,445	696
1985	25,156	3,519	28,675	208,444				22,977	233,779	37,681	729
1986	23,709	3,064	26,773	205,356				27,254	236,219	40,157	882
1987	28,923	3,338	32,261	220,674				35,676	259,350	43,357	1,112
1988	24,105	2,380	26,485	218,588				35,023	257,702	34,799	1,696
1989	18,411	1,530	19,941	226,124				40,197	271,342	32,920	1,499
1990	13,853	973	14,826	219,636				41,500	263,530	31,468	1,786

Table 5.8 Continued.

	RESIDENT					NON-RESIDENT					
	FURHARVESTER			RESIDENT	LIFETIME	HUNTING		TOTAL	HABITAT	IA DUCK	HUNT
YEAR[a]	over 16[b]	under 16	TOTAL[c]	HUNT[d]	over 65	over 18	under 18	LICENSE[e]	STAMP[f]	STAMP[g]	PRESERVE[h]
1991	14,208	719	14,927	217,200				45,792	266,845	32,537	1,454
1992	14,272	793	15,065	203,508				39,211	247,673	34,304	1,810
1993	14,672	829	15,501	197,966				29,231	232,298	31,741	2,137
1994	15,811	952	16,763	211,289				45,610	260,815	33,232	1,870
1995	15,343	903	16,246	210,727				48,028	263,531	34,903	2,467
1996	17,237	1,021	18,258	209,663				53,058	265,653	43,060	2,317
1997	18,330	1,066	19,396	211,530				52,730	269,443	38,275	2,516
1998	18,325	1,078	19,403	208,790				50,511	266,519	40,349	3,107
1999*	***15,804***	***1,004***	***16,808***	***206,210***	***2,885***	***42,379***	***2,086***	***44,465***	***253,943***	***42,588***	***2,772***
2000	12,793	1,936	14,729	200,995	1,642	39,067	1,901	40,968	245,351	40,913	2,898
2001	14,665	658	15,323	194,051	1,515	26,748	1,090	27,838	237,407	40,378	2,963
2002	14,235	644	14,879	189,138	2,339	36,728	1,532	38,260	229,829	37,574	3,282
2003	13,753	651	14,404	193,279	1,772	43,145	1,951	45,096	240,527	35,746	3,173
2004	13,906	701	14,607	190,154	1,786	41,159	1,847	43,006	235,336	34,611	3,254
2005	12,711	665	13,376	189,813	1,886	40,159	1,801	41,960	233,416	31,666	3,165
2006	13,796	746	14,542	188,628	1,973	39,038	1,815	40,853	231,284	31,982	3,370
2007	14,445	834	15,279	184,257	1,970	35,267	1,604	36,871	222,559	31,992	3,010
2008	14,673	850	15,523	177,723	2,074	28,427	1,167	29,594	208,461	30,560	2,665
2009	13,376	722	14,098	172,230	2,257	24,352	1,026	25,378	198,880	29,644	2,562
2010	14,162	871	15,033	164,380	2,016	19,992	773	20,765	185,598	28,263	2,254
2011	15,908	1,020	16,928	160,256	2,109	23,657	714	24,371	185,559	27,930	2,460
Statistics:											
10 Year Avg.	14,097	770	14,867	180,986	2,018	33,192	1,423	34,615	217,145	31,997	2,920
Long-term Avg.	16,657	1,820	18,477	260,187	2,017	33,855	1,485	23,249	246,976	42,871	2,053
Percent Change from:											
2011	12.3	17.1	12.6	-2.5	4.6	18.3	-7.6	17.4	0.0	-1.2	9.1
10 Year Avg.	12.9	32.4	13.9	-11.5	4.5	-28.7	-49.8	-29.6	-14.5	-12.7	-15.7
Long-term Avg.	-4.5	-44.0	-8.4	-38.4	4.5	-30.1	-51.9	4.8	-24.9	-34.9	19.8

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

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

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

[d] Total resident licenses is sum of resident hunt, combination, and fur/fish/game, until ELSI system implementation in 1999.

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

[fgh] Numbers represent combined resident and non-resident sales.

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

YEAR	PHEASANT	QUAIL	COTTONTAIL	JACK RABBIT	SQUIRREL	HUNS	RUFFED GROUSE
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		1,540
1970	283,400	87,665	167,190	26,460	136,150		2,660
1971	301,150	80,250	134,470	16,326	118,059		1,663
1972	230,000	63,900	137,000	12,800	105,000	6,400	3,000
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	8,198
1977	279,689	103,776	170,074	11,302	141,596	17,691	5,668
1978	270,413	101,916	142,809	14,268	120,503	34,329	8,306
1979	241,972	73,461	114,642	10,029	111,434	23,465	4,931
1980	252,440	86,816	119,901	8,526	111,425	27,554	9,281
1981	254,803	97,430	150,881	11,106	117,942	28,731	7,059
1982	214,263	68,479	118,994	4,862	105,262	21,532	8,317
1983	203,014	63,060	118,535	7,331	98,553	25,366	5,701
1984	176,312	58,630	102,993	5,543	86,380	21,179	7,573
1985	175,225	54,427	107,500	6,568	88,849	25,956	5,949
1986	184,759	63,985	92,727	5,193	84,082	30,822	6,874
1987	212,118	83,754	103,199	7,298	77,819	40,878	6,053
1988	204,659	74,584	84,529	4,376	74,783	44,154	8,353
1989	211,586	79,971	89,054	5,634	80,937	48,785	9,611
1990	210,845	72,886	87,437	4,679	70,539	49,220	7,095
1991	202,319	62,684	83,200	4,001	63,601	25,165	4,884
1992	176,430	56,287	66,967	5,802	60,443	22,949	4,378
1993	166,260	49,345	65,704	1,547	62,175	14,920	2,197
1994	189,664	50,258	68,840	1,239	57,381	18,294	2,521
1995	200,302	50,839	68,499	4,361	57,495	15,954	3,940
1996	205,592	44,974	75,870	2,623	56,382	21,914	2,525
1997	205,203	35,473	51,785	2,872	43,632	12,330	2,031
1998	184,585	32,378	54,588	1,604	53,859	13,502	152
1999[a]	181,673	41,117	50,254	2,456	46,994	11,390	1,481
2000	167,521	39,957	46,311	1,572	35,395	6,043	960
2001	122,906	24,591	36,125	2,933	36,760	5,757	3,227
2002	127,599	20,887	27,945	1,692	25,482	4,417	1,060
2003	142,233	24,895	31,600	326	27,863	4,054	930
2004	130,583	22,336	32,195	600	29,302	4,537	273
2005	136,192	18,578	40,225	1,870	25,943	7,147	3,074
2006	118,680	22,556	34,292	1,989	27,746	5,553	3,046
2007	109,229	18,234	31,106	1,502	23,160	3,819	1,489
2008[b]	85,871	13,095	27,191	1,405	22,857	2,996	416
2009	74,017	10,179	25,840	1,894	24,586	3,705	369
2010	60,058	10,604	22,005	541	23,440	1,229	205
2011	45,975	9,436	17,197	Closed	20,420	1,782	
Statistics:							
10 Year Avg.	103,044	17,080	28,960	1,313	25,080	3,924	1,207
Long-term Avg.	203,843	57,693	98,803	9,005	82,304	18,367	4,025
Percent Change from:							
2011	-23.4	-11.0	-21.8		-12.9	45.0	-100.0
10 Year Avg.	-55.4	-44.8	-40.6		-18.6	-54.6	-100.0
Long-term Avg.	-77.4	-83.6	-82.6		-75.2	-90.3	-100.0

[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] Ruffed grouse dropped from small game survey and estimated with it's own survey.

* Nomsen R.C. 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	SHOOTING HOURS	LIMIT - BAG/POSS REGULAR	LIMIT - BAG/POSS YOUTH	# COUNTIES OPEN
1946	28 OCT-17 NOV	21	1000-1600	3/6		59
1947	11 NOV-20 NOV	10	1200-1600	2/2		64
1948	11 NOV-30 NOV	20	1200-1600	2/4		68
	11 NOV- 5 DEC	25	1200-1630	2/4		68
1949	11 NOV-17 NOV	7	1200-1630	2/4		11
1950	11 NOV- 5 DEC	25	1200-1630	3/3		70
	11 NOV-20 NOV	10	1200-1630	3/3		13
1951	11 NOV- 5 DEC	25	1200-1630	3/3		65
	11 NOV-22 NOV	12	1200-1630	3/3		27
1952	18 NOV-12 DEC	25	1200-1630	3/3		65
	18 NOV-29 NOV	12	1200-1630	3/3		27
1953	11 NOV- 5 DEC	25	1200-1630	3/3		69
	11 NOV-22 NOV	12	1200-1630	3/3		23
1954	11 NOV- 5 DEC	25	1200-1630	3/3		70
	11 NOV-22 NOV	12	1200-1630	3/3		22
1955	12 NOV- 5 DEC	24	1200-1630	3/3		70
	12 NOV-24 NOV	13	1200-1630	3/3		22
1956	10 NOV- 3 DEC	24	1200-1630	3/3		70
	10 NOV-22 NOV	13	1200-1630	3/3		22
1957	9 NOV- 2 DEC	24	1200-1630	3/3		70
	9 NOV-21 NOV	13	1200-1630	3/3		22
1958	8 NOV- 1 DEC	24	1000-1630	3/6		70
	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

Table 5.10 Continued.

YEAR	DATES REGULAR / YOUTH	SEASON LENGTH	SHOOTING HOURS	LIMIT - BAG/POSS REGULAR	LIMIT - BAG/POSS YOUTH	# COUNTIES OPEN
1983-84	5 NOV- 1 JAN	58	0800-1630	3/6		STATEWIDE
1984-85	3 NOV- 1 JAN	60	0800-1630	3/6		STATEWIDE
1985-86	2 NOV- 5 JAN	65	0800-1630	3/9		STATEWIDE
1986-87	1 NOV- 4 JAN	65	0800-1630	3/9		STATEWIDE
1987-88	31 OCT- 3 JAN	65	0800-1630	3/12		STATEWIDE
1988-89	29 OCT- 8 JAN	72	0800-1630	3/12		STATEWIDE
1989-90	28 OCT-10 JAN	75	0800-1630	3/12		STATEWIDE
1990-91	27 OCT-10 JAN	76	0800-1630	3/12		STATEWIDE
1991-92	26 OCT-10 JAN	77	0800-1630	3/12		STATEWIDE
1992-93	31 OCT-10 JAN	72	0800-1630	3/12		STATEWIDE
1993-94	30 OCT-10 JAN	72	0800-1630	3/12		STATEWIDE
1994-95	29 OCT-10 JAN	74	0800-1630	3/12		STATEWIDE
1995-96	28 OCT-10 JAN	75	0800-1630	3/12		STATEWIDE
1996-97	26 OCT-10 JAN	77	0800-1630	3/12		STATEWIDE
1997-98[1]	26 OCT-10 JAN / 18-19 OCT	78/2	0800-1630	3/12	1/2	STATEWIDE
1998-99	31 OCT-10 JAN / 23-24 OCT	72/2	0800-1630	3/12	1/2	STATEWIDE
1999-00	30 OCT-10 JAN / 22-23 OCT	73/2	0800-1630	3/12	1/2	STATEWIDE
2000-01	28 OCT-10 JAN / 21-22 OCT	75/2	0800-1630	3/12	1/2	STATEWIDE
2001-02	27 OCT-10 JAN / 20-21 OCT	76/2	0800-1630	3/12	1/2	STATEWIDE
2002-03	26 OCT-10 JAN / 19-20 OCT	77/2	0800-1630	3/12	1/2	STATEWIDE
2003-04	25 OCT-10 JAN / 18-19 OCT	78/2	0800-1630	3/12	1/2	STATEWIDE
2004-05	30 OCT-10 JAN / 23-24 OCT	73/2	0800-1630	3/12	1/2	STATEWIDE
2005-06	29 OCT-10 JAN / 22-23 OCT	74/2	0800-1630	3/12	1/2	STATEWIDE
2006-07	28 OCT-10 JAN / 21-22 OCT	75/2	0800-1630	3/12	1/2	STATEWIDE
2007-08	27 OCT-10 JAN / 21-22 OCT	76/2	0800-1630	3/12	1/2	STATEWIDE
2008-09	25 OCT-10 JAN / 18-19 OCT	78/2	0800-1630	3/12	1/2	STATEWIDE
2009-10	31 OCT-10 JAN / 24-25 OCT	72/2	0800-1630	3/12	1/2	STATEWIDE
2010-11	30 OCT-10 JAN / 23-24 OCT	73/2	0800-1630	3/12	1/2	STATEWIDE
2011-12	29 OCT-10 JAN / 22-23 OCT	74/3	0800-1630	3/12	1/2	STATEWIDE

[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	STATEWIDE
1965-66	6 NOV-31 JAN	86	0830-1600	8/16	STATEWIDE
1966-67	22 OCT-31 JAN	102	0800-1630	8/16	STATEWIDE
1967-68	21 OCT-28 JAN	103	0800-1630	8/16	STATEWIDE
1968-69	26 OCT-31 JAN	98	0800-1630	8/16	STATEWIDE
1969-70	25 OCT-31 JAN	99	0800-1630	8/16	STATEWIDE
1970-71	24 OCT-31 JAN	100	0800-1630	8/16	STATEWIDE
1971-72	23 OCT-31 JAN	101	0800-1630	8/16	STATEWIDE
1972-73	28 OCT-31 JAN	96	0800-1630	8/16	STATEWIDE
1973-74	27 OCT-31 JAN	97	0800-1630	8/16	STATEWIDE
1974-75	26 OCT-31 JAN	98	SUNRISE-SUNSET	8/16	STATEWIDE
1975-76	25 OCT-31 JAN	99	0800-1630	8/16	STATEWIDE
1976-77	6 NOV-31 JAN	86	0800-1630	8/16	STATEWIDE
1977-78	5 NOV-31 JAN	87	0800-1630	8/16	STATEWIDE
1978-79	4 NOV-31 JAN	88	0800-1630	8/16	STATEWIDE
1979-80	3 NOV- 6 JAN	64	0800-1630	6/12	STATEWIDE
1980-81	1 NOV-31 JAN	92	0800-1630	8/16	STATEWIDE
1981-82	7 NOV-31 JAN	86	0800-1630	8/16	STATEWIDE
1982-83	6 NOV-31 JAN	87	0800-1630	8/16	STATEWIDE
1983-84	5 NOV-31 JAN	88	0800-1630	8/16	STATEWIDE
1984-85	3 NOV-31 JAN	90	0800-1630	8/16	STATEWIDE
1985-86	2 NOV-31 JAN	91	0800-1630	8/16	STATEWIDE
1986-87	1 NOV-31 JAN	92	0800-1630	8/16	STATEWIDE
1987-88	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1988-89	29 OCT-31 JAN	95	0800-1630	8/16	STATEWIDE
1989-90	28 OCT-31 JAN	96	0800-1630	8/16	STATEWIDE
1990-91	27 OCT-31 JAN	97	0800-1630	8/16	STATEWIDE
1991-92	26 OCT-31 JAN	98	0800-1630	8/16	STATEWIDE
1992-93	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1993-94	30 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1994-95	29 OCT-31 JAN	95	0800-1630	8/16	STATEWIDE
1995-96	28 OCT-31 JAN	96	0800-1630	8/16	STATEWIDE
1996-97	26 OCT-31 JAN	98	0800-1630	8/16	STATEWIDE
1997-98	25 OCT-31 JAN	99	0800-1630	8/16	STATEWIDE
1998-99	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1999-00	30 OCT-31 JAN	94	0800-1630	8/16	STATEWIDE
2000-01	28 OCT-31 JAN	96	0800-1630	8/16	STATEWIDE
2001-02	27 OCT-31 JAN	97	0800-1630	8/16	STATEWIDE
2002-03	26 OCT-31 JAN	98	0800-1630	8/16	STATEWIDE
2003-04	25 OCT-31 JAN	99	0800-1630	8/16	STATEWIDE
2004-05	30 OCT-31 JAN	94	0800-1630	8/16	STATEWIDE
2005-06	29 OCT-31 JAN	95	0800-1630	8/16	STATEWIDE
2006-07	28 OCT-31 JAN	96	0800-1630	8/16	STATEWIDE
2007-08	27 OCT-31 JAN	97	0800-1630	8/16	STATEWIDE
2008-09	25 OCT-31 JAN	99	0800-1630	8/16	STATEWIDE
2009-10	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
2010-11	30 OCT-31 JAN	94	0800-1630	8/16	STATEWIDE
2011-12	29 OCT-31 JAN	95	0800-1630	8/16	STATEWIDE

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	0800-1630	4/8	N. US 30
1977-78	5 NOV- 1 JAN	58	0800-1630	6/12	N. US 30
1978-79	4 NOV- 1 JAN	60	0800-1630	6/12	N. US 30
1979-80	3 NOV- 6 JAN	65	0800-1630	6/12	N. US 30
1980-81	1 NOV-31 JAN	92	0800-1630	6/12	N. I-80
1981-82	7 NOV-31 JAN	86	0800-1630	6/12	N. I-80
1982-83	6 NOV-31 JAN	87	0800-1630	6/12	N. I-80
1983-84	5 NOV-31 JAN	88	0800-1630	6/12	N. I-80
1984-85	3 NOV-31 JAN	90	0800-1630	6/12	N. I-80
1985-86	2 NOV-31 JAN	91	0800-1630	6/12	N. I-80
1986-87	1 NOV-31 JAN	92	0800-1630	6/12	STATEWIDE
1987-88	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1988-89	29 OCT-31 JAN	94	0800-1630	8/16	STATEWIDE
1989-90	7 OCT-31 JAN	117	0800-1630	8/16	STATEWIDE
1990-91	6 OCT-31 JAN	118	0800-1630	8/16	STATEWIDE
1991-92	5 OCT-31 JAN	119	0800-1630	8/16	STATEWIDE
1992-93	10 OCT-31 JAN	114	0800-1630	8/16	STATEWIDE
1993-94	9 OCT-31 JAN	115	0800-1630	8/16	STATEWIDE
1994-95	8 OCT-31 JAN	116	0800-1630	8/16	STATEWIDE
1995-96	14 OCT-31 JAN	109	0800-1630	8/16	STATEWIDE
1996-97	12 OCT-31 JAN	112	0800-1630	8/16	STATEWIDE
1997-98	11 OCT-31 JAN	113	0800-1630	8/16	STATEWIDE
1998-99	10 OCT-31 JAN	114	0800-1630	8/16	STATEWIDE
1999-00	9 OCT-31 JAN	115	0800-1630	8/16	STATEWIDE
2000-01	14 OCT-31 JAN	110	0800-1630	8/16	STATEWIDE
2001-02	13 OCT-31 JAN	111	0800-1630	8/16	STATEWIDE
2002-03	12 OCT-31 JAN	112	0800-1630	8/16	STATEWIDE
2003-04	11 OCT-31 JAN	113	0800-1630	8/16	STATEWIDE
2004-05	9 OCT-31 JAN	115	0800-1630	8/16	STATEWIDE
2005-06	8 OCT-31 JAN	116	0800-1630	8/16	STATEWIDE
2006-07	7 OCT-31 JAN	117	0800-1630	8/16	STATEWIDE
2007-08	13 OCT-31 JAN	111	0800-1630	8/16	STATEWIDE
2008-09	11 OCT-31 JAN	113	0800-1630	8/16	STATEWIDE
2009-10	10 OCT-31 JAN	114	0800-1630	8/16	STATEWIDE
2010-11	9 OCT-31 JAN	115	0800-1630	8/16	STATEWIDE
2011-12	8 OCT-31 JAN	116	0800-1630	8/16	STATEWIDE

Table 5.13 Iowa's cottontail and jackrabbit seasons.

YEAR	DATES COTTONTAILS / JACKRABBITS	SEASON LENGTH	SHOOTING HOURS	LIMIT - BAG/POSS COTTONTAILS	JACKRABBITS	AREA OPEN
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		STATEWIDE
1965-66	12 SEP-21 FEB	163	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1966-67	10 SEP-19 FEB	163	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1967-68	15 SEP-17 FEB	163	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1968-69	14 SEP-16 FEB	163	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1969-70	13 SEP-15 FEB	163	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1970-71	12 SEP-28 FEB	170	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1971-72	11 SEP-29 FEB	171	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1972-73	9 SEP-28 FEB	173	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1973-74	8 SEP-28 FEB	174	0600-1800	AGGREGATE - 10/NONE		STATEWIDE
1974-75	7 SEP-28 FEB	175	SUNRISE-SUNSET	AGGREGATE - 10/NONE		STATEWIDE
1975-76	6 SEP-28 FEB	176	SUNRISE-SUNSET	AGGREGATE - 10/NONE		STATEWIDE
1976-77	11 SEP-28 FEB	171	SUNRISE-SUNSET	AGGREGATE - 10/NONE		STATEWIDE
1977-78	3 SEP-28 FEB	179	SUNRISE-SUNSET	AGGREGATE - 10/NONE		STATEWIDE
1978-79	2 SEP-28 FEB/4 NOV-7 JAN	180/65	SUNRISE-SUNSET	10/NONE	3/6	STATEWIDE
1979-80	1 SEP-29 FEB/3 NOV-6 JAN	182/65	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1980-81	6 SEP-28 FEB/1 NOV-4 JAN	176/65	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1981-82	5 SEP-28 FEB/7 NOV-3 JAN	177/58	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1982-83	4 SEP-28 FEB/6 NOV-2 JAN	178/58	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1983-84	3 SEP-29 FEB/5 NOV-18 DEC	180/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1984-85	1 SEP-28 FEB/3 NOV-16 DEC	181/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1985-86	31 AUG-28 FEB/2 NOV-15 DEC	182/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1986-87	30 AUG-28 FEB/1 NOV-14 DEC	183/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1987-88	5 SEP-29 FEB/31 OCT-13 DEC	178/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1988-89	3 SEP-28 FEB/28 OCT-10 DEC	179/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1989-90	2 SEP-28 FEB/29 OCT-11 DEC	180/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1990-91	1 SEP-28 FEB/27 OCT-9 DEC	181/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1991-92	31 AUG-29 FEB/26 OCT-8 DEC	183/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1992-93	5 SEP-28 FEB/31 OCT-6 DEC	177/37	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1993-94	4 SEP-28 FEB/30 OCT-5 DEC	176/37	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1994-95	3 SEP-28 FEB/29 OCT-4 DEC	177/37	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1995-96	2 SEP-28 FEB/28 OCT-1 DEC	178/35	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1996-97	7 SEP-28 FEB/26 OCT-1 DEC	174/37	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1997-98	1 SEP-28 FEB/25 OCT-1 DEC	181/38	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1998-99	1 SEP-28 FEB/31 OCT-1 DEC	181/32	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1999-00	1 SEP-28 FEB/30 OCT-1 DEC	181/33	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2000-01	1 SEP-28 FEB/28 OCT-1 DEC	181/35	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2001-02	1 SEP-28 FEB/27 OCT-1 DEC	181/36	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2002-03	1 SEP-28 FEB/26 OCT-1 DEC	181/37	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2003-04	1 SEP-28 FEB/25 OCT-1 DEC	181/38	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2004-05	1 SEP-28 FEB/30 OCT-1 DEC	181/33	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2005-06	1 SEP-28 FEB/29 OCT-1 DEC	181/34	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2006-07	1 SEP-28 FEB/28 OCT-1 DEC	181/35	SUNRISE-SUNSET	10/20	1/2	STATEWIDE
2007-08	1 SEP-28 FEB/27 OCT-1 DEC	181/36	SUNRISE-SUNSET	10/20	1/2	STATEWIDE
2008-09[a]	30 AUG-28 FEB/25 OCT-1 DEC	182/38	SUNRISE-SUNSET	10/20	1/2	STATEWIDE
2009-10	5 SEP-28 FEB/31 OCT-1 DEC	177/32	SUNRISE-SUNSET	10/20	1/2	STATEWIDE
2010-11	4 SEP-28 FEB/30 OCT-1 DEC	178/33	SUNRISE-SUNSET	10/20	1/2	STATEWIDE
2011-12	3 SEP-28 FEB/Closed	179/Closed	SUNRISE-SUNSET	10/20	Closed	STATEWIDE

1963-1977 SEASONS AND LIMITS ARE AN AGGREGATE OF COTTONTAILS AND JACKRABBITS.

a Cottontail opener changed from 1 Sept. to Saturday before Labor Day.

Figure 5.1 Survey regions for the August Roadside Survey.

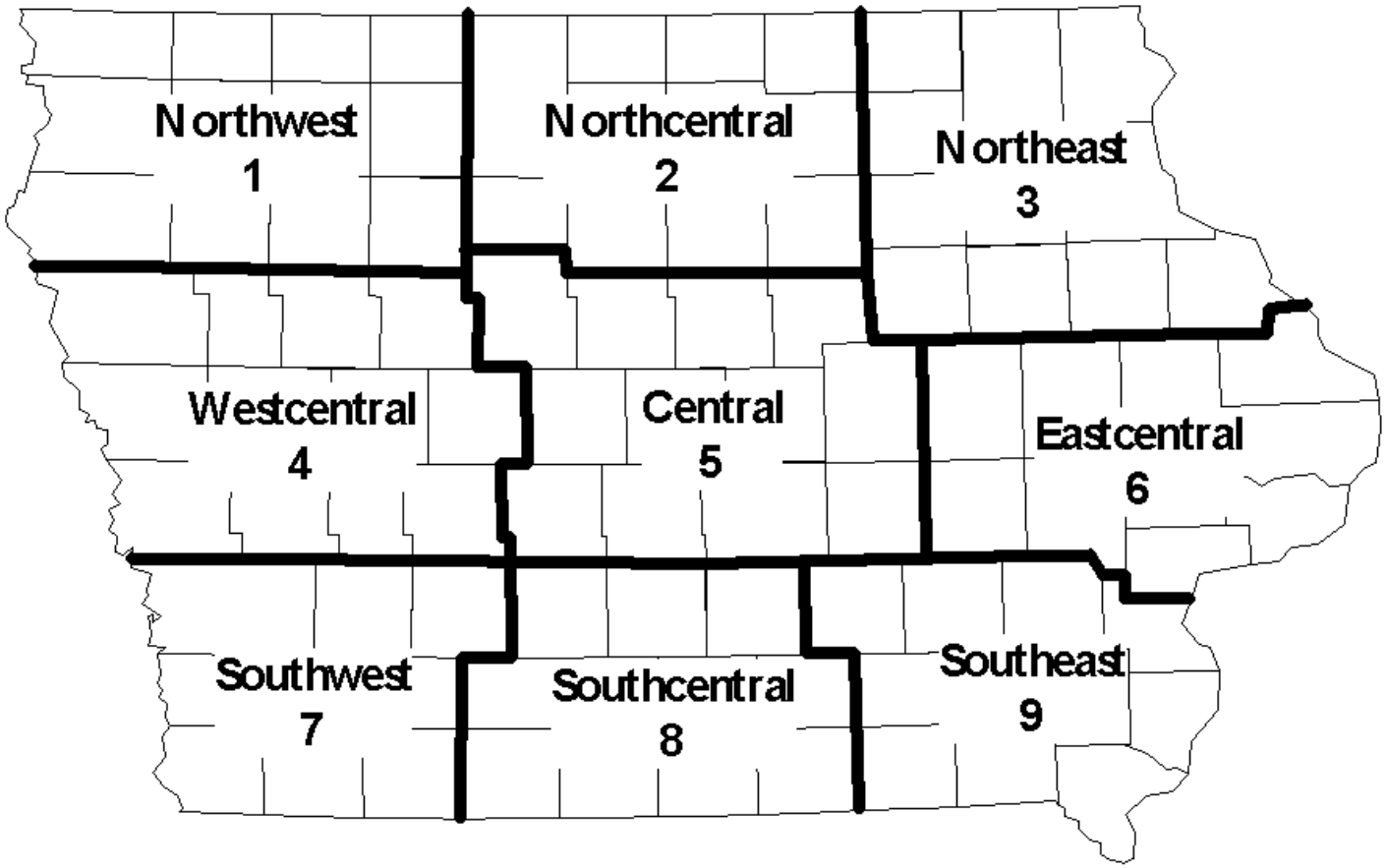


Figure 5.2 Statewide trends in pheasant harvest and August roadside survey counts

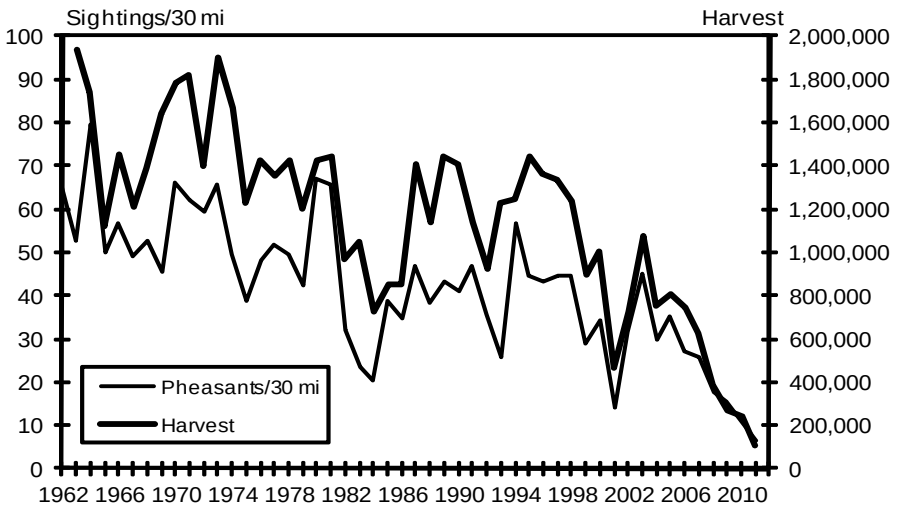


Figure 5.3 Statewide trends in pheasant broods and average brood size from August roadside survey

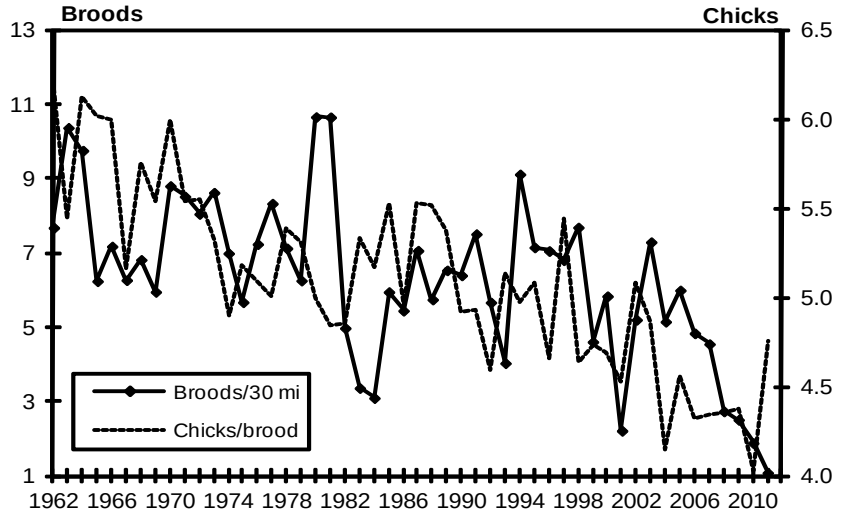


Figure 5.4 Statewide sex ratio and estimated cock harvest from winter pheasant surveys

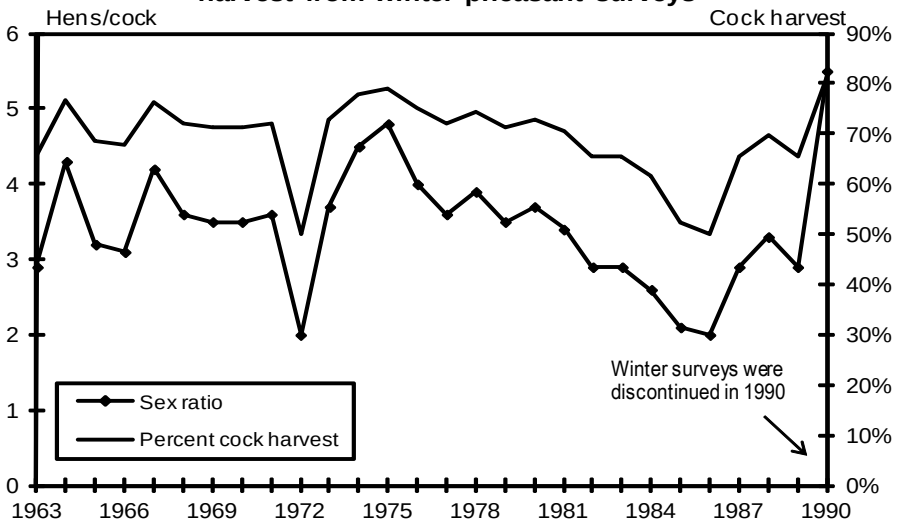


Figure 5.5 Statewide trends in pheasant hens with and without broods from August roadside survey

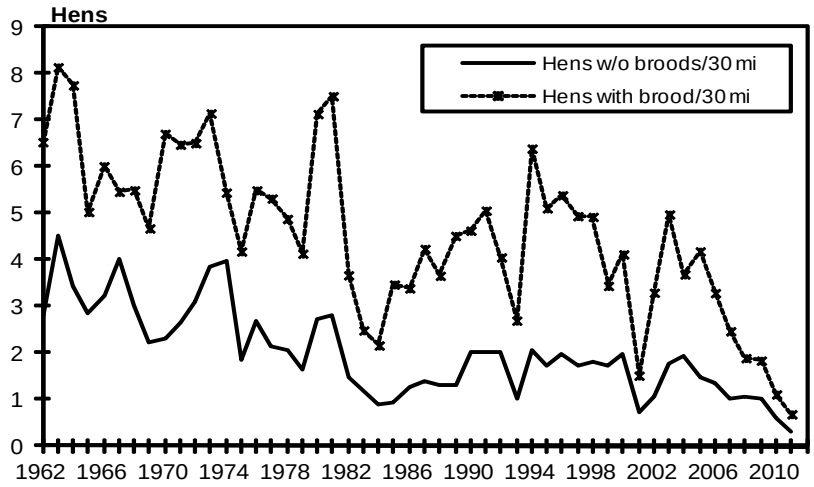
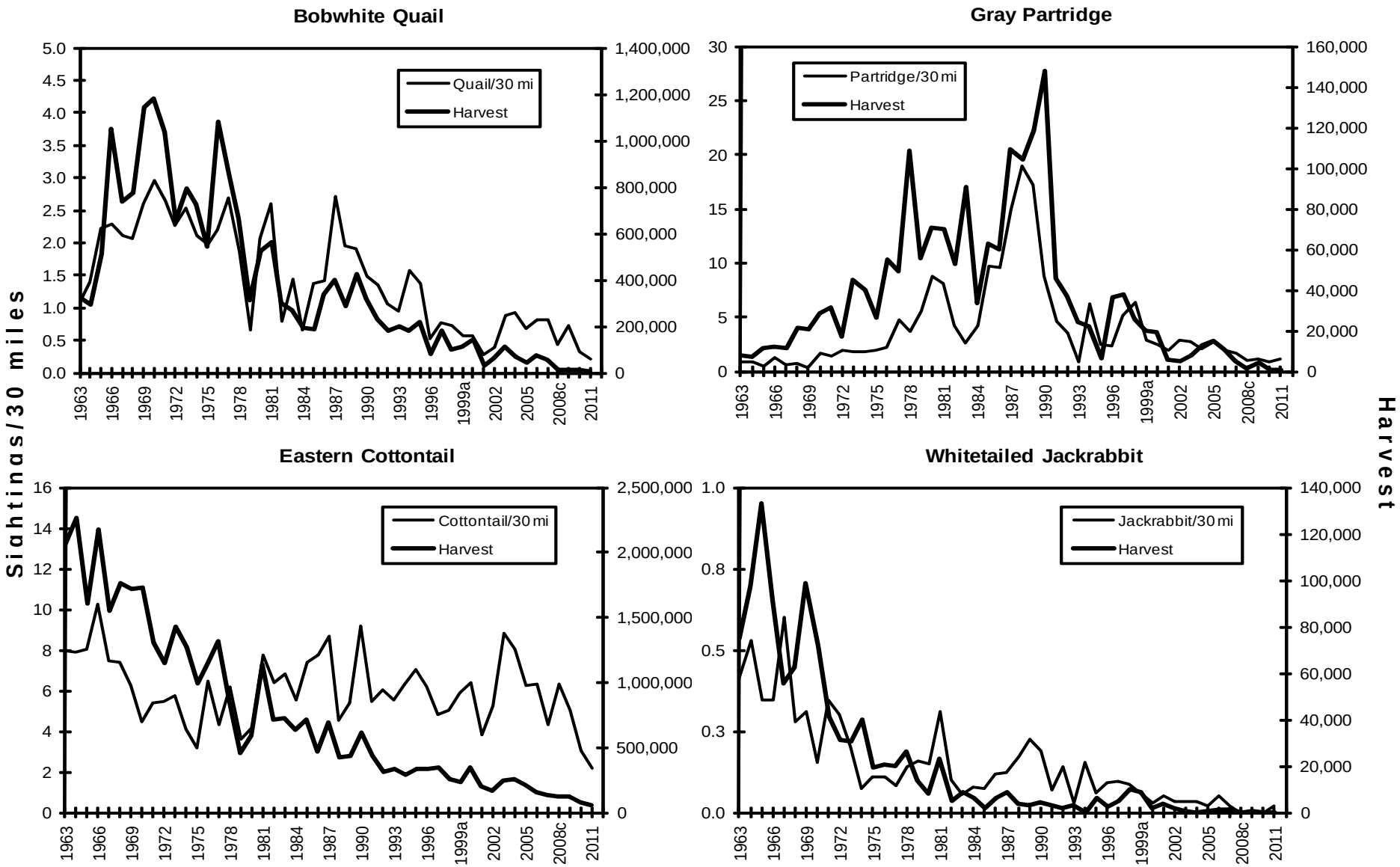


Figure 5.6 Statewide trends in small game harvests and August roadside survey counts



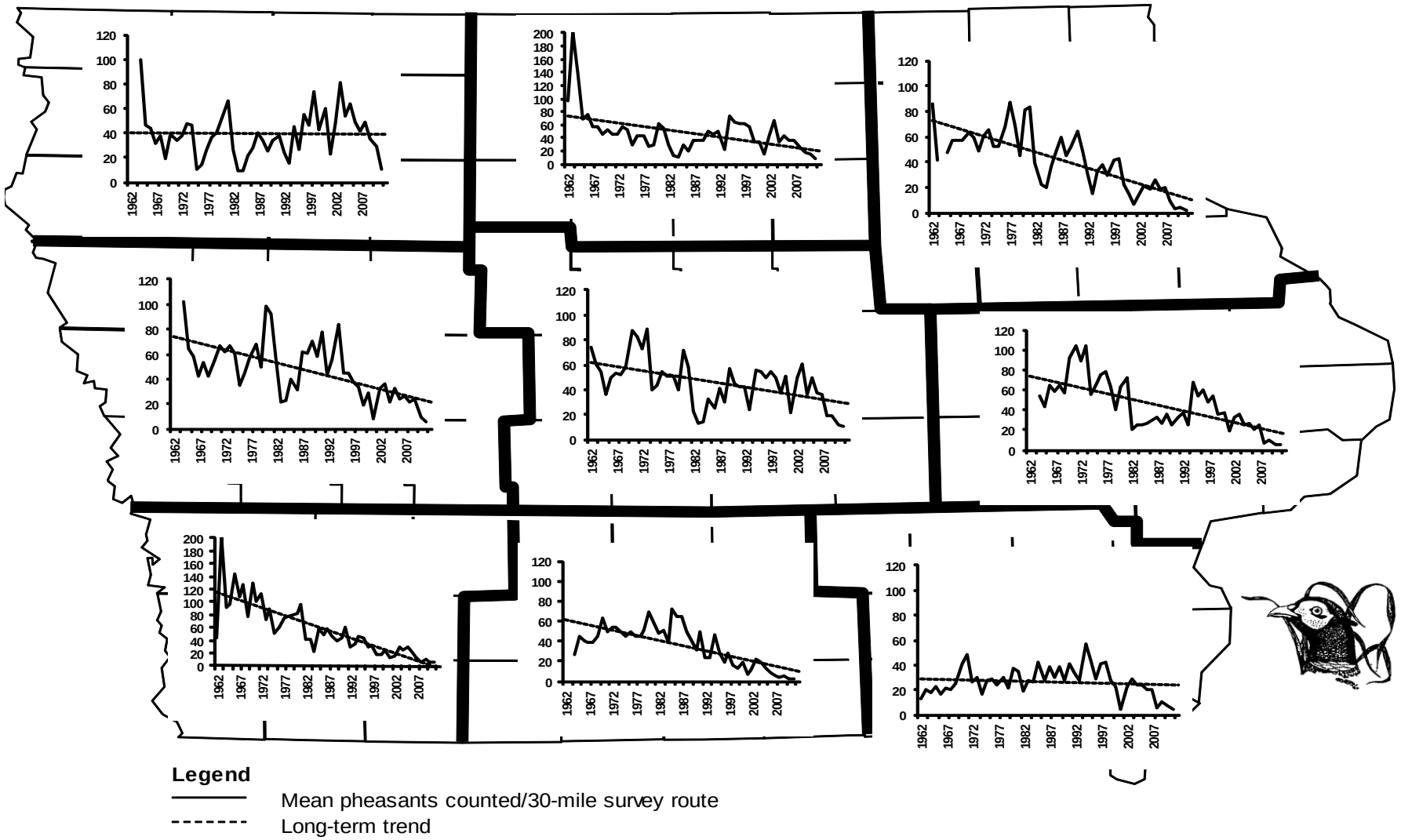


Figure 5.7 Regional trends in ring-necked pheasant numbers from the August roadside survey (1962-present).

Note: Because of variation in historical counts, vertical axises among survey regions are not to the same scale.

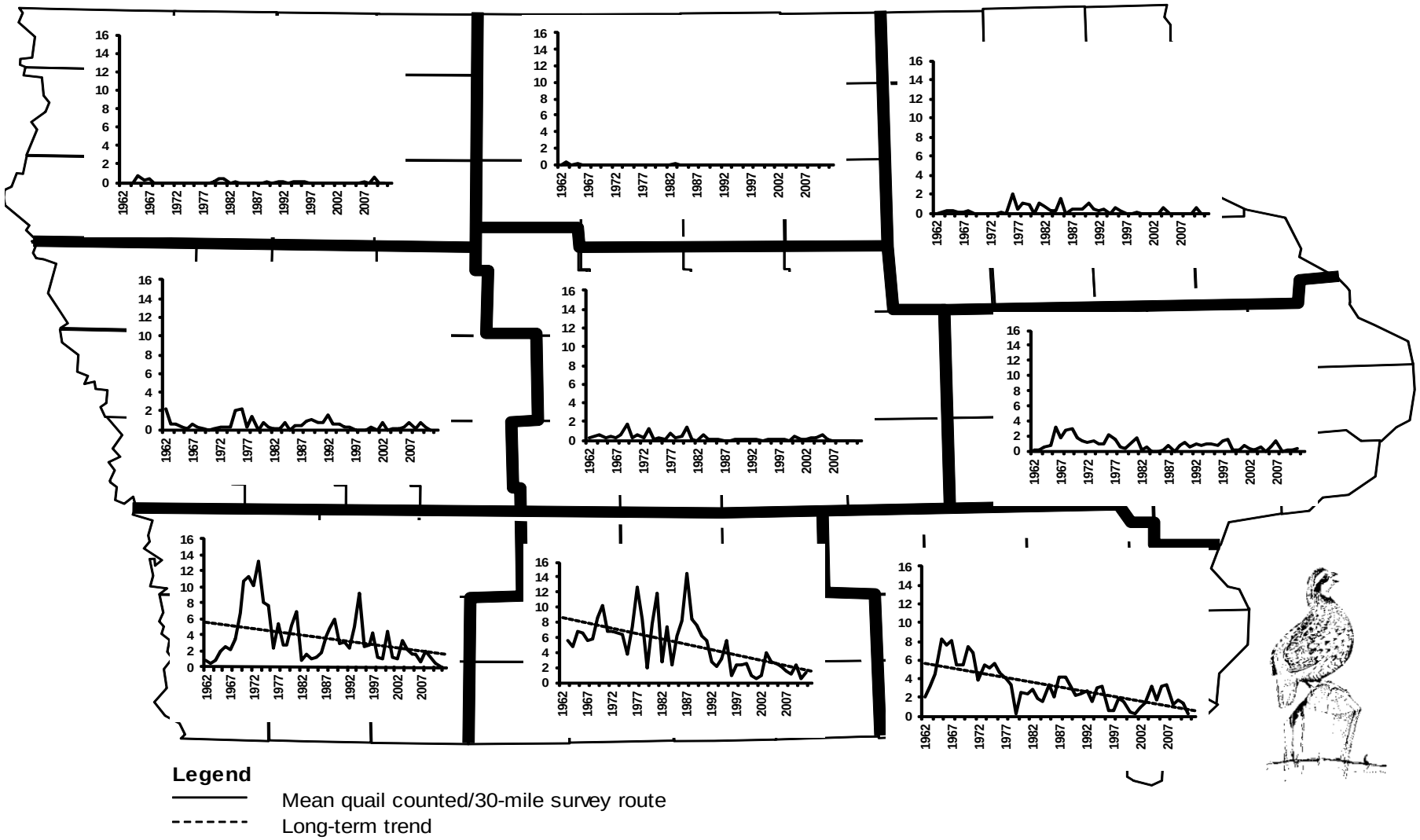


Figure 5.8 Regional trends in bobwhite quail numbers from the August roadside survey (1962-present).

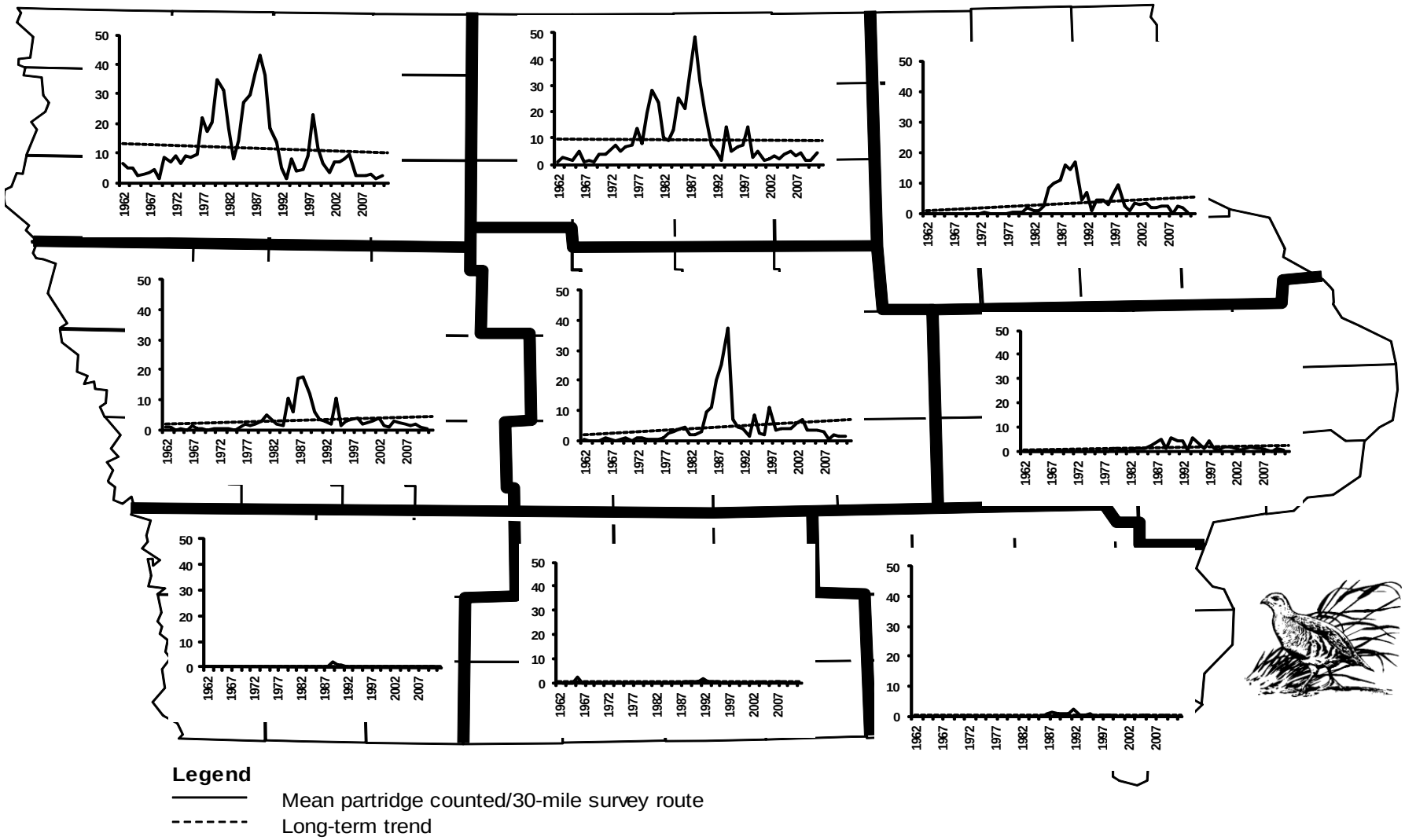


Figure 5.9 Regional trends in gray partridge numbers from the August roadside survey (1963-present).

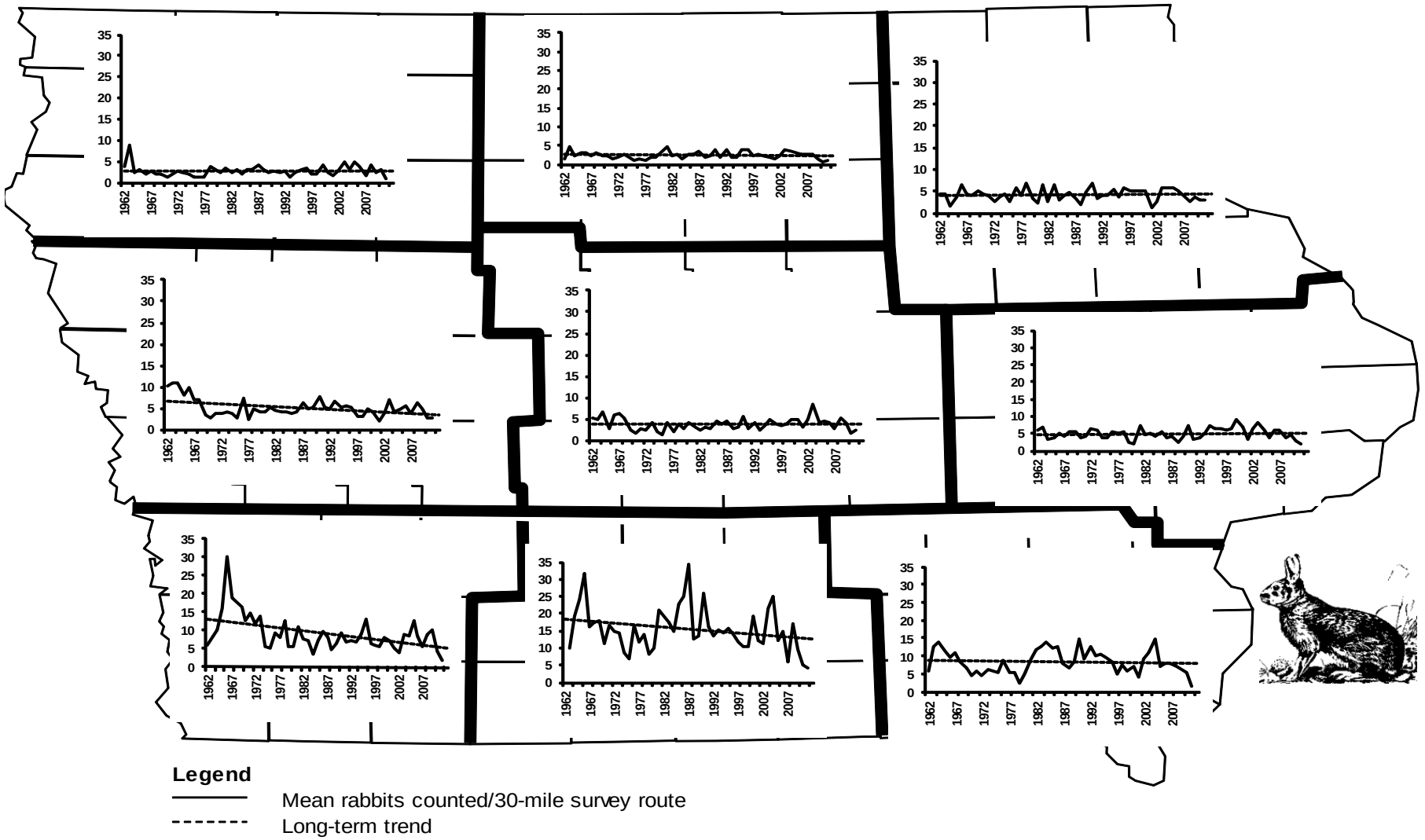


Figure 5.10 Regional trends in cottontail rabbit numbers from the August roadside survey (1962-present).

Figure 5.11 Sales of Iowa hunting licenses

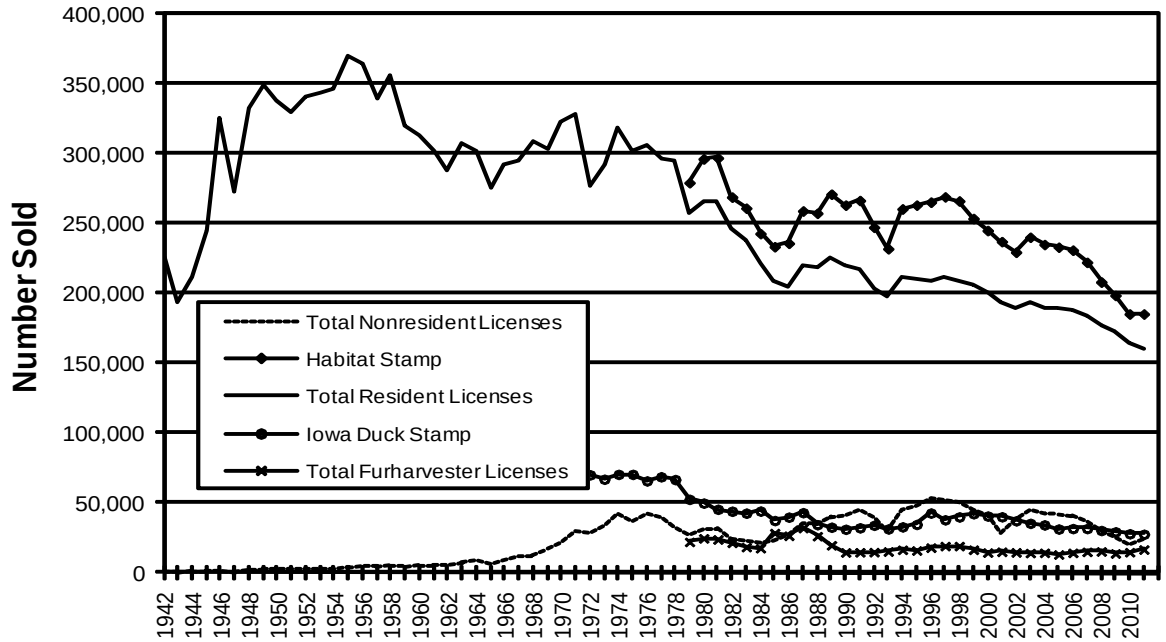
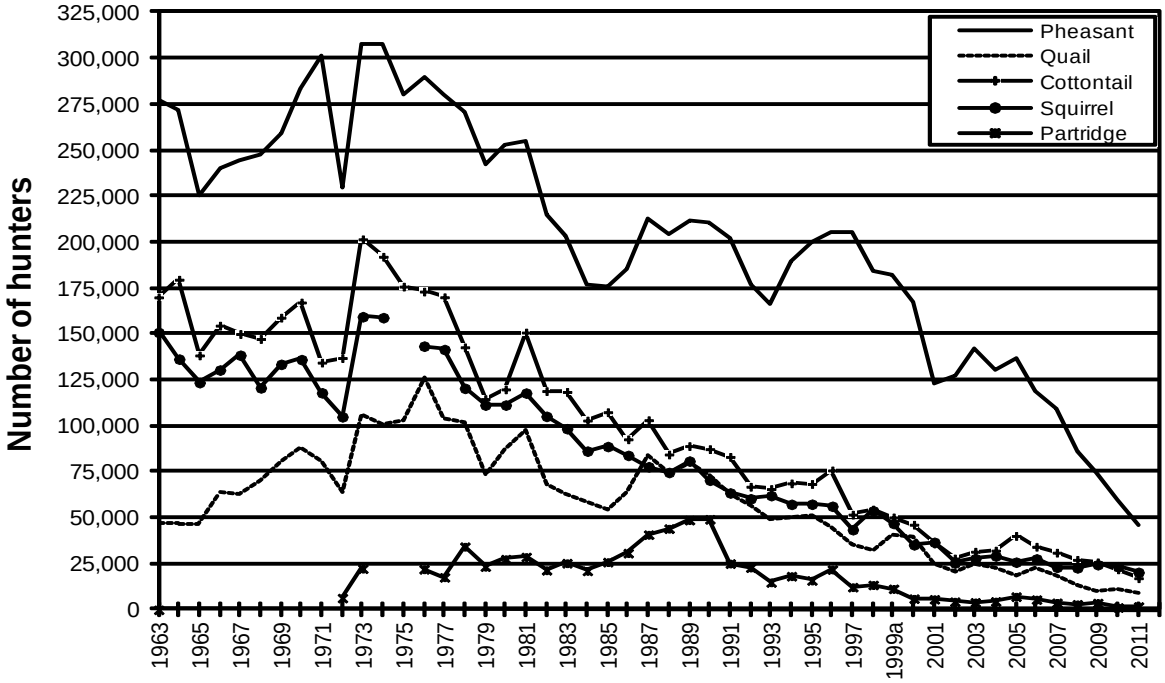


Figure 5.12 Estimated number of Iowa small-game hunters (resident and NR hunters combined)



WILDLIFE RESTORATION – 2011-2012 activities

PEREGRINE FALCON RESTORATION

The peregrine falcon (*Falco peregrinus*) was extirpated as a breeding bird from the eastern U.S. by 1964. In the Midwest, peregrines formerly nested on cliffs along Lake Superior, Lake Michigan and the upper Mississippi River, plus suitable palisade areas. The upper Mississippi River area was the major historic nesting area for peregrines in the Midwest, with an estimated historic population of 30 – 35 pairs (Tordoff 1986). Most of Iowa's historic peregrine nesting occurred on the Mississippi River bluffs of northeastern Iowa in Allamakee, Clayton, Dubuque, and Clinton counties (Anderson 1907, Allert 1939, Pierce 1940), but nesting also occurred on the palisades of the Cedar River in Linn and Johnson counties (Bailey 1918) and along the Cedar River in Black Hawk County (Anderson 1907). A nest was also reported at the mouth of Beaver Creek in Polk County (DuMont 1931). Prior to reintroduction, the last documented nests were noted in 1955 and 1956 at two of six eyries in Allamakee County (Berger and Mueller 1969), although there were reports of a nest with two eggs in Allamakee County in 1964 and a nest with downy young at Blackhawk Point, Allamakee County in 1967 (Roosa and Stravers 1989). Pesticides, specifically DDT, were the primary cause for the dramatic decline in the peregrine population. Until 1998, the peregrine falcon was a federally and state listed endangered species. The bird was federally delisted in 1998, but remains on the state endangered species list.

In an effort to guide recovery of the peregrine falcon to the eastern U.S., an Eastern Peregrine Recovery Plan (EPRP) was developed. The overall goal of this plan was to establish a viable peregrine falcon population consisting of 175 breeding pairs, which is half of the pre-pesticide population. For each region of the eastern U.S., EPRP set a goal of 20-25 breeding pairs. Iowa falls under the Midwestern and Great Lakes regional plan (MGLRP). As part of the MGLRP, Iowa set a goal of establishing 5 breeding pair by the year 2000 with an ultimate goal of 10 breeding pair for a viable population. To achieve this goal, the Wildlife Diversity program planned to release 55 peregrines in the first 5 years. The "magic number" of birds released to get one breeding pair return is about 13. A maturing bird is expected to return to a release site within 2-3 years after release and establish a territory within that area. As a result, no release site will be used for more than 2 years to avoid confrontations with adult falcons and hack birds.

Iowa's Peregrine Falcon Restoration project began in 1989 with the release of 10 (2F,8M) birds in Cedar Rapids from the Telecom USA building. There was one mortality during this first release when a bird collided with a building. Releases continued for the second year at the Cedar Rapids release site with 13 falcons (3F,10M) in 1990. Two of these birds, 1 male and 1 female, died as a result of collisions with buildings. During the 1990 hacking process a subadult male (T6?- apparently from 1989 C.R. release) showed up in Cedar Rapids and regularly interacted with hacked birds.

In 1991, a second release site was selected for the third year of the project. A total of 19 birds (8F,11M) were

released in 1991 at the First Baptist Foundation of the Elsie Mason Manor in Des Moines. Similar to the 1991 Cedar Rapids release, a subadult male (T93- from 1990 Cedar Rapids release) appeared for a brief period of time. Little to no aggressive interactions were observed between this subadult and the hacked falcons. During 1991, peregrines were observed in Cedar Rapids, Davenport and Keokuk; however, no nests were located. A second release was not attempted at the Des Moines site during 1992 because two falcons attempted to nest on the American Republic Insurance building. The female (R13 – Kansas City 1990) laid 5 eggs total. One egg rolled off the alcove ledge and another was cracked. The 3 remaining eggs were laid in a different alcove and never incubated. The male at this site was X20 from the 1990 Cedar Rapids release. This was the first nesting attempt in Iowa in nearly 30 years.

Elsewhere in the state during 1992, falcon pairs established two additional territories. A male falcon in Cedar Rapids successfully attracted a mate in mid-May, but it was too late in the season for breeding. The pair engaged in courtship flights and investigated the nest box on the Firststar Bank building, but did not actually attempt to nest. In the Quad Cities, a pair appeared to be incubating eggs under the Centennial Bridge; however, there were no observations of feeding in late-June. The site was investigated in September, but no eggs, egg fragments, dead young or even a definitive nest site was found.

The third release site chosen for releases in 1992 (the 4th year of the project) was Davenport. However, the arrival of a falcon pair precluded this site from release since the territorial adults could potentially harm the young hacked birds. As a result, 8 birds (2F,6M) were released from the Laurel Building in Muscatine during 1992. A male Cedar Rapids bird (T95 – 1990) appeared after the hacked birds fledged. T95 engaged in mock combat with the young and occasionally harassed them at the hack site, but he did not harm any of the young. Of the 8 birds released at Muscatine, 2 died, both males.

In 1993, there was much falcon activity across the state. We had 2 successful peregrine falcon nests in Iowa. The falcon pair returning to the American Republic Insurance building was the same male (X20) and female (R13) who attempted to nest in 1992. Shortly after their return, the male (X20) was found decapitated after a three-bird territorial dispute. The "winning" male did not remain in the area. The female (R13) eventually mated successfully with a third male, T93 (from 1990 Cedar Rapids release), that came to Des Moines. This pair successfully hatched and raised 3 young. In early July, one of these young was found dead in the air conditioning unit of the American Republic Insurance Building.

The second successful nest occurred in Cedar Rapids. The male was identified as X64 (Des Moines – 1991) and the female as R49 (Des Moines – 1991). This pair laid 4 eggs and hatched 2. Of the two young, one died of exposure from stormy weather. The Iowa Falconer's Association donated a young male to foster into the nest. The adults accepted the "implant" along with the remaining female chick. Both young fledged successfully from the nest.

A third nesting occurred in Iowa

during 1993 at the Centennial Bridge in Davenport. A pair was observed demonstrating nesting behavior, but that soon changed about the time young should hatch. Closer observation of the nest site did not reveal young or eggs, however, a possible scrape was located along with falcon prey remains. A decomposed body of a female falcon (W24 – Kenosha, WI) was found trapped in the I-beam of the bridge. It is possible that this bird was the nesting female. Once she became trapped, the male abandoned the nest and attracted a new female (R95 – Colonnade, MN). By this time, it was too late in the season for nesting.

At Muscatine, a single male (C/M – Muscatine, 1992) returned to the site, but did not attract a mate. Because of the return of this bird, a second release was not made at this site.

During 1994, two falcon pairs nested successfully, marking the second year in a row for nest success. The birds at Firststar Bank in Cedar Rapids were the same, R49 and X64. They laid and hatched 4 eggs (2F,2M), but one female died soon after hatching. Another chick was treated for trichonomoniasis (Frounce) and released. All three young fledged successfully. The second successful nest was at the same site in Des Moines – the American Republic Insurance building. This pair was also the same birds from 1993, R13 and T93. Their first nesting attempt on the east side of the building was unsuccessful as one egg rolled off the ledge and the other two eggs were abandoned. The birds moved to the west side where they laid and hatched three young (1F,2M), all of which fledged successfully. The young female later died as a result of a collision with a building and one young male died of unknown causes. There was no known nesting attempts at either Davenport or Muscatine, however, a bird was observed during the winter at the Centennial Bridge in Davenport.

The original goal established by EPRP of 20-25 nesting pair was met and replaced with a new regional goal of 40 territorial pairs. This new goal was met and surpassed in 1993. By 1994, the midwestern region had 61 territorial pairs with 41 successfully nesting. As a result of meeting the regional goal, many states tapered off falcon releases. However, Iowa's goal of establishing 5 nesting pairs by the year 2000 did not look promising without further releases. Furthermore, many did not consider the Midwestern population recovered since there was very little nesting on natural eyries aside from cliffs in northern Minnesota and Michigan.

In order to address the need for more releases in Iowa, a Peregrine Falcon Recovery Team (PFRT) was formed to continue releases with the hope of establishing a sustainable peregrine population that requires little or no maintenance or manipulation. The (PFRT) hoped to continue urban releases in strategic locations along the Mississippi and inland along known flyways. The group would also evaluate the possibility of releasing birds along the cliffs of NE Iowa.

The 2 falcon pairs in Cedar Rapids and Des Moines nested successfully once again in 1995, marking the third consecutive successful nesting season in Iowa. The Cedar Rapids pair produced four eggs and hatched three young (1F,2M). All three young fledged successfully. One male was later found dead as a result of a collision. The Des Moines pair laid four eggs and hatched

three females, all of which fledged successfully.

Iowa has been able to maintain its two nesting falcon pairs in Des Moines and Cedar Rapids. Regionally during 1996, there were 87 territorial pairs of which 45 nested successfully. The Cedar Rapids pair (still the same male and female) again produced 3 birds (1F,2M), one egg did not hatch. All 3 birds fledged successfully. The Des Moines pair hatched 3 young, but one mysteriously disappeared leaving only 2 males to fledge successfully. This year marked the start of additional falcon releases with the hopes of achieving the goal of 5 breeding pair by the year 2000. The Peregrine Falcon Recovery Team, who generated the funding and volunteers to conduct the releases, spearheaded these releases. Mason City released 7 birds total (3F,4M), two of which (both females) came from Iowa City during the hacking process. Iowa City was in the process of hacking 3 birds (2F,1M), when a wild peregrine showed up at the release site and killed the male. The two remaining females were transported to Mason City to fledge for safety of the birds. There were no releases at Burlington due to mortality prior to placing the birds in the hack box.

The falcon project met with mixed success in 1997. Both falcon pairs returned to nest in Cedar Rapids and Des Moines, however, the Des Moines pair exhibited problems. The female laid her eggs in an alcove on the American Republic Insurance Building that did not have pea gravel in the bottom, so the eggs got wet. We put gravel in, but it was too late. The female abandoned the eggs. She did, however, lay 2 eggs in another alcove and 1 in yet another. To facilitate incubation, we moved the lone egg in with the 2, but later one was kicked out of the scrape, one was cracked and the other was abandoned. Two of the 6 eggs were sent for analysis to try and provide answers for the aberrant behavior of the Des Moines female. On the bright side, the Cedar Rapids pair laid 4 eggs and successfully fledged 2 (both males). Elsewhere in the state, the PFRT continued releases at the Mason City site with 3 young (1F,2M), one of which died from injuries received after colliding with a fence. Iowa City did not release birds in 1997, but Bob Anderson started his efforts of releasing birds on the natural eyries of NE Iowa. He released 4 birds in 2 batches of two (2F,2M) at a hack site situated on the cliffs overlooking the Iowa River near Bluffton. Two of the birds were equipped with radio transmitters, but were not tracked successfully for very long due to the topography interfering with the transmission of the signals.

Things were back on track for 1998. Both falcon pairs nested successfully in Cedar Rapids and Des Moines. The Des Moines pair produced 3 young (1F,2M) as did the Cedar Rapids pair (2F,1M). There was no evidence of additional eggs in Des Moines, however, there were 5 eggs in Cedar Rapids. As for other releases in the state, Mason City concluded its final peregrine release in 1998, sending off 15 falcons (4F,11M) without a hitch and Louisa had its first release with 4 young (3F,1M). Bob Anderson continued his cliff-site releases in 1998. However, he changed the release site from Bluffton to Effigy Mounds National Monument. The latter location is an exceptional bluff overlooking the Mississippi River. Two

psuedo-rocked hack boxes were mounted on the bluff face. A total of nine birds (5F,4M) were released from the sight. Radio transmitters on the birds indicated no mortality up to dispersal. Unfortunately, two of the Effigy Mounds birds died during the spring of 1999 due to a possible collision and a drowning.

The Peregrine Falcon Recovery Project had a slight change in direction during 1997. The decision was made to no longer allow urban releases, except for two grandfathered sites that already had the steps in motion for 1998 releases. Those grandfathered sites were Mason City and Louisa. The Mason City site releases were completed with the hacking of 15 falcons in 1998, and Louisa continued releases through 2000. The reasoning behind this decision was that the transition of falcons nesting in urban areas to natural cliff sites was not occurring as originally thought. In fact, some studies indicate that urban birds may actually be hindering wild nesting since falcons attract falcons. In an effort to return falcons to their historic nesting eyries in Iowa, the Iowa DNR has prioritized cliff-site releases.

Falcon production had mixed success again in 1999. On a down note, the Des Moines pair did not produce any young. The American Republic Insurance Building, where the birds nest, was getting a new roof. Rainy weather pushed construction into peak nesting time, causing too much disturbance for the breeding adults. Cedar Rapids was still a production stronghold with 3 young fledging in 1999. On a positive note, 1999 produced Iowa's third nesting falcon pair at a power smokestack in Lansing. The adults, both from Minnesota successfully produced 3 young (1F,2M). Falcons have been sighted in Mason City, but no nest attempts were documented.

Release efforts continued in Iowa during 1999. Louisa released 8 birds in their second release year. The Raptor Resource Project, headed by Bob Anderson, was awarded a grant by the Iowa DNR to continue release efforts at Effigy Mounds National Monument. He released 9 falcons in 1999. Bob was also granted a FWS permit to take chicks from smokestack nests and release them at cliff sites along the Mississippi River. A new cliff release site was added in 1999. This site, at Eagle Point Park in Dubuque, is also along the Mississippi River. Two rock-lined hack boxes were placed on a bluff overlooking the river. Volunteers released 21 falcon chicks (5F,16M) in 1999 from this site.

2000

In 2000, for the first time in at least 3 decades, wild peregrines were produced on Mississippi River cliffs. At Queen's Bluff, in southeastern Minnesota, 1 young fledged successfully from parents which had been released in Iowa. The female was hacked from Mason City in 1998, and the male was hacked from Effigy Mounds in 1998. In all, there were 5 pairs of peregrines at cliff-sites along the Mississippi River. Thanks to efforts by Bob Anderson, the same pair that nested in 1999 in a nest-box at the Alliant Energy power plant smokestack near Lansing, now nested in a nest-box at a nearby cliff, where peregrines historically nested. They fledged 4 young (3M,1F), but the young female died post fledging. It is worth noting that, according to Bud Tordoff (Tordoff et al 2000), "these were the first young peregrines known to fledge from a cliff nest in the Mississippi River valley since

the extirpation of the original population by DDT in the 1950s and 1960s."

Urban nest sites were also successful in 2000. At the American Republic Building in Des Moines, 9-year-old female 13R, nesting here for the eighth year, paired again with 10-year-old male 93T, his seventh year at the site. They produced 4 eggs and fledged 2 male young. In Cedar Rapids at the Firstar Bank nest site, a 2-year-old female, *S/*5 (fledged in Des Moines in 1998) replaced female R49. She mated with 11-year-old male 64X, here for the eighth year. They produced 4 eggs and fledged 4 young (3M,1F). Besides the 3 successful nests, there was also a peregrine pair reported in April at the smokestack nest box at the Louisa Mid-American power plant. Also reported was a 1999 Louisa released male (wearing black/green band) frequenting the Mid-American Energy Co. building in Davenport, and a peregrine with a gold band on the right leg and a red/black band on the left leg was reported in Burlington on July 1 by Conservation Officer, Don Simonson.

Mississippi River peregrine releases continued in 2000, with 19 falcons hacked at the Dubuque cliff site and 6 male peregrines hacked at the Louisa power plant site. All told, there were 164 peregrines hacked from Iowa release sites from 1989-2002. Eighty-four of these birds were released along the Mississippi River, and 62 peregrines were released off limestone bluffs.

2001

Year 2001 saw 5 Iowa peregrine territories. The same returning nesting pairs were identified at Des Moines, Cedar Rapids, and Lansing. The Des Moines pair produced 4 eggs and fledged 3 young (2M,1F). The young female later died after colliding with a window. There were 3 eggs laid and 3 young females fledged at Cedar Rapids. The Lansing pair attempted to nest unsuccessfully on a cliff, and finally laid 4 eggs (which did not hatch) in a nest box. An unidentified pair of peregrines attempted to nest beneath the Centennial Bridge in Davenport. The female is a sub-adult wearing a black/green band, and it is not known if the male is banded. Young falcons were heard food-begging beneath the bridge, but it is not known if any young fledged successfully (unverified report indicated one). A fifth pair of falcons held a nesting territory at the Louisa generating plant smokestack nest-box. The female hatched in 1999 from a smokestack box in Minneapolis, and the male has not been identified. The stage is set for 5 nesting pairs in 2002.

2002

In 2002 six falcon territories were reported with five sites successfully fledging young. At Cedar Rapids four-year-old female *S/*5, nesting here for the third time, and thirteen-year-old male 64X (identified previously as 64T), here for the tenth year, produced four eggs, hatched three and fledged two females and a male.

The Des Moines pair once again laid three eggs on the east side of the American Republic Insurance bldg. However, the eggs disappeared as hatch date drew near. In late June an egg was discovered on the west side of building which hatched. A lone male was banded July 30 and successfully fledged in early August.

The Lansing cliff site was active in 2002 where the same pair successfully

fledged two young, a male and a female. The adult female X/*D, fledged in 1998 at NSP Sherco, Becker, Minnesota and here for the first time, paired with five-year-old male *T/M, nesting here for the fourth year. The falcon box on the bluff, across from the Alliant Energy plant placed by Bob Anderson was a suitable backdrop as historic falcon banders gathered to assist and witness event. It had been 44 years since Dan Berger, Jack Oar, Jim Grier, Jack Oberg, Dave Seal, and Chuck Sindelar banded falcons at historic eyries. This year they were assisted by Dave Kester, banding two young.

In the Quad Cities the pair that previously occupied the Centennial Bridge nested in a falcon box placed by falconer, Tom Deckert. Three-year-old female 8/*E, hacked in 1999 at Muncie, Indiana paired with three-year-old male P/D, hacked in 1999 at Dubuque, Iowa. The MidAmerican Insurance building hosted three young, two females and a male in downtown Davenport. All successfully fledged with minimal intervention from humans.

A new falcon site came on line this year. A box affixed to the smokestack of the Louisa Generating Station near Muscatine was used. The female Z/V fledged in 1999 at NSP Riverside, Minneapolis, Minnesota. The tiercel has not been identified. One young male successfully fledged.

A sixth falcon territory occurred at the Holnam Cement Plant at Mason City. Falconer Lowell Washburn who hacked 25 young from the site between 1996 – 1998, reported a male was seen intermittently throughout the summer.

Also in 2002 eight young falcons were hacked at the Duane Arnold nuclear facility near Palo, Iowa. Bob Anderson with Raptor Research Project coordinated the placement of four young. Meanwhile four young at a smokestack box near Alma, Minnesota were stranded when an untimely death of the adult male occurred at that site. Plus, the female was discovered injured and unable to provide for young. The four were relocated to the Palo site and all eight successfully fledged.

2003

In 2003 there were seven territories in Iowa. Mason City territory at Holnam Plant was inactive, but two new territories occurred in Iowa. Falcon activity was noted at nestbox at Alliant Plant near Chillicothe in Wapello Co. An adult peregrine was observed and a scrap was created in nestbox. At Quad Cities under I-80 bridge, a fledgling falcon was photographed and according to falconer Lowell Washburn an eyrie was presumed to have occurred under bridge. Adults were not identified at either site.

At Des Moines same adults fledged four young from second, NW alcove of American Republic building. At Cedar Rapids same adults fledged four young. At Louisa female Z/V and unknown male fledged three young.

Near Lansing the wild pair attempted to nest on a natural ledge. Two young hatched but had disappeared by banding time. Falconers Bob Anderson and Dave Kester believed raccoon predation destroyed nest. Raccoon sign was observed in area and access by land was possible.

Quad Cities female 8/*E and unidentified male produced four young under Centennial bridge. Young were relocated to natural bluff near Bluffton and hacked by Bob Anderson. All four

survived and were observed throughout summer.

Iowa falcons produced at least 16 young this year making it a banner year for falcon production.

2004

In 2004, Bob Anderson reported the pair at Lansing cliff, Allamakee County, hatched young but none were present at banding. A second, wild nesting pair was reported downstream by Dave Kester, on a Mississippi River cliff at Waukon Jct., Allamakee County. There were 2 eggs but no young produced. Female at this site was identified as Lora (48/E), hatched at Xcel Energy, Monticello, MN in 2003. Male is two-year-old 19/M Dairyland Cooperative at Alma, Wisconsin 2002. Anderson believed only male was incubating.

A scrape was present at nest box on smokestack at Alliant Energy Plant at Chillicothe, Wapello County, but no young produced. Two unidentified peregrines occupied site.

Danny Akers, a reliable birder, reported a peregrine pair copulating about one mile southwest of Guttenberg, Clayton County, on April 18, but despite subsequent searches in the area, no eyrie was discovered.

At state Capitol bldg in Des Moines female 39/E, NSP Riverside, Minneapolis 2003, has paired with 93T and is actively defending site from intruders.

At American Republic Insurance bldg. at Des Moines, Polk Co. Iowa, female 8/*T (produced three young) (Colonnade bldg. 2002) here for her first nesting attempt paired with fourteen-year-old male 93T (produced 27 young), his twelfth year at this site. Four eggs were laid and three males fledged. One immature male, D/06, was retrieved dead from collision with Ruan bldg. in July.

At Louisa Generating Plant, Louisa County, Jim Haack, Mid-American Energy, reports that five-year-old female Murphy Z/V(produced eight young), here for fourth year, and an unidentified male fledged four, three males and a female. Female 62/D recently was trapped inside a building and died of apparent heat exhaustion.

At US Bank bldg at Cedar Rapids, Linn Co. Iowa, six-year-old female ***S/ ***5 (produced 13 young) nesting here for fifth time and 13 year-old male 64X (produced 38), here for 12th year, produced four eggs, hatched four, and fledged three, one male and two females. Female 63/D was found dead. It was feared no young survived at this site as shortly after fledging, adults were sighted repeatedly but no young were seen.

At Davenport, Scott County, a pair once again nested at Centennial Bridge on eastern section of middle span. Three young were reported before fledging, but neither adult was identified. Also, no activity was reported at 2003 territory at I80 Bridge near Bettendorf.

It appears there is a new territory at Burlington, Des Moines County, beneath another Mississippi River Bridge. Former falconer, Lee Eberly, reported at least one, and possibly two peregrines were seen flying to and from under the bridge in mid-June, and vocalizations were heard 4 or 5 times. There has been peregrine activity noted at this site in the past. No peregrines were identified, and it is unknown if there was an active nest.

In summary, young fledged was down from 16 in 2003 to 13 in 2004 at four successful sites. There was

evidence of peregrine territorial activity at ten sites.

2005

In 2005 ten territories had seven successful fledgings with 21 young produced. At Firstar Bank (US Bank), Cedar Rapids, Linn County, Iowa, Jodeane Cancilla, Macbride Raptor Project, reports that seven-year-old female *S/*5 (produced 16 young), nesting here for the sixth year, and two-year-old male 78/E (produced 3), here for his first nesting, produced four eggs, hatched all four, and fledged three young, two males and a female.

American Republic, Des Moines, Polk County, Iowa. 15-year-old male 93T (31 young), his 13th year at this site, paired for the second year with four-year-old female Ellie b/g 8/*T, fledged in 2001 at Colonnade, Minneapolis, Minnesota. They produced four eggs, four were banded, and fledged three young, two females and one male. One male was found dead, having fallen from eyrie. On July 22, female 8/*T was found with a wing injury that precludes further flying, although she lives on in captivity. Male 93T has sired 31 young in his long career here.

MidAmerican Energy Corporate Headquarters, Davenport, Scott County, Iowa. Dave Sebben reports two six-year-olds, female 8/*E, fledged at Muncie, Indiana, in 1999, paired with male P/D, fledged at Dubuque, Iowa, in 1999, produced one young. It was banded but died when hit by a car after fledging.

At Louisa, Louisa County, Iowa, Jim Haack, MidAmerica Energy, reports that an unidentified female and an unidentified male, both banded, fledged four young, two males and two females. This is the fourth year of successful nesting at this site.

Leo's Bluff, Waukon Junction, Allamakee County, Iowa. This is second year for this cliff site**.** Dave Kester and Bob Anderson report that two-year-old female Lora 48/E paired with three-year-old Brady 19/M, both here for the second year, and nested a half mile upstream from the 2004 site. They fledged two young, one each sex, from a cliff with no nest box, the first such cliff nest in Iowa in over 40 years.

Alliant Energy Lansing / Lansing cliff, Lansing, Allamakee County, Iowa. Bob Anderson, Raptor Resource Project, and Dave Kester report that an unidentified adult female with a b/r band paired with eight-year-old male Alpha *T/M (produced 14 young), nesting here for the seventh year. The site has had an interesting history. Falcons were first attracted to nest in a box on a nearby stack, where they fledged young in two seasons. The stack box was then removed and a box placed on the nearby cliff. Young were fledged in 2002. However, in 2003 and 2004, the falcons used a ledge instead of the box and lost their young to raccoon predation. This year, Kester and Anderson placed a new box on the stack, from which five young peregrines were fledged, three males and two females.

Alliant Energy Plant, Chillicothe, Wapello County, Iowa, Judi Johnson reports six-year-old female Z/V (produced 10 at Louisa and Chillicothe) and an unidentified male, judged by plumage to be two years old, produced four eggs and fledged two young. Female Z/V has relocated to this site from Louisa Generating Plant.

I80 Bridge, Quad Cities, Scott County, Iowa, had peregrine activity

again this year. An adult pair is on site, but no young were found. A nest tray was installed under the bridge on Iowa side of center span of bridge. This bridge is 12 miles upstream from Centennial Bridge.

Mississippi bridge, Burlington, Des Moines County, Iowa. John Rutenbeck reports seeing and hearing two peregrines flying under the bridge in mid-June. Peregrine activity has been noted here in past years. There was no proof of a nest this year.

State Capitol, Des Moines, Polk County, Iowa, female Fast Track b/g 39/E, fledged in 2003 at NSP Riverside, Minneapolis, Minnesota, here in 2004 and early spring this year, was not seen through the nesting season. Adult male, T93, from downtown nest site has been soaring and perching on west side of Capitol, throughout summer.

Seven successful sites produced 21 young in 2005. There were three additional sites with peregrine pairs for a total of ten territories this year.

There were some downturns in Iowa's peregrine population in 2006. However there were ten territories reported and five successful sites that produced eleven young. At Leo's Bluff near Waukon Junction, IA, both of the adult falcons and their young mysteriously disappeared according to bob Anderson. When he and Dave Kester rappelled into the eyrie, one pipped egg and fragments from three other eggs that indicated a normal hatch were discovered. However, there were no eyas falcons or defending adults. Other cliffs in that area of the river were searched on several occasions without finding either of the adult falcons. This is very strange and researchers are at a loss to explain what could have happened.

The adult falcons at the Lansing, IA power plant moved back to the nearby cliff this year, most probably due to a major construction project that took place near the stack. In past seasons, these falcons have lost their young around ten days of age to raccoons at this ledge. On 5/17/06, a large contingency of volunteers met at this cliff to initiate efforts to repel raccoons from the ledge site. However, they were too late. One set of raccoon tracks and eggshell fragments were discovered at the eyrie.

Another disappointment occurred in Des Moines where an unidentified female laid eggs at American Republic Insurance bldg. onto cold concrete. Four eggs were discovered and pea gravel added under them but they did not hatch.

On a brighter note at Cedar Rapids US Bank bldg. female *S/5* here for eighth year (produced 20 young) and three-year-old male 78/E (produced seven young) here for second year. Pair produced four young – three males and one female.

At MidAmerican Energy Corporate Headquarters, Davenport, Scott County, Iowa. Dave Sebben reports two seven-year-olds, female 8/*E, fledged at Muncie, Indiana, in 1999, paired with male P/D, fledged at Dubuque, Iowa, in 1999, produced two young.

At Louisa Generating Station, Jim Haack, MidAmerican Energy, reports that an unidentified female and an unidentified male, both banded, fledged two females and one male. There was one dead young in box. This is the fifth year of successful nesting at this site.

Alliant Energy Plant, Chillicothe, Wapello County, Iowa, Judi Johnson reports seven-year-old female Z/V (produced 10 at Louisa and Chillicothe) and an unidentified male and fledged one young.

At Great River Bridge local birder, Hal Geren, reported two adult and one young throughout July.

At I 280 Bridge at Quad Cities, local birder Kelly McKay reported pair of falcons on west pier (Iowa side) of bridge. Two eggs on concrete were discovered and placed in a nest tray with pea gravel. There was no further activity reported at this site.

At I 80 bridge in Quad Cities a pair of peregrines were defending the bridge but no eggs were discovered. Nest tray on Iowa side of bridge had not been used.

In summary there were ten territories with five successful pairs and eleven young produced in 2006.

2007

Spring 2007 held great promise for peregrine nesting in Iowa. A definition of success might include as many wild-produced young in a year that were hacked in any given year, since project began in 1989. In 1999 at Eagle Point Park in Dubuque, 21 peregrines were released by Lowell Washburn, Tom Deckert and Dubuque College. This year twelve territories with eight successful nests produced 23 young.

In Des Moines four young were produced at American Republic Insurance bldg. (37 young since ’93) New male at this site is 63/B, (Woodman Tower , Omaha, NE. ’04)(four young ’07). There is a second territory at State Capitol.

In Cedar Rapids a brood of five young were reported by Theresa Chapel at USBank (50 young since ’93). Female *S/5* (Des Moines, IA ’98) here for ninth year (produced 25 young) and four-year-old male 78/E (Kokomo, IN. ’03) here for third year (produced 12 young) produced five young, all males.

At Lansing cliff (14 young since ’99), Bob Anderson boarded up the power plant nest box and installed a cliff nest box here on 3/30/07. Raccoon predation has been a problem at this location, but it was believed the box would provide a successful nest. Raccoon predation occurred again this year.

At Leo’s Bluff near Waukon Jct. (four young since ’05) Bob Anderson reported that last year falcons hatched one egg successfully, but the entire family mysteriously disappeared in mid-May. This year, the nest was successful with two young. Adult female 66/A (St. Louis ’05) and male is unbanded. First nested here 2004.

At Clinton, Iowa, (one young ’07) unidentified pair produced one young at new site. Site is ML Kapp Generating Station with Alliant Energy. This site is located at southern extent of historic peregrine nesting range along Mississippi flyway in Iowa.

At I 80 Bridge unidentified pair defended territory, but no eyrie or young detected. Nest tray had not been used and is now located on upstream side on Illinois side of channel.

At MidAmerican HQ (12 young since ’02) in Quad Cities same eight-year-old pair 8/*E (Muncie, IN ’99) and P/D (Dubuque, IA ’99) here for sixth year (two on Centennial Bridge) laid four eggs in rain gutter. Eggs were placed in nest tray but did not hatch.

Female recycled and laid four eggs in nest box, but did not successfully hatch.

At I 280 bridge (four young ’07) near Quad Cities unidentified pair produced four young at this new site. Young were banded by Jodeane Cancilla of Macbride Raptor Project with assistance from Illinois DOT officials.

At Louisa Generating Station (19 young since ’02) Jim Haack reported four young successfully fledged from 06/A female (St. Louis, MO. ’05) and unidentified male for sixth year.

At Burlington, Great River Bridge (at least two young since ’04) an unidentified pair, here for fourth year fledged at least one young.

At Chillicothe (five young since ’05), Ottumwa Generating Station with Alliant Energy, Judi Johnson reports eight year-old female Z/V (NSP Riverside, Mpls. MN. ‘99) (produced 12 at Louisa and Chillicothe) and an unidentified male fledged two young.

In summary twelve territorial pairs provided eight successful nests with 23 young produced in 2007.

2008

Spring 2008 began inauspiciously enough, but climate conditions resulted in a tough year for some peregrine pairs in Iowa. This year thirteen territories with eight successful nests produced 20 young.

In Des Moines three young were produced at American Republic Insurance bldg. (40 young since ’93) Male at this site is 63/B, (Woodman Tower , Omaha, NE. ’04)(seven young ’07). Female is unbanded.

A second territory at State Capitol produced two young. Female 39/E (NSP Riverside Plant, Minneapolis MN) has been at Capitol since 2003. Male is unbanded.

In Cedar Rapids a brood of two young were reported by Theresa Chapel at USBank (52 young since ’93). Female *S/5* (Des Moines, IA ’98) here for tenth year (produced 27 young) and five-year-old male 78/E (Kokomo, IN. ’03) here for fourth year (produced 14 young).

At Lansing cliff (17 young since ’01), Bob Anderson reports falcon pair back in Alliant Energy smokestack box and fledged three.

At Waukon Jct. (seven young since ’04) Bob Anderson reported that pair relocated up stream to Gitta’s Bluff. Nest was successful with three young. Adult female *K/*W (John Latsch Park, MN ’06) and male is unbanded.

At Clinton, Iowa, (one young ’07) unidentified pair produced no young at this site. Site is ML Kapp Generating Station with Alliant Energy. This site is located at southern extent of historic peregrine nesting range along Mississippi flyway in Iowa.

At I 80 Bridge unidentified pair defended territory, but no eyrie or young detected. Nest tray had not been used and is now located on upstream side on Illinois side of channel.

At MidAmerican HQ (13 young since ’02) in Quad Cities same nine-year-old pair 8/*E (Muncie, IN ’99) and P/D (Dubuque, IA ’99) here for seventh year (two on Centennial Bridge) laid three eggs in nest box. One young fledged.

At I 280 bridge (four young ’07) near Quad Cities unidentified pair produced nested on Illinois side of bridge. Flood conditions prevented exploring this site in ’08.

At Louisa Generating Station (23 young since ’02) Jim Haack reported four young successfully fledged from 06/A female (St. Louis, MO. ’05) and unidentified male for seventh year.

At Burlington, Great River Bridge (at least four young since ’04) an unidentified pair, here for fifth year fledged two young.

At Chillicothe (four young since ’05), Ottumwa Generating Station with Alliant Energy, Judi Johnson reports nine- year-old female Z/V (NSP Riverside, Mpls. MN. ‘99) (produced 12 at Louisa and Chillicothe) and an unidentified male were unsuccessful. Three eggs were discovered June 13, but area was subjected to violent storms later in the month.

There is a new pair occupying Agri-Bunge grain elevator at McGregor, Iowa. Female is a brown bird immature.

In summary thirteen territorial pairs provided eight successful nests with 20 young produced in 2008.

2009

Spring 2009 heralded the year Peregrine Falcons were upgraded from Endangered to a Species of Special Concern status in Iowa. This year thirteen territories with nine successful nests produced 25 young.

In Des Moines four young were produced at American Republic Insurance bldg. (44 young since ’93) Male at this site is 63/B, (Woodman Tower , Omaha, NE. ’04)(11 young ’07) Female is 39E (NSP Riverside plant ‘03) here for first year (produced six young two at capitol in ‘08).

A second territory at State Capitol produced four young. Female (six young) and male are unbanded (four young).

In Cedar Rapids a brood of one young was reported by Theresa Chapel at USBank (53 young since ’93). Female *S/5* (Des Moines, IA ’98) here for eleventh year (produced 28 young) and six-year-old male 78/E (Kokomo, IN. ’03) here for fifth year (produced 15 young).

At Lansing cliff (20 young since ’01), Bob Anderson reports falcon pair back in Alliant Energy smokestack box and fledged three.

At Waukon Jct. (seven young since ’04) Bob Anderson reported that pair relocated back to Leo’s Bluff. Nest was unsuccessful. Adult female *K/*W (John Latsch Park, MN ’06) and male is unbanded.

At Clinton, Iowa, (three young ’07) unidentified pair produced two young at this site. Site is ML Kapp Generating Station with Alliant Energy. 46D was photographed at ADM and is possibly at ML Kapp. This site is located at southern extent of historic peregrine nesting range along Mississippi flyway in Iowa.

At I 80 Bridge unidentified pair defended territory, but no eyrie or young detected. Nest tray had not been used and is now located on upstream side on Illinois side of channel.

At MidAmerican HQ (15 young since ’02) in Quad Cities same ten-year-old pair 8/*E (Muncie, IN ’99) and P/D (Dubuque, IA ’99) here for eighth year (two on Centennial Bridge) laid three eggs in nest box. Two young fledged.

At I 280 bridge (four young ’07) near Quad Cities unidentified pair nested on Illinois side of bridge.

At Louisa Generating Station (27 young since ’02) Jim Haack reported four young successfully fledged from

06/A female (St. Louis, MO. ’05) and unidentified male for eighth year.

At Burlington, Great River Bridge (at least four young since ’04) an unidentified pair, here for sixth year fledged one young.

At Chillicothe (nine young since ’05), Ottumwa Generating Station with Alliant Energy, Judi Johnson reports ten-year-old female Z/V (NSP Riverside, Mpls. MN. ‘99) (produced 16 at Louisa and Chillicothe) and an unidentified male were successful. Four young fledged.

In summary thirteen territorial pairs provided nine successful nests with 25 young produced in 2009.

2010

Spring 2010 was the year Peregrine Falcons were considered a Species of Special Concern in Iowa and no longer endangered. It should be noted that nesting pair on I 280 bridge near Davenport have located on the Illinois side the last three years and are no longer included in Iowa data base. This year fourteen territories with ten successful nests produced 21 young.

In Des Moines two young were produced at American Republic Insurance bldg. (46 young since ’93) Male at this site is 63/B, (Woodman Tower , Omaha, NE.’04)(13 young ’07) Female is 39E (NSP Riverside plant ‘03) here for second year (produced eight young, two at Capitol in ‘08).

A second territory at State Capitol produced one young. Unbanded female (seven young) and male 39/A (American Republic ’08) here for first year were successful above east portico.

In Cedar Rapids a brood of four young was reported by Theresa Chapel at USBank (57 young since ’93). Female *S/5* (Des Moines, IA ’98) here for twelth (produced 32 young) and seven-year-old male 78/E (Kokomo, IN. ’03) here for sixth year (produced 19 young).

At Lansing cliff (22 young since ’01), Bob Anderson reports falcon pair back in Alliant Energy smokestack box and fledged two.

At Waukon Jct. (seven young since ’04) Bob Anderson reported that pair relocated back to Leo’s Bluff. Nest was unsuccessful. Adult female *K/*W (John Latsch Park, MN ’06) and male is unbanded.

At MacGregor Bob Anderson reports Agri Bunge Elevator has unidentified pair. Thre young were produced.

At Clinton, Iowa, (three young ’07) unidentified pair were not successful at this site. Site is ML Kapp Generating Station with Alliant Energy. 46D was photographed at ADM and is possibly at ML Kapp. This site is located at southern extent of historic peregrine nesting range along Mississippi flyway in Iowa.

At ADM plant in Clinton, new nesting pair produced three males. Female is 35/M and female is 83/M (Cedar Rapids ’03)

At I 80 Bridge unidentified pair defended territory, but no eyrie or young detected. This bridge was under reconstruction this year but pair did not relocate to nest box on MidAmerican Riverside smokestack just downstream.

At MidAmerican HQ (18 young since ’02) in Quad Cities same eleven-year-old pair 8/*E (Muncie, IN ’99) and P/D (Dubuque, IA ’99) here for ninth year (two on Centennial Bridge) laid four eggs in nest box. Three young fledged.

At I 280 bridge (four young ’07) near Quad Cities unidentified pair nested on Illinois side of bridge. We will no longer include this pair with Iowa totals.

At Louisa Generating Station (28 young since ’02) Jim Haack reported one young successfully fledged from 06/A female (St. Louis, MO. ’05) and unidentified male for ninth year. An earlier hatch of three young had disappeared by June 11. A new nest site at the plant near area that was used for releases produced one young.

At Burlington, Great River Bridge (at least five young since ’04) an unidentified pair, here for seventh year fledged one young.

At Chillicothe (11 young since ’05), Ottumwa Generating Station with Alliant Energy, Judi Johnson reports eleven- year-old female Z/V (NSP Riverside, Mpls. MN. ‘99) (produced 18 at Louisa and Chillicothe) and an unidentified male were successful. two young fledged.

There were two new bridge pairs to be aware of at Dubuque and Muscatine this year. At Dead Cow bluff near Lansing bob Anderson reported dawn from young but no falcons in June.

In summary fourteen territorial pairs provided ten successful nests with 21 young produced in 2010.

2011

Spring 2011 had intense weather events. Most notably adverse conditions were blamed for no production from falcon pairs in NE Iowa cliff region. It should be noted that nesting pair on I 280 bridge near Davenport will be included in the Iowa data base. This year 16 territories with nine successful pairs produced 22 young.

In Des Moines four young were produced at American Republic Insurance bldg. (50 young since ’93). Male at this site is 63B, (Woodman Tower , Omaha, NE.’04)(17 young ’07) Female is 39E (NSP Riverside plant ‘03) here for third year (produced 12 young, two at Capitol in ‘08).

A second territory at State Capitol (eight young since 2009) produced two young. Unbanded female (six young) and male 39/A (American Republic ’08) here for second first year (six young ’10) were successful above east portico.

In Cedar Rapids a brood of four young was reported by Theresa Chapel at USBank (61 young since ’93). Female *S/5* (Des Moines, IA ’98) here for thirteenth (produced 36 young) and eight-year-old male 78/E (Kokomo, IN. ’03) here for seventh year (produced 23 young).

At Guider’s Bluff aka Dead Cow Bluff (unidentified active pair since 2010) was not successful according to Bob Anderson.

At Lansing Cliff aka Achaflaya Bluff (22 young since ’01), Bob Anderson reports falcon pair on cliff but were unsuccessful.

At Waukon Jct. (seven young since ’04) Bob Anderson reported that pair relocated back to Leo’s Bluff. Nest was unsuccessful. Adult female *K/*W (John Latsch Park, MN ’06) and male is unbanded.

At MacGregor reports Bunge Elevator (Three young since 2010) Bob Anderson reported unidentified pair was unsuccessful.

At Dubuque Bridge (Two young since 2010) Roger Scholbrock reports two young fledged from unidentified pair.

At Clinton, Iowa, (Three young since ’07) unidentified pair were not successful at this site. Site is ML Kapp Generating Station with Alliant Energy. 46D was photographed at ADM and is possibly at ML Kapp. This site is located at southern extent of historic peregrine nesting range along Mississippi flyway in Iowa.

At ADM plant in Clinton (Five young since ’10), nesting pair produced two males. Female is 35/M (Kansas City 2005) (Five young since ’10) and female is 83/M (Cedar Rapids ’03)(Five young since ’10).

At I 80 Bridge unidentified pair defended territory, but no eyrie or young detected.

At MidAmerican HQ (19 young since ’02) in Quad Cities same twelve-year-old pair 8/*E (Muncie, IN ’99) and P/D (Dubuque, IA ’99) here for tenth year (two on Centennial Bridge) laid three eggs in nest box. One young fledged.

At I 280 bridge (five young ’07) near Quad Cities unidentified pair nested on Illinois side of bridge. Iowa will record data at this site.

At Louisa Generating Station (28 young since ’02) Jim Haack reported no young successfully fledged. Female06/A female (St. Louis, MO. ’05) and unidentified male for tenth year.

At Burlington, Great River Bridge (at least five young since ’04) an unidentified pair, here for eigth year fledged two young.

At Chillicothe (14 young since ’05), Ottumwa Generating Station with Alliant Energy, Judi Johnson reports new pair five year old female N23 (Sharon Cargill Plant Jefferson Co. WI 2006)(three young since 2011) and male 26/B (Am. Rep. Des Moines 2009) (three young since 2011). Three young fledged.

In summary 16 territorial pairs provided nine successful nests with 22 young produced in 2011.

2012

Spring 2012 came early from very mild winter season. It should be noted that nesting pair on I 280 bridge near Davenport have located on the Illinois side the last five years and are no longer included in Iowa data base. This year 15 territories with 13 successful nests produced 34 young.

In Des Moines three young were produced at American Republic Insurance bldg. (49 young since ’93) Male at this site is 63/B, (Woodman Tower, Omaha, NE.’04)(16 young ’07) Female is 39E (NSP Riverside plant ‘03) here for second year (produced 11 young, two at Capitol in ‘08).

A second territory at State Capitol produced one young. Unbanded female (eight young) and male 39/A (American Republic ’08) here for third year were successful above east portico.

In Cedar Rapids a brood of three young was reported by Theresa Chapel at USBank (60 young since ’93). Female *S/5* (Des Moines, IA ’98) here for fourteenth year (produced 35 young), and nine-year-old male 78/E (Kokomo, IN. ’03), here for eighth year (produced 22 young).

A new site at Aggie’s Bluff two miles upstream from Lansing an unidentified pair produced four young.

At Lansing cliff (26 young since ’01), Bob Anderson reports falcon pair back in Alliant Energy smokestack box and fledged four.

At Waukon Jct. (seven young since ’04) Bob Anderson reported that

pair relocated back to Leo's Bluff. Nest was unsuccessful. Adult female *K/*W (John Latsch Park, MN '06) and male is unbanded.

At MacGregor Bob Anderson reports Bunge America Elevator has unidentified pair. Three young were produced.

At Dubuque Wisconsin Bridge Roger Scholberg unidentified pair here for third reports one young produced from.

At Clinton, Iowa, (six young '07) unidentified pair were successful at this site with three young. Site is ML Kapp Generating Station with Alliant Energy. 46D was photographed at ADM and is possibly at ML Kapp. This site is located at southern extent of historic peregrine nesting range along Mississippi flyway in Iowa.

At ADM plant in Clinton, nesting pair produced two (seven young since 2010.) Female is 35/M and female is 83/M (Cedar Rapids '03)

At I 80 Bridge unidentified pair defended territory, but no eyrie or young detected.

At MidAmerican HQ (21 young since '02) in Quad Cities same thirteen-year-old pair 8/*E (Muncie, IN '99) and P/D (Dubuque, IA '99) here for 11th year (two on Centennial Bridge) laid four eggs in nest box. Three young fledged.

At I 280 bridge (four young '07) near Quad Cities unidentified pair nested on Illinois side of bridge. We will no longer include this pair with Iowa totals.

At Louisa Generating Station (30 young since '02) Jim Haack reported two young successfully fledged from 06/A female (St. Louis, MO. '05) and unidentified male for eleventh year. A new nest site at the plant near area that was used for releases produced one young.

At Burlington, Great River Bridge (at least seven young since '04) an unidentified pair, here for ninth year fledged one young.

At Chillicothe (15 young since '05), Ottumwa Generating Station with Alliant Energy, Judi Johnson reports eleven- year-old female Z/V (NSP Riverside, Mpls. MN. '99) (produced 22 at Louisa and Chillicothe) and an unidentified male were successful – four young fledged.

In summary 15 territorial pairs provided 13 successful nests with 34 young produced in 2012.

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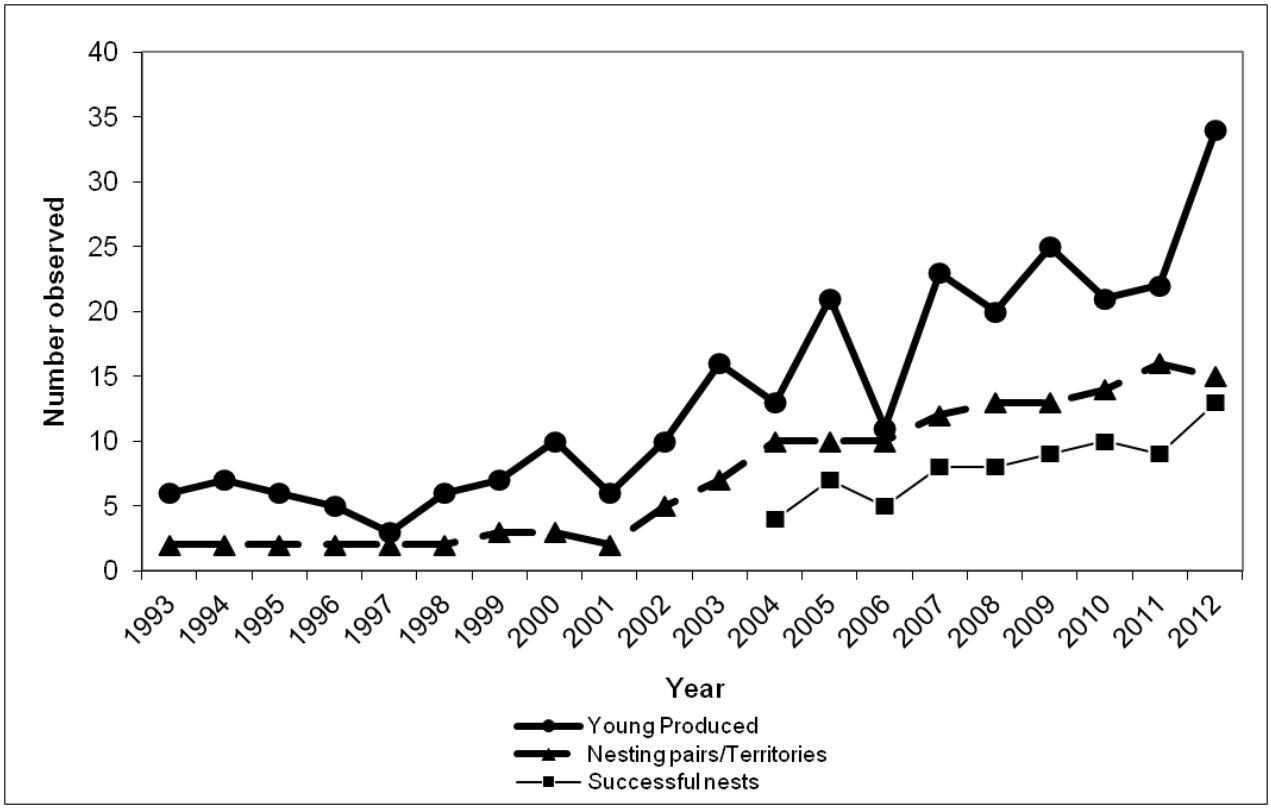
Young Peregrine falcons produced from known Iowa nesting pairs 1993 - Present.



GREATER PRAIRIE CHICKEN RESTORATION

HISTORICAL REVIEW

Greater prairie chickens (*Tympanuchus cupido pinnatus*) commonly nested throughout Iowa from the time of European settlement in the mid-nineteenth century until about 1900. Numbers peaked about 1880 when most of Iowa was a mosaic of small 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 to 50 a day were common, and some hunters took up to 200 per day.

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

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

RESTORATION

First Reintroduction Attempt

In the early 1980's, the Iowa Conservation Commission, now the Iowa Department of Natural Resources (IDNR), attempted to restore prairie chickens to west central Iowa. The IDNR 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 8.1). The release site was located in the Loess Hills east of Onawa, Monona County (Fig. 8.1). 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 mixed. A large number of chickens were observed in the release area the following day; however, sightings thereafter were sporadic and often at a distance from the release area. In 1981, single birds occurred near the release area and groups of birds were reported 20 and 60 miles from the release site. 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. The birds appeared to prefer the level valley to the hilly region 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, IDNR, *pers. comm.*).

Second Reintroduction Attempt

1987-1989 Stockings: In 1987, the IDNR made a second restoration attempt at Ringgold Wildlife Area located two miles north of the Missouri border in Ringgold County (Fig 8.1). 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 IDNR 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 8.1).

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

were verified as Iowa release birds by the bands on their legs (Maury Meadows, *pers. comm.*).

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

1992-94 Stockings: An agreement with KDWP once again allowed IDNR 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 (Fig. 8.1). 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 8.1).

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

Current Restoration Attempts: In 2012 the Iowa DNR has 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 help bolster the diminishing population of birds.

In the short-term the plan suggests trapping and releasing roughly 350 birds between 2012 and 2015. In early April 2012, fifty birds, 25 male and 25 female birds were trapped in Southwest Nebraska (near Imperial) and released within 24 hours on the two active lek sites in the vicinity of Kellerton in Ringgold County, IA.

BOOMING GROUND SURVEY

Methods

Attempts have been made each spring by IDNR personnel and volunteers

to locate leks and count booming males. Counts of known leks are made on sunny mornings with winds <10 mph throughout the 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 begun in 2009, using a prairie chicken habitat suitability model to establish 10 Survey Areas across 8 southern Iowa counties (Fig. 8.2). Each survey area had between 19 and 26 listening points located randomly or at a known past or present lek site. A total of 149 listening points were surveyed twice during the booming season (Fig. 8.2). MDC personnel make similar counts on and around the Dunn Ranch, where the birds are part of the same regional population. It is possible that some booming grounds have not been located.

Results

2002: This year personnel witnessed a direct loss of one lek in Ringgold Co. (69N, 29W, Sec 3) from previous years due to CRP conversion to rowcrop, but yet maintained seven active leks as in 2001. This is the third year for Decatur, Ringgold, and Wayne counties. Three new locations were found. However, the number of booming males fell again this year (21.4%) to 22, bringing the mean total to 37.0 (Table 8.2). This also continues a two year trend of declining males per lek to 3.1 in 2002. This year the number of leks is near average, but the count of booming males and mean males per lek is below the eight year mean at 59.5% and 52.5% respectfully. Current and prior lek locations are shown in figure 8.2. There were no releases or relocates done in 2002.

2003: Three new locations were noticed again this year (Table 8.2). There was a gain of two leks from 2002 to nine for 2003, which is above the average to date by 15.3% (Table 8.2). This year yielded the most positive observation by matching the most leks observed since 1998. Also males per lek increased from 3.1 in 2002 to 3.6 in 2003, and total booming males showed increases of 10 from 22 to 32, making this the fifth most since 1995 (Table 8.2). Current and prior lek locations are shown in figure 8.2.

2004: Only one new location was noticed this year (Table 8.2). There was a loss of three leks from 2003 to six for 2004, which is below the average to date by 21% (Table 8.2). For the first time since reporting in 1995, only two counties are reported with active leks. Total booming males is among the lowest in record since 1997 (Table 8.2). However, males per lek continues to show steady numbers in recent years with 3.7 in 2004. Despite the large amount of spring rain in 2004, biologists still received reports of large broods. Current and prior lek locations are shown in figure 8.2.

2005: Two new lek locations were noted this year (Table 8.2). However, there was a reduction in total number of leks from six in 2004 to five this year. In 2005, there were once again 3 counties reporting active leks, which is up one county from last year. Total booming males was 24, which also is up from 22 last year (Table 8.2). Males per lek was the highest it has been since 2000, with 4.8 males per lek seen. Weather conditions were favorable for nesting this season, and broods have been reported. Current and prior lek

locations are shown in figure 8.2.

2006: One new lek location was noted this year though one previously active was observed inactive so the total number of active leks remains at five (Table 8.2). These five leks were spread across three counties which is also consistent with last year. However, the lowest number of booming males since 1996 was recorded this year with only 16 reported (Table 8.2). The average number of males per lek was 3.2. No brood sightings were reported. Current and prior lek locations are shown in figure 8.2.

2007: Four active leks were identified this year spread through 3 counties (Table 8.2). Only 15 booming males were recorded across these leks with an average of 3.75 males per lek. The largest lek is by the Kellerton viewing platform and observers on April 2, 2007 reported between 14-22 birds at a time on the lek evenly split between male and female. No broods were spotted during summer surveys in 2007.

The number of leks has declined over the past 10 years from a high of 9 to this year's 4. The number of booming males has declined as well and broods have proven difficult to find.

2008: A new effort was embarked upon in 2008 to determine the genetic diversity of southern Iowa's prairie chicken population. Trap lines were set out at the largest lek on the Kellerton Wildlife Area at the end of March and run through April 18th. Blood was collected from the 10 birds captured (7 males, 3 females) and sent for genetic analysis. Full results are still pending.

Booming males were counted on four leks this year all in Ringgold County. The biggest lek was once again at Kellerton Wildlife area where as many 14 males were initially observed booming though once the females appeared there were only 10 males. Current and prior lek locations are shown in figure 8.2.

2009: The newly established lek survey recorded 3 established lek sites in Ringgold County and one possible lek site in Adams County. The well established Kellerton lek had a high of 13 males and 4 females observed, while a smaller lek area to the north of Kellerton had a high of 4 males and 1 female seen during the survey (table 8.2). This smaller lek area was likely used by a total of 5 males and 2 females. One male was possibly heard booming at a lek area to the east of this smaller lek site. Another two male chickens were not seen, only heard at a possible lek area in Adams County.

In addition, a prairie chicken nest was located for the first time just southwest of the main Kellerton lek. Twelve eggs were counted and a later visit confirmed that 11 successfully hatched. A further sighting of the brood recorded that two of the chicks had died and the remainder of the brood was not seen and their fate is unknown.

2010: The 2010 lek survey recorded 3 established lek sites in Ringgold County. The well established Kellerton lek had a high of only 8 males however a high of 7 was collected on another satellite lek site and an additional 4 were observed on the final lek site, north of Kellerton (table 8.2). Outside of the lek survey an additional 6 females were observed on one of the satellite lek sites. The average number of males observed per lek was the highest it has been in the previous 10 years at 6.33. While this number should be somewhat encouraging it really seems to reflect the concentration of birds on fewer

lek sites.

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

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

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

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

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

DISCUSSION

Prairie chicken reintroduction efforts have resulted in a small population of prairie chickens in a concentrated area of southern Iowa and northern Missouri.

Pasture and hay are still primary land uses in this region which benefits the chickens. One major threat to the habitat in this area is the high price of corn, making CRP less desirable. Hundreds of acres of CRP are likely to be removed from the program and returned to crop land in the next few years.

On a positive note, this area was targeted for additional acres in the CP-38 SAFE program with the goal of restoring habitat specifically for chickens and the USDA announced the first open sign-up for CRP in a few years. The area around Kellerton is also a high priority area for land acquisition particularly tracts to the south of Kellerton WA that would connect with Ringgold WA and prairie chicken populations in northern Missouri. In addition, intensive management of large blocks of grassland by public agencies will help ensure adequate habitat into the future.

Another complicating aspect of prairie chicken management is the small size of the prairie chicken population and

whether because of low genetic diversity, it may be necessary to supplement the population with additional releases. The trapping study in 2008 revealed that genetic diversity within the population was low. Introduction of new birds should assist with improving genetic diversity in this small population.

Kellerton Bird Conservation Area

A model for landscape-level grassland bird conservation was developed by research biologists in the Midwest and serves as the basic design for Iowa's Bird Conservation Areas (BCA). The Kellerton Bird Conservation Area (KBCA) was formally designated in 2001 and is the first attempt to put the habitat objectives of the Dissected Till Plains Bird Conservation Plan into action. The KBCA is a 10,000-acre area of public and private lands located in extreme south central Iowa and was the first BCA designated in the country.

In 1998, the KBCA consisted of 70% grassland, 25% cropland, and 5% woodland. The primary booming grounds used by the chickens are located within the boundaries. All the land was privately owned, and the grasslands were either pasture, hayfields, or land entered in CRP. Within this 10,000-acre area, a contiguous block of 2,100 acres of grassland was identified as a priority acquisition tract.

A 680-acre parcel was the first desired purchase aimed to protect Iowa's largest greater prairie chicken lek. The IDNR acquired the initial 680-acre KBCA tract in December 1998. The IDNR, the National Fish and Wildlife Foundation, Pheasants Forever, Iowa Audubon, and numerous private donations provided funds for the initial acquisition. The IDNR continues to purchase land in the area whenever it can. Since 2002 an additional 636 acres have been purchased for conservation protection in the Kellerton BCA.

In addition to the proposed 2,000 acre publicly-owned core area, IDNR and the Natural Resource Conservation Service (NRCS) promote conservation efforts on nearby private land. Area biologists work closely with landowners and implement WHIP, and CRP programs in and around the area. WHIP and CRP programs can be used to enhance wildlife management on an additional 2,500 acres of land within the KBCA by encouraging farmers to use rotational grazing, cutting trees, planting native grasses, and prescribed burning.

In addition to the KBCA acquisition, the Missouri Nature Conservancy (TNC) purchased the 2,200-acre Dunn Ranch in the spring of 1999. The MDC also acquired Pawnee Prairie, a large grassland tract west of the Dunn Ranch.

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Table 8.1. Dates, numbers, and locations of greater prairie chicken releases in Iowa, 1980-2012. Gamma (Γ) = male, Epsilon (E) = female

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 (IDNR trapping crew)	Mount Ayr, Ringgold Co., Price Twp., Sec. 13.[3]
April 1992	31Γ 20E	KDWP (IDNR trapping crew)	Kellerton, Ringgold Co., Athens Twp., Sec. 8.[4]
April 1992	9Γ 9E	KDWP (IDNR trapping crew)	Ringgold Wildlife Area, Ringgold Co., Lotts Creek Twp., Sec. 24.[2]
April 1993	13Γ 33E	KDWP (IDNR trapping crew)	Kellerton, Ringgold Co., Athens Twp., Sec. 8. [2]
April 1993	24Γ 24E	KDWP (IDNR trapping crew)	Orient, Adair Co., Lee Twp., Sec. 36.[5]
April 1994	10Γ 17E	KDWP (IDNR trapping crew)	Kellerton, Ringgold Co., Athens Twp., Sec. 8.[4]
April 1994	31Γ 34E	KDWP (IDNR trapping crew)	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	Nebraska Game and Parks (IDNR Trapping crew)	Kellerton, Ringgold Co., Athens Twp., Sec. 16.[4]
April, 2012	10Γ 17E	Nebraska Game and Parks (IDNR Trapping crew)	Kellerton, Ringgold Co., Atens TWP., Sec. 6

* KFGC = Kansas fish and Game Commission, KDWP = Kansas Department of Wildlife and Parks, SDGFP = South Dakota Game Fish and Parks Department, IDNR = Iowa Department of Natural Resources.

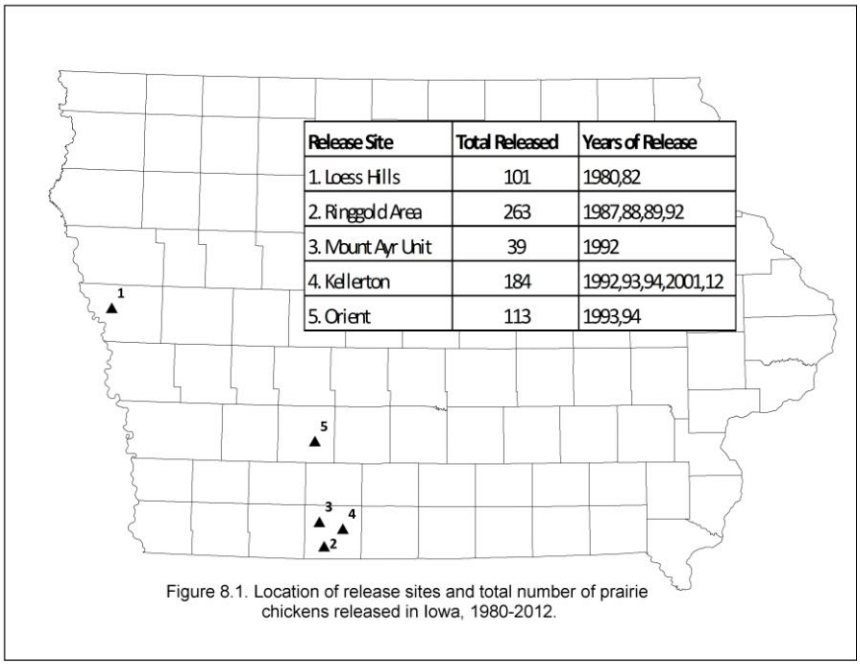
[1-5] Release sites indicated on county map (Figure 8.1)

Table 8.2. Location and number of greater prairie chickens observed on active leks in Iowa, 2002-2012.

		Legal Description													
County	**Township**	**Twp**	**Rge.**	**Sec.**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Adair	Orient	74N	31W	3											
Adair	Orient	74N	31W	11											
Adair	Lee	75N	31W	26											
Adams	Union	72N	32W	24											
Adams	Douglas	72N	35W	26								2			
Adams	Prescott	72N	33W	4										2[a]	
Decatur	High Point	69N	24W	1											
Decatur	High Point	69N	24W	2	4										
Decatur	High Point	69N	24W	11											
Đecatur	Grand River	69N	27W	16					1	1					
Decatur	Grand River	69N	27W	22				3	1	2					
Decatur	Franklin	70N	25W	9											
Decatur	Franklin	70N	25W	20											
Decatur	Garden Grove	70N	24W	36		3									
Ringgold	Athens	68N	28W	4	2			3	2		2		7		
Ringgold	Athens	68N	28W	16	10	10	11	11	11	9	14	13	8	6	2
Ringgold	Athens	68N	28W	8			3					1			
Ringgold	Athens	68N	28W	17		5									
Ringgold	Athens	68N	28W	2	1										
Ringgold	Athens	68N	28W	20		2									1
Ringgold	Athens	68N	28W	6								5	4	7	9
Ringgold	Athens	68N	28W	5											5
Ringgold	Poe	68N	29W	?											
Ringgold	Rice	68N	30W	24											
Ringgold	Rice	68N	30W	13	2	1	1								
Ringgold	Liberty	69N	29W	3		4	2								
Ringgold	Liberty	69N	29W	10											
Ringgold	Monroe	69N	28W	2											
Ringgold	Monroe	69N	28W	12		4	4								
Ringgold	Monroe	69N	28W	28							2				
Ringgold	Monroe	69N	28W	33											
Ringgold	Monroe	69N	28W	15	1										
Ringgold	Monroe	69N	28W	22		1									
Ringgold	Tingley	70N	29W	34				5			1				
Union	Spaulding	73N	31W	?											
Wayne	Jackson	68N	21W	18		2	1	2	1	2					
Wayne	Jackson	68N	21W	14	2										
	Total Chickens[b]	mean=	19.67		22	32	22	24	16	14	19	21	19	13	17
	Total Active Leks	mean=	5.308		7	9	6	5	5	4	4	4	3	2	4
	Total Chickens/Lek[b]				3.14	3.56	3.67	4.80	3.20	3.50	4.75	5.25	6.33	6.50	4.25

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

[b] before 2009 = only males



Release Site	Total Released	Years of Release
1. Loess Hills	101	1980,82
2. Ringgold Area	263	1987,88,89,92
3. Mount Ayr Unit	39	1992
4. Kellerton	184	1992,93,94,2001,12
5. Orient	113	1993,94

Figure 8.1. Location of release sites and total number of prairie chickens released in Iowa, 1980-2012.

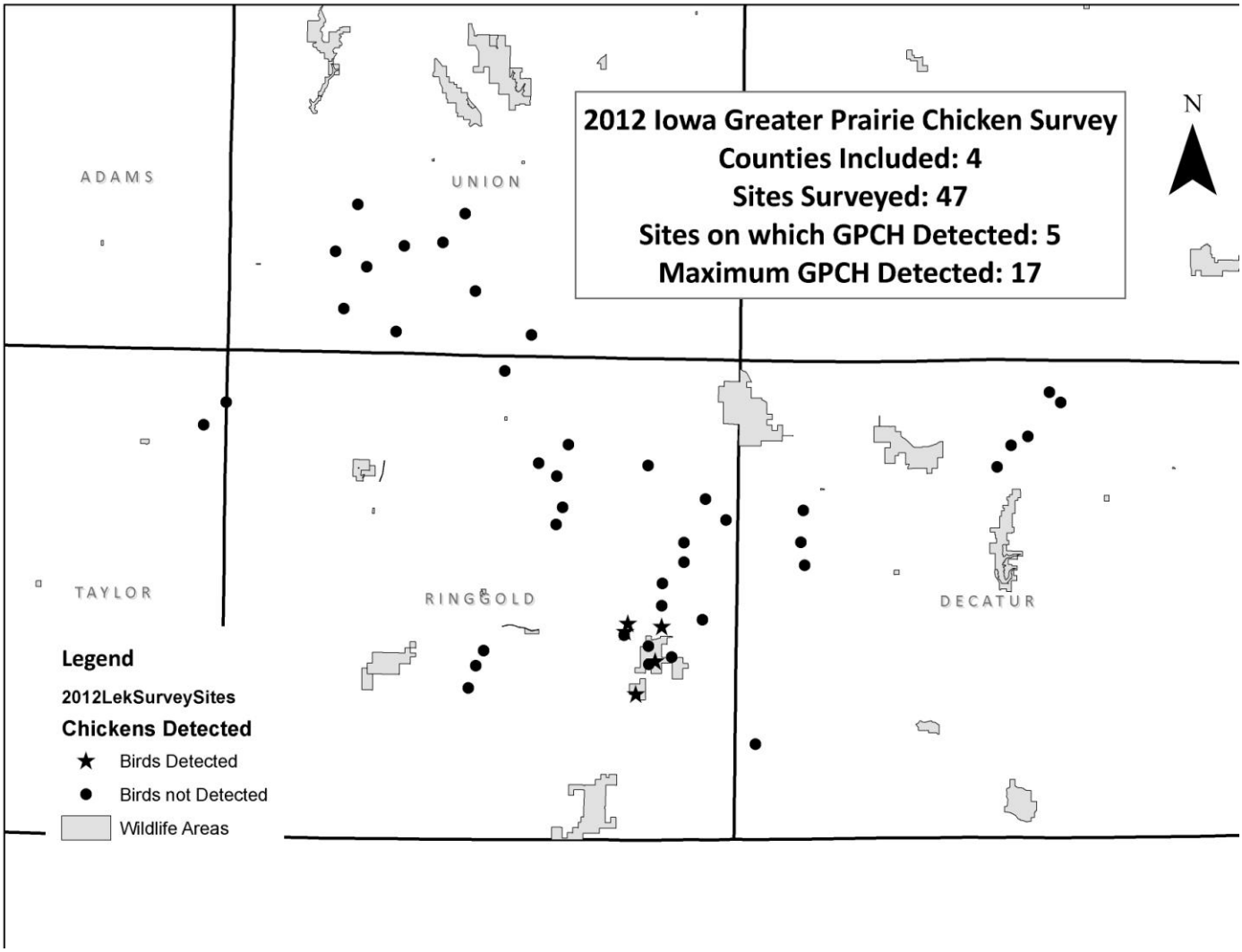


Figure 8.2. Location of sites surveyed and sites where chickens were detected during the 2012 prairie chicken lek survey.

TRUMPETER SWAN RESTORATION

Prior to the settlement of Iowa, trumpeter swans nested throughout the state. However, wetland drainage and unregulated hunting of trumpeters soon brought their demise. Prior to 1998, the last pair wild nesting trumpeter swans in Iowa occurred in 1883 on the Twin Lakes Wildlife Area southwest of Belmond, Iowa in Hancock County. Some 115 years later, the first modern day hatch of three wild trumpeter swan cygnets occurred in 1998 in Dubuque County. This pair hatched 5 in 1999, 5 again in 2000, 4 in 2001, 5 in 2002 and 4 in 2003.

In 2000, a second pair nested on a Winnebago County Conservation Board wetland (Russ Tract at Thorpe Park) 8 miles west of Forest City. This pair had 5 eggs. Unfortunately none hatched. We did; however, augment the nest with a sixth egg and it hatched providing this pair with a young cygnet to help bond the pair to the wetland nest site.

Trumpeter swans were first given nationwide protection in 1918 when the United States, Canada, and Mexico signed the International Migratory Bird Treaty. A nationwide swan count in the early 1930s indicated that only 69 existed in the continental United States with all those occurring in Red Rock Lakes National Wildlife Refuge in southwest Montana. The Red Rock Lakes became the nation's first National Wildlife Refuge because of the presence of these trumpeter swans.

In 1993, the Iowa Department of Natural Resources developed a plan to restore trumpeter swans to the state. Our original goal was to establish 15 wild nesting pairs to the state by the summer of 2003. That goal was reached in 2004. Our updated goal was to have 25 wild nesting pairs in Iowa by 2006, and that goal was reached in 2005. Our 2nd goal is to use the swans to "trumpet" the many positive values of wetlands not only for wildlife habitat for many rare and endangered plant and animal species, but for water quality improvement (nature's natural water filter), flood reduction, and groundwater recharge as well.

Iowa trumpeter swans are being obtained from 26 different states, including zoos, private propagators, other state swan projects, and any other sources that might have available swans, a total of 120 sources to date. We have establishing flightless breeder pairs at appropriate sites, the young of which the DNR releases for free flight at other places across the state. We find it necessary to move young produced at these flightless pair sites have to be moved otherwise they interfere with the following year's reproductive activity because the adult pair continually harass the young to harass from their nesting territory.

Because trumpeter swans are nearing sustainable numbers the DNR is currently phasing out of Trumpeter swan restoration. A detailed phase out plan is near completion. Thirty three partnership breeding pair sites are currently active. Through the summer of 2008 nearly all trumpeter swans released in Iowa are marked with plastic green or red neck collars and leg bands, along with U.S. Fish and Wildlife Service metal leg bands. The plastic neck and leg bands are marked with alpha letters C, F, H, J, K, P, T, M, and two numbers, 00 through 99. Many of the early FWS leg bands were made of soft aluminum metal and several of these dropped off. In 2004, we began using lock-on stainless steel FWS leg bands and we are not aware of any band losses since.

We are trying to obtain as much outside funding as possible and we are the

fortunate recipients of $165,000 in memory of David A. and Robert Luglan Sampson, formerly of Webster City. Numerous individuals, organizations, and corporations have contributed significant smaller dollar amounts. The Iowa Chapter of the Wild Sheep Association of North America has contributed over $4000 to Trumpeter Swan Restoration in recent years. Considerable soft match/in-kind contributions have been made and are conservatively estimated at over 1.5 million dollars. The Trumpeter Swan Program was also awarded a State Wildlife Grant (SWG) in 2004.

Twenty trumpeter swans were released in Iowa in 2012 (Table 1). Seventy-seven swans were released throughout Iowa in 2004. In 2005, 115 swans were released. In 2006, 70 trumpeters were released and in 2007, 71 trumpeter swans were released. In 2008, 53 trumpeters were released in Iowa and 18 in Arkansas. In 2009, 61 trumpeters have been released in Iowa and 15 in Arkansas. In 2010, 51 trumpeters have been released in Iowa and 16 in Arkansas. Table 3. shows a grand total of 1112 trumpeters released to date. Iowa has the largest trumpeter swan observation database with over 3600 observation of neck collared swans thru 2012. After 10 years of migration observations, the largest concentrations of migrating Iowa swans are wintering in northeast and east-central Kansas and northwest and west-central Missouri. One Iowa trumpeter swan wintered as far south as Oklahoma during the winter of 1998/1999. Also, one swan wintered near Heber Springs, Arkansas in 1999/2000. During the winter of 2002-2003, 2 swans released at Hottes Lake near Spirit Lake, Iowa, migrated to Lubbock, Texas. These are possibly the first known, or at least the first of very few interior swans to migrate to Texas since the 1880's. There were 6 confirmed shootings of Iowa swans out-of-state, (1 in Wisconsin, 5 in Texas). A $17,000 fined was charged to four men in connection with the family group of 5 Iowa swans shot in Texas.

In 2001, the swans that nested at Union Slough NWR and Mallard Marsh wintered in southwest Arkansas. In the winter of 2003/2004, a record 9 (at that time) 35 free flying trumpeter swans wintered near Webster City, Iowa. An estimated 75 to 100 trumpeter swans wintered in the state in 2003/2004. "Traditional" swan wintering sites are developing in Iowa. During the winter of 2004-2005, 15 trumpeters staged and spent a portion of their winter at private partner Bob & Mary Boock's property near Wheatland in east central Iowa. Twenty-four swans staged and spent most of the winter on a rock quarry pit in Atlantic in southwest Iowa. On Bill Beemer's Pond, a private partner site near Webster City, 61 trumpeter swans spent the winter and another dozen staged on that area before moving further south. During 2005-2006, the number of wintering/staging swans at Wheatland and Atlantic remained the same. At Bill Beemer's the wintering swans increased to 74 and near Mason City, Iowa on the Winnebago River, 13 free flying swans appeared. Nearly 100 swans wintered on Bill Beemer's pond near Webster City in 2008 and 2009. Approximately 50 swans wintered in Atlantic, about 35 swans wintered near Nora Springs, while about 20 wintered at our Great Ape partnership site in southeast Des Moines. During the record snowy and cold winter of 2009 and 2010 about 150 trumpeter swans wintered at Beemer's pond. 162 wintered at Beemers pond in winter 2010/11 with a total of 193 swans wintering in the state. Over 150 trumpeters wintered in Iowa

each of the past 4 years. Table 4. If swans can find open water during the winter, many of them will remain throughout the state. These "winter" sites have provided many people the opportunity to view this "charismatic-mega fauna."

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 were observed at Monticello, Minnesota in the spring of 1997. The straight-line round trip mileage for these birds is over 1300 miles. An unusual swan movement during the winter of 2008-09 was reported in Virginia and that swan returned to Iowa and was reported near Waterloo during the summer of 2009. We have been disappointed that several of our marked swans have lost both plastic neck collars and legs bands and a few have lost the soft aluminum metal USFWS leg bands. A 9C lock on band is currently being used and should remain for a lifetime and for the last 4 years we have not neck collared any swans that have been released in Iowa. Neck collar losses create problems analyzing both movements and mortality of Iowa Trumpeter Swans.

A review of the last 11 years of swan sightings indicates most areas of the state are now seeing swans at sometime during the year. This is another indication that the restoration effort is moving forward. During 2006, 29 of our partnership pairs' nests hatched, producing nearly 90 young. Ten additional nests failed to hatch and about 2 dozen of the nearly 90 cygnets died of various causes. The invasion of West Nile Virus into Iowa had us cautiously concerned, but at this point we have seen little impact on the trumpeter swans. A new concern could be avian influenza. We hope, if that does occur, impacts will be minimal. The DNR is excited about the future of trumpeter swans in the state and it appears that free flying swans in Iowa are nearing sustainability.

Thru 2008, 274 known mortalities to date includes: 56 have died in power line collisions, 54 poached by violators, 14 died due to lead poisoning, 11 due to apparent malnutrition, and 34 to diseases. Several other mortalities have likely occurred from unknown and unreported causes. Mortality rates are somewhat higher than anticipated and could likely slow trumpeter swan restoration efforts, although our known swan nest attempts are still increasing. Iowa currently has the dubious distinction of having some of the higher shooting mortality of any state in the Midwest. We hope that with increased publicity, additional enforcement efforts, and public scrutiny, we will see the illegal shooting be reduced. Shooting trumpeter swans results in a citation of $1500 in liquidated damages, court costs, and perhaps hunting license revocation. All wildlife populations are cyclic so we know that nest attempts will show ups and down over the duration of the trumpeter restoration efforts. Each year there could also be 2 or 3 other nest attempts that we do not know about as we have had at least a few families of swans show up in the state in what we would consider earlier than when normal southward swan migration begins.

A major milestone was reached in 1998, 1999, and again in 2000, when the first and second free-flying trumpeters nested in Iowa since 1883. Seven free flying swans have bonded and mated with seven captive/pinioned swans and have produced eggs. Besides these, we have several pairs of Iowa swans nesting in Southern Minnesota and Wisconsin.

Several trumpeters nesting just across the Iowa border into Minnesota and the one near Potosi, WI are the southern most nesting swans in the respective states. At least one Iowa bird, a male, was part of a nesting pair on the north shore of Lake Ontario. Also a pair attempted to nest in 2007 and successfully nested on the Canadian shore of the boundary waters 2008.

High mortality of adults from illegal shootings had us greatly concerned that we may be negatively impacting wild nesting swans in future years. However, in 2002, we had 8 nest attempts in Iowa and 2 Iowa pairs nesting on the Wisconsin side of the Mississippi River. In 2003, we had 13 wild trumpeter swans nest attempts in Iowa and the same 2 Iowa pair nesting on the Wisconsin side of the Mississippi River producing a record 44 young in the wild. In 2004, we had 4 new wild nesting pairs in Iowa, with a total of 14 wild trumpeter swans nest attempts in Iowa, 9 were successful. Fifty trumpeter swans nesting attempts occurred in 2011. Figure 1 shows the statewide distribution of these nesting attempts. Several additional Iowa released Trumpeter were reported nesting in MN and WI this year. In 2004, a pair of Iowa trumpeter swans nested, unsuccessfully, near Chillicothe, MO., giving hope that swans will nest on some farm ponds and perhaps our restoration efforts will spill over into Missouri. This pair has successfully hatched 3 cygnets near Dawn, MO, a few miles from their unsuccessful nest attempt of the previous year. In 2006, this pair's nest flooded out. Their first nest attempt in 2007, also flooded out, but in their renest attempt 1 cygnet hatched. This was the nesting attempt of trumpeter swans in Missouri in over 140 years. In 2008 and 2009 the pair was not present but one cygnet remains in the area of where it hatched in 3 years previous. A new milestone occurred in 2006 when a pair of Iowa trumpeter swans nested for the first time in nearly 160 years near Savanna, IL. Reports of a second pair of nesting trumpeter swans in the Savanna, Illinois has yet to be confirmed. This pair nested again in 2007 but was flooded out in 2008. In 2009 this pair nested again and successfully hatched 4 cygnets.

In 2012, 45 trumpeter swan nest attempts occurred in Iowa (Figure 1). In 2010, 42 trumpeter swan nest attempts occurred and 50 attempts in 2011. Since 1998, 341 known trumpeter swan nests have occurred in Iowa (Table 3). The 2012 dry weather and wetland conditions resulted in higher cygnet mortality and increased cases of lead poisoning. Many wetlands went completely dry in August and cygnets were forced to walk overland in search food and water.

Iowa has and continues to be a major player in the increase and expansion of the interior trumpeter swan restoration efforts. The Iowa DNR believes that it is approaching sustainability of trumpeter swan in the state. Because we have the largest contingency of captive producing trumpeters in the U.S., we received approval to cooperate with the Trumpeter Swan Society, Arkansas Game and Fish Department, the Mississippi Flyway Council, and the Fish and Wildlife Service and release trumpeter swans in Arkansas. The plan was to release up to 40 swans that had flew in Iowa to hopefully get their "compass readings" and released them on the Buffalo National River and Holla Bend NWR in Arkansas and only at Holla NWR in 2010. We captured and release 18 in 2008, 15 in 2009, and 16 in 2010. The intent is to see if these released swans will migrate north the first year and then in succeeding years return south to

winter with additional swans from the northern states. So far Iowa swans released in AR The first one was sighted in molting condition at Willow Slough in Fremont County in July of 2008. The second one apparently died from a utility wire collision northeast of Clarinda, IA in April of 2010. Other reports include two swan in Otter Tail county MN, one in western IL, and one in Des Moines county, IA As far as we know the remainders of the swans are still in the vicinity of where they were released in Arkansas.

The Trumpeter Swan Society has made enhancing more southward migration one of their goals since its inception. Iowa trumpeter swan production will allow this goal to be tested to see if additional southward migration can be enhanced. This 3 year portion of the Iowa to Arkansas project was completed with the 2010 release. We will continue to explore the possibility of capturing family groups of wintering free flying in both Iowa and Minnesota and releasing them in Arkansas as a part of the effort to encourage more swans to migrate southward.

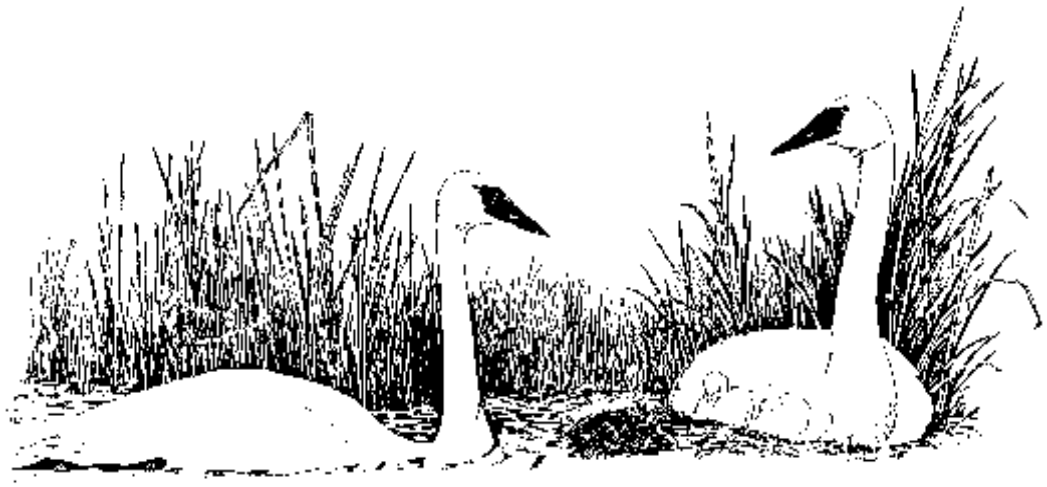
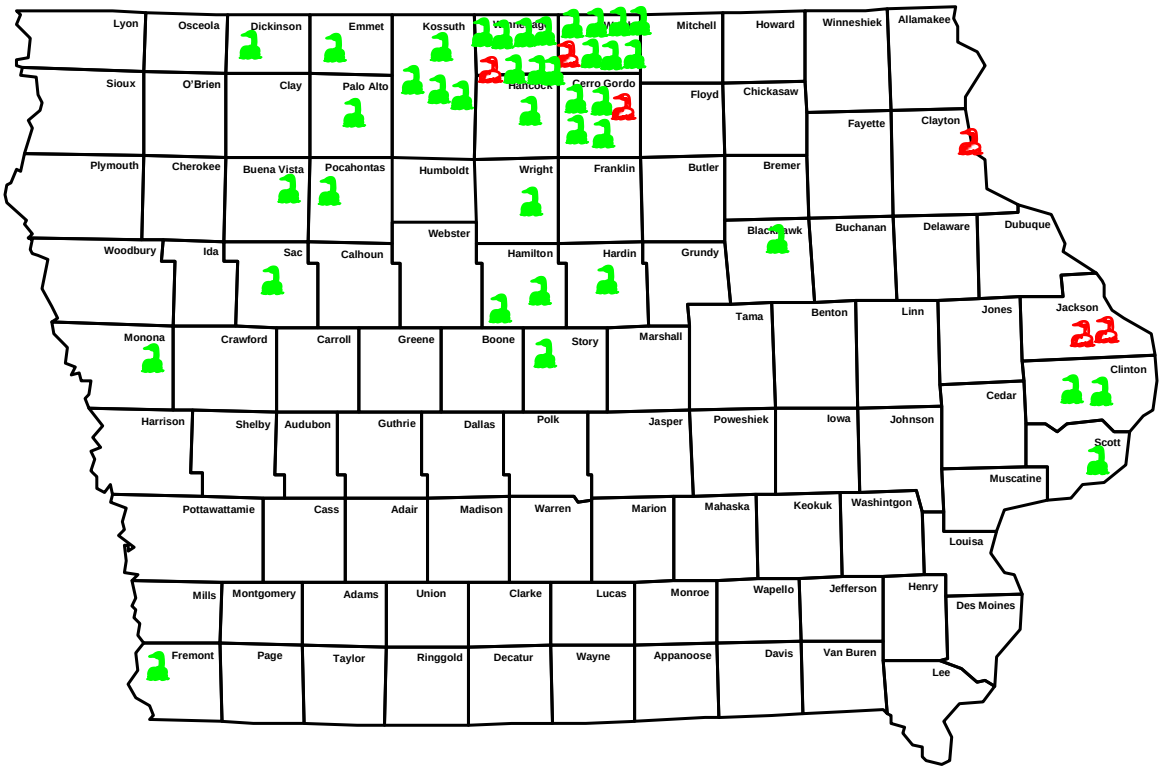


Figure1. Wild Trumpeter Swan Nest in 2012
45 nest attempts



Successful

Unsuccessful

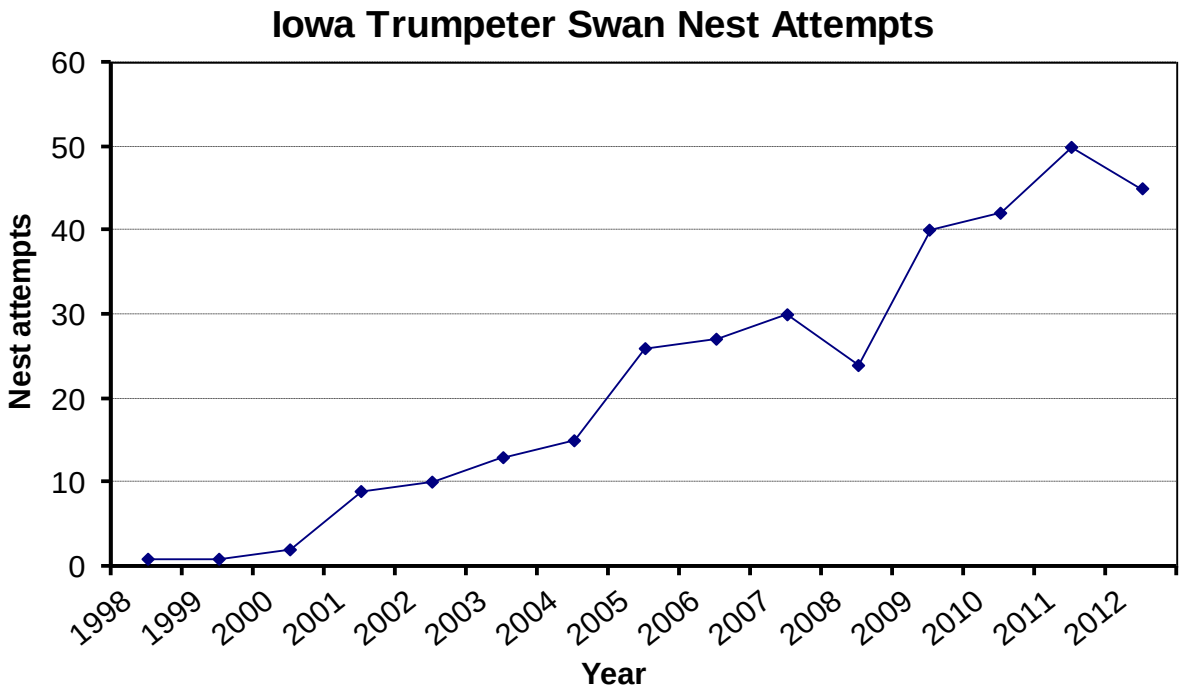

Iowa Trumpeter Swan Nest Attempts
Nest attempts
60
50
40
30
20
10
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Year

Table 1. Trumpeter swans released in Iowa 2012

Year	Release Site	County	Males	Females	Total
2012	Arrowhead Marsh	Sac	1	2	3
	Cassiday Pond	Clinton	1	0	1
	Green Island WMA	Jackson	1	1	2
	Lost Island Marsh WMA	Palo Alto	2		2
	Moorland pond	Webster	1		1
	Mud Lake	Dubuque	1	2	3
	Rapp Park	Page	2	2	4
	Riverton WMA	Fremont	3	1	4
					20

Table .2. Wild free flying Trumpeter swans banded and released in Iowa, 1997 - present.

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

Table 3. Wild free flying Trumpeter swans nest attempts and total number of released swans. 1997 - present.

Year	Wild Nest Attempts (known)	# of Broods	# Hatched	Mean brood size	~ # Fledged	Adult total	Captive Released	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 to 39	112	4.4	84	156	57	total =297 (Pop Survey Estimate)
2011	50	49	217				51	
2012	45						20	
	341		**983**		**522**		**1112**	

Table 4 **Wintering Trumpeters in Iowa**

Year	Beemers*	Atlantic*	Boock*	Severe*	Mason City*	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	240	60	33	44	0	377

*Beemer's Pond, 5 miles west of Webster City, IA Hamilton county
*Atlantic Quarry, 1 mile NW of Atlantic, IA Cass county
*Boock's Wetland, 4 miles North of Wheatland, IA Clinton county
*Laurie Severe Pond, 2 miles South of Nora Springs, IA Floyd county
*Mason City, 1 mile S of Mason City, IA Cerro Gordo county

OSPREY RESTORATION

Osprey, Pandion haleatus, commonly called the fish hawk or fish eagle, is neither a true hawk nor eagle. Ospreys are cosmopolitan and occur worldwide with the exception of Antarctica. The species is of ancient lineage and presently is classified near the kite family. There are four subspecies presently recognized, two occurring in North America, P.H. carolinenses and P.H. ridgwayi. Ridgwayi is found in the Bahamas and Caribbean, while carolinensis is the Midwestern species. Carolinensis is migratory in its northern range and resides in south Florida and possibly part of the Gulf coast and northwest Mexico.

Ospreys were never confirmed to historically nest in Iowa, but were probably here given the abundance of lakes and wetlands that dotted the prairie. Ospreys are very unwary birds and territorially appear weak. Pairs will nest colonially. Nests may be upon structure, manmade or natural, that provides a platform, but Ospreys have been known to nest on the ground. Nests are generally at least one-foot deep and four to five feet wide, are made of sticks and lined with grass. Highest productivity is attained on power poles and nesting platforms.

Ospreys were heavily affected by the biocide crash of the 1950s. Populations were severely reduced throughout the range but hardest hit in the Great Lakes and Atlantic coast. A strong fidelity to ancestral breeding areas slowed range expansion into vacant and newly created habitat since the DDT era.

With construction of lakes by Department of Natural Resources and reservoirs by U.S. Army Corps of Engineers, potential osprey habitat exists that was previously not available. There are numerous osprey summer sightings in Iowa, but apparently these young, non-breeding ospreys return to northern areas for mating and nesting. Despite this population growth, ospreys have demonstrated little breeding range expansion. Minnesota and Wisconsin DNR officials suggest that ospreys, in our lifetime, do not readily pioneer new breeding ranges. Instead they experience suppressed reproduction as density of breeders increase. To address this issue, young ospreys from Wisconsin and Minnesota are being relocated to areas with suitable habitat in southern Minnesota, Iowa, Kansas, Missouri and Ohio.

The Iowa Department of Natural Resources has assisted conservation partners with technical assistance, encouragement, and fish to successfully release ospreys in Iowa. The Macbride Raptor Project located near Coralville Reservoir has spearheaded this work. Beginning in 1997, four or five young ospreys have been released annually at their facility until 2002. Personnel at the Hartman Reserve Nature Center and volunteers in Cedar Falls initiated a release at their facility in 1998. Staff of Boone County Conservation Board and Polk County Conservation Board with volunteers coordinated a release at Saylorville Reservoir in 2000. Boone Co. staff and volunteers began releases at Don Williams Lake in 2003. Wickiup Hill in Linn Co. and Clear Lake were added in 2004. The U.S. Army Corps of Engineers has provided distinguished service for releases at Coralville and Saylorville Reservoir respectively. Assisted by literally hundreds of volunteers, these conservation organizations have devoted their efforts

to bring ospreys to Iowa as a nesting species. A four-year minimum commitment of releasing ospreys is required at each site. Project fundraising is the responsibility of the conservation organizations doing the releases. Ospreys cost about $500 per bird.

In Iowa, ospreys have two bands, a silver U.S. Fish and Wildlife Service band and a numbered, **lavender** band on separate legs. Forty-eight ospreys have been released at the three sites since 1997.

Beginning in 2000 Osprey released in SW Minnesota by Minnesota DNR, built a nest atop a microwave tower near Cayler Prairie in NW Iowa. In late winter Great-horned Owls were seen at the nest and tending young, however by April the Ospreys were once again nesting at the site. Incubation appeared to be progressing, but ultimately the nesting attempt failed. It was believed extremely violent storms were a factor in the demise of the nesting attempt. A second pair was also observed nest building in the Spirit Lake area. At Coralville reservoir a 1998 released Osprey was nest building with two other unidentified adult Osprey. The adults were seen feeding the year-class of 2001.

2002

In 2002 the Spirit Lake pair nested on a platform at the outdoor classroom area of Spirit Lake school. Tim Waltz with Big Sioux Wildlife unit coordinated the pole/platform placement at the school. In early July a single egg was discovered by Ed Heidenbrink and Don Poggensee, but no young were produced at the site. Also on a pole/platform near Cayler Prairie a nest was constructed at that site.

At Coralville reservoir a nest was constructed by A5 (Macbride 1998) and an unbanded female, but apparently no eggs were laid. These birds were joined by H2 (2000 Saylorville) feeding young hacked birds. Four Wisconsin Ospreys were placed at the site. However, two young died from heat stress prior to release.

At Saylorville a pair of wild birds E4 (Hartman 2000) and E1 (Macbride 2000) appeared at the site, strafing released birds and causing excitement. Five additional osprey were hacked from the site.

At Hartman Reserve Nature Center four additional Ospreys were hacked in 2002.

2003

In 2003 the Spirit Lake pair successfully nested at the outdoor classroom of Spirit Lake Middle School. One chick was banded July 10, 2003. It was the first Osprey chick to be banded in Iowa since European settlement of the area. The adult female was banded B/T and released in 1997 near Minnetonka, Minnesota by the Minnesota DNR. The heritage of the adult male is unknown.

Also in 2003 three Osprey chicks were produced at Macbride Recreational Area near Coralville Reservoir. The Macbride Raptor Project observed that the male, A5, was released from their facility in 1998. The female, H2, was released at Saylorville Reservoir by Polk County Conservation Board in 2000.

Fourteen additional Osprey were released at Hartman Reserve Nature Center near Waterloo/Cedar Falls, Don Williams Lake by Boone County Conservation Board, and Saylorville Reservoir by Polk County Conservation Board. Hopefully those Ospreys will prosper and banding young will occur at their sites in 2004. In 2003, 77 Osprey

have been relocated to Iowa with four wild-produced chicks.

2004

Spring 2004 brought four nesting attempts at three sites in Iowa. At Red Rock Reservoir, unit biologist, Chuck Kakac, reported two young fledging from remote nest observed from Runnels overlook.

Unfortunately, three nest attempts failed due to extreme climatic conditions. At Macbride the nest that was successful in 2003 blew down in high winds. Male A8 (Macbride 1998) was identified at this nest. A second nest at Macbride was constructed and occupied by an unidentified pair. At Spirit Lake Outdoor Classroom same pair attempted to nest again. Birder, Ed Thelen, observed male Osprey carrying something from nest then dropping it. He discovered a newly hatched chick, dead. At Saylorville an unidentified Osprey pair built nest on a platform at west-end of Mile Long Bridge during summer.

Two new release sites were established this year. Volunteers at Clear Lake constructed a release tower at Iowa Regular Baptist Camp along north shore of Clear Lake. Linn County Conservation Board staff and volunteers at Wickiup Hill coordinated a release. Both sites released five Ospreys from Chippewa Flowage region near Hayward, Wisconsin. Also an additional rehabbed Osprey from Wisconsin was released at Wickiup Hill.

Boone County Conservation staff and volunteers placed five Wisconsin Ospreys at Don Williams Reservoir. And volunteer staff at Hartman Reserve Nature Center placed four Wisconsin Ospreys at their site. Polk County Conservation staff and volunteers placed five Minnesota Ospreys at their site at Jester Park on banks of Saylorville Reservoir.

A total of 25 Ospreys were placed at five sites in 2004. Since 1997 105 Ospreys have been released at six sites. Six wild produced Ospreys have fledged from Iowa nests.

2005

Spring 2005 brought five known nesting attempts in Iowa. Unidentified pairs carried sticks and made nest attempts at Saylorville, Hartman Reserve Nature Center, Don Williams and Lake Macbride. A second nesting pair at Macbride fledged two young.

A total of five Ospreys came to Iowa from Minnesota and nineteen more were relocated from Wisconsin.

At Hartman a wild nesting pair appeared to be incubating but no hatching was noted. Four additional Wisconsin Ospreys were released.

At Don Williams a wild nesting pair carried sticks throughout summer but did not incubate. Five additional Ospreys were relocated from Minnesota.

At Clear Lake five additional Ospreys were relocated from Wisconsin.

At Linn County's site at Wickiup Hill Conservation board staff and volunteers released five additional Ospreys from Wisconsin.

A new site was constructed at Red Rock Reservoir by Marion Co. Conservation Board, DNR Parks, and Newton Correctional facility personnel. Five Ospreys were relocated from Wisconsin.

Since 1997 129 Ospreys have been released at seven sites. Eight wild Ospreys have been produced in Iowa.

A 2002 female from Saylorville, J4, paired with an unidentified male in Twin Cities. A nest was constructed and

female was apparently incubating, but male disappeared. Nest failed due to poor incubation it was believed. A replacement male was at nest site later in summer.

2006

In 2006 there were six nesting pairs reported and four successful nesting pairs fledged eight young. A total of ten Ospreys came to Iowa from Minnesota and fifteen more were relocated from Wisconsin. There were three rehabilitated Ospreys placed at White Rock Conservancy.

At Hartman Reserve Nature Center a wild nesting pair fledged two young. Male is H8 from 2001 release and female is unbanded.

At Lake Macbride personnel from Macbride Raptor Project reported two nesting pairs and one was successful. Adults J7 (Hartman 2003) and K8 (Hartman 2002) fledged two young.

At Don Williams a wild nesting pair fledged two young. However, one young was discovered dead at nest site. Necropsy revealed that it was not West Nile virus. Five additional Ospreys were relocated from Minnesota.

At Jester Park, Polk CCB report a pair E1 (Macbride 2000) and E4 (Hartman 2000) fledged two young.

At Linn County's site at Wickiup Hill, Conservation board staff and volunteers released five additional Ospreys from Wisconsin. A wild nesting pair appeared to be incubating but no chicks hatched.

At Clear Lake five additional Ospreys were relocated from Minnesota. However two young did not survive hacking process.

At Red Rock Reservoir Marla Mertz of Marion Co. Conservation Board and DNR Parks personnel released five Ospreys from Wisconsin.

A new site was established at White Rock Conservancy where five Wisconsin Ospreys were hacked. Three rehabbed birds from The Raptor Center were also released.

Since 1997 157 Ospreys have been released at eight sites. Sixteen wild Ospreys have been produced in Iowa.

2007

In 2007 there were nine Osprey nest attempts with five successful nests producing 12 young. A definition of success might be concluded at Macbride Raptor Project, located near Coralville Reservoir, where three nesting pairs fledged seven young. The most any site has released at one time are six relocated birds.

This year eleven Ospreys were brought to Iowa from Minnesota and nineteen were relocated from Wisconsin to five sites.

In conjunction with three wild nesting birds at Macbride, a nesting pair returned to Jester Park and fledged one young. Another successful nesting occurred at Don Williams in Boone Co., where three young were banded. An unidentified pair at Rathbun Reservoir constructed a nest tih one egg that was abandoned due to high water up to the nest.

In Cedar Falls, pair returned to successful nest site. However, last year's nest had been removed by *iwireless* cell phone company. Pair reconstructed new nest on nearby cell phone tower, but later abandoned the site.

At Wickiup Hill in Linn Co. pair returned to nest site established in 2006. Pair appeared to be incubating but did not hatch. In July a nest site was

discovered on 280 ft. meterological tower at Duane Arnold nuclear plant near Wickiup Hill. It is believed to be a separate nesting pair with critical details omitted. It has not been determined if adults are banded, or the outcome of nesting attempt.

Also, Linn CCB staff and volunteers placed five Wisconsin young and one rehabbed bird from Minnesota at Wickiup Hill.

At Clear Lake six Wisconsin young were placed by volunteers.

At White Rock Conservancy there were six Wisconsin young placed by SOAR and volunteers.

At Red Rock there were four Minnesota and two Wisconsin young placed by Marion CCB, Ia. DNR, and volunteers.

At Spirit Lake Dickinson CCB, Tim Waltz with DNR, and volunteers placed six Minnesota young at this new site.

Since 1997 187 Ospreys have been released at nine sites. Thirty wild Ospreys have been produced at 15 nests, since 2003.

2008

In 2008 there were eleven Osprey nest attempts with two successful nests producing six young. This year ten Ospreys were brought to Iowa from Minnesota and ten were relocated from Wisconsin to five sites.

A new nesting pair was discovered just south of Sioux City in Woodbury Co. Three young fledged from this site according to Jerry Von Ehwegen.

There were four wild nesting pairs at Macbride. Three young from nest at Jester Park were rescued before nest flooded over. All three survived and two were released at White Rock Conservancy. Another nesting occurred at Don Williams in Boone Co. but fierce storms after hatching destroyed the young.

In Cedar Falls, pair returned to successful nest site. However, last year's nest had been removed by *iwireless* cell phone company. Pair reconstructed new nest on nearby cell phone tower, but nesting attempt failed.

At Wickiup Hill in Linn Co. pair returned to nest site established in 2006. Three young hatched but did not survive fierce storm in June. Second pair at Duane Arnold did not appear to be successful in 2008.

Nest at Rathbun Lake was swamped by June floods again. And a new pair were observed by Jay Gilliam creating a nest near Walnut Woods in Polk Co.

Four wild nesting pairs at Macbride/Coralville Reservoir failed due to extreme weather conditions.

At Clear Lake two Wisconsin and two Minnesota young were placed by volunteers.

At White Rock Conservancy there were three Minnesota Osprey young placed. Additionally two wild-produced young from Jester Park nest were released successfully.

At Red Rock there were two Minnesota and two Wisconsin young placed by Marion CCB, Ia. DNR, and volunteers.

At Spirit Lake Dickinson CCB, Tim Waltz with DNR, and volunteers placed four Minnesota young.

At Mudlake in Dubuque the Dubuque CCB and University of Dubuque volunteers released four Wisconsin Ospreys at this new site.

Since 1997 209 Ospreys have been released at ten sites. 33 wild

Ospreys have been produced at 16 successful nests since 2003.

2009

In 2009 there were twelve Osprey nest attempts with eight successful nests producing 17 young. This year ten Ospreys were brought to Iowa from Minnesota and ten were relocated from Wisconsin to five sites.

There is a nesting pair just south of Sioux City near Sergeant Bluffs in Woodbury Co. Three young fledged from this site according to Jerry Von Ehwegen. A zero was observed upon band of adult female.

There were three wild nesting pairs at Macbride. Site off Scales Bend Road were believed to have relocated from Coralville Reservoir. Three young were produced. Unable to read adult bands, if any. Site at Sugar Bottom has one young. Female is unbanded and male is unconfirmed. Site at Lake Macbride had three young. One of adults has a purple band.

At Jester Park in Polk CCB two young were banded from pair that relocated from Lodge area to campground #6. A new pair at Walnut woods built sizable nest but were unsuccessful.

At Don Williams, Boone CCB banded two young.

In Cedar Falls, a pair returned to successful nest site upon *iwireless* cell phone tower. However, last year's nest had been removed by *iwireless* cell phone company. Pair reconstructed new nest lower on cell phone tower, but nesting attempt failed. Second pair at George Wythe was active but nested unsuccessfully. One adult is AT from White Rock 2006. Third pair at Don Miller's quarry were unsuccessful. Fourth pair at Gilbertville fledged two.

At Duane Arnold Plant pair from Wickiup Hill in Linn Co. produced one young.

Nest at Rathbun Lake was inactive.

At Spirit Lake four young from Minnesota were placed by Dickinson CCB staff and volunteers. One young perished due to West Nile Virus before release.

At White Rock Conservancy Kay Neumann and Saving Our Avian Resources staff placed four Minnesota Osprey young.

At Mud Lake in Dubuque the Dubuque CCB and University of Dubuque volunteers released five Wisconsin Ospreys.

At Annett Nature Center Missy Smith and Warren CCB staff and volunteers placed five Wisconsin Ospreys.

At Red Rock two Minnesota Ospreys were released by Marla Mertz with Marion CCB.

Since 1997 228 Ospreys have been released at eleven sites. 50 wild Ospreys have been produced at 24 successful nests since 2003.

2010

In 2010 there were 17 Osprey nest attempts with 14 successful nests producing 22 young. This year 12 Ospreys were brought to Iowa from Minnesota and nine were relocated from Wisconsin to five sites.

There is a nesting pair just south of Sioux City near Sergeant Bluffs in Woodbury Co. Two young fledged from this site according to Jerry Von Ehwegen. A zero was observed upon band of adult female. Also according to Von Ehwegen, there was one new nests in Monona Co. fledging one,.

There were three wild nesting pairs at Macbride. Site off Scales Bend Road were believed to have relocated from Coralville Reservoir. Three young were produced. Staff were unable to read adult bands, if any. Site at Sugar Bottom has one young. Female is unbanded and male is unconfirmed. Site at Lake Macbride had three young. One of adults has a purple band.

At Jester Park in Polk CCB two young were banded from pair that relocated from Lodge area to campground #6. A new pair at Walnut Woods built sizable nest in 2009 and produced two young. A new nest was built at Polk City Refuge. Adults were not identified but male had green USFWS band indicating it was hatched in Iowa. This is first evidence of F2 generation of ospreys in Iowa.

At Don Williams, Boone CCB banded two young. However six days later, young were dead. West Nile Virus is suspected.

In Cedar Falls, a pair returned to successful nest site upon *iwireless* cell phone tower. However, last year's nest had been removed by *iwireless* cell phone company. Pair reconstructed new nest lower on cell phone tower, but nesting attempt failed. Second pair at George Wythe was active but nested unsuccessfully. One adult is AT from White Rock 2006. Third pair at Don Miller's quarry were unsuccessful. Fourth pair at Gilbertville fledged two.

At Duane Arnold Plant pair from Wickiup Hill in Linn Co. produced two young. A second Linn Co. nest was reported south of Palo in August.

Nest at Rathbun Lake was flooded again

At Spirit Lake a pair nested near release site. Two young hatched and were banded, however, 30 day old chicks did not survive ferocious July storms. Two young from Minnesota were placed by Dickinson CCB staff and volunteers and successfully fledged.

At White Rock Conservancy Kay Neumann and Saving Our Avian Resources staff placed four Minnesota Osprey young.

At Mud Lake in Dubuque the Dubuque CCB and University of Dubuque volunteers released four Wisconsin and one Minnesota Ospreys.

At Annett Nature Center Missy Smith and Warren CCB staff and volunteers placed five Wisconsin and one Minnesota Ospreys.

At Red Rock four Minnesota Ospreys were released by Marla Mertz with Marion CCB.

In summary 17 nesting pairs had 14 successful nest attempts with 22 young produced. Since 1997 249 Ospreys have been released at eleven sites. Seventy two wild Ospreys have been produced at 38 successful nests since 2003.

2011

In 2011 there were 16 Osprey nest attempts with 12 successful nests producing 30young. This year ten Ospreys were brought to Iowa from Minnesota and seven were relocated from Wisconsin to five sites.

There is a nesting pair just south of Sioux City near Sergeant Bluffs in Woodbury Co. Two young fledged from this site according to Jerry Von Ehwegen. Also according to Von Ehwegen, a nest in Monona Co. near Sloan had three young.

There were four wild nesting pairs at Macbride. Site off Scales Bend Road produced three young. Site at Sugar Bottom had three young. Site at

Lake Macbride had three young. Pair at Curtis Bridge is unknown.

At Jester Park in Polk CCB two young were produced at campground #6. Nesting pair at Walnut Woods was unsuccessful. Nesting pair at Polk City Refuge was unsuccessful. Adults were not identified but male had green USFWS band indicating it was hatched in Iowa. This is first evidence of F2 generation of Ospreys in Iowa.

At Don Williams, Boone CCB reported two young.

In Cedar Falls, a pair returned to successful nest site upon *iwireless* cell phone tower and produced two young. Second pair at George Wythe was active but nested unsuccessfully. One adult is AT from White Rock 2006. Evansdale nest was unsuccessful. Fourth pair at Gilbertville fledged two.

At Duane Arnold Plant pair from Wickiup Hill in Linn Co. produced three young. A second Linn Co. nest south of Palo Nest produced two.

At Spirit Lake pair nested near release site. Three young were produced. One young from Minnesota was placed by Dickinson CCB staff and volunteers and successfully fledged.

At White Rock Conservancy Kay Neumann and Saving Our Avian Resources staff placed five Minnesota Osprey young.

At Mud Lake in Dubuque the Dubuque CCB and University of Dubuque volunteers released two Wisconsin and two Minnesota Ospreys.

At Annett Nature Center Missy Smith and Warren CCB staff and volunteers placed five Wisconsin Ospreys.

At Red Rock two Minnesota Ospreys were released by Marla Mertz with Marion CCB.

In summary 16 nesting pairs had 12 successful nest attempts with 30 young produced. Since 1997 266 Ospreys have been released at eleven sites. One hundred two wild Ospreys have been produced at 50 successful nests since 2003.

2012

In 2012 there were 16 Osprey nest attempts with 14 successful nests producing 32 young. This year nine Ospreys were brought to Iowa from Minnesota and five were relocated from Wisconsin to three sites.

At White Rock Conservancy Kay Neumann and Saving Our Avian Resources staff placed three Minnesota Osprey young at Swan Lake in Carroll Co.

At Annett Nature Center Missy Smith and Warren CCB staff and volunteers placed four Minnesota Ospreys. Nest building has been documented at the release site.

At Mud Lake in Dubuque the Dubuque CCB and University of Dubuque volunteers released five Wisconsin young.

There is a nesting pair just south of Sioux City near Sergeant Bluffs in Woodbury Co. Two young fledged from this site according to Jerry Von Ehwegen. A zero was observed upon band of adult female. Also according to Rich Pope, there were two young fledged from site near Solon in Monona Co.

There were three wild nesting pairs at Macbride. Site off Scales Bend Road were believed to have relocated from Coralville Reservoir. Three young were produced. Staff was unable to read adult bands, if any. Site at Sugar Bottom has one young. Female is unbanded and male is unconfirmed. Site

at Lake Macbride had three young. One of adults has a purple band.

At Jester Park in Polk CCB two young were banded from pair at campground #6. Pair at Walnut Woods built sizable nest in 2009 and produced two young. Nest at Polk City Refuge was inactive.

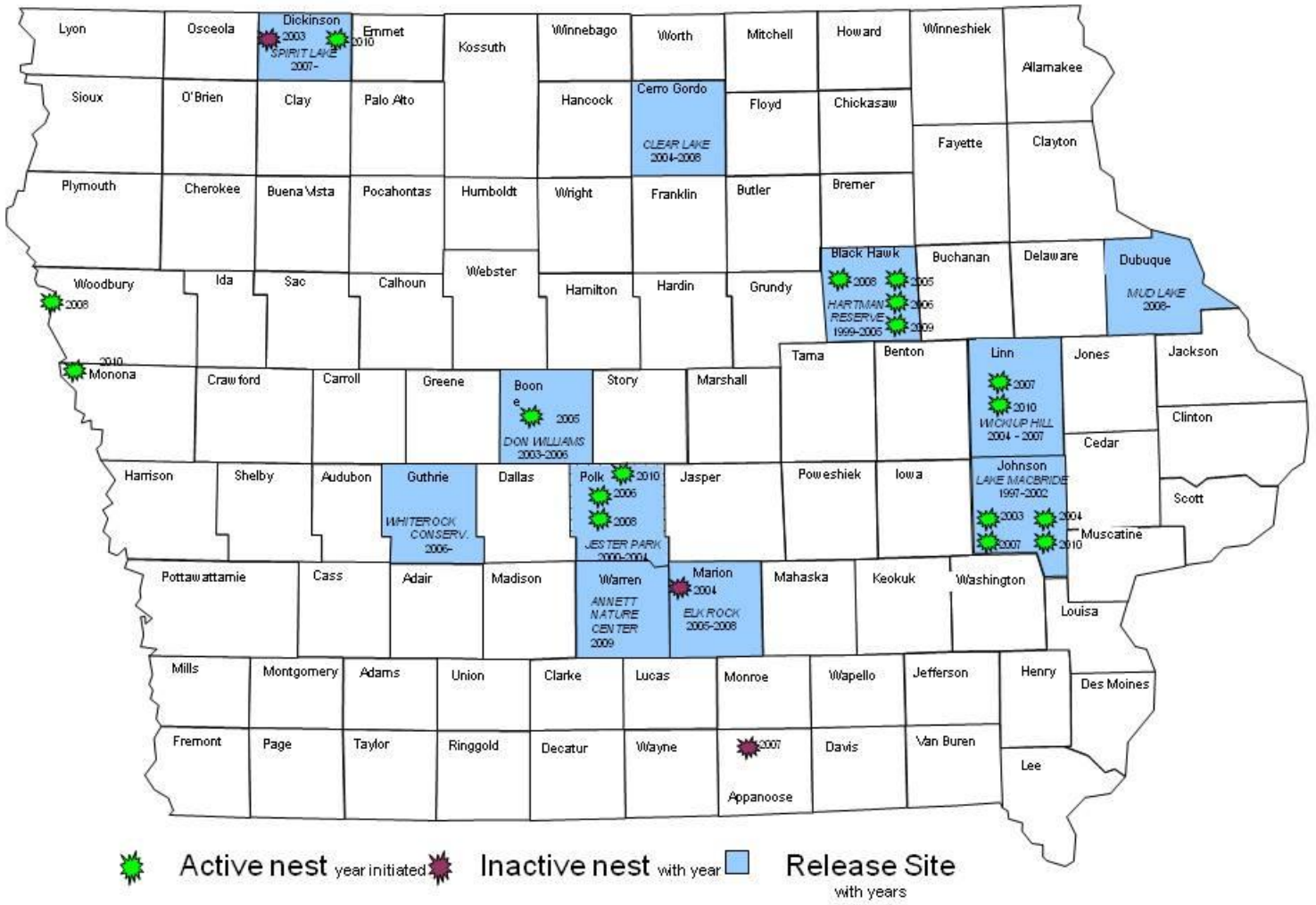
At Don Williams, Boone CCB reported two young.

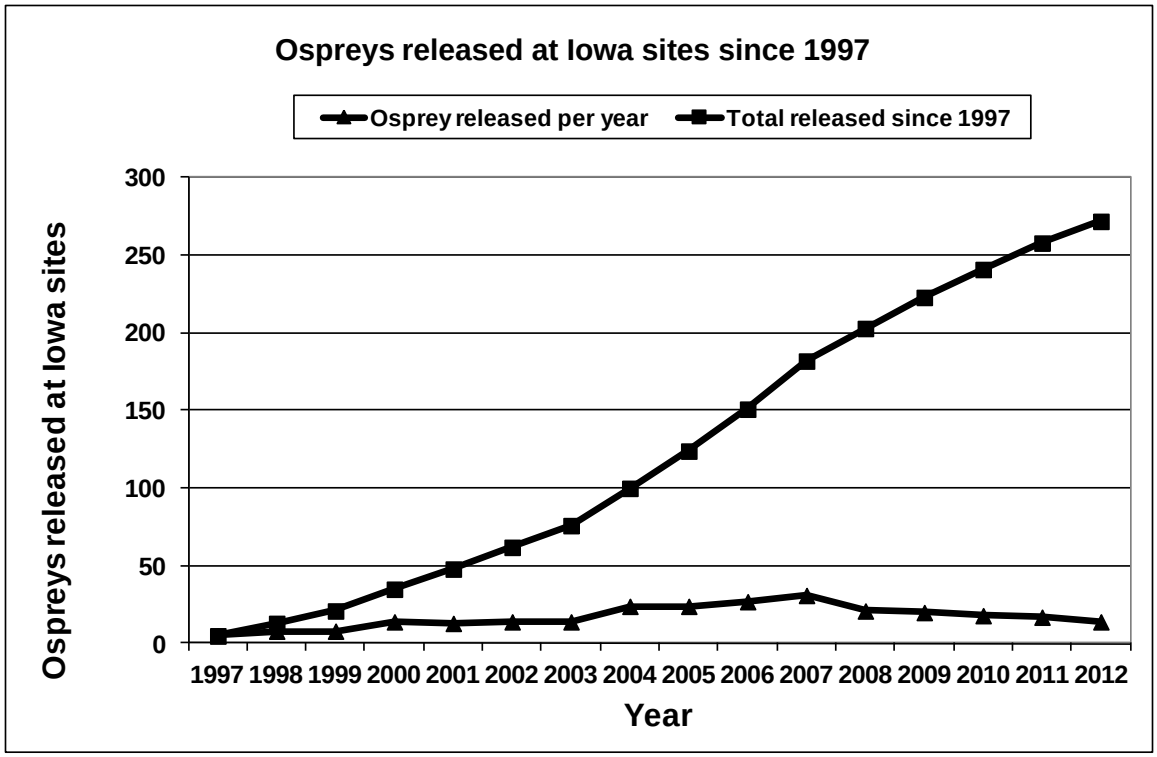
In Cedar Falls, a pair returned to successful nest site upon *iwireless* cell phone tower. However, last year's nest had been removed by *iwireless* cell phone company. One adult is AT from White Rock 2006. Pair reconstructed new nest lower on cell phone tower, but nesting attempt failed. Pair at Evansdale produced two young. Pair at Gilbertville fledged two.

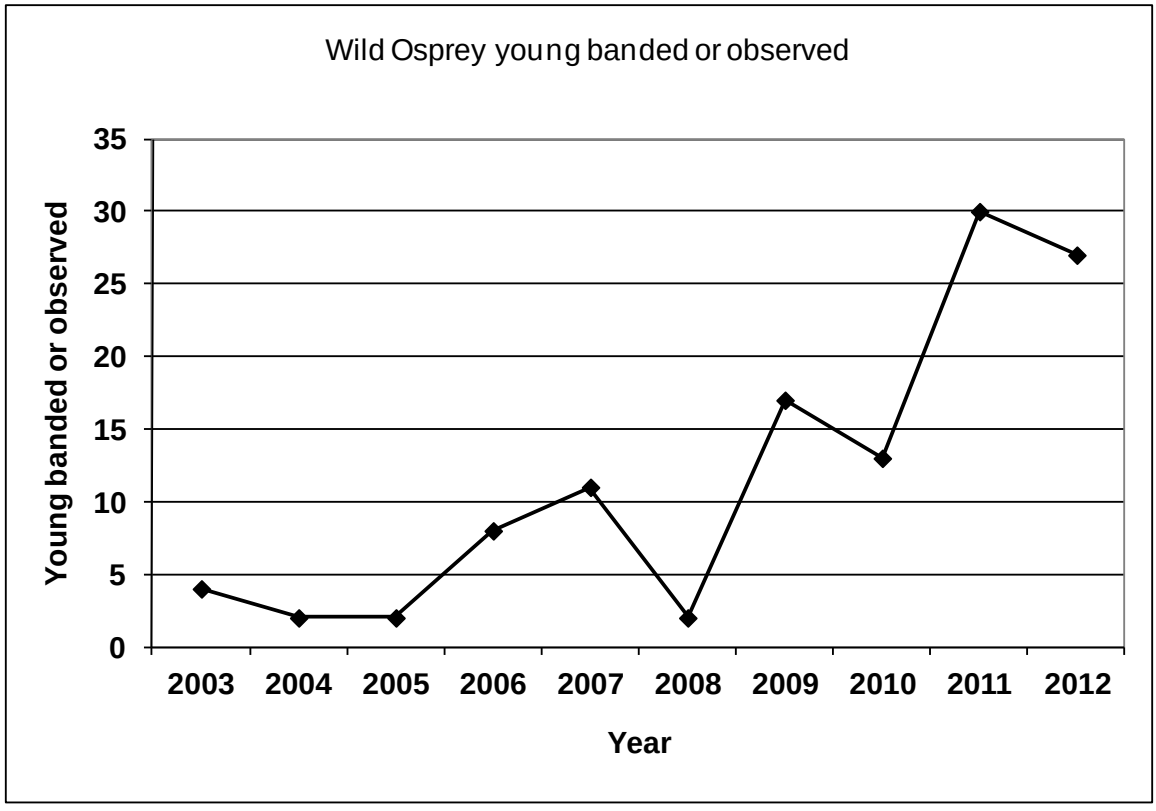
At Duane Arnold Plant pair from Wickiup Hill in Linn Co. produced two young. A second Linn Co. nest south of Palo fledged two young. A possible third nesting pair is in area.

At Spirit Lake a pair nested near release site. Two young fledged. A new nest at Lower Gar fledged one young. In summary 17 nesting pairs had 14 successful nest attempts with 27 young produced. Since 1997 282 Ospreys have been released at twelve sites. 106 wild Ospreys have been produced at 66 successful nests since 2003.

Ospreys in Iowa 2011




Ospreys released at Iowa sites since 1997
Osprey released per year
Total released since 1997
Ospreys released at Iowa sites
300
250
200
150
100
50
0
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Year


Wild Osprey young banded or observed
Young banded or observed
35
30
25
20
15
10
5
0
2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Year

SANDHILL CRANES IN IOWA

Prior to European settlement of Iowa, Sandhill Cranes probably were a common nesting species and abundant migrants. As early as 1820, Edwin James saw large flocks of cranes migrating north along the Missouri River in Harrison County. Even in the 1890's, it was not uncommon to see flocks of hundreds or even thousands of cranes in Winnebago and Hancock Counties in spring. Although there are few specific records, Sandhill Cranes probably were fairly common nesters in north-central and northwest Iowa. With settlement, the combination of unregulated hunting and loss of nesting habitat led to a rapid disappearance of nesting cranes from Iowa. The last Sandhill Crane nesting of that era was at the headwaters of the Iowa River near Hayfield in Hancock County in May 1894. As was common in those days, the eggs were taken for an egg collection.

Cranes nest in shallow wetlands with dense vegetation. They create a nest mound by pulling up marsh plants and laying one to three eggs that hatch in late spring. About three months after hatching the young begin to fly, but the brownish-colored young remain with their parents throughout their first winter. Cranes eat waste grain, seeds, berries, roots, tubers, snakes, frogs, crayfish, worms and insects.

By the early 1900s, even migrating Sandhill Cranes were rare in Iowa. For the next 60 years, there are very few reports of cranes in Iowa. Throughout the Midwest, problems similar to Iowa's caused Sandhill Crane populations to dwindle. Just a few dozen pairs remained in Wisconsin, Minnesota and Michigan through the 1940s. During the 1970s and 1980s, however, nesting populations increased in the northern states, and a few migrating sandhills were seen in Iowa.

The number of Sandhill Cranes reported in Iowa increased greatly in the late 1970s and 1980s (Dinsmore 1989), culminating in their return as a nesting species. Nesting birds derive from populations in Wisconsin, which increased greatly in the 1970s and 1980s (Robbins 1992) and eventually spilled over into Iowa. These birds winter in Florida and Georgia. The huge flocks that gather in central Nebraska nest in the Arctic. Those flocks are probably the source of most cranes seen in western Iowa (Kent and Dinsmore 1996).

In 1992, after a 98-year absence, Sandhill Cranes successfully nested in Iowa at Otter Creek Wildlife Management Area in Tama County. Two colts were produced. In 1993, cranes also attempted to nest at a second area at Green Island along the Mississippi River in Jackson County, however due to annual flooding, young were not produced at that site until 1997. In the mean time cranes at Sweet Marsh became established and successfully nested, beginning in 1994. The Sweet Marsh flock has grown to include four other sites in Bremer Co.

2002

In 2002, Sandhill Cranes were observed in four new sites. Reports were received of cranes sited in Clinton and Chickasaw County. Allamakee County picked up another site where young were produced and in western Iowa, young were produced in

Woodbury County. Cranes have been included in bird counts in at least 14 counties during the year.

2003

In 2003 unison calling between adults increased to 27 pairs around the state. There were 95 known sightings and fifteen documented young around the state. Dr. Jim Dinsmore provided a sightings file that included a number of counties where cranes were seen in recent years.

In Boone County a nesting pair had wintered at a farmstead south of Madrid. The pair performed nesting courtship displays and created a nest in the farmyard. Two eggs were laid in the spring. In April the nest and eggs were destroyed. Raccoons or dogs were suspected. In June a Sandhill Crane carcass was discovered in the vicinity of the nest near powerlines. The fate of this unconventional pair is unknown.

2004

In 2004 cold, wet spring conditions hampered Sandhill Crane nesting in Iowa. Twenty-seven pairs of cranes were reported but only seven young hatched. However, most sites had summering cranes and additional pairs were reported near Belle Plaine, Chickasaw Co., and Olin in Jones Co. Jones County became fifteenth county documenting crane nesting.

2005

Exciting news in 2005 includes successful nesting of cranes in Winnebago County. CCB Director, Robert Schwartz, reported a colt at Hogsback Wildlife Area. Also DNR Biologist, Bill Ohde, reported a new pair at Wiese Slough in Muscatine County that produced one young. Ric Zarwell, in Allamakee Co., reported four pairs with four young. Across the state 20 pairs were reported with nine pairs that successfully reproduced 13 young. Including Winnebago and Muscatine Counties, Sandhill Cranes have now been reproduced in 17 counties.

2006

In 2006 a favorable nesting season has maintained our Sandhill Cranes nesting population at 17 counties. Two notable crane sightings occurred when Whooping Cranes were reported in Iowa. During spring migration five whoopers stayed over in Winnebago Co. A second flock of eight whoopers were discovered in northeastern Iowa. By early June all had left Iowa and returned to their home at Necedah National Wildlife Refuge in Wisconsin. In September three of the five Whoopers returned to Winnebago Co. As of 2005 there were only 336 whoopers in the wild and 135 in captivity.

2007

In 2007 Sandhill Crane sightings were included in three new counties: Palo Alto, Greene, and Madison Counties. Also Crane reproduction was noted at Chichaqua Bottoms in Polk Co. bringing our total to 18 counties with cranes successfully nesting.

Also, during this past summer there were record numbers of Whooping Crane chicks hatched at Wood Buffalo National Park in northern Canada. An aerial survey of the breeding grounds found 65 nests and 84 new chicks. The new Whooping Crane chicks include 28 sets of twins. This year's offspring come after last year's encouraging numbers of 76 new chicks - including 24 sets of twins.

2008

Record flood levels in 2008 suppressed nesting crane reproduction around the state, but good numbers have been frequenting our marshes during autumn migration of 2007. Otter Creek Marsh in Tama Co. and Sweet's Marsh in Bremer Co. reported flocks of 25 and 27 birds last autumn. This nesting season Sweet Marsh reported 15 birds with five unison calling pairs. Otter Creek had 18 cranes with two pairs producing one young each. Allamakee Co. distinguished itself with 22 cranes sighted during spring survey and four unison calling pairs. Although there has been limited growth of crane population and subsequent reports around the state, cranes are increasingly appreciated by birding community and conservation groups dedicated to providing marshland habitat around the state.

2009

In 2009 the weather during the crane survey in April was quite favorable. Twenty five pairs have been reported with two counties, Muscatine and Woodbury, including crane sightings after a few years of not recording any sightings. With suitable nesting habitat being emphasized in every county, it is hopeful Sandhill Cranes will maintain their incremental growth in reproduction. A pair near Comanche, Iowa raised young at a five acre wetland near Hwy 30.

2010

Wetland conditions during the Crane Survey in April, 2010 were quite favorable for successful nesting as record snowfall provided the melt water to fill wetland basins. With a wetter than normal summer we should see moderate population changes, if summer 2010 flooding is similar to the 2008 flooding around Iowa. At this time, good reproduction has occurred at enough sites to maintain our optimism that Iowa's Sandhill Crane population is continuing to increase. Autumn flights of cranes around Pool 9 of the Mississippi River, Otter Creek Marsh and Sweet's Marsh are providing outdoor enthusiasts opportunities to see Cranes on Iowa wetlands. About 110 cranes were observed during this spring's survey. Nesting success was confirmed for 11 pairs, resulting in a 2010 production of 14 colts.

2011

Wetland conditions during April, 2011 were good, but the weather on survey day was challenging with 35 degrees and wind gusts to 40mph. With a wetter than normal spring we will see moderate population ebbs and flows. However, good reproduction has occurred in enough sites to maintain our optimism that our Sandhill Crane population continues to increase. Most exciting area that cranes have discovered is Mitchell Co. along Cedar River in north central Iowa. Cranes have reproduced in 22 counties since 1992. Autumn concentrations of cranes around pool nine on the NE Iowa portion of the Mississippi River, Otter Creek Marsh and Sweet's Marsh are providing outdoor enthusiasts spectacular flights and social interactions of Cranes adapting to Iowa's wetland complexes.

Each autumn Iowa's Sandhill Cranes are establishing concentration or staging areas at Sweet Marsh where 35 have been reported, Green Island Bottoms along Mississippi River in Jackson co. with 35 more, and Otter Creek Marsh in Tama County where 54 were reported in October, 2010. This is

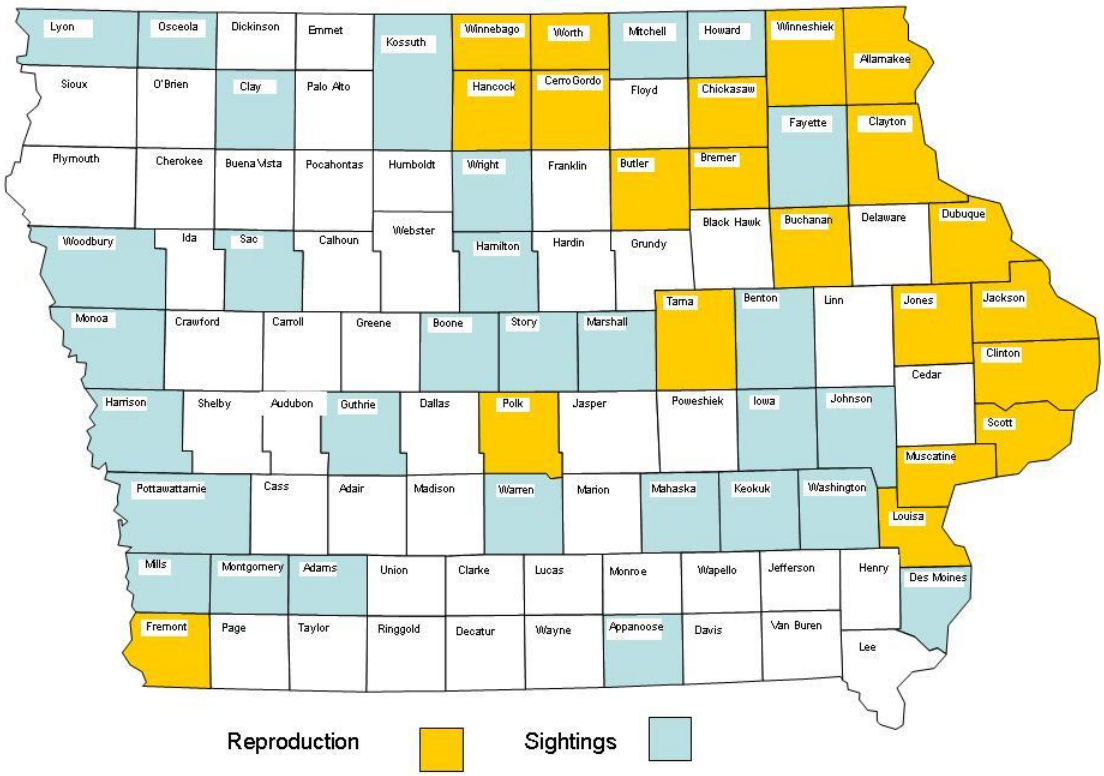
an exciting development that has grown incrementally since the first successful nesting at Otter Creek Marsh in 1992.

2012

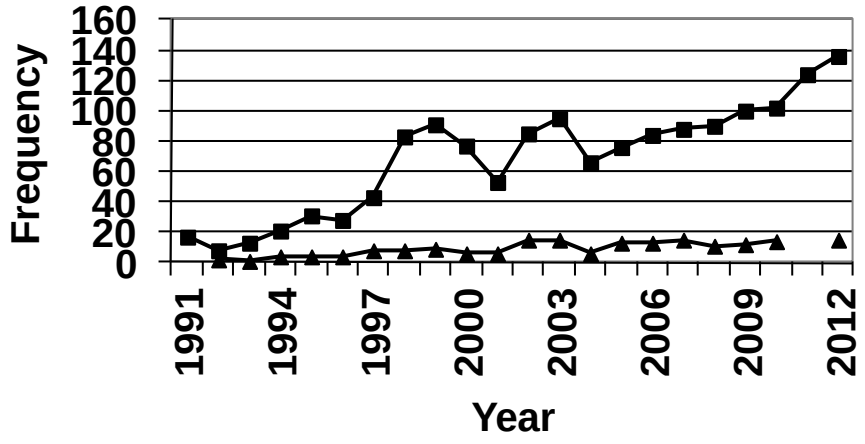
Wetland conditions during April, 2012 were exceptional throughout the nesting season. Summer drought conditions created wildlife hardships but cranes fared as well or better than the majority of species surveyed. Good reproduction has occurred in enough sites to maintain our optimism that our Sandhill Crane population continues to increase. Cranes have reproduced in 21 counties since 1992. Autumn concentrations of cranes around pool nine on the NE Iowa portion of the Mississippi River, Otter Creek Marsh and Sweet's Marsh are providing outdoor enthusiasts spectacular flights and social interactions of Cranes adapting to Iowa's wetland complexes.

Each autumn Iowa's Sandhill Cranes are establishing concentration or staging areas at Sweet Marsh where 42 have been reported a record high, Green Island Bottoms along Mississippi River in Jackson co. with 35 more, and Otter Creek Marsh in Tama County where 107were reported in October, 2011. This is an exciting development that has grown incrementally since the first successful nesting at Otter Creek Marsh in 1992.

Observations of Sandhill Cranes in Iowa through 2011



Sandhill Crane numbers and reproduction in Iowa 1987-Present



BALD EAGLE RESTORATION

HISTORICAL REVIEW

When Euro-Americans first arrived in Iowa, it is likely that bald eagles nested throughout the state, particularly in the woodlands along rivers, streams, and fish infested lakes. As forests were cut and the woodland habitat occupied by eagles was altered, eagle numbers declined. Direct persecution (mostly shooting) and changes in eagle habitat, particularly nesting habitat, appear to have eliminated the bald eagle as an Iowa nester by the early 1900s. Early records for the bald eagle in Iowa do not give us a good idea of how many nests there once were for this species, but we do know that eagles were "formerly common in Iowa and frequently nested in favorable localities" (Anderson 1907). It appears that the last nest documented near the turn of the last century was in Jasper County in 1905, where two young eaglets were taken from a nest near Kellogg (Anderson 1907).

The passage of the Federal Bald Eagle Protection Act of 1940 was the first real effort to protect eagles, especially from shooting. The use of organochlorine pesticides (such as DDT) after World War II also severely devastated eagle populations (Broley 1958, Carson 1962). It was only after the banning of organochlorine pesticide use in this country in 1972 and the listing of the bald eagle for protection on the Endangered Species Act in 1978 that this species began to recover. The bald eagle was considered an extirpated species on Iowa's first threatened and endangered species list in 1977 (Roosa 1977), and it was not again expected to be seen nesting in Iowa.

MORE RECENT IOWA NESTING RECORDS

As improbable as it seemed, the bald eagle did nest in Iowa again. The first nest noted in over 70 years was located near New Albin on the Mississippi River floodplain in 1977 (Roosa and Stravers 1989). Two young were produced that first year, but it was not until 1980 that another eaglet was produced from that nesting territory. In 1984, Dinsmore et al. (1984) considered the bald eagle a rare summer resident. It was in 1985 that a second Iowa eagle nest appeared, just three miles downstream from the first. That nest produced three young. During 1986, a third nesting territory appeared in Allamakee County on the Mississippi River, and a fourth occurred in Jackson County. The first documented nest away from the Mississippi River was found in 1987 along the Skunk River near Coppock in Jefferson County (Figure 15.1). The following year there were eight active nests reported. Two more new nests were discovered away from the Mississippi River, one in Allamakee County and one in Fremont County near Forney's Lake. A new nest was also found in Clayton County along the Mississippi River, and a nest in a huge cottonwood tree was reported by towboat captain, Pat Flippo, for Des Moines County near the mouth of the Skunk River.

As part of the USF&WS regional plan for bald eagle recovery, in 1981 Iowa established a goal of 10 active Bald Eagle nests by the year 2000 (Grier 1988). This goal was surpassed in 1991 when the number of active nests jumped to 13. Nest numbers climbed to 21 in 1992, to 43 in 1995, and to 84 in 1998 - the last year in which most Iowa nests were monitored closely. At that time, bald eagles had nested in 42 different counties.

The number of eagle pairs continued to grow, and by 2004, eagles had been reported nesting in 66 counties. Adams, Henry, Poweshiek, and Ringgold counties were the 2004 additions. During 2005, five more counties (Polk, Marshall, Story, Montgomery, and Kossuth) reported eagle nesting for the first time, bringing Iowa's eagle nesting county total to 71. Similarly, during 2006, six additional counties (Dickinson, Franklin, Boone, O'Brien, Wapello, and Page) reported eagle nesting, and five new counties (Hancock, Harrison, Cedar, Greene, and Lee) reported eagle nests in 2007. In 2008, eagle nesting was confirmed in Davis and Pottawattamie counties, and in 2009, Cerro Gordo and Emmet counties reported their first eagle nesting. Bald eagle nests were reported for Clarke and Winnebago counties in 2010 and for Grundy, Wright, and Pocohontas counties in 2011. During 2012, an active nest was confirmed for Audubon County. There are now ninety-two counties with documented eagle nesting (Figure 15.1), and approximately 538 bald eagle territories have been reported to the Iowa DNR since 1977.

In 2011, reports were received for 290 territories, with 50 reported for the first time. Roughly 73% (213) of the territories were reported active in 2011, and 21% (62) were reported inactive. The remaining 15 territories were reported with unknown activity. Thirty-five percent (n=102) of the active territories reported in 2011 included data on the outcome of the nesting season. Six (6%) of the 102 nests ended up failing, and 96 (94%) were successful in producing young. For the 76 territories for which we have a good count of fledglings, a total of 121 young were produced, which averages to 1.49 young produced per nest. If we extrapolate, assuming 94% of all nests reported as active are successful; this produces an estimate of 306 young fledged from Iowa nests in 2011. Projected eagle nest numbers (based on number of new nests reported each year and average nest increase rate since 1995) is shown in Figure 15.2 for 1999-2011.

Bald Eagle Nest Flight Survey: In March and April of 2011 a pilot study was undertaken in Iowa to look at the feasibility of using airplanes to survey for eagle nests. Between March 15 and leaf-out, eagle habitat (riparian timber) in 99 ten square- kilometer blocks was flown in central Iowa. These blocks were stratified into three equal groups based on the amount of riparian timber contained in the block. Approximately 1700 miles of potential eagle habitat was flown within the blocks.

Nineteen nests had been previously documented in the habitat blocks. During the aerial survey, 10 nests were identified; five were previously documented and five newly discovered. By comparison, the ground survey reported on 13 nests within the same blocks, providing a greater level of data.

Midwinter Bald Eagle Survey: Beginning in 1983, ICC staff cooperated on a national Midwinter Bald Eagle Survey to assess the health of the greater bald eagle population. In cooperation with the National survey coordinator, USGS Raptor Research and Technical Assistance Center in Boise, Idaho, IA DNR Wildlife Diversity Staff continue to coordinate this survey today. Data from this survey indicate a dramatic increase in Iowa winter bald eagle numbers since 1993 (Figure 15.3). An especially high count (2,493) during the winter of 2001 was related to harsh weather conditions and the subsequent concentration of eagles in count areas of the Mississippi River. Very mild winter conditions during surveys conducted in 2002 and 2003 were reflected in lower count numbers, which were still higher than any year prior to 2001. Cold winter weather again forced eagles south into Iowa during the next winter, and the 2004 survey results documented 4,432 bald eagles along Iowa's rivers; particularly along the Mississippi River. Milder weather conditions during the January, 2005 survey resulted in eagles being more spread out, and a reduced total (from 2004 count) of 3,164 bald eagles was tallied. The mild winter weather trend continued for the January, 2006 survey, and only 2,592 bald eagles were counted within the state. Similar mild conditions occurred for the 2007 count, with 2,431 bald eagles tallied during January. In 2008, cold weather returned, and Iowa's January count found 3,913 bald eagles within Iowa borders. During the January 2009 survey, 2,534 eagles were counted, and 2,566 bald eagles were tallied during the January 2010 survey. A total of 3,674 Bald Eagles were counted in 2011, which is the highest number since 2008 (3,913).

The number of eagles counted in the 2012 Midwinter Survey was roughly the same as numbers from 2011. In 2012, a total of 3,232 Bald Eagles were counted; that total remained higher than the previous 10 year average of 2991. In spite of decreased numbers of eagles counted during 2009 and 2010 surveys (perhaps partly due to variable weather conditions during surveys and large fluctuations in food resource availability), the overall population trend is upward. The majority of these eagles are associated with the Mississippi and Des Moines rivers. Although the Mississippi River has been the traditional wintering stronghold for eagles, the Des Moines River held a substantially higher number of wintering birds during the previous two winters.

DISCUSSION

Both nesting and winter survey data were used for evaluating the delisting of bald eagles in the United States. Such information was used to upgrade the bald eagle national status from Endangered to Threatened in 1995, and in August 2007, the bald eagle was removed from the Federal Endangered/Threatened Species list. Iowa upgraded bald eagle from Endangered to Special Concern status in 2009.

Undoubtedly there are several reasons why nesting Bald Eagles have staged a comeback in Iowa. One reason for the recovery may be related to this species' ability to pioneer into suitable nesting habitat. This was not only true of Iowa's

first nest in seven decades, which appeared in Allamakee County, but it also became obvious in 1987 when a pair of eagles nested in Jefferson County along the Skunk River. It was further evidenced in 1988 when an eagle pair nested in extreme southwestern Iowa in Fremont County near the Missouri River. Another key element helping eagle recovery appears to be Iowa's close proximity to one of the more stable nesting populations of bald eagles in the continental United States. Three states to the north, including Minnesota, Wisconsin, and Michigan, presently have a combined total of approximately one-third of all nesting eagles in the lower 48 states. There is little doubt that Iowa's eagle population has benefitted from its neighbor states to the north. Even in 1998, when eagle nests occurred in 42 counties, over half of all Iowa's eagle nests could be found in four counties in the northeastern corner of the state.

An unanticipated factor that has helped bald eagle numbers recover is their adaptability. It appears that eagles nesting in the Mississippi River floodplain may be somewhat tolerant of boat traffic (McKay et al. 1995). Other instances indicate that some eagles are more tolerant of disturbance than others. There are now numerous nests located within several hundred yards of buildings, roads, and farm fields. One nest along the Upper Iowa River in Howard County is only about 100 yards from the bedroom window of very interested eagle nest watchers. The nest is located across the river and, so far, human activities have not negatively affected the nest's success. Grier (1988) explained that eagles' ability to tolerate human activity and nest close to buildings has . . . "broadened their amount of available habitat and living space."

THE FUTURE

Although the outlook for Iowa's eagle population is favorable, there are still factors that affect eagle numbers. Unmanaged logging can pose a threat to eagles, and the removal of large, mature cottonwoods along Iowa streams limit where eagles can nest and find foraging perches. Logging in the vicinity of eagle nests also can affect the nesting outcome, especially if done during the nesting season. Even though there are strict federal laws protecting eagle roost and nest sites against disturbance during their occupancy, cutting of roost trees of bald eagles during the time of year that eagles are not using them is not prohibited.

Lead poisoning is still a concern, as a number of eagles are found in Iowa each year, either dead or suffering from this problem. Five out of eight bald eagles found sick in Iowa and brought to wildlife rehabilitators between November 1998 and January 1999 suffered from lead poisoning. Iowa's Wildlife Rehabilitators report that of the bald eagles received by rehabilitators and tested for presence of lead since January 2004, approximately 50% show elevated levels of lead. Since 1996, an average of 25% of the bald eagles admitted each year to The Raptor Center at the University of Minnesota have toxic levels of lead in their blood. Where the majority of this lead is coming from is yet to be determined.

Despite current problems that face the bald eagle, its numbers continue to recover. In 1963, an Audubon Society survey found only 417 remaining bald eagle nests in the continental United States. It was a species headed for extinction. In 2006, the U.S.F&WS estimated about 9,500 active nests in the lower 48 states. Iowa, which had no nests for over 70 years, in 2010 had approximately 250 active nests. The enforcement of protective laws and a change in the public's attitude toward eagles have helped bring back this species.

Bald Eagle Appreciation Days: Iowa DNR staff have been involved with promoting the appreciation of bald eagles since helping establish the first event in Keokuk in 1985. There are presently at least 13 Bald Eagle Appreciation Days held in Iowa each winter to celebrate the existence of eagles, and between 25,000 and 35,000 people gather at these events annually. With the continuation of public support for bald eagle recovery, this bird's population should continue to increase.

ACKNOWLEDGMENTS

Our thanks to the many Iowans who continue to monitor our eagle nests, continue to help with winter eagle surveys, and provide information that better helps the different agencies protect and manage for this species.

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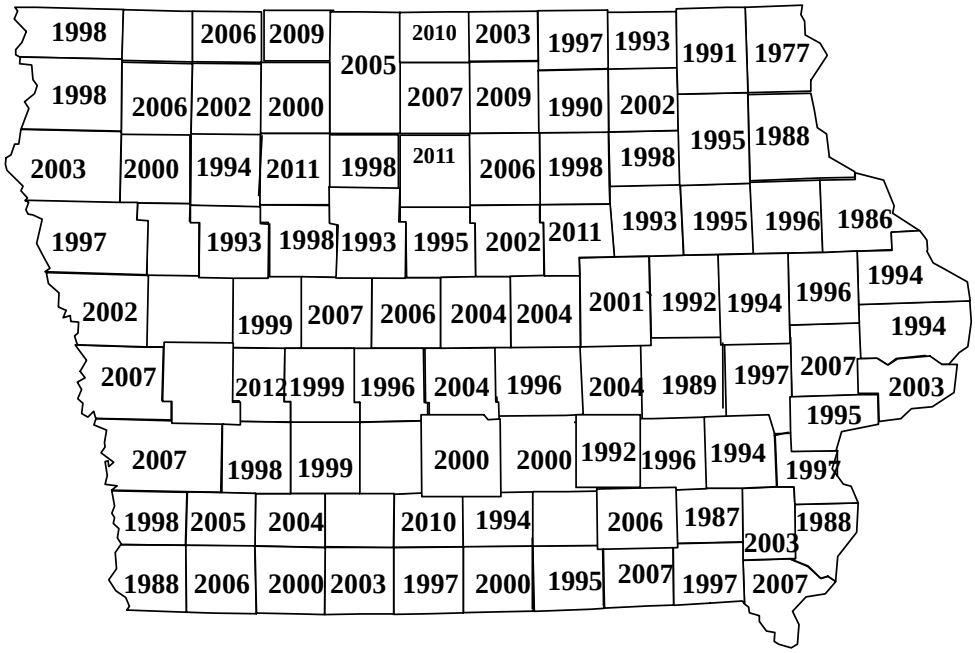


Figure 15.1. First year in which a bald eagle nest was reported for 92 counties, 1977 through 2012.

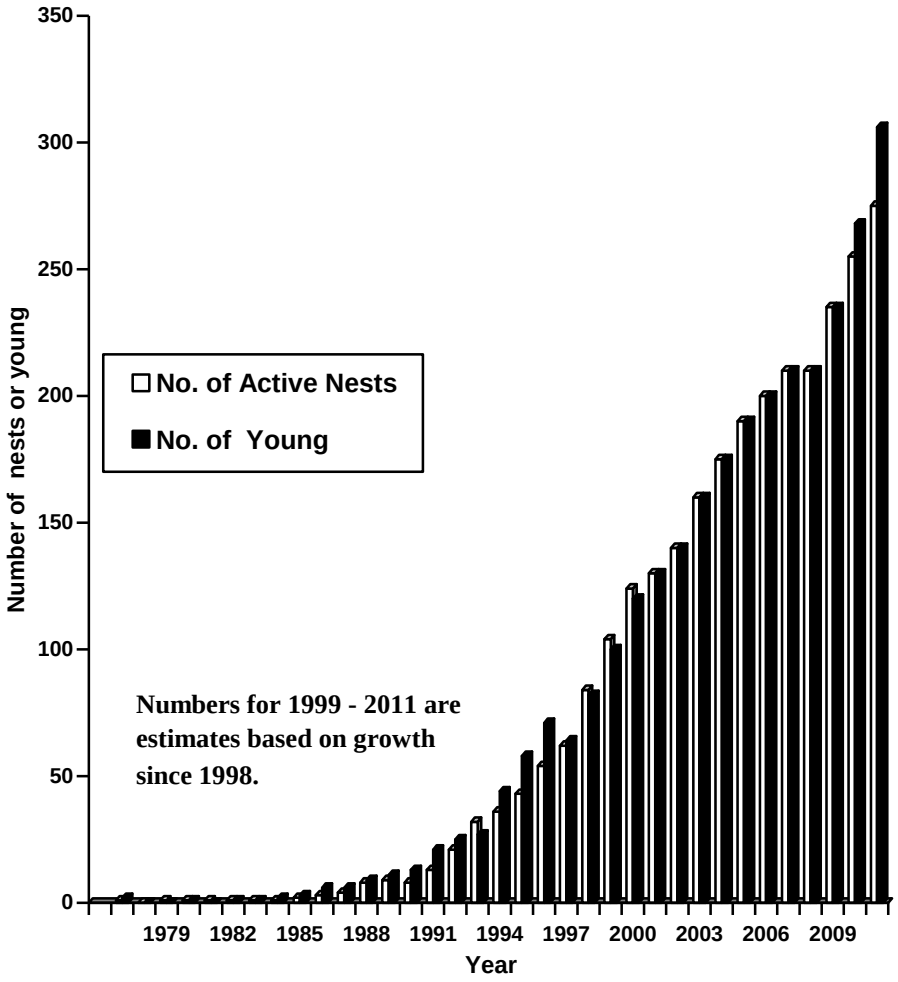


Figure 15.2. Number of Bald Eagle active nests and young produced in Iowa, 1977 through 2011.

Figure 15.3

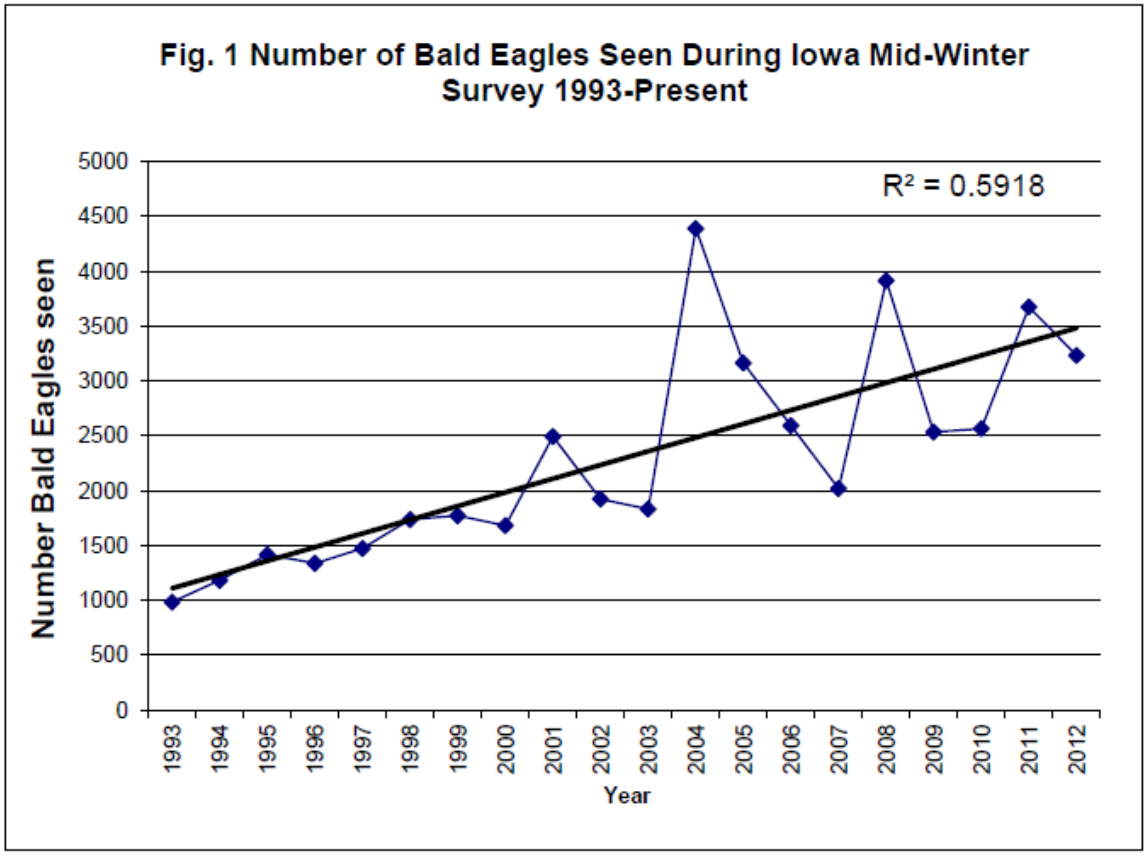


Fig. 1 Number of Bald Eagles Seen During Iowa Mid-Winter Survey 1993-Present
R² = 0.5918
Number Bald Eagles seen
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Year

MOUNTAIN LION/COUGAR STATUS IN IOWA
2000 – present

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 the state, but nowhere in great numbers. The lynx has been extirpated and the bobcat is currently increasing in numbers. The last historical record of a mountain lion/cougar in Iowa appears to be near Cincinnati, Iowa in Appanoose County, where one was shot in 1867.

Since the mid-1990's, the DNR has received several reports of large "cat" like sightings that lead some to believe that a few "free ranging" mountain lions/cougars may again be occurring in some portions the state. These "free ranging" mountain lions/cougars could be either escapees, or released animals, privately owned, (grandfathered in before July 1, 2007 legislation to curtail the ownership of certain "dangerous wild animals") or animals dispersing from western and southwestern states. **THE IOWA DNR HAS NOT 'STOCKED' OR INTRODUCED MOUNTAIN LIONS INTO THE STATE NOR IS THERE ANY CONSIDERATION OF DOING SO.** Southeast South Dakota, eastern Nebraska, northeast Kansas, northern Missouri, as well Minnesota, Wisconsin, and Illinois, have reported increased mountain lion/cougar sightings during the past 9+ years.

Figure 1 is a map showing mountain lion sightings reported to the DNR. Tracks and/or sightings are marked as confirmed or unconfirmed. This past year, the DNR confirmed two mountain lion reports. Trail camera photos were confirmed to be legitimate photos of a mountain lion in Clinton County in September 2011. These trail camera photos were from a private landowner who wishes to remain anonymous. The second case involved the shooting of a young subadult male (2 yrs old) by local police authorities in the town of Blencoe, IA of Monona County on January 7, 2012. DNA tissue samples have been sent to a lab in an effort to trace the area it came from outside of Iowa. Results are still pending. Tooth age analysis was used to determine the age of that animal.

Other past reports in Iowa since 2000 include 3 visual sightings, a road-kill near Harlan and 2 shot animals, one near Ireton and the other near Chariton, which indicate that a few wild mountain lions/cougars have roamed into the state in recent years. The road-killed animal in Jasper County was not reported to the DNR until after the road-kill near Harlan. This animal was exhumed and a close inspection of the remains showed the animal had been de-clawed, indicating that it must have been a captive animal at one time.

The confirmed sighting in Ringgold County was observed by DNR personnel, and mountain lion scat was collected at that observation site. Two other visuals, one in Harrison County and one in Fremont County appear to be valid sightings. We have several instances of deer hunters seeing partially eaten deer covered by grass and other debris. This is somewhat typical of how mountain lions/cougars cache their prey but some bobcats will similarly cover their prey although older deer (those seen while hunting) would not necessarily be a prey target for most, smaller sized bobcats. Overall however, the 150,000+ deer hunters seldom report a sighting of a mountain lion during their hunting activities. With the methods of deer hunting that takes place in Iowa, one would expect to get more reports of mountain lions during that time. 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.

In November 2004, a confirmed, ground truthed photo of a mountain lion/cougar was taken near Albion, IA in Marshall County on a trail master, motion sensitive camera.
In November 2003, a mountain lion/cougar was shot in Sioux County near Ireton, Iowa. In January 2004, a mountain lion/cougar was shot south of Chariton, Iowa in Wayne County. DNA testing to determine origin of the 3 dead animals has been completed and results indicate that they are of North American origin. Theory has it that the only legal source of captive mountain lions/cougars should show DNA of South American origin, although more study is necessary before that theory can be substantiated or discounted. In February 2004, Dale Garner, DNR administrator, confirmed a mountain lion/cougar track south of Lucas, IA in Lucas

County.

From 2005 – 08, there were several unconfirmed sightings of mountain lions. However in December 2009, a hunter shot a male cougar from a tree near Marengo, IA during the second deer shotgun season. Like the other 3 killed since 2002, it also appeared to be a wild free ranging animal with no broken teeth and very sharp claws indicating that it was not an apparent captive reared escapee or one that had been released. Some DNA tissue was sent in for analysis to determine the origin of the animal. Results from that testing showed strong indications that it matched DNA common to cats from the Black Hills region of South Dakota.
In 2010, several sightings, tracks, and other sign were reported to the DNR, but none of them could be confirmed as mountain lion. Then in 2011, we had the confirmed mountain lion pictures in Clinton Co and the mountain lion shot in Blencoe in early 2012. 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 points all over the state. This does not count all of the reports other DNR staff receive in their regions throughout the state as well. 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.

Currently the mountain lion has no legal status in the Iowa Code, thus they are not given any sort of protection by Iowa Law. 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. It was 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 passed the Senate with little controversy, knowing full well that the House would not consider this potentially hot-button politically issue. The DNR was asked by the Governor's office not to pursue mountain lion/cougar and black bear furbearer status in the Iowa Code in 2006, 2007, and 2008. Senator Mary Lunby of Cedar Rapids, however, introduced legislation to do such again during the 2007 legislative session, but the topic did not get any consideration. Departmental rules associated with such legislation would have very minimal restrictions thus allowing anyone with special concerns to destroy a mountain lion/cougar, if it was going to injure or harm property or persons.

Professor James Mahaffy of Dordt College has a list/website with his assessment of mountain lion/cougar sightings in Northwest Iowa. He has recorded several sightings along the Big Sioux and Doon Rivers in the eastern edge of South Dakota and western edge of Iowa. Numerous other mountain lion/cougar sightings have been generated from these reports. We attempted to map only the most credible reports. However, since the spring of 2002, we have received so many reports, which agency personnel and others believe to be reliable, that it is becoming increasingly difficult to sort out which reports are reliable. 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". Although the DNR does not advocate indiscriminate killing of mountain lions, another road-kill, shooting, or a clear photo or video would help add credibility and confidence to all the mountain lion sightings that we are currently receiving.

Depredation: This past year, we had some cases of livestock depredation but could not positively confirm any of them to be for sure from mountain lions. These reports came from the following counties: Humboldt, Kossuth, Emmet, and Polk. 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). However, it is possible for a mountain lion to depredate livestock, however again, we did not have any cases in Iowa in 2011 where we could determine for sure that a mountain lion caused livestock damage. We had 2 reports of horses with claw marks (scratches) on the hind flank, and 2 reports of dead calves that some property owners believe were taken by mountain lions. Solid evidence to validate these reports was difficult to ascertain. However, mountain lion researchers believe that white-tailed deer and other wild animals, especially mammals, are the preferred prey.

Even so, predators are generally opportunists and if hungry they will take what is readily available. We have had at least 5 reports (1 in Carroll, 1 in Harrison County, 1 in Polk County, 1 in Jones County, 1 in Calhoun County, and 1 in Pocahontas County) from people who believe that they have seen mountain lion cubs. A few

additional reports of mountain lion cubs have been reported this past year. At this point most DNR personnel are skeptical of those reports. All mountain lions that have been killed in Iowa in recent years, as well as others in neighboring Midwest states have all been reproductively immature 1 to 2 year old males. 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-tracker.com/cougar.html and http://www.geocities.com/Yosemite/9152/cougar.html. It is important to remember that all cat tracks are round is 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. 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 show no claw marks except in unusual circumstances. When possible, good plaster casts of suspected tracks will aid greatly in their identification. We will continue to monitor and map reliable sightings, but because there are still many mountain lion/cougar sightings that are reported with poor quality photos or video and so few tracks found, they are difficult to substantiate.

SAFETY ISSUES:

The good news is that lions generally avoid humans. People are more apt to be killed by a dog than a mountain lion/cougar. Some safety do's and don'ts can be found at the Mountain Lion Foundation of Texas website, www.mountainlion.org Also the Eastern Cougar Network is a great source of Mountain lion/cougar information. Their website is mdowling@courgarnet.org.

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

(1) Spread your jacket, coat or shirt above you head attempt to look larger.

(2) Hold your ground, wave, shout and don't run, as running stimulates the predator reflex (just like dogs) to pursue anything that runs away.

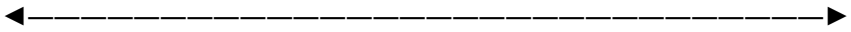
(3) Maintain eye contact if you sight a lion. Lions prefer to attack from ambush and count on the element of surprise

(4) If small children are present, or if there are several people in your group, gather everyone very close together. Mountain lions are not predators of large groups.

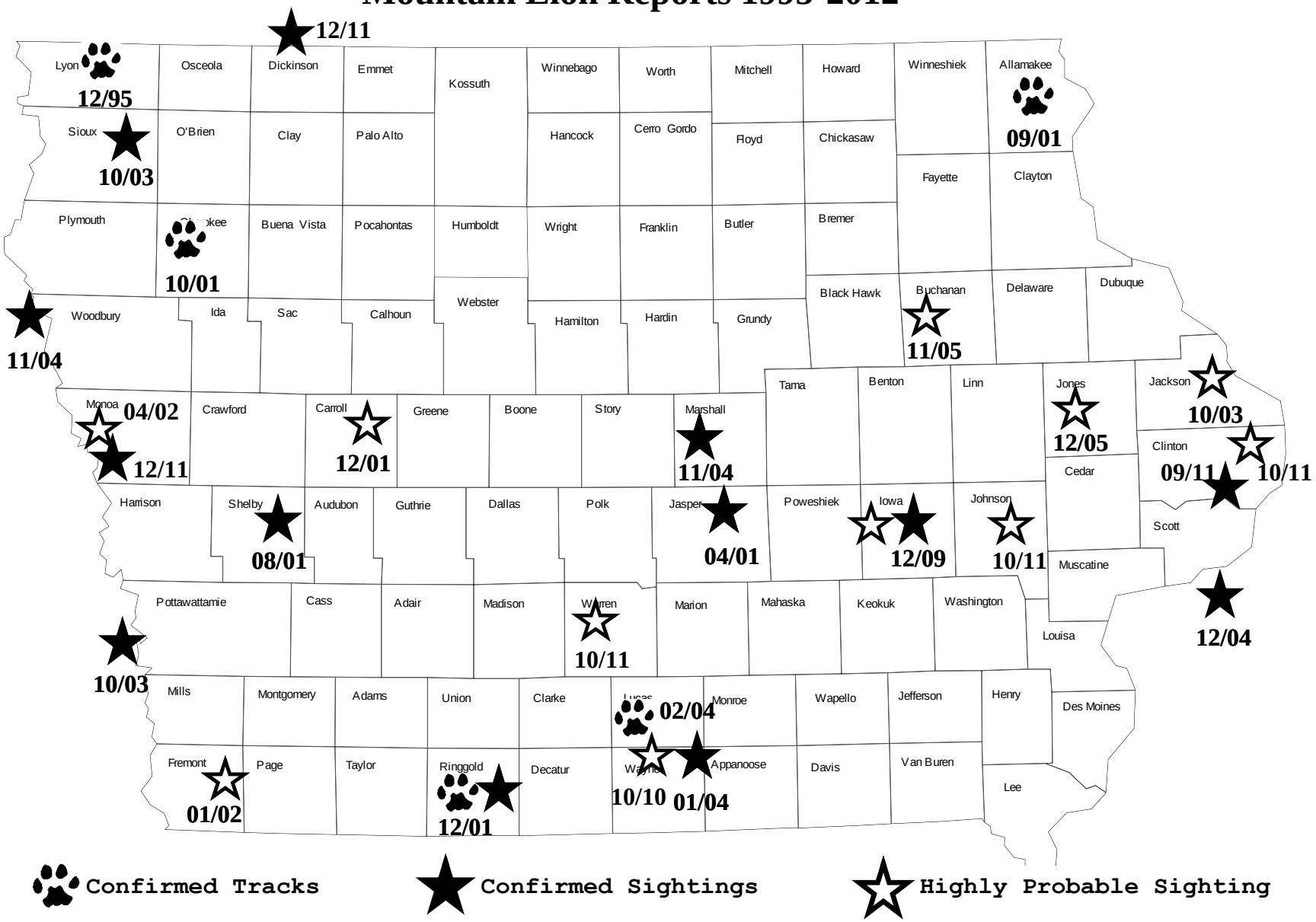
In the past 110 years 66 people have been attacked by mountain lions/cougars, resulting in 61 injuries, 19 of which were fatal, and none occurred in Iowa. In 2010, the DNR published a 4 fold brochure on the Status of Mountain Lions/Cougars in Iowa for the State Fair. The brochure is available on the Iowa DNR website and we send it out whenever needed to interested individuals or the media.

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) has given 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.

4 inches



Mountain Lion Reports 1995-2012



Numerous additional sighting have been reported, but are not mapped because of less than credible information. 09-10-12

BLACK BEAR STATUS IN IOWA
2001 to 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 that 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 exist from early-day pioneers in Iowa that have been recorded in journals and diaries.

There are pre-1900 records of black bears from 48 Iowa counties, two-thirds of them from counties in the eastern half of Iowa. The last recorded historical bear sighting in the 1800s was one killed near Spirit Lake in 1876. Although a Fish Commission had been established in 1873 nothing really happened in terms of Game/Wildlife legislation until after the last black bear had disappeared. Thus they are not recognized as a designated wildlife species in the Iowa Code. In the 1960s, black bear reports began to occur in the state. Several of these reports were from captive bears that were either turned loose or were escapees. In the 1990s through the present, we began to field more reports of what appeared to be wild free ranging black bears in the state. Currently, the nearest established wild populations of black bears are in Wisconsin, Minnesota, and Missouri. These populations are expanding their range towards Iowa from both the north and south. Figure 1 shows the most recent sightings of bears in Iowa. During 2002, there were at least 5 different fairly reliable black bear sightings. In 2003 and 2004, no reliable sightings have been reported. However during the spring and summer of 2005, the Iowa DNR received its first modern day black bear depredation complaint. In Allamakee County, a black bear reportedly was marauding several beehives in a few scattered locations foraging on both the bees and the honey. In 2008, a surge of 5 black bear sightings occurred, 1 in each of the following counties: Davis, Johnson, Winneshiek, as well as one shot in both Franklin and Fremont counties a week apart. Although not validated, the circumstantial evidence seems to indicate the one shot in Franklin County may have been and escaped or released bear while the one in Fremont County appears to be wild as it had been seen in Missouri, just days before it was killed just across the border from where it was last seen in Missouri.

In July (2009), a male black bear entered the northeast part of the state and paralled the eastern Iowa border south before crossing the Mississippi returning to Wisconsin. This bear crossed the Mississippi River near Harpers Ferry in Allamakee County moved westward then south and basically paralleled the river southward to near Clinton. Then it crossed the Mississippi River near Green

Island, Iowa back into Wisconsin then northward to Baraboo, Wisconsin where it became impossible to keep track of it because it had no specific markings.

During May of 2010, there was a reliable report of an adult black bear and a yearling spotted just west of Marquette, IA (Clayton County) feeding at bird feeders. In late May, 2010, a smaller bear, probably a yearling, was witnessed in northwest Mitchell County near Carpenter, IA. In early June, a bear was seen north of Northwood (Worth County) near the Iowa/Minnesota border. Observations of this bear have also reported in southern Minnesota. It would seem unlikely that this bear was the same one reported near Marquette as it was not reported at any point between and in Iowa that would be unusual as there is so much open territory to see the bear. All indications are that these are wild, free ranging bears, not bears released or escaped from captivity.

In October 2010 a black bear was sighted in and around the Yellow River Forest in Allamakee County. This promted the Iowa Department of Natural Resources to issue a warning for people to avoid the animal at that time. This bear is likely a young male that moved into Iowa from southern Wisconsin where there is a healthy wild bear population.

In September 2011, a black bear was sighted in Winneshiek County. Again, this is likely to be a wondering bear from southeast Minnesota or southwest Wisconsin. A few unconfirmed reports came from Mitchell County along the upper Cedar River as well.

This past spring, from May through June 2012, several sightings of a black bear were confirmed in northeast Iowa. The following is a documented list of those sightings:

- Winneshiek Co, near Ridgeway on May 15th, 2012
- Fayetter Co, near West Union on May 18th, 2012
- Chickasaw Co, near Fredericksburg on May 21st, 2012
- Floyd Co, near Nora Springs on May 29th, 2012
- Bremer Co, near Frederika on June 11th, 2012
- Winneshiek Co, Decorah on June 20th, 2012

Communication with Terry Haindfield (Iowa DNR Wildlife Biologist, NE Iowa) indicated this particular bear may have moved on north into southeast Minnesota. No more documented sightings occurred in northeast Iowa the rest of the summer, but were in southeast Minnesota.

Black bear sightings are usually more reliable than mountain lion/cougar sightings because they 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. The DNR continues to consider legislation to give both species legal furbearer status in the Iowa Code. The Governor's office has discouraged the DNR from pursuing legal status of the black bear and mountain lion/cougar because of bio-political conflicts between agriculture and these 2 wildlife species. Proposed legislation was introduced for

designation status for the black bear, but it did not get debated during the 2006 and 2007 legislative sessions. However the public outcry over the 2 black bears shot in mid 2008 point out that much of the public is in favor of some type of legal black bear status. The effort to give them furbearer status needs to be pursued in the future. This would allow appropriate wildlife management to occur which would include opportunities to handle nuisance black bear complaints. Regardless of legislation, development of a more uniform and standard policy concerning bear sightings in Iowa may be warranted. A lot of emotion is generated when one of these bears are killed. Where possible, we should discourage the indiscriminant killing of black bears unless there are concerns for human, pets, or livestock safety. Bears are omnivores, primarily vegetarians, foraging on seeds, fruits, berries and other plant material but given the opportunity they may feed upon animals as well. Human tolerance will be the deciding factor as to whether black bears could ever re-established again in Iowa. If they do, I am sure that their numbers would remain quite small.

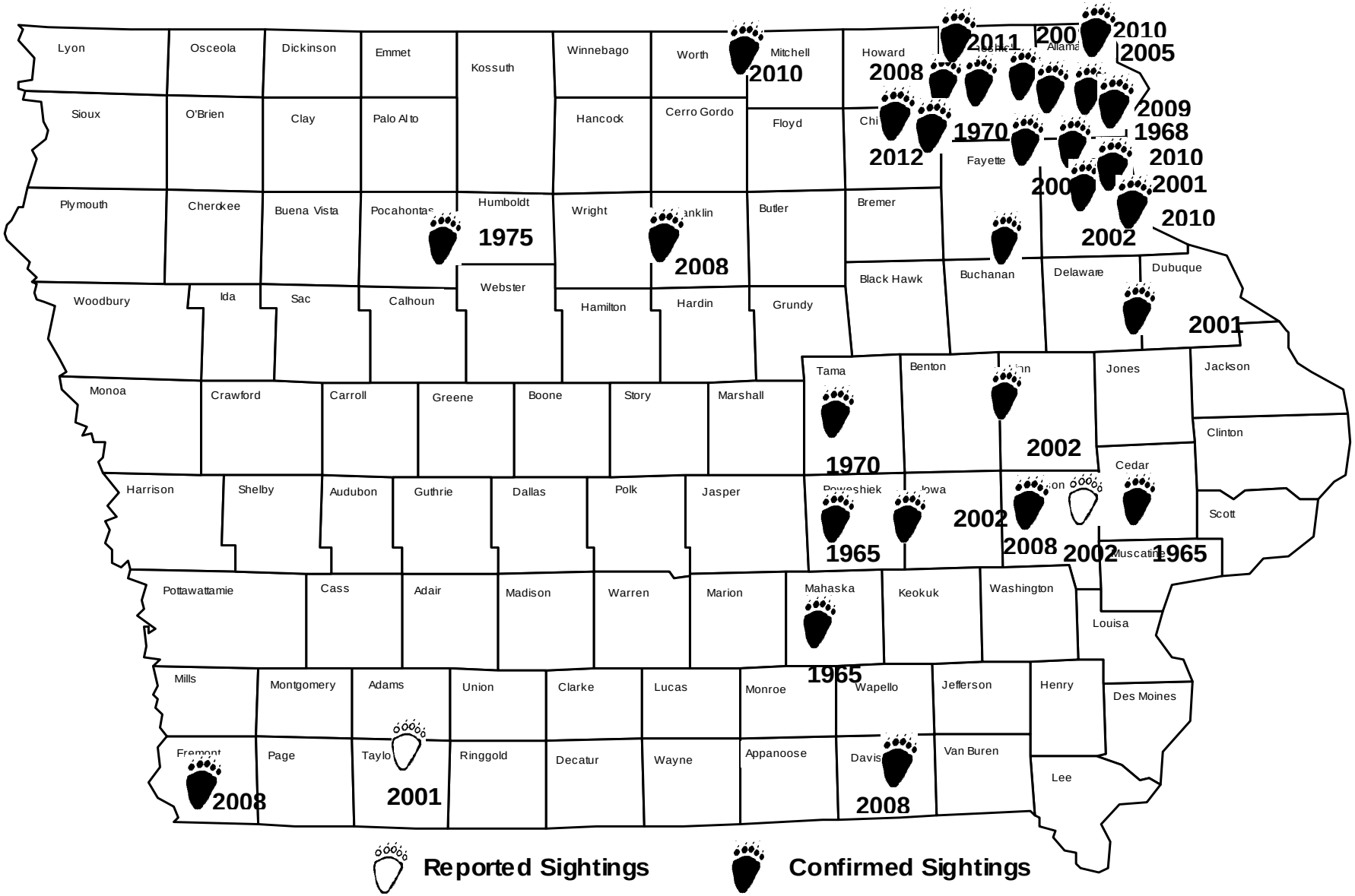


Figure 1. Black Bear Status In Iowa

(1876 Last Historical Sighting)
(Dickinson County)

9-10-12

GRAY WOLF (TIMBER WOLF) STATUS IN IOWA
2001 to Present

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. 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. In 1978, they were reclassified (down-listed) from endangered to threatened under the ESA in Minnesota. The US Department of Interior's Fish and Wildlife Service administers the ESA. The Fish and Wildlife Service is working to allow more state rights' management of gray wolves and other resident species. In 2007, the gray wolf was taken off the Threatened list in Minnesota. 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. Pending some sort of litigation the Gray Wolf will now be allowed to have some sort of legal regulated harvest under state management in Minnesota. At this time, the MN DNR is moving forward with their first modern day wolf harvest that will take place this Fall (2012).

Unlike the Moutain Lion and the Black Bear, the gray (timber) wolf is designated as a furbearer with state protected status under the Iowa Code. Gray wolves likely have protection status because they were not clearly separated from the coyote in early bounty legislation, while Moutain Lions and Black Bear had basically been extirpated before any wildlife legislation occurred. Thus the wolf was officially listed as a furbearer while the other 2 species had already disappeared and thus no reason to include them in early legislation. In recent years Minnesota wolves have been edging southeastward along the Mississippi River towards Iowa. In the mid-1990s occasional, lone wolves were appearing in the Winona,

Minnesota region, approximately 75 miles from the Iowa border.

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. Rodney Rovang, manager of the Effigy Mounds National Monument near Marquette, Iowa, indicates that he has observed occasional wolf tracks in and near Allamakee County over the past decade. Two known wolf-like animals were taken in 2010 in Sioux and Guthrie County.

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. Wolves are very mobile animals and as they extend their range southward more will likely frequent Iowa.

The Rocky Mountain wolf population was delisted from threatened on July 18, 2008 which allowed them to be legally harvested with approved state management plans, however an injunction by animal rights activists has now placed them back on the Threatened List which in essence gives them protection again. This is subject final court action as to whether they remain threatened or are in fact, delisted again where ranchers could kill them as needed to protect their livestock.

THE GRAY (TIMBER WOLF WAS OFFICALLY DELISTED FROM ENDANGERED AND THREATENED ON MARCH 6, 2009. The back and forth between federal protection or delisting has continued since. However, many western states now allow wolves to be readily killed if there is concern for the welfare of livestock. Numerous animals have, in fact, been taken since this occurred.

Plans are underway to revise Iowa's Gray Wolf Management Plan as required under the removal of the gray wolf from the Threatened list. Now that the gray wolf has been removed from the Threatened list in Minnesota, we are planning to revise the plan to accommodate the newly designated status of the gray wolf in the Midwest. The revised version will serve as guide as to how the DNR should respond to wolf concerns as wolf numbers increase and human and wolf encounters occur. During 2009 through 2011 a few reports have come from people seeing what they believed were gray wolves in Iowa on a more frequent basis but we have not been able to validate their presence with any sort of solid evidence. No reported, confirmed, sightings occurred in 2011. The most most recent (unconfirmed) report was in Jefferson County in July 2012. However, if the current trend continues, I think it is only a matter of time before a validated wild gray wolf is killed in the state. 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.

APPENDICES

1. **2011 Bowhunter Observation Survey**
2. **Ruffed Grouse Observation Survey**

2011 Bowhunter Observation Survey
Iowa Department of Natural Resources

Peter A. Fritzell, Jr., Human Dimensions Specialist, Iowa DNR
Dr. William R. Clark, Professor, Iowa State University

The Iowa Department of Natural Resources (DNR) conducted the annual Bowhunter Observation Survey during October 1 – December 2, 2011. This was the eighth year of the survey, which was designed jointly with William R. Clark, Professor at Iowa State University. The two primary objectives for this survey are to: 1) determine the value of bowhunter observation data as a supplement to other deer data collected by the DNR; and 2) develop a long-term database of selected furbearer data for monitoring and evaluating population trends. Bowhunters are a logical choice for observational-type surveys because the methods used while bowhunting deer are also ideal for viewing most wildlife species in their natural environment. In addition, bowhunters typically spend a large amount of time in bow stands: more than 40 hours/season is not uncommon. We believe avid bowhunters are the best hunters to select for participation in this survey because they not only hunt often, but they also have the most experience in selecting good stand locations, controlling or masking human scent, using camouflage, identifying animals correctly, and returning surveys.

Participants for the 2011 survey were selected from a list of bowhunters who had purchased a license for each of the 3 years prior to 2011 (i.e., avid bowhunters). Our goal was to select approximately 999 bowhunters in each of Iowa's 9 climate regions. Each climate region contains approximately 11 counties, and approximately 91 bowhunters were selected per county in an effort to evenly distribute observations in each region. Selection of participants consisted of a 3-step process. In each county, participants were first selected from a core group of avid bowhunters who had previously indicated an interest in participating in this survey. If fewer than 91 core group participants existed in a county, additional participants were randomly selected from a separate list of avid bowhunters who were not in the core group. Finally, if the number of "core group" and "randomly selected" participants in a county was less than 91, additional avid hunters were selected from other counties in the region to reach the regional goal of 999 participants. A total statewide sample of 8,991 bowhunters was selected for participation.

Responses were obtained from 2,045 bowhunters who recorded their observations during 30,024 hunting trips, yielding 103,087.5 hours of total observation time (3.43 ± 0.02 hours/trip; mean ± 95% CL). Bowhunters reported a median of 14 trips during the 63-day season. Regionally, the number of bow hunting trips (and hours hunted) ranged from 1,750 (5601.5 hours) in northwest Iowa (Region 1) to 4832 (16,785.5 hours) in east-central Iowa (Region 6). The raw survey response rate was 22.7%.

Observations were standardized for each of the 12 species to reflect the number of observations per 1,000 hours hunted in each of the 9 regions. In addition, 95% confidence limits were calculated for each estimate. Precision among estimates for common species, such as deer, wild turkeys, and raccoons, was good: confidence limits were generally within ±15% of the estimate. However, for less common species, such as badgers, bobcats, gray fox, and otters, the uncertainty associated with the estimate was quite large and occasionally exceeded the estimated value.

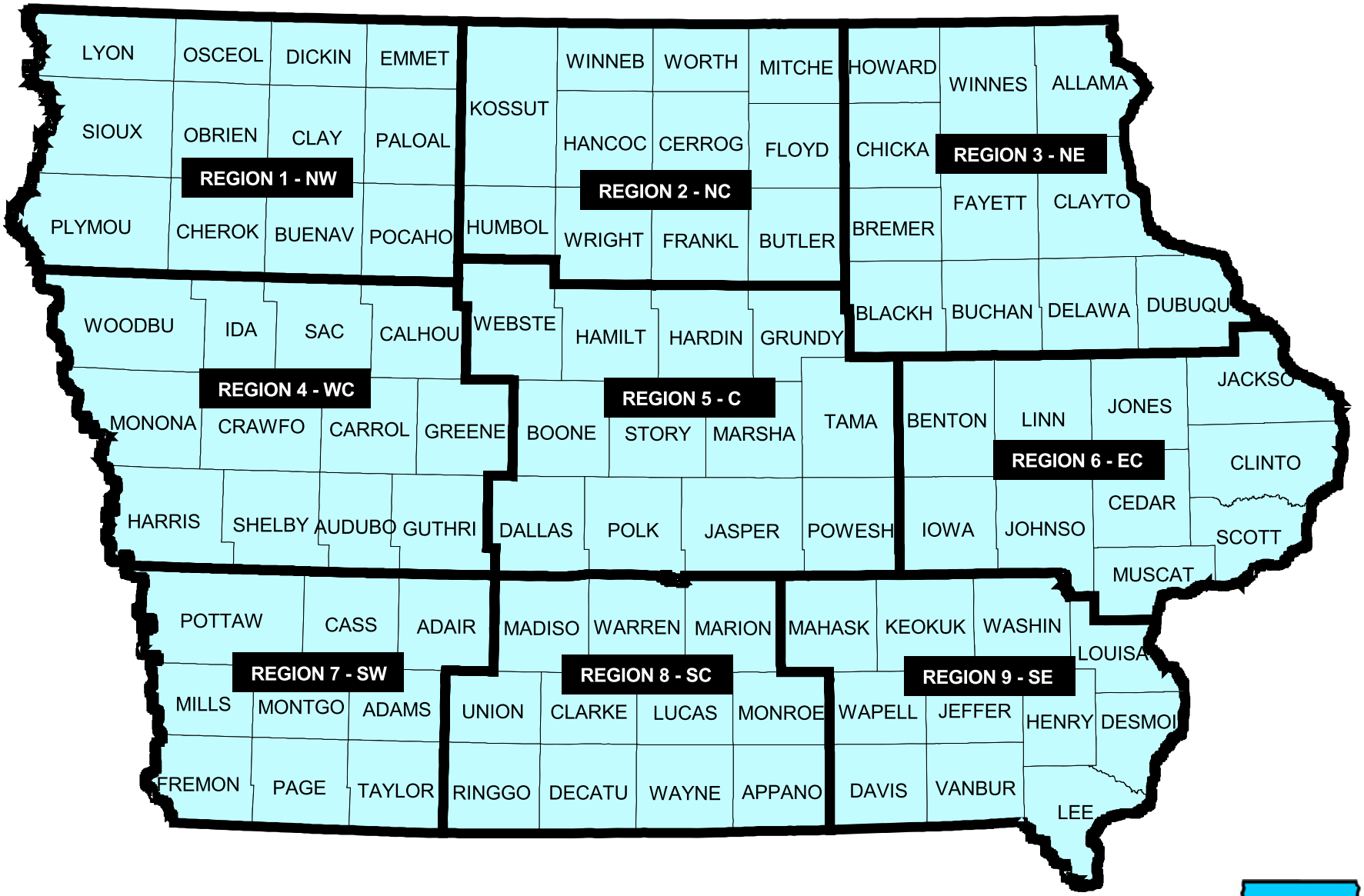
A comparison of results from 2010 and 2011 indicated that the number of total deer observed/1,000 hours declined significantly in the northeast, west-central, and east-central regions (3, 4, 6) of Iowa. No significant change in total deer observations/1,000 hours was detected in any other region. The number of wild turkeys observed/1,000 hours was unchanged in all regions compared to 2010. There were no year-to-year significant differences in bobcat nor river otter observations/1,000 hours regardless of region in 2011. Observations of opossums per 1,000 hours significantly increased in 2011 in the central and south-central regions of Iowa (regions 5 and 8). Raccoon observations/1,000 hours were unchanged in all regions except the east-central and southeast, where observations/1,000 hours declined.

The DNR thanks all hunters who participated in the 2011 Bowhunter Observation Survey. Iowa's bowhunters are the best group of hunters to provide this observational information, and their participation in this survey will play a major role in the conservation of these wildlife species in the future. The volume of information they have provided could never be duplicated by the staff of biologists, technicians, and conservation officers of the Iowa DNR.

When looking at the following charts, we caution against making comparisons between regional estimates for any species. Any differences in observation rates between regions could be related to differences in many factors such as population size, habitat, topography, land use, or any other factor affecting the sightability of animals. For each of the selected species, any differences between regions are NOT entirely related to regional differences in population size.

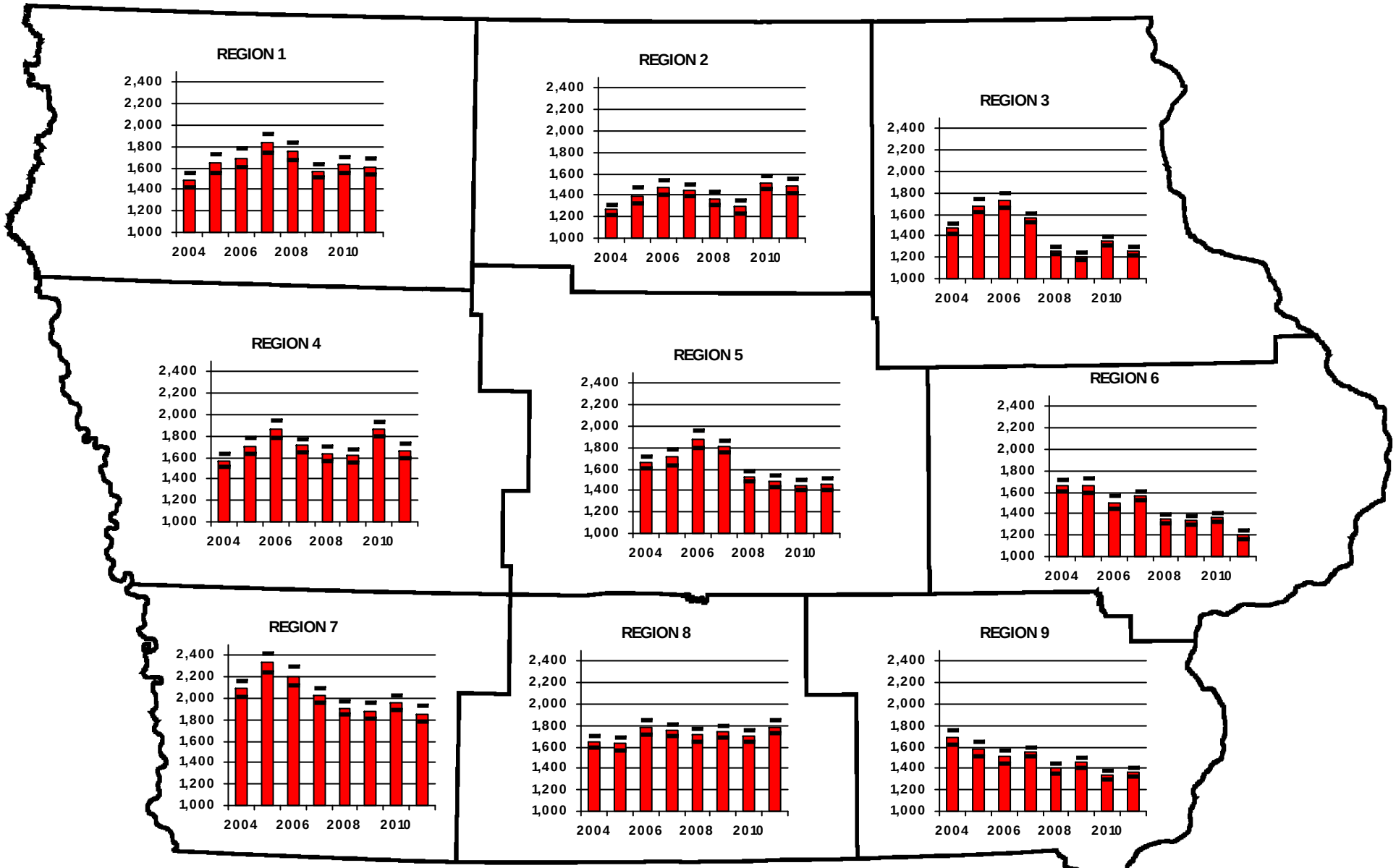
Bowhunter Observation Survey, Iowa Dept. of Natural Resources

Bowhunter Observation Regions



Total Deer Observations Per 1,000 Hours Hunted

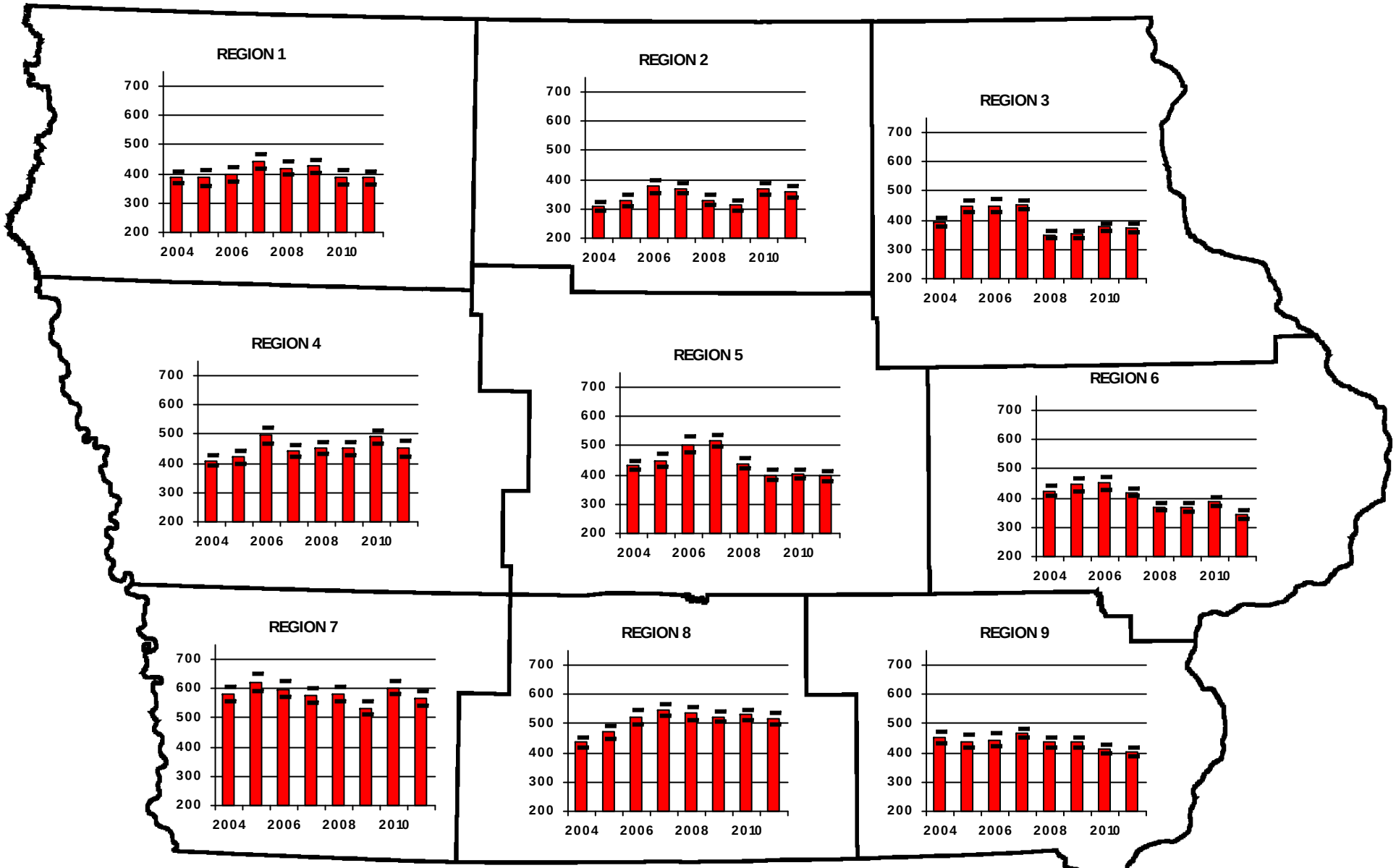
Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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

Antlered Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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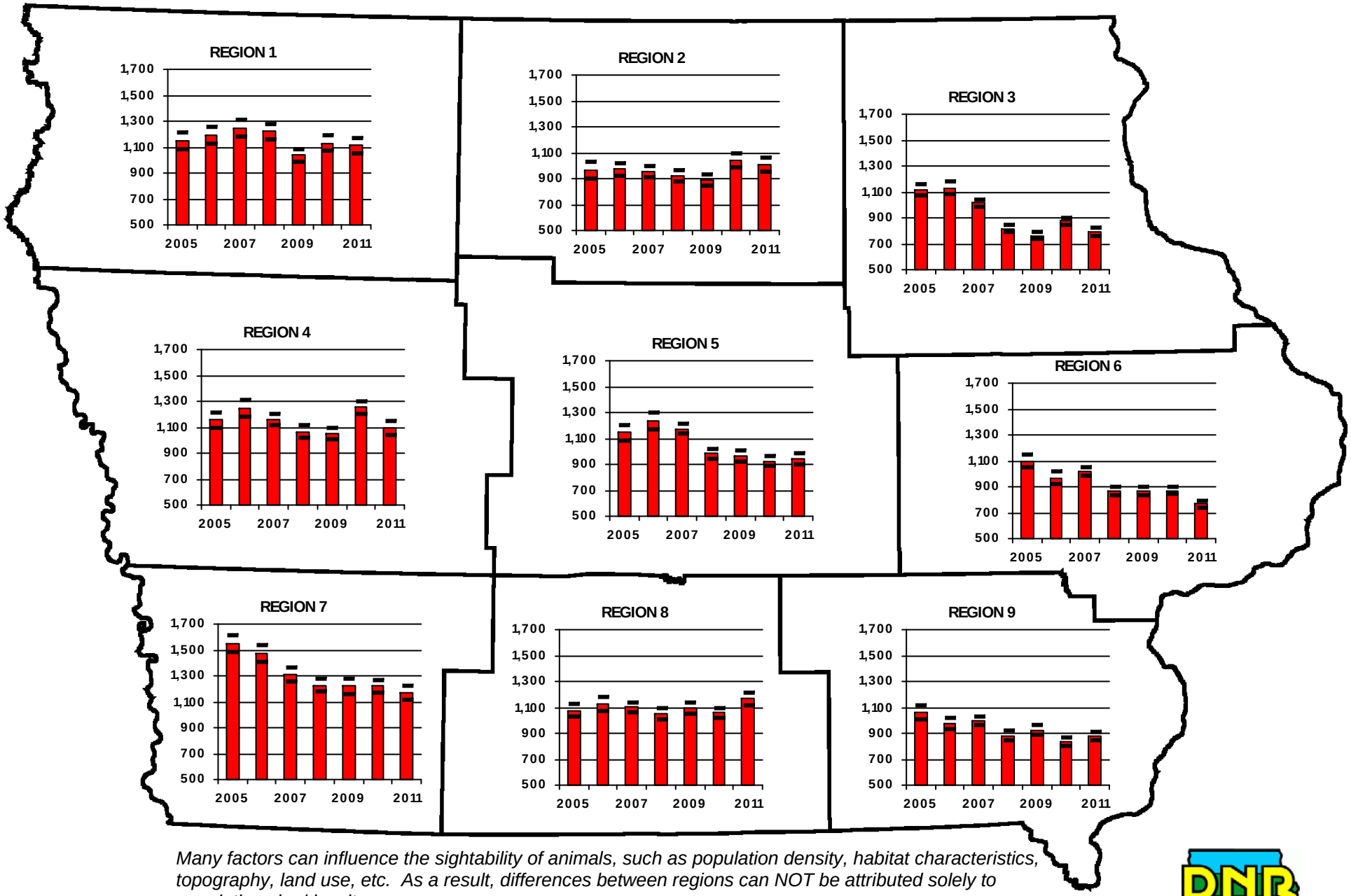
Antlerless Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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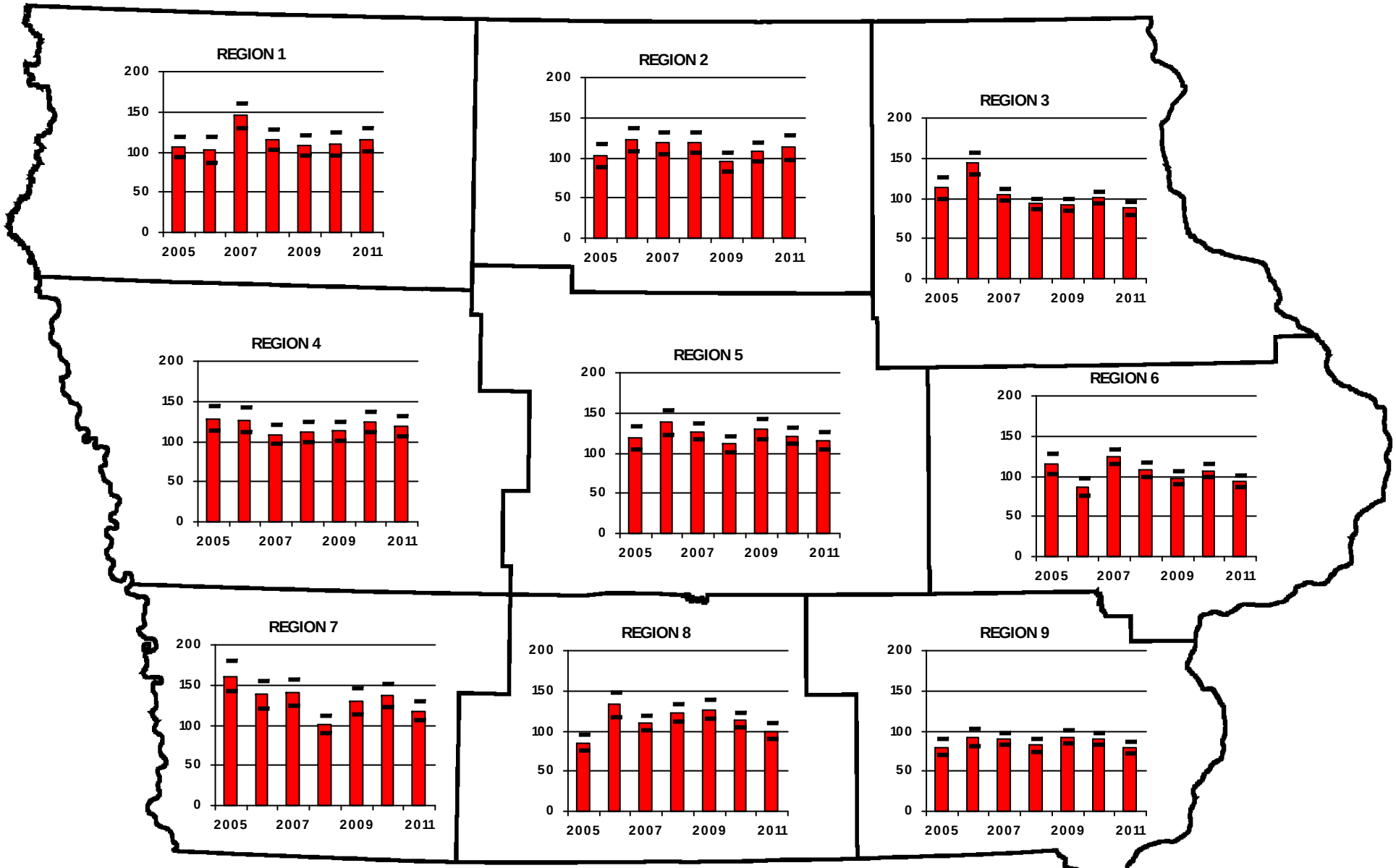
Unknown Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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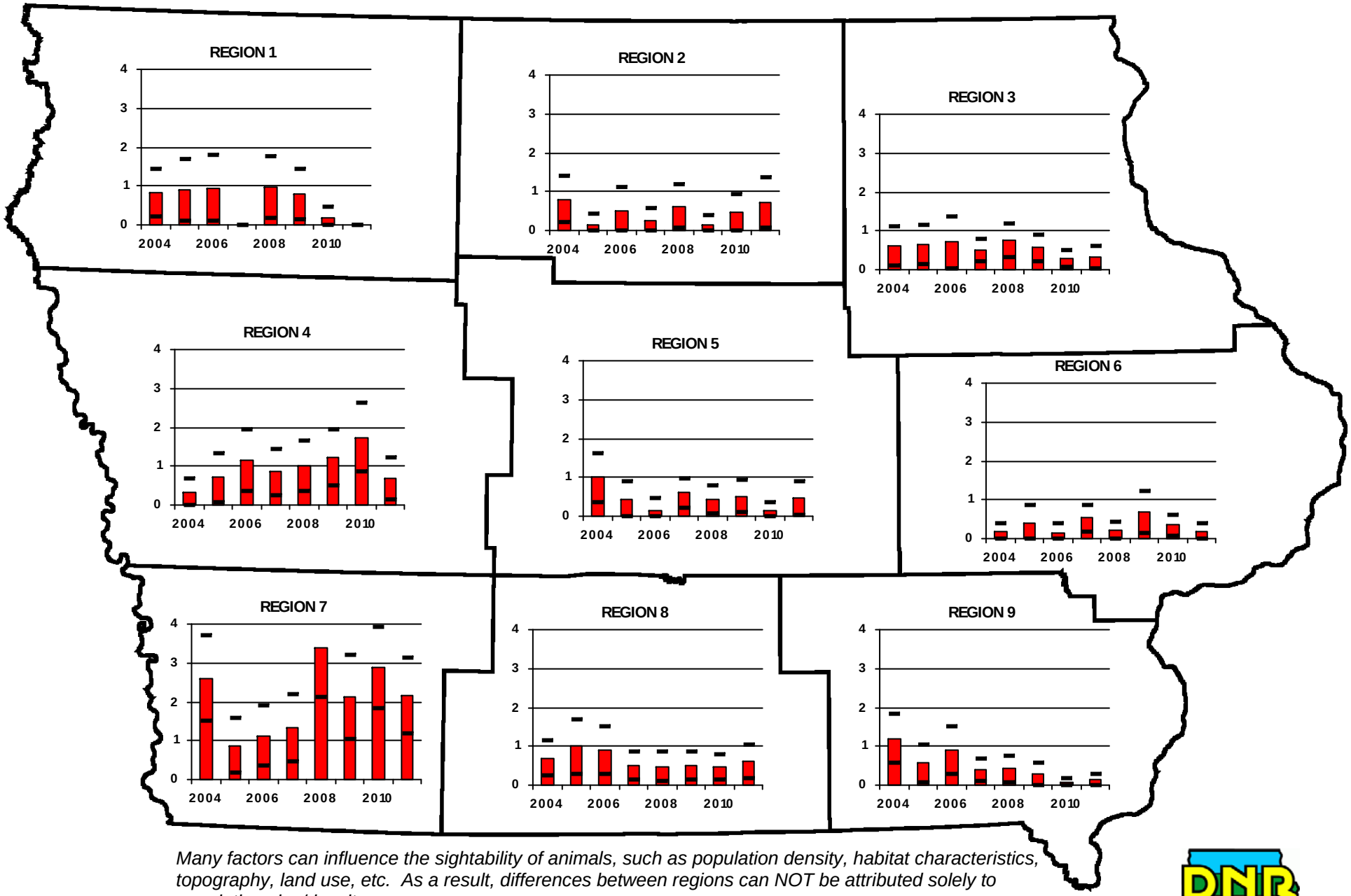
Badger Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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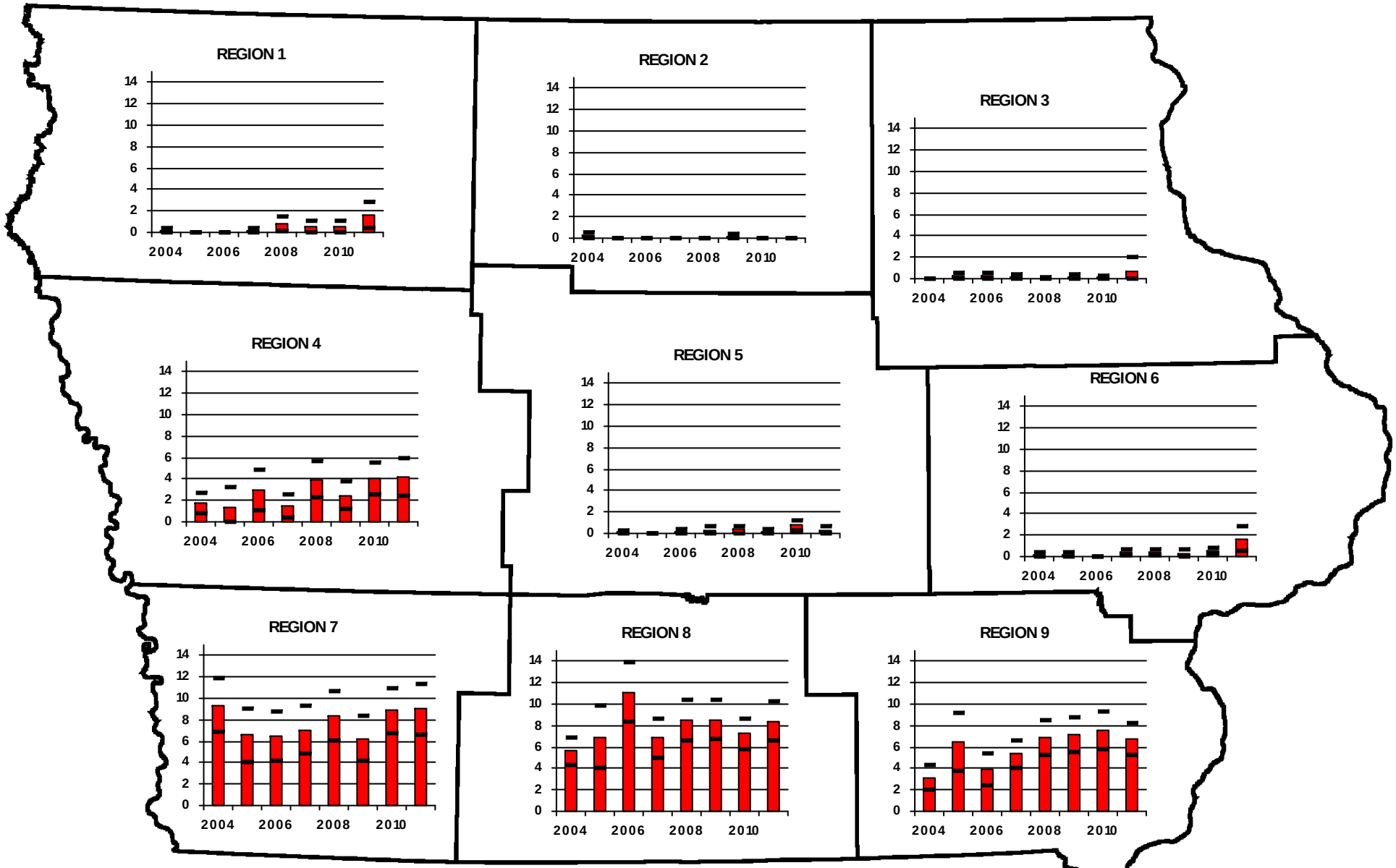
Bobcat Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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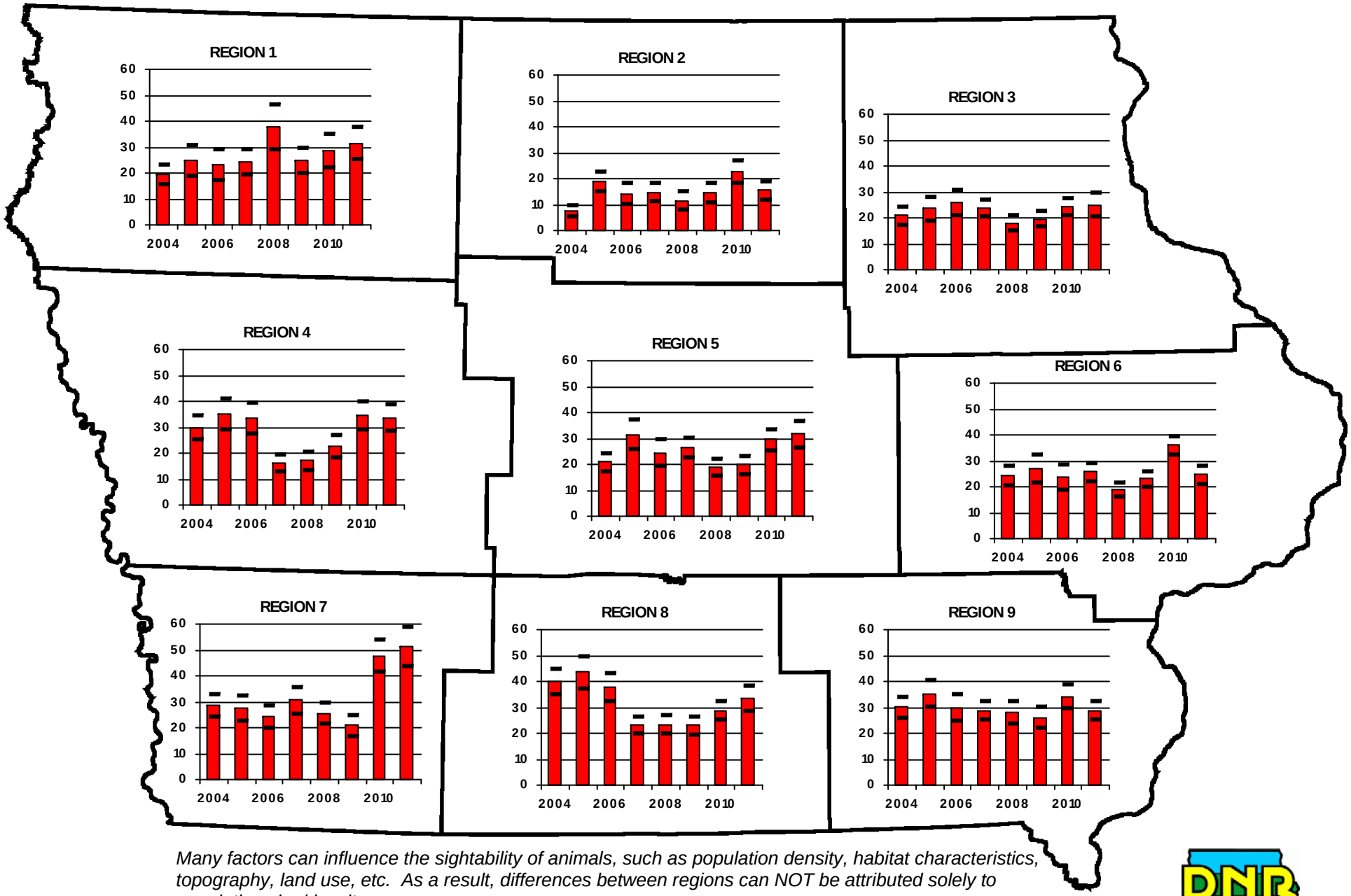
Coyote Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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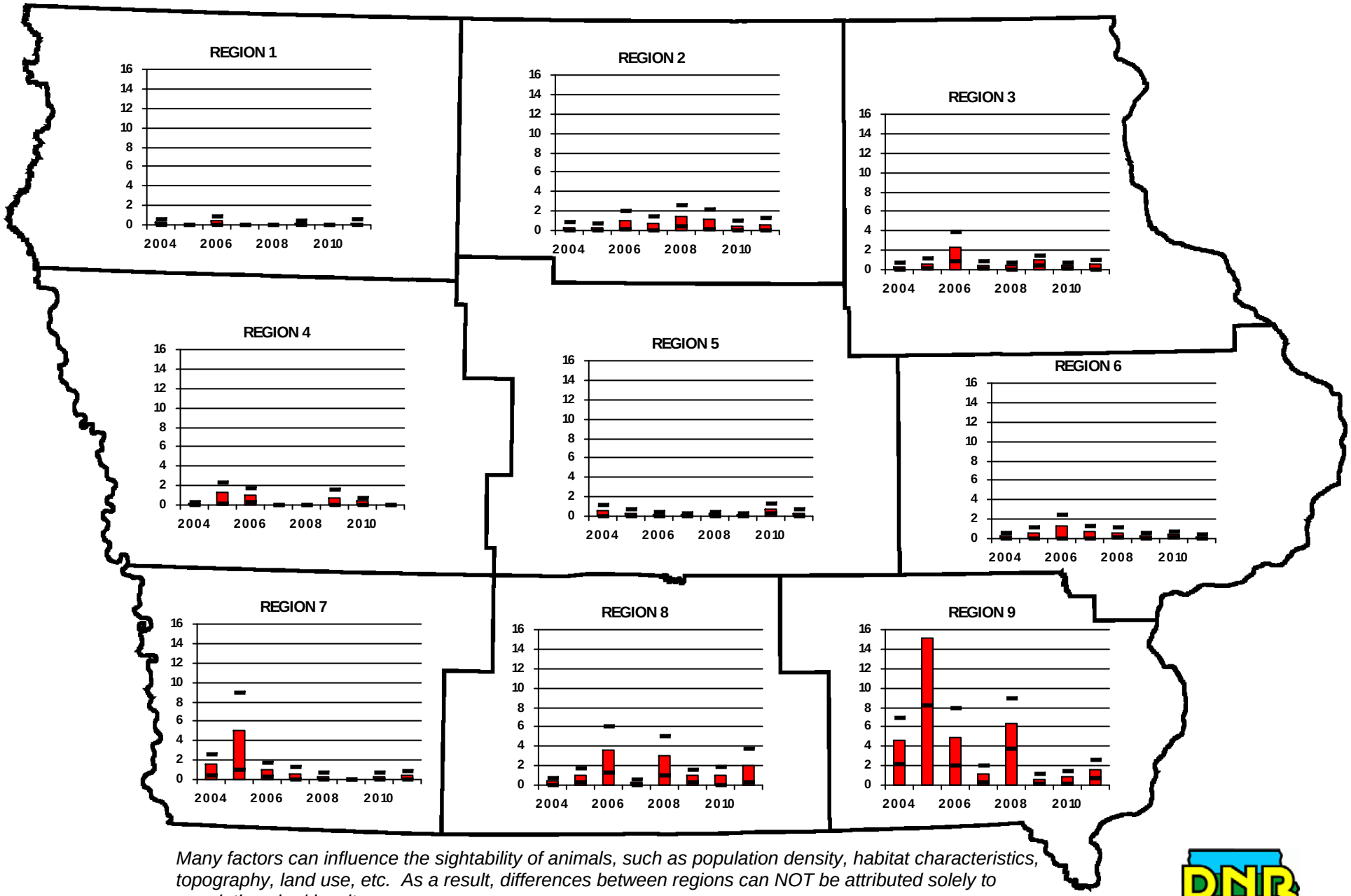
Gray Fox Observations Per 1,000 Hours Hunted

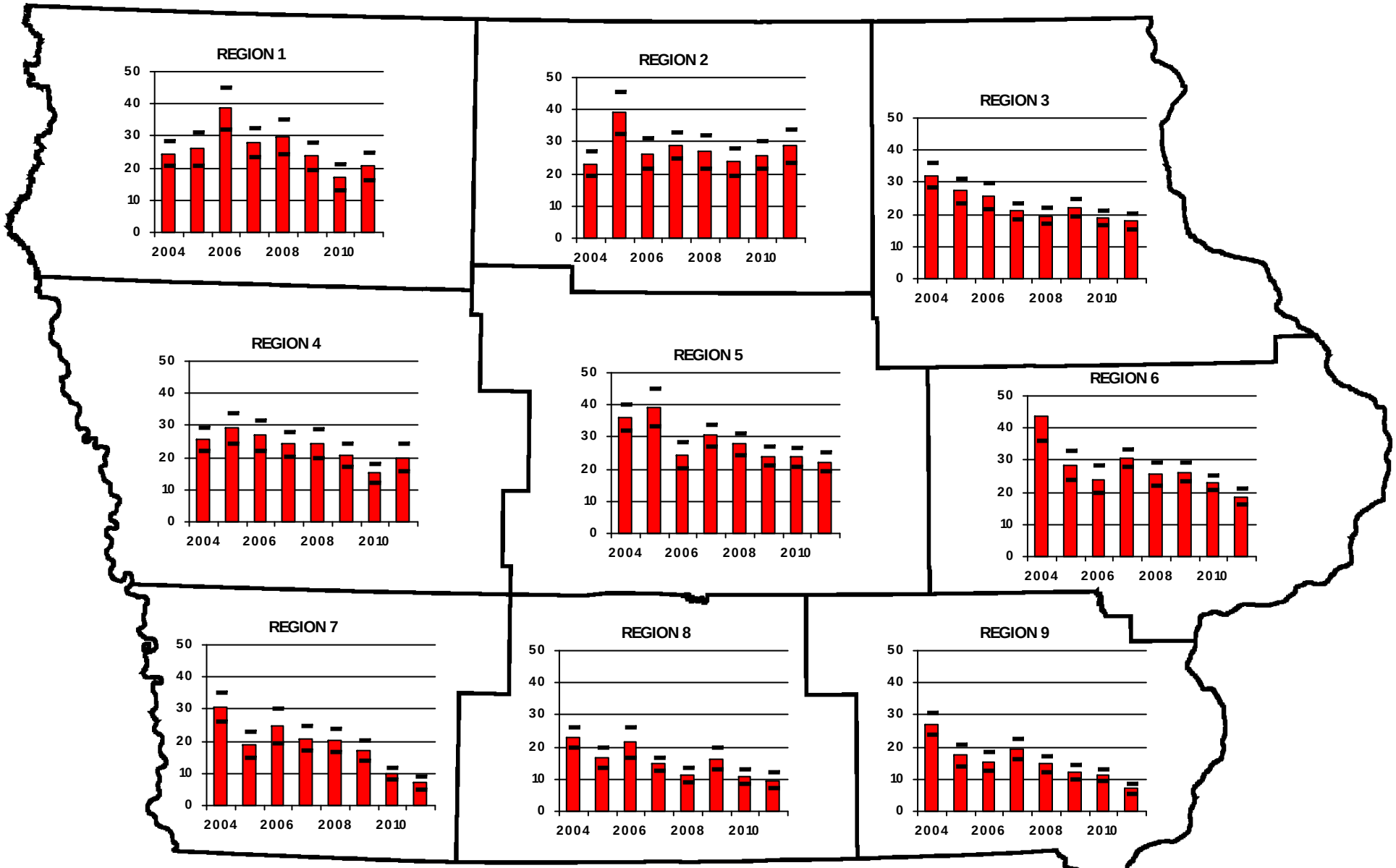
Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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

House Cat Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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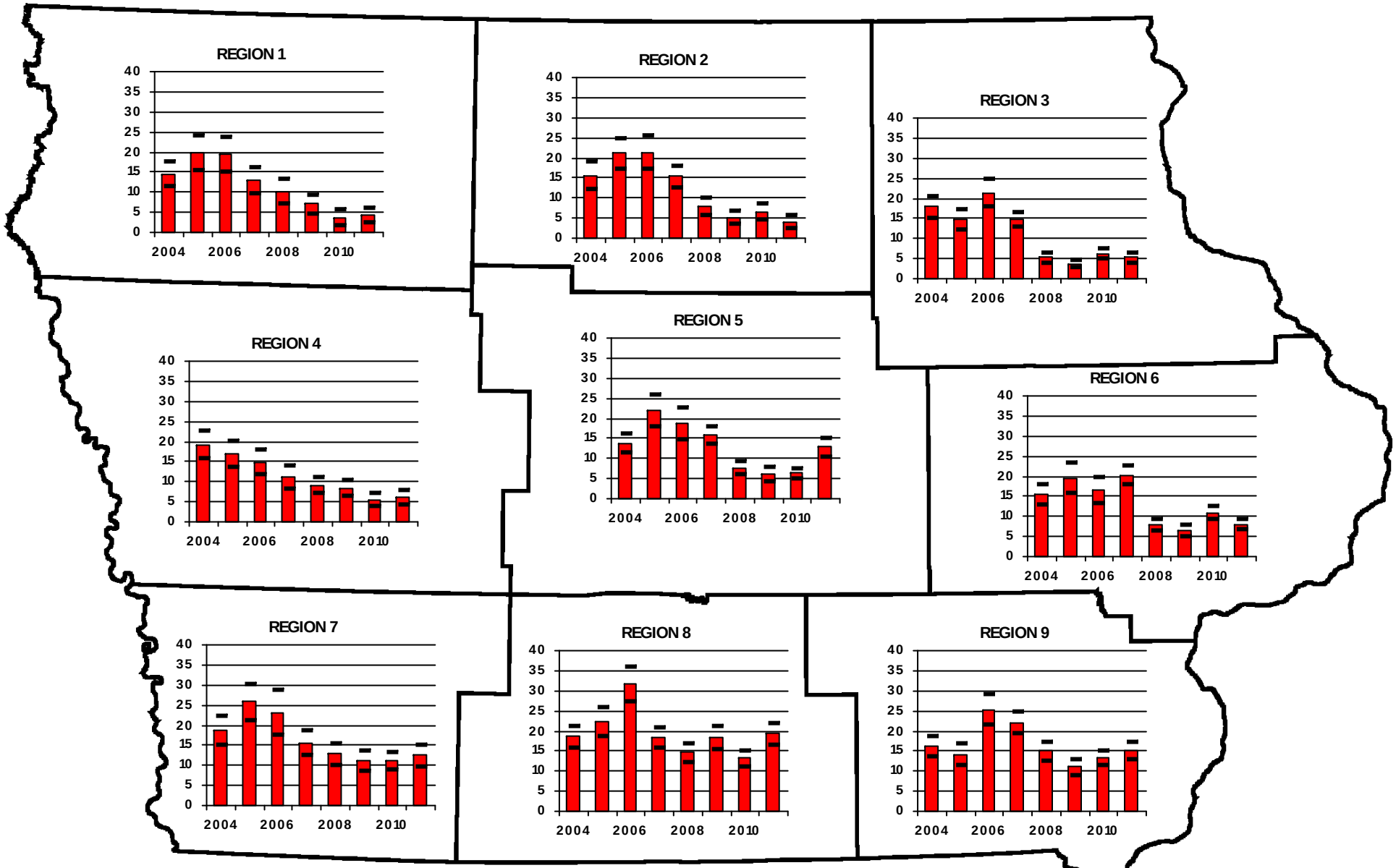
Opossum Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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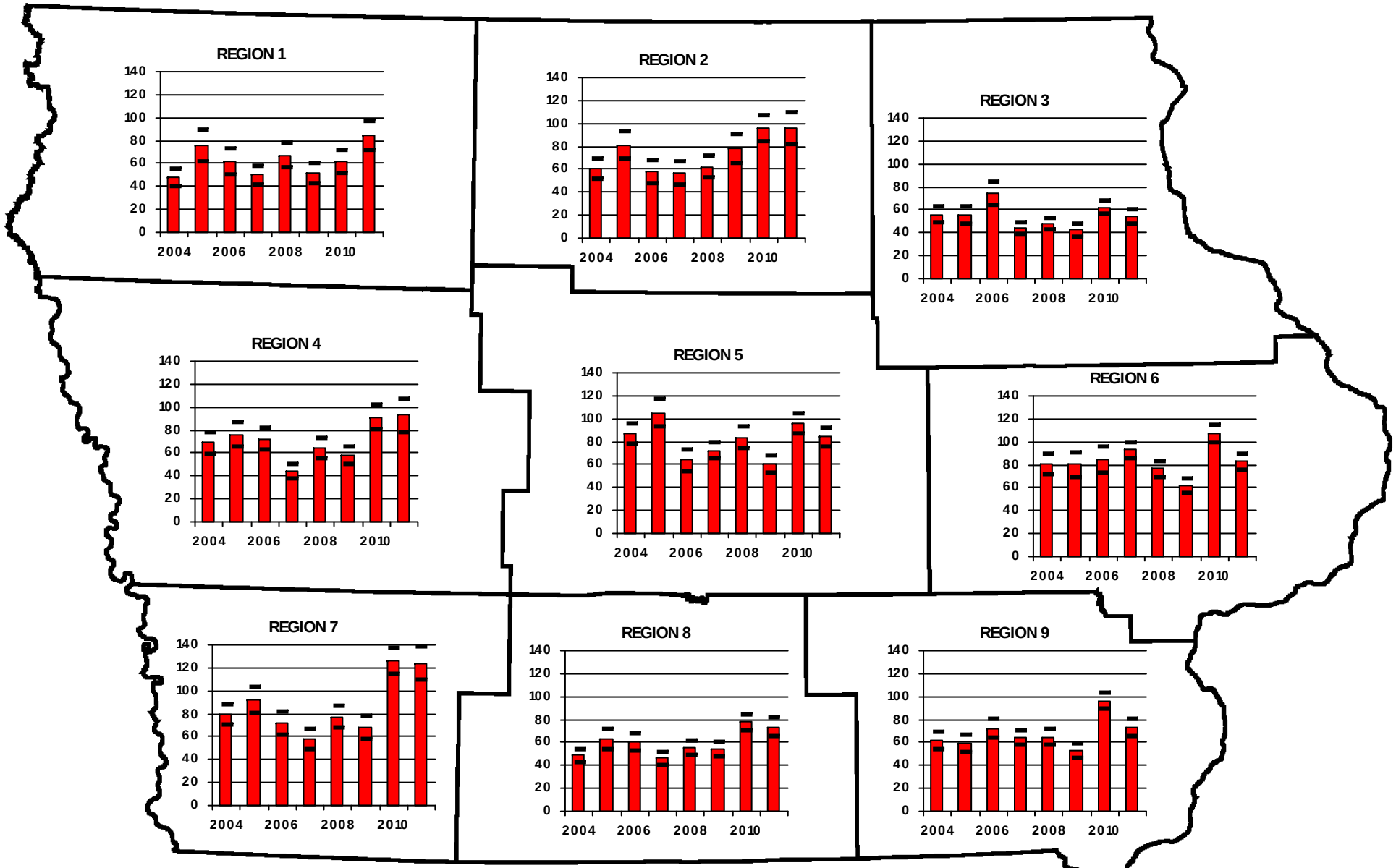
Raccoon Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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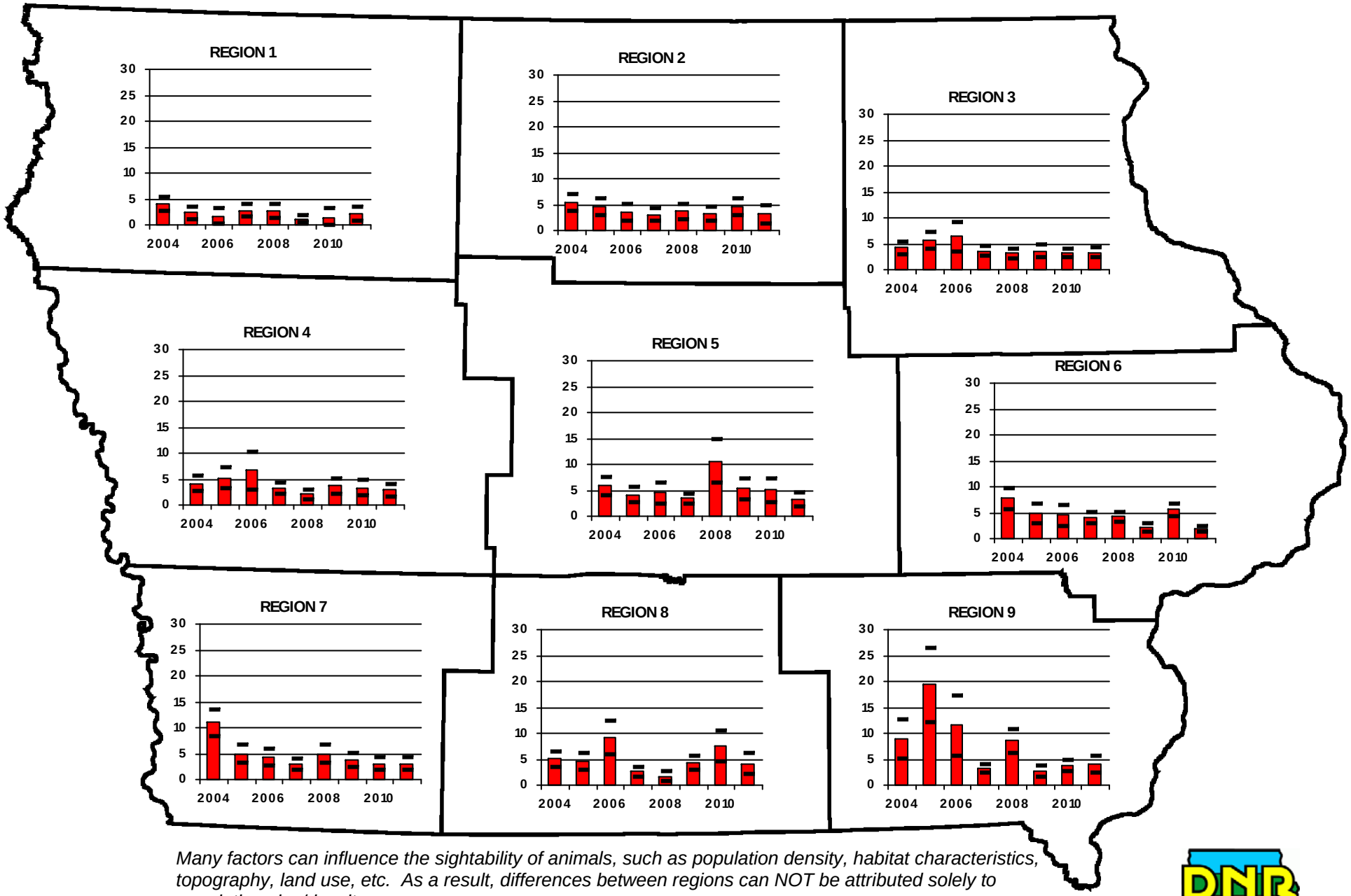
Red Fox Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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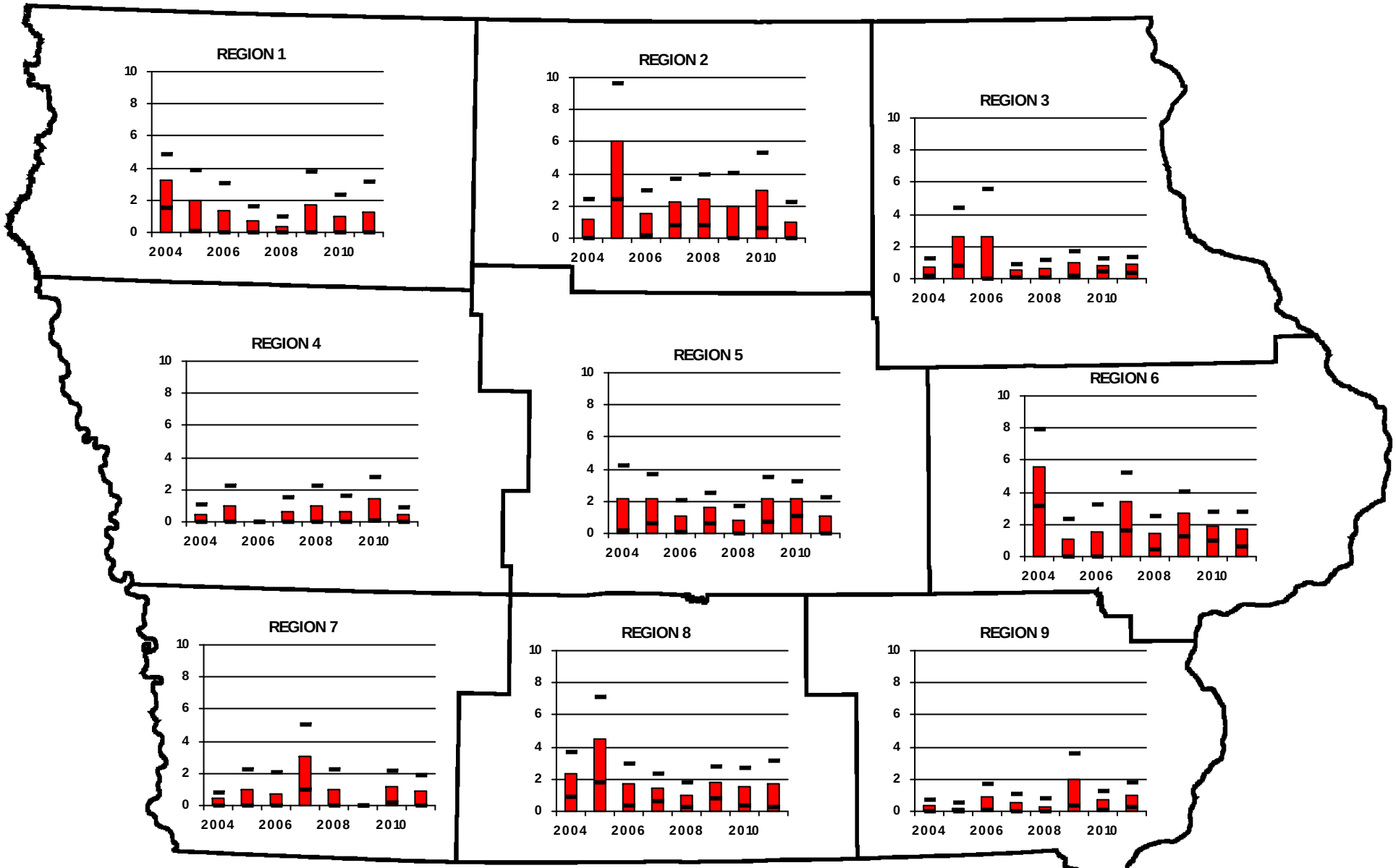
River Otter Observations Per 1,000 Hours Hunted

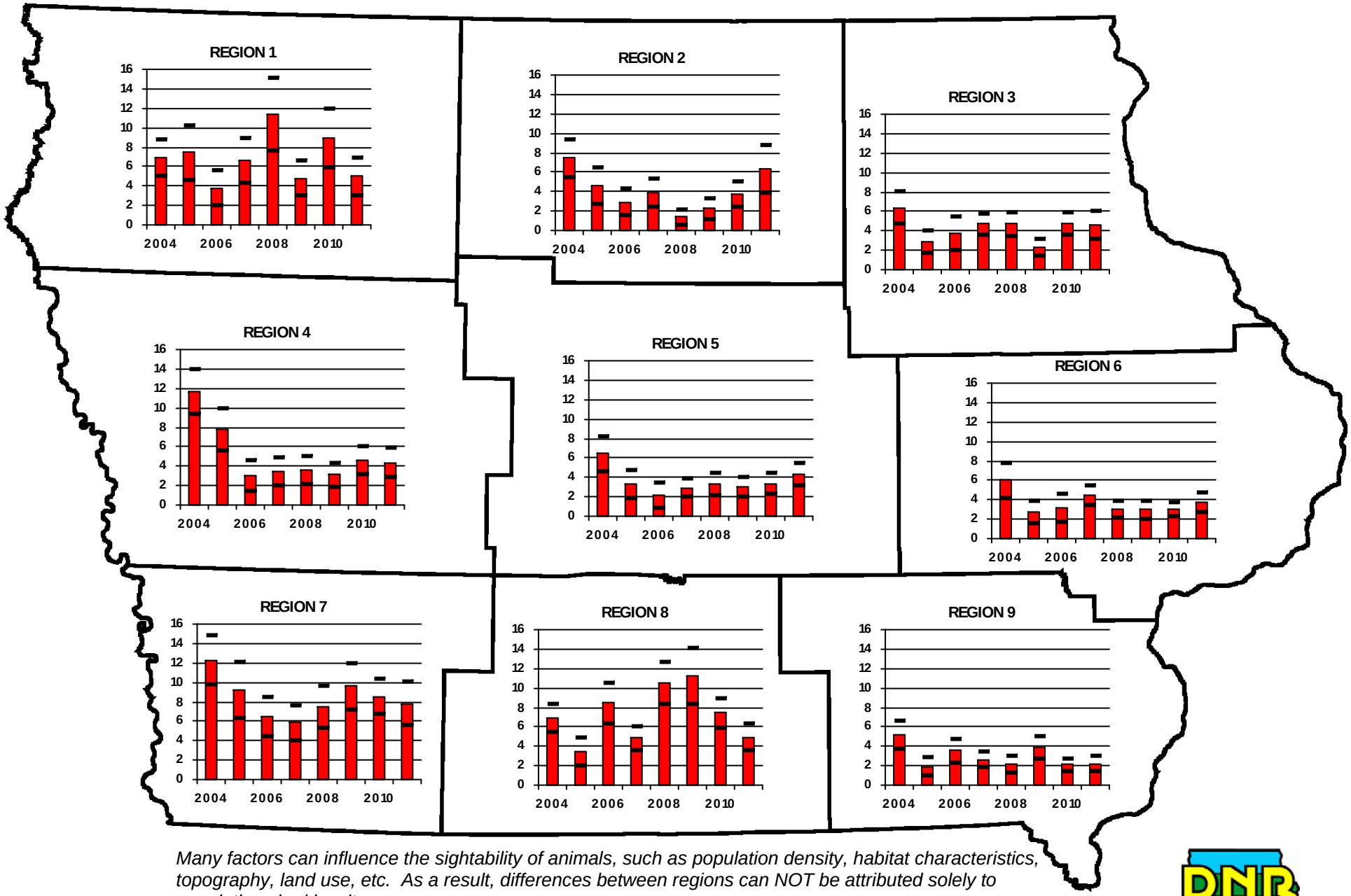
Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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

Striped Skunk Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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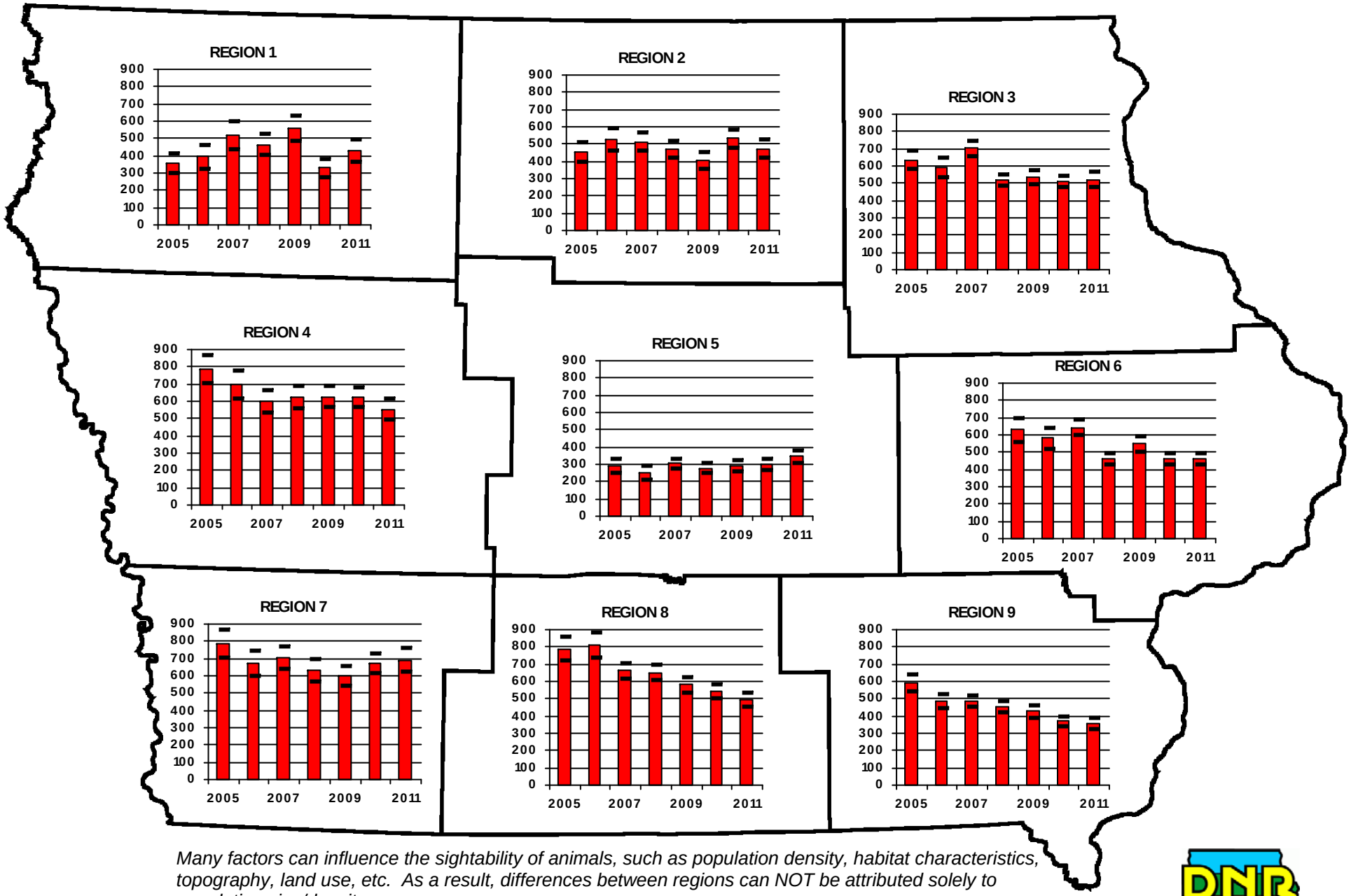
Wild Turkey Observations Per 1,000 Hours Hunted

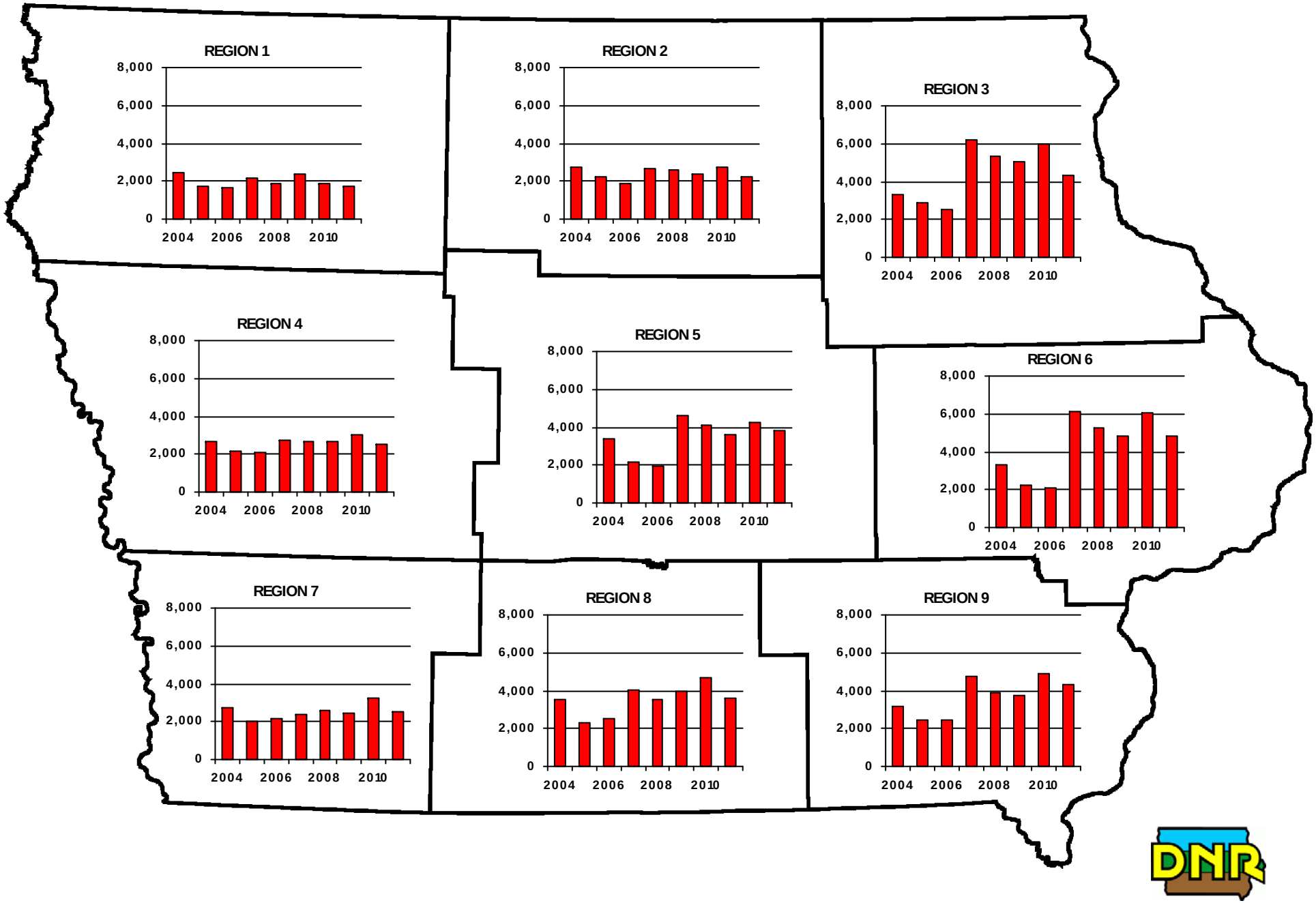
Bowhunter Observation Survey, Iowa Dept. of Natural Resources



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

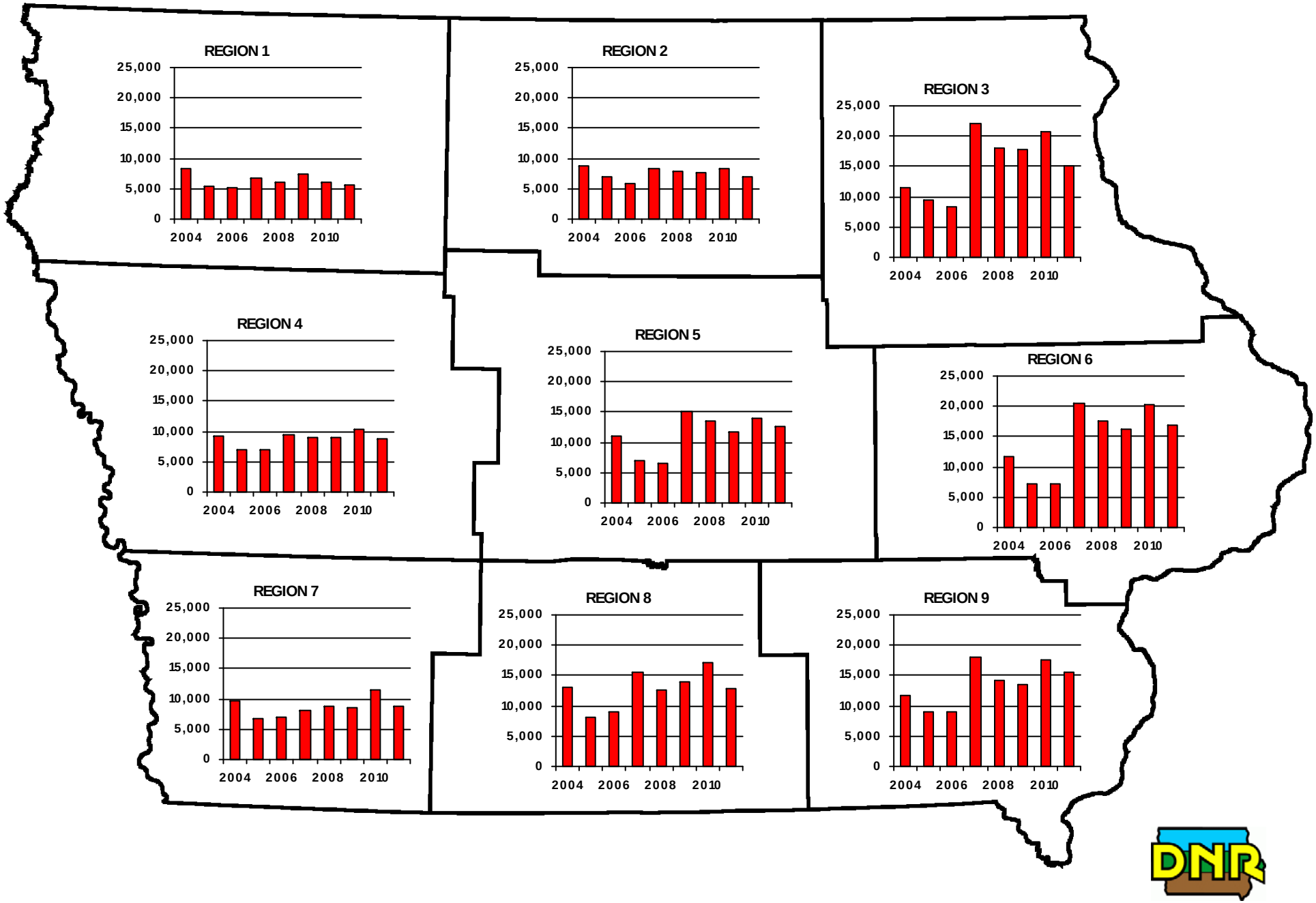
Bowhunting Trips by Survey Participants

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



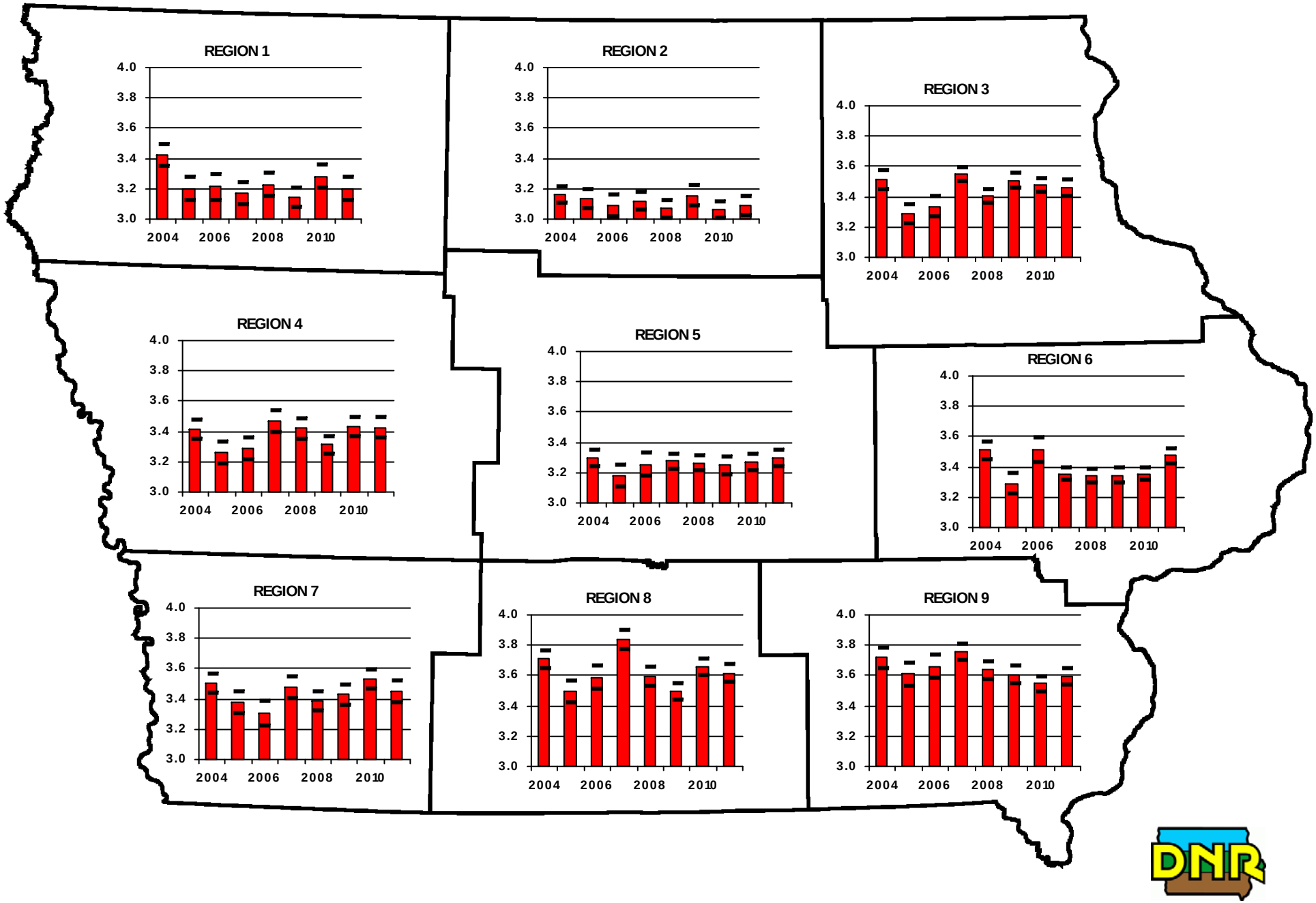
Hours Hunted by Survey Participants

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



Average Hours Hunted/Bowhunting Trip

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



RUFFED GROUSE

HISTORICAL PERSPECTIVE

History: Ruffed grouse (*Bonasa umbellus*) were found nearly statewide in Iowa during the mid-19th century but deforestation and grazing of timber caused a dramatic decline of grouse populations (Klonglan and Hlavka 1969). Ruffed grouse had disappeared from southwest Iowa by 1900 and further population declines occurred in the south and east-central portions prior to the 1920's.

Grouse were restricted to their present range in the northeast 6 counties by 1930 (Fig. 2.9). Between 1930 and the early 1960's there was an increase in available and potential grouse habitat in southern and eastern Iowa primarily from secondary succession of private forests and the acquisition and removal of state lands from grazing.

HUNTING SEASONS

Although limited in distribution the existing populations in northeast Iowa have persisted and provided limited hunting opportunity. The first modern-day hunting season was in 1968, after a 44-year continuously closed season. Current hunting season format was established in 1981 and has varied only to assure the season opens on a Saturday.

FALL RUFFED GROUSE SURVEY

Estimates of ruffed grouse harvest and hunter effort were historically obtained from the annual Small Game Hunter Survey. The sampling strategy associated with this survey was primarily designed to estimate the annual harvest and hunter effort for species that have somewhat large population distributions (i.e., distributed across all or most of Iowa). However, ruffed grouse have a distribution that is primarily limited to northeast Iowa, and the sampling strategy was less than optimal for estimating ruffed grouse harvest and hunter effort. In addition, ruffed grouse harvest is limited to the northeast Iowa grouse hunting zone while the harvest of all other small game is allowed statewide.

In 2008, ruffed grouse were removed from the small game hunter survey and the Iowa Ruffed Grouse Survey was initiated. This survey has two primary goals: (1) to obtain an estimated rate that grouse are encountered by squirrel, turkey, and deer hunters, and (2) obtain an estimate of the number of grouse flushed, grouse harvested, and days hunted by ruffed grouse hunters. The sampling frame for the Iowa Ruffed Grouse Survey consists of all individuals who obtained a regular hunting license and reside in one of 14 counties that coincide with the grouse hunting zone in northeast Iowa. The limited sampling frame suggests that any estimates of grouse harvest and hunter effort should be considered minimum estimates because individuals residing outside of the 14-county area may also hunt and harvest grouse in the grouse hunting zone. The sampling design for this survey uses stratified random sampling whereby individuals are selected at random from each of 14 strata (i.e., counties) to help ensure the sample is distributed across the entire grouse hunting zone. The survey consists of two mailings: postcards are initially mailed to 3,500 individuals in mid-February and a second follow-up mailing is sent to non-respondents in late March.

Responses are returned via prepaid business reply mail to the Boone Wildlife Research Station. Postcards are electronically imaged and data are entered using OCR, ICR, and OMR technology.

Data are verified by DNR personnel and validated through the use of predetermined validation rules. Further accuracy checks are performed by routines written in SAS programming language. Missing values are inputted using the Hot Deck procedure of PRECARP, and estimates are calculated using SAS PROC SURVEYMEANS and the SAS SMSUB macro.

2011-2012 Survey: Hunters surveyed in NE Iowa (Allamakee, Blackhawk, Bremer, Buchanan, Chickasaw, Clayton, Delaware, Dubuque, Fayette, Howard, Jackson, Jones, Linn, and Winneshiek) reported observing an average of 7.0 grouse per 1000 days of hunting, which was lower than the previous year of 16.8 grouse per 1000 days (Table 2.13). On average, it took hunters 13.9 days to detect a grouse, was slightly longer than the previous year of 13.2 days. An estimated 445 ruffed grouse hunters spent an estimated total of 6,143 days hunting for grouse in 2011-12. The previous year, 205 grouse hunters spent 1,075 total days hunting grouse. For the 2011-12 season, an estimated 523 ruffed grouse were flushed by grouse hunters, which was higher than the 501 estimated the previous year (but statistically significant). For the 2011-12 season, zero ruffed grouse were reported to have been harvested, which was the same in previous year (Table 2.14). Low sample size of the grouse surveys make reliable harvest estimates difficult to determine, since very few hunters actively seek ruffed grouse as game in Iowa.

LITERATURE CITED

Klonglan, E. D., and G. Hlavka. 1969. Recent status of ruffed grouse in Iowa. Proc. Iowa Acad. Sci. 76:231-240.