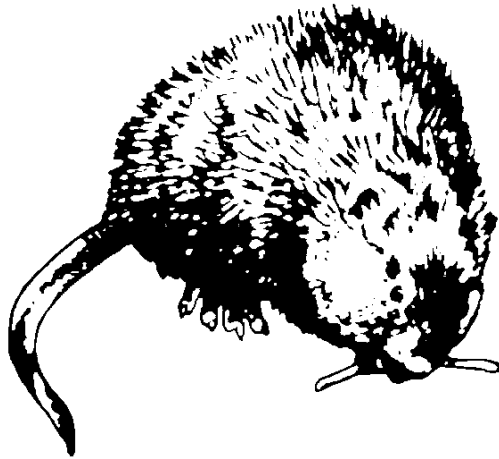


***TRENDS IN IOWA WILDLIFE
POPULATIONS AND HARVEST
2007***



***Iowa Department of Natural Resources
Richard Leopold, Director
September 2008***

TRENDS IN IOWA WILDLIFE POPULATIONS AND HARVEST 2007

Compiled by:
Peter Fritzell

Chapters Prepared by:

Tom Litchfield	White-tailed Deer
Todd Gosselink	Wild Turkeys
Ron Andrews	Furbearers
Guy Zenner	Waterfowl
Todd Bogenschutz	Upland Wildlife
Pat Schlarbaum	Peregrine Falcon
Pat Schlarbaum	Osprey
Pat Schlarbaum	Sandhill Crane
Bruce Ehresman	Bald Eagle
Ron Andrews	River Otter
Ron Andrews	Bobcat
Ron Andrews	Mountain Lion
Ron Andrews	Black Bear
Ron Andrews	Gray Wolf
Ron Andrews & David Hoffman	Trumpeter Swan
Stephanie Shepherd	Greater Prairie Chicken
Steve Roberts	Bowhunter Observation Survey

CONSERVATION & RECREATION DIVISION

September 2008

Iowa Department of Natural Resources

RICHARD LEOPOLD, Director

TABLE OF CONTENTS

(Sections were submitted as PDF documents by authors. Page numbering provided here indicates the page in the compiled digital file. Numbering that appears within the file exists if authors chose to number their individual sections separately.)

WHITE-TAILED DEER

<i>Historical perspective</i>	7
<i>2007 Hunting Season Results</i>	8
<i>Population surveys</i>	13
<i>Outlook for 2008</i>	14
<i>Figures</i>	16
<i>Tables</i>	22
<i>Appendix A – Shotgun and Late Muzzleloader season extensions</i>	34
<i>Appendix B – Reported harvest during 3-day Shotgun extension</i>	42

WILD TURKEYS

<i>Historical perspective</i>	45
<i>Spring harvest survey</i>	46
<i>Youth Turkey Season</i>	47
<i>Fall harvest survey</i>	47
<i>Brood survey</i>	50
<i>Figures</i>	53
<i>Tables</i>	57

FURBEARERS

<i>Historical perspective and current season results</i>	69
<i>Tables</i>	75
<i>Figures</i>	82

WATERFOWL

<i>Duck breeding populations</i>	85
<i>Giant Canada Goose Populations</i>	85
<i>Waterfowl harvests</i>	86
<i>Waterfowl seasons</i>	87
<i>Waterfowl banding</i>	87
<i>Figures</i>	88
<i>Tables</i>	90

UPLAND WILDLIFE

<i>Historical summary of populations and harvest</i>	107
<i>2007-08 Small Game Harvest Survey</i>	112
<i>Tables</i>	114
<i>Figures</i>	129

WILDLIFE RESTORATION – 2007-2008 activities

<i>Peregrine Falcon Restoration</i>	139
<i>River Otter Restoration</i>	153
<i>Greater Prairie Chicken Restoration</i>	163
<i>Trumpeter Swan Restoration</i>	175
<i>Osprey Restoration</i>	185
<i>Sandhill Crane Status in Iowa</i>	193
<i>Bald Eagle Restoration</i>	197
<i>Bobcats Status in Iowa</i>	205
<i>Mountain Lion Status in Iowa</i>	211
<i>Black Bear Status in Iowa</i>	217
<i>Gray Wolf Status in Iowa</i>	221

PRIOR RESTORATIONS – without 2007 - 2008 activities

<i>Ruffed Grouse</i>	(Archived in 2002, http://www.iowadnr.com/wildlife/).....
<i>Wild Turkeys</i>	(Archived in 2002, http://www.iowadnr.com/wildlife/).....
<i>Canada Geese</i>	(Archived in 2001, http://www.iowadnr.com/wildlife/).....

APPENDICES

<i>Bowhunter Observation Survey</i>	223
---	-----

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. This spring the deer herd was estimated to be about 340,000 before the fawning season. 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 food, cover and easy travel lanes. Urban environments may 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. Preferred foods also change through the year in response to changing metabolic demands.

The whitetail's ability to thrive in Iowa is likely the result of an abundant, reliable food source 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 have a single fawn their first year 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 Iowa today. 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 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.

2007-2008 Hunting Season Results

This hunting season represented the second year in a change of methodology in collecting harvest information in Iowa. Hunters were required to report their harvest by calling in the information, reporting it online at the Department's web site, or by reporting the harvest through the ELSI system at a license dealer. The reported kill for the 2007-2008 season was 146,214 (Table 1.1) which is about 3% lower than in 2006 (Table 1.2). Both of these figures represent the known minimum harvest for 2007 and 2006. 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.

Antlerless deer represented 63% of the 2007 harvest and over 51% of the total harvest was comprised of does (Table 1.3). The proportions represented a 2% increase for antlerless deer and a 0.5% decrease in does when compared to the 2006 season. Fourteen percent of the reported doe kill occurred during the November and January antlerless seasons. The reported number of antlered deer in the harvest was 7% lower than in 2006 and represented 37% of the 2007 harvest (shed-antlered bucks are included in this statistic). There were 2,161 shed-antlered bucks reported which represented 3% of the total buck harvest (includes button bucks) or 4% of the "antlered" buck harvest (since shed-antlered bucks, by definition, carried antlers at some point during the deer season).

Caution should be used when comparing the reported harvest and license success rates for this year to the harvest estimates and 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).

Information (registration numbers, age and sex, county of kill, etc.) was collected from over 3,800 deer checked in the field and at lockers for CWD to determine what proportion of successful hunters reported their deer. Preliminary examination of this data indicated that 91% of the deer that were encountered in the field were reported. This was a decrease of 4% in the reporting rate observed during the 2006 seasons. There is a good probability for bias with this data 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 86% of the deer harvested in 2007/08 were properly reported. This lower reporting rate during the 2007/08 season is important as when it is taken into account analyses indicate that the actual harvest in 2007 was greater than that of the 2006 season.

Figure 1.1 compares the harvest reporting (a known minimum harvest level) system 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 current harvest reporting system and also displays 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 2007 can be made. In Figure 1.2, estimates from 1985-2006 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. The 2007 estimate is based on an estimated 86% reporting rate as discussed earlier. With time, a more accurate average reporting rate will be able to be determined and applied to past harvest estimates (prior to 2006) if desired.

There were just over 11,500 more deer licenses issued (13,506 more antlerless licenses but 1,868 fewer either-sex licenses) for the 2007/2008 deer season compared to 2006 (Table 1.4). Antlerless licenses made up about 40% of the deer licenses issued during the 2007/08 deer season. The number of paid licenses increased by 7,851 while the number of landowner/tenant licenses increased by 3,787.

The season framework was very similar to 2006 (Table 1.5). This was the 12th year for the special January season and the 3rd year for the November Antlerless season. However, in 2007, 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-seven counties had additional antlerless licenses available that could be

used in both shotgun seasons, the late muzzleloader season, and the bow season (2 counties less than in 2006). Twenty-two counties in northern and central Iowa had no antlerless quotas (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 3,200 deer were taken during special management hunts in urban areas and in state and county parks (Table 1.6). Approximately 1,850 deer were reported by hunters using special antlerless depredation licenses that were allotted to landowners who were experiencing crop damage problems. Vouchers or license applications are issued to the landowner who can then distribute them to hunters who use the paperwork to authorize the purchase of a depredation license.

Six of the top 10 counties for total kill were in the northeast portion of the state. Clayton was again the top county for total reported kill with 7,551 deer or about 9.7 deer harvested per square mile (Tables 1.7 & 1.3). Calhoun County had the lowest kill with a reported 136 deer or about 0.24 deer per square mile.

Shotgun Season

The reported kill during the shotgun seasons was 11% lower than the reported harvest for 2006 (Table 1.1). Extreme weather conditions during both seasons throughout much of the state are felt to be largely responsible for this decline and will be discussed in more detail later on.

Antlered bucks made up about 39% of the total kill, while does made up 49% of the kill. Button bucks made up about 12% 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 (555 reported) represented 26% of the total reported harvest for the animals. The early onset of winter weather probably played a part in this.

There were 84,586 paid resident licenses sold for the first season and they resulted in 40,883 deer reported killed, while 62,838 paid resident licenses resulted in 26,292 deer reported during the second season. This translates to a 48% license success rate for first season hunters and 42% for second season hunters.

Antlered bucks and does made up essentially equal portions of the first season at 44% and 45%, respectively. During the second season does made up the majority of the harvest at 52%. Antlerless deer made up 57% of the reported kill during the first season and 66% 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 51 counties during the second season (54 counties in 2006).

The precision of the location of the reported harvest should be better than the previous survey method due to a much larger sample size and timeliness of reporting. Assuming that any biases in reporting are consistent between counties, 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 2007 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 majority of these counties.

As noted previously, both openers of Iowa's 2007 shotgun seasons were plagued by adverse weather conditions throughout much of the state. Blizzard-type conditions occurred during both openers and a large portion of the state was hit by a major ice storm a few days into the second shotgun season. A large portion of the state with some of the highest deer densities was encased in a thick layer of ice and some areas were without power for up to a week.

The hunter reporting system allowed the harvest to be monitored more closely than would have been possible in previous years. A few days into the second shotgun season a decision was made to recommend to the Natural Resource Commission that a 3-day shotgun season extension for antlerless deer be implemented in order to attempt to recoup some of the lost doe harvest and maintain the deer program's progress towards herd goals.

The Commission met and voted to approve the season extension which was the first of its kind in the state. Please see Appendix A for a detailed accounting of the information utilized, thoughts behind the recommendation, and the reasoning for the timing of this shotgun season extension.

The antlerless deer shotgun season extension was also impacted by adverse weather conditions (the 4th weekend in a row of bad weather) but resulted in an additional harvest of about 3,800 deer which included approximately 2,900 does. Although the harvest was not as large as anticipated, it did help recover some of the antlerless harvest deficit from the regular shotgun seasons. A more detailed account of the deer harvest during the shotgun season extension can be found in Appendix B.

January Antlerless Season

For 2007, there were 59 counties open for the January antlerless season (Figure 1.3). All licenses issued for this season were for antlerless deer only. The season was the same length for all counties (11-27 January) but centerfire rifles could be used during the entire season in designated southern counties. A total of 26,880 licenses were issued, which is 11% more than the previous year with 34% of them being reported as filled (Table 1.1).

Over 9,000 antlerless deer were reported during the season which was a 37% increase over the reported kill from January 2007. This harvest increase also aided in making up the doe harvest deficit left over from the shotgun seasons. The reported kill during this season accounted for 6.3% of the statewide total kill and does harvested during the January antlerless season represented about 10% of the total doe harvest.

However, the impact on many counties was much greater. The harvest increased the reported county kill by 34% and the doe kill by 50% in Decatur County for example. In many southern Iowa counties the harvest represented from 15-25% of the total reported harvest and from 15-30% of the total doe harvest for the county. Hunters reported that 78% of the deer taken were does and 15% were buck fawns.

Shed-antlered bucks made up 7.4% of the reported harvest for the January antlerless season (684 animals) and accounted for 32% of the total number of shed-antlered bucks reported during the 2007/08 season. Typically, shed-antlered bucks make up about 4% of the January antlerless season harvest. The higher rate

observed this year can be tied to the early and persistent onset of winter weather beginning on 1 December.

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 November 11. The reason for the delay was to only have this season in those counties where the county antlerless license quota had not filled.

About 11,500 licenses were issued (a 1% decline from 2006) and hunters reported killing about 4,500 deer during this season (a 9% increase over 2006). Seventy-six percent of the deer killed were does. The kill during this relatively new season increased the total harvest by 3% and the doe kill by 5% statewide (Table 1.1).

Again, the harvest was directed towards counties in eastern and southern Iowa where the impact was greater. Although delaying the purchase date of these licenses probably lessens the impact of this hunt somewhat; many southern, northeastern, and a few central counties had reported doe harvests that represented from 5-12% of the total reported doe harvest for the county.

Archery

The reported harvest for 2007 was about 23,700 deer which was 1% higher than the reported harvest in 2006 (Table 1.1). The number of licenses issued increased by 5% over the previous year to 85,240. Hunters reported that 34% of the antlerless licenses were used to tag a deer and the overall reported archery license

success rate was 28%.

Fifty-nine percent of the deer taken by archers were male and 52% were antlered bucks (includes shed-antlered bucks, Table 1.8). During the archery season, 141 shed-antlered bucks were reported which represented 6.5% of the total reported harvest for this category.

Muzzleloader

The reported kill during the early muzzleloader season was 4,462 (18% decline from 2006) and license sales were down 1% (Table 1.1). About 35% of the licenses purchased were reported to have been used to tag a deer. Bucks made up 55% of the kill, with antlered bucks making up about 47% of the total (Table 1.9).

The kill during the late muzzleloader season was reported to be about 11,200 (Table 1.1) which represented an increase of 19% over the 2006 reported harvest. Fifty-six percent of the deer reported were does and 31% of the deer killed during the late muzzleloader season were antlered bucks (includes shed-antlered bucks). During the late muzzleloader season, 679 shed-antlered bucks were reported in the kill which represents about 6% of the harvest for the season and about 31% of the total reported harvest for this category. Again, the early onset of winter weather would have had an effect on this harvest rate.

The increase in the reported harvest during the late muzzleloader season over 2006 levels again was another factor that helped make up the doe harvest deficit created during the shotgun seasons.

Nonresidents

Of the 6,000 any-deer licenses issued, 3,016 or 50% went to hunters during the shotgun seasons, 2,101 or 35% to

bowhunters, and 879 or 15% to late season muzzleloader hunters. An additional 9,258 antlerless licenses were issued. Of these, 4,984 went to hunters during the shotgun season, 3,148 went to bowhunters, 1,014 went to late season muzzleloader hunters and 108 went to hunters participating in the holiday season that ran from December 24 to January 2.

In regards to any-deer licenses, about 51% of the shotgun licenses, 38% of the late muzzleloader licenses, and 45% of the archery licenses were reported as being used to tag a deer. Less than 5% of the deer tagged by nonresidents with any-deer licenses were does.

In regards to the antlerless licenses, about 43% of the shotgun licenses, 31% of the late muzzleloader licenses, and 16% of the archery licenses were reported to be successful. Overall, nonresidents reported harvesting about 2,800 antlered bucks, 2,700 does, and 400 button bucks. The overall license success rate for all licenses was 38% and the overall harvest consisted of 46% does.

Special Youth/Disabled Hunter Season

The number of licenses issued for this special season was 39% higher than in 2006 (Table 1.1). Youth season hunters who do 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. Only 175 licenses or roughly 2% of the total were issued to disabled hunters.

Forty-three percent of the licenses were reported to be used to tag a deer. About 51% of the deer reported were

antlerless deer and the reported harvest consisted of 41% does.

Special Deer Management Zones

Special management hunts were conducted at 53 locations in 2007-2008 and about 3,200 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. Most 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 4,200 licenses and permits were issued to hunters/landowners in depredation situations where hunters reported killing another 1,848 deer. This is about a 75% increase in harvest utilizing antlerless depredation licenses over 2006/07 reported levels.

Population Surveys

Three techniques are used to monitor deer population trends in Iowa. These are 1) an aerial survey conducted in January - March after the deer seasons are complete, 2) a spotlight survey conducted in April, and 3) a record of the number of deer killed on Iowa's rural highways throughout the year. All of these surveys correlate well with the reported harvest over the last 15 years 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 high variability in the survey conditions.

Deer populations for the state as a whole have leveled off and are declining after displaying strong growth for almost a decade (Figure 1.8). 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 aerial survey conducted after the 2007/08 hunting season (Jan-Mar 2008) showed no change from the previous year (Table 1.10). Conditions for this survey were improved over the previous year with very good snow conditions in most instances and with deer herds that were more concentrated due to the harsher than normal winter conditions. In all, 321 survey transects/areas were monitored throughout the state, over 90% of total. Due to the good snow conditions and concentrated deer herds, the trend counts should have been among the best in the last several years (in regards to the ability to observe the highest percentage of deer).

The number of deer killed on rural highways decreased by about 8% in 2007. The estimated number of vehicle miles driven was similar to 2006 so the adjusted roadkill (kills per billion miles – kbm) decreased 8% as well. In general, the rate of roadkills (kbm) has been relatively flat over the last few years.

The number of deer counted per 25 mile route on the spotlight survey increased by about 1% in 2008. The counts over the past few years seemed to be stabilizing and beginning to decline before taking another jump in 2007. Spotlight surveys seemed highly variable this spring with some areas charting large increases or decreases that can not be explained by population changes alone. With deer being much more concentrated than normal following the harsher than normal winter and that being followed by a very late spring green-up and floods, it is felt the weather conditions greatly influenced the observed variability.

Utilizing the mathematical relationships described earlier to plot estimated harvests and harvest structures

from 1985-2007, the data was used in the population model and the resulting “best fit” simulation indicates a declining deer population statewide (Figure 1.8). The model indicates about a 5% decline has occurred since the simulation peaked in the 2005 postseason analyses. The model has a very strong correlation with the spotlight survey and good correlation with the aerial survey and roadkill index.

Outlook for 2008

Hunters will see some changes in the 2007/2008 deer seasons. Deer hunting regulations will again allow all hunters to take deer of either-sex in both shotgun and muzzleloader seasons in all counties..

The biggest changes for 2008 are designed to increase the number of does killed in portions of central, southern, southwestern, western, and northeastern Iowa. The number of antlerless licenses available for 2008/2009 is 123,950 which is 11,050 more than the statewide quota in 2007/2008. The number of counties in Iowa without an antlerless quota will remain the same at 22 counties. These counties are all located in the northwestern and central portions of the state. The quotas remained the same in 37 counties, and were increased in 40 counties.

Hunters again will be allowed to obtain antlerless licenses in every season. The limit on the number of licenses a hunter can obtain is 1 until September 15, and unlimited from that date on until the quota is filled. The objective of these regulations is to bring deer numbers back to the mid to late 1990s levels in the targeted areas.

Youth season hunters who do not take a deer during the Youth deer hunting season may use the any-sex Youth deer hunting license and unused tag during the early or late muzzleloader seasons or one of

the two shotgun seasons.

A law passed by the 2008 Legislature requires that beginning with the 2008/09 deer seasons, hunters harvesting an antlered deer must attach the Transportation Tag to one of the antlers.

The 2007/08 winter weather conditions were much more severe than normal throughout most of the state. The deer herds seemed to come through the winter well and although a few instances of starvation were documented among fawns (northeastern portion of the state), it was felt that winter mortality had no appreciable effect on deer numbers.

The winter was followed by a cool, wet spring with significant flooding in many portions of the state. Spring green-up was delayed and in many areas deer remained grouped together for longer than normal.

In early June, eastern and southeastern Iowa experienced catastrophic flooding events, setting new records in many areas. The flooding was responsible for some mortality in the deer herds with the fawns being most vulnerable. The magnitude of the mortality is not known but is felt not to be significant at this time.



Figure 1.1. A comparison of the post-season harvest estimates from 1985-2005 (the top line) with the reported harvests (2006 and 2007) and the converted harvest from 1985-2005 (the bottom line). The dotted line would be the “actual” harvest if deer were reported at rates similar to those measured in 2006 (the first year of mandatory reporting).

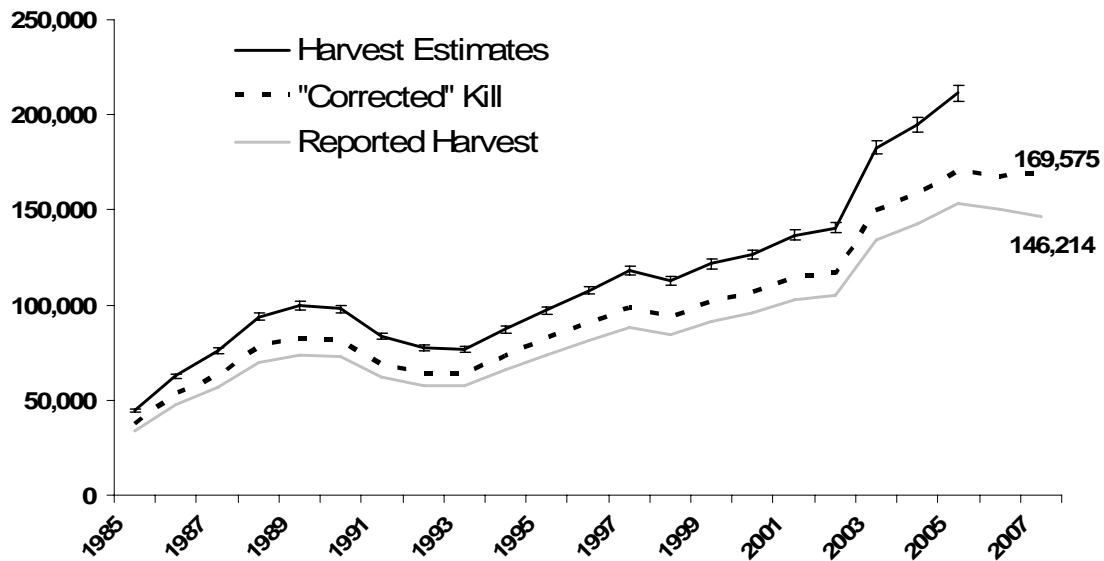


Figure 1.2. An estimate of the number of antlered bucks, does, and button bucks killed in 2007 if 86% of the actual harvest were reported. The estimates from 1985 -2005 assume the relationship between the reported harvest and the post-season mail survey would have been consistent in the past and were constructed using the 90% reporting rate estimate that was calculated for the 2006 hunting season (the first year of mandatory reporting).

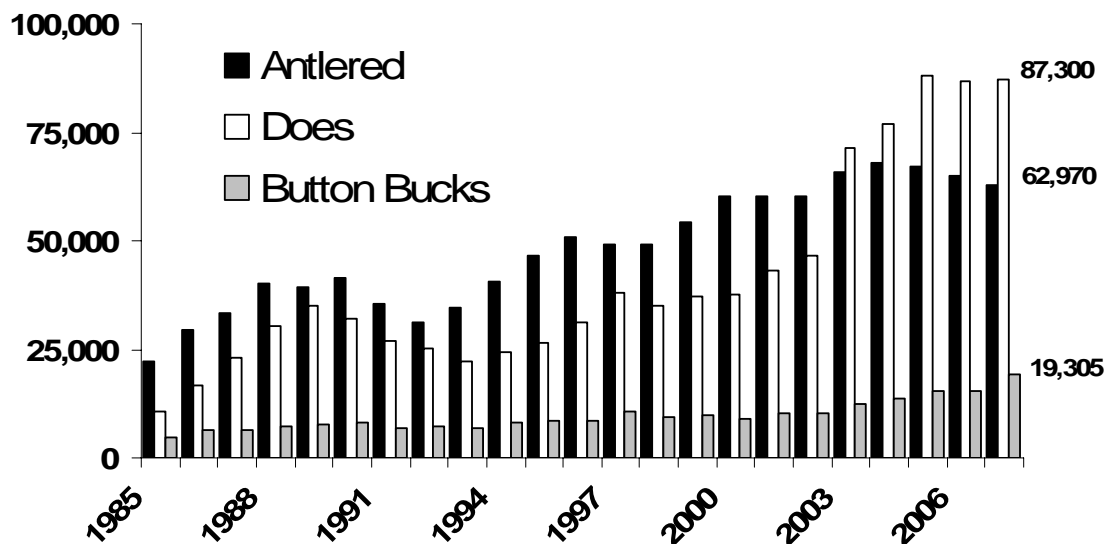


Figure 1.3. 2007/08 resident antlerless-only license quotas by county and distribution of November and January antlerless-only seasons. All counties were either-sex during all seasons in 2007-2008.

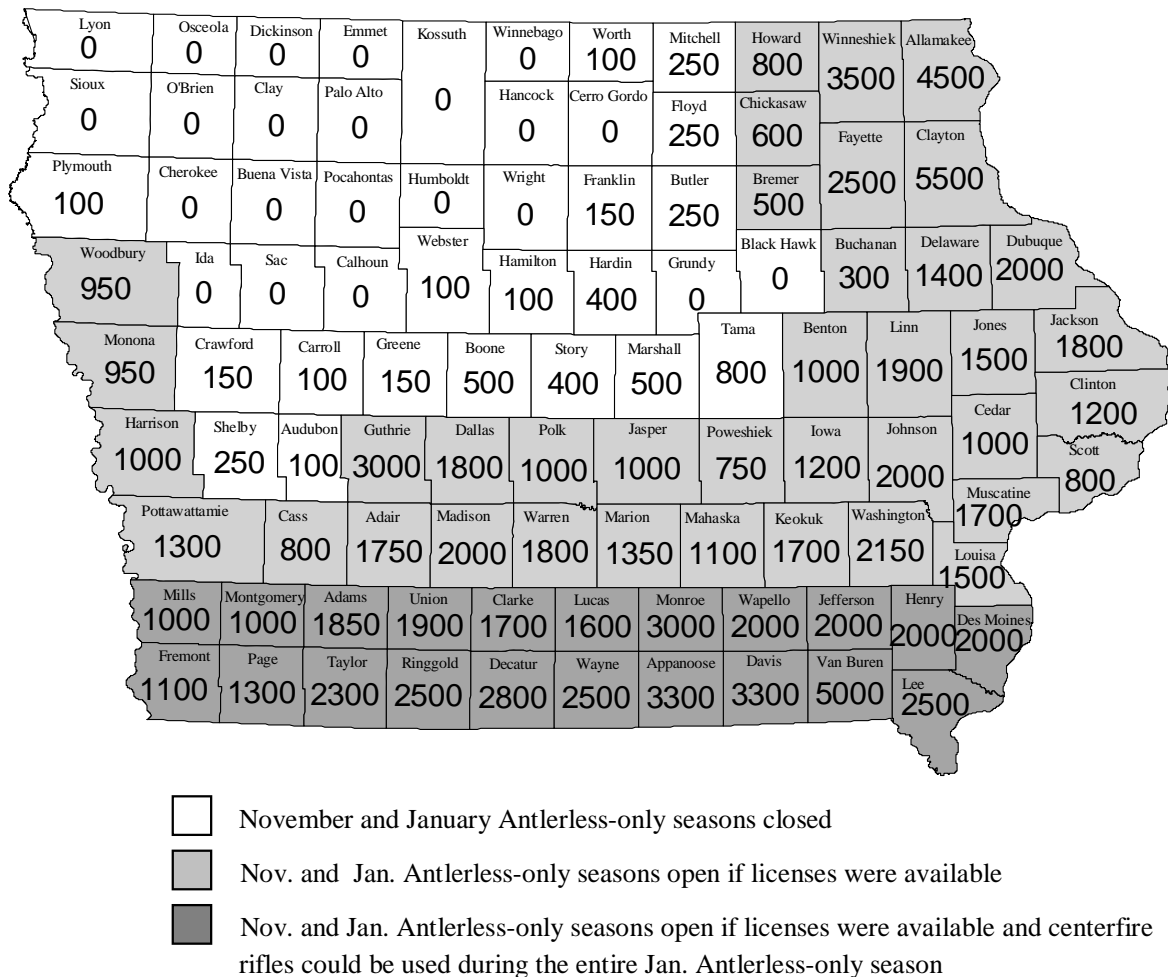
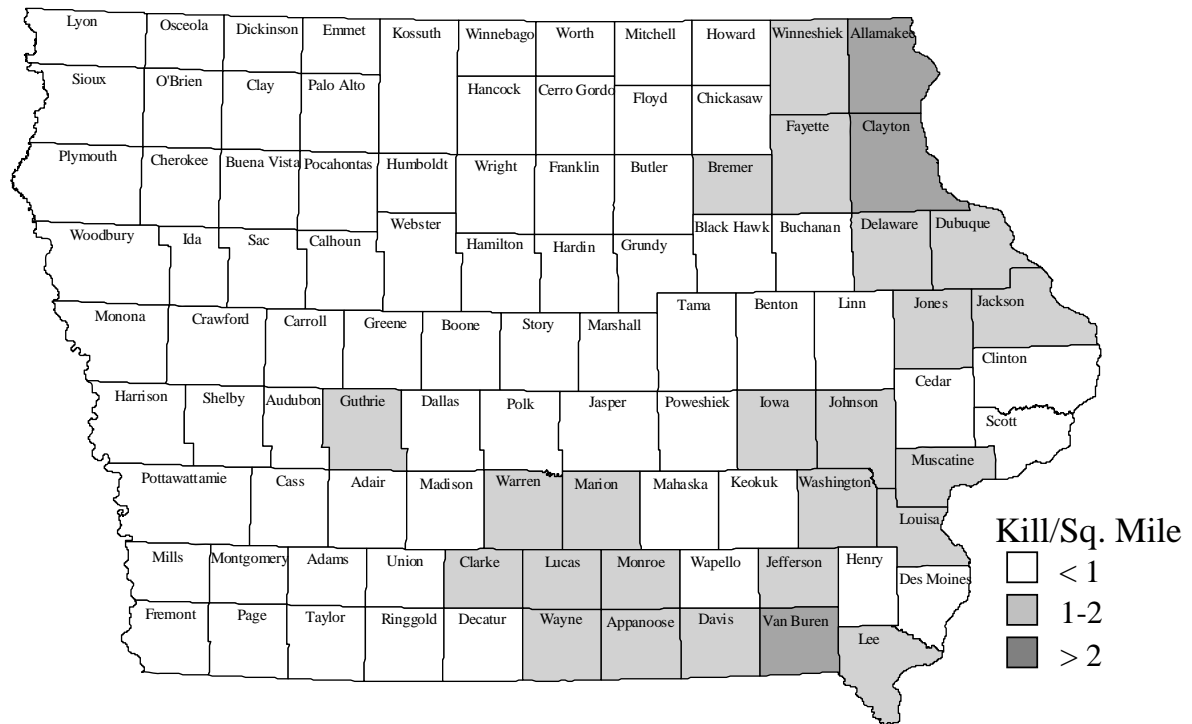
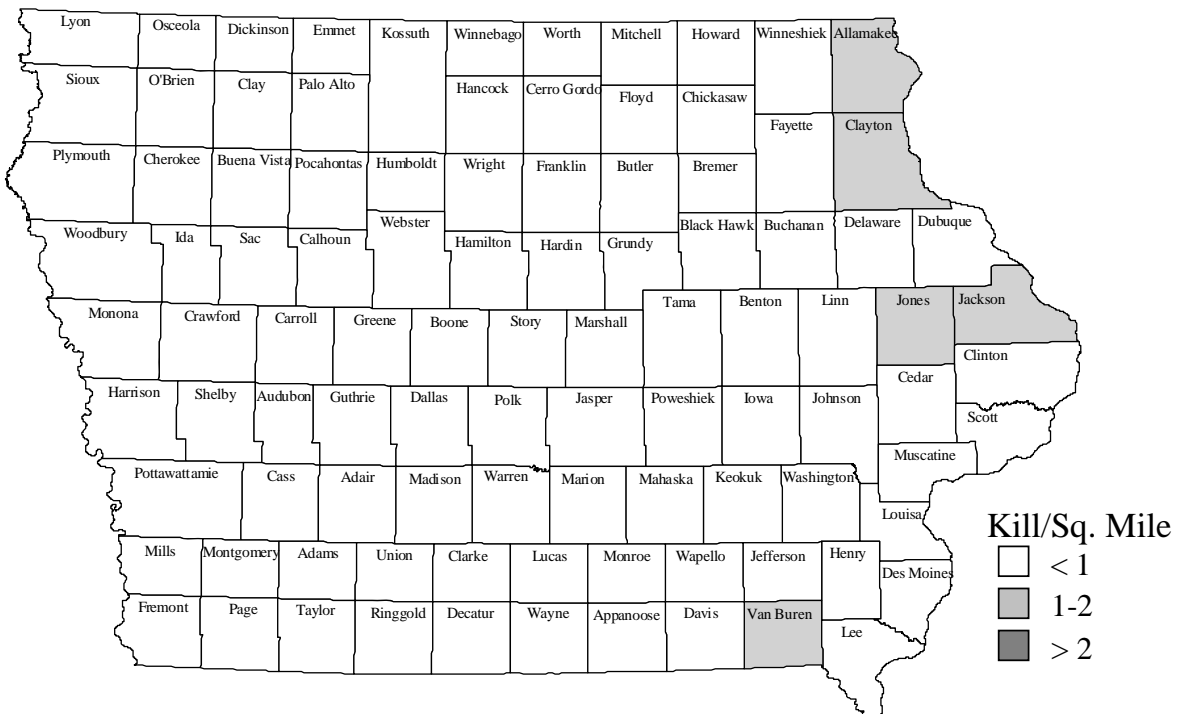


Figure 1.4. The reported average number of deer killed per square mile in each county during the 2007 shotgun seasons. The kill by hunters with free landowner/tenant licenses was not included since their licenses were valid for both seasons.

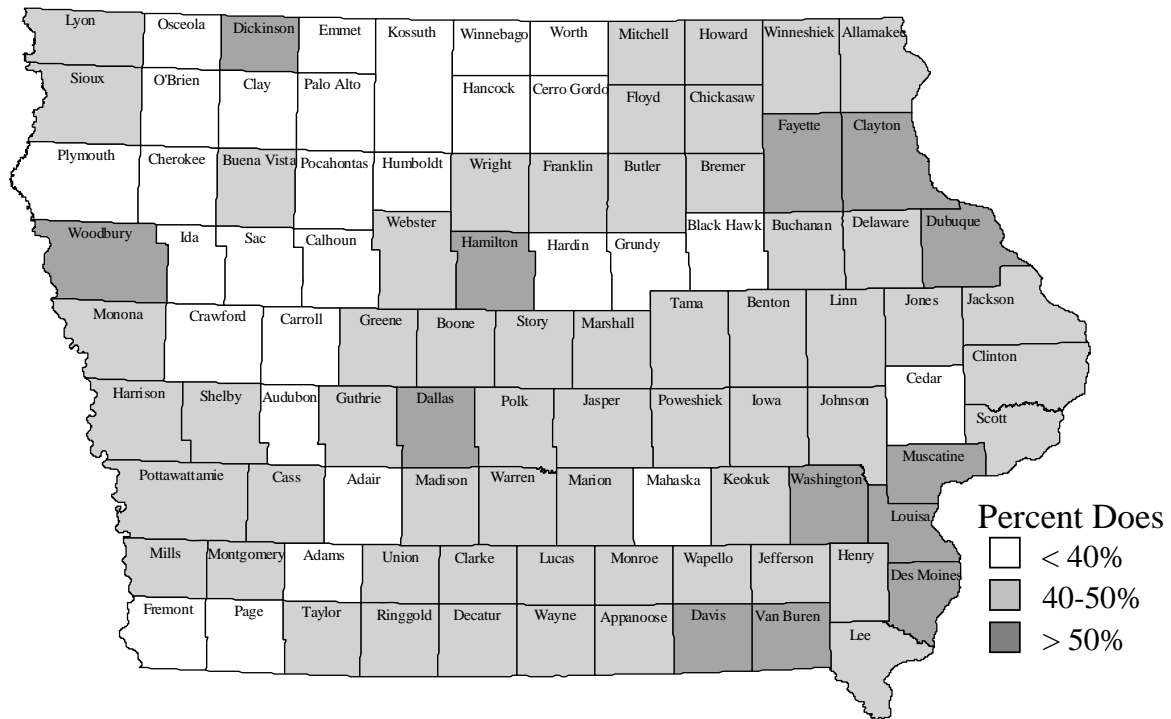


Season 1

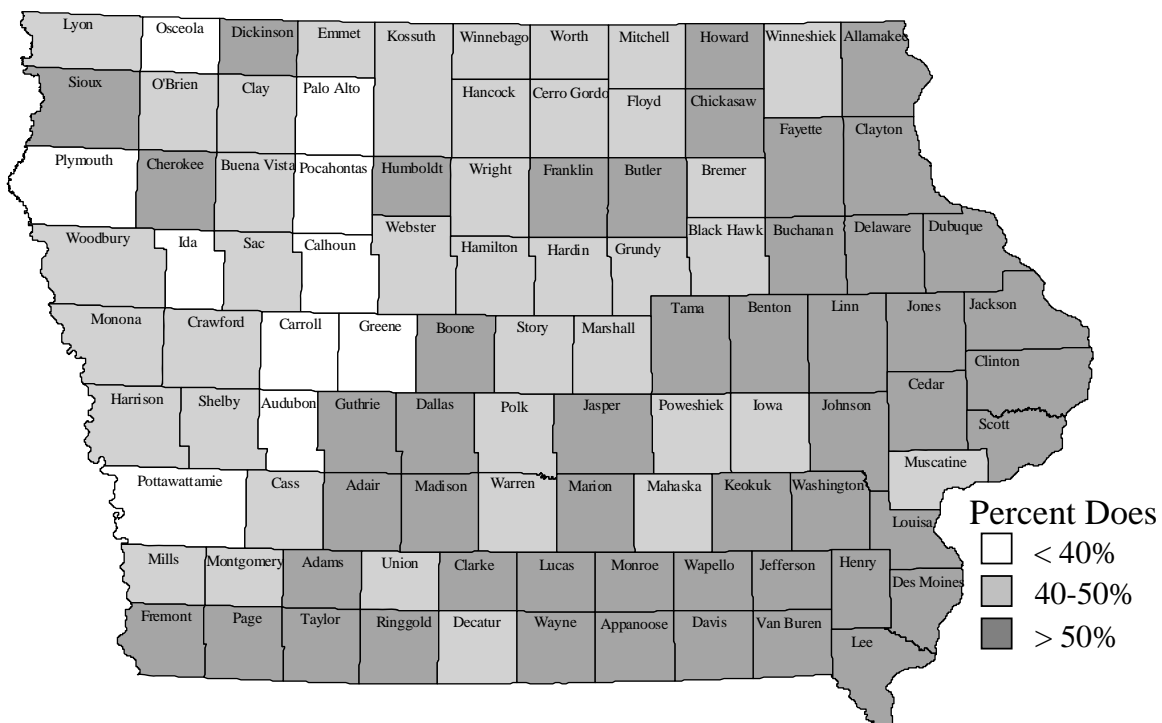


Season 2

Figure 1.5. The proportion of the reported harvest by hunters with paid licenses that were does during the 2007 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 reported average number of deer killed per square mile in each county during the 2007 - 2008 deer season.

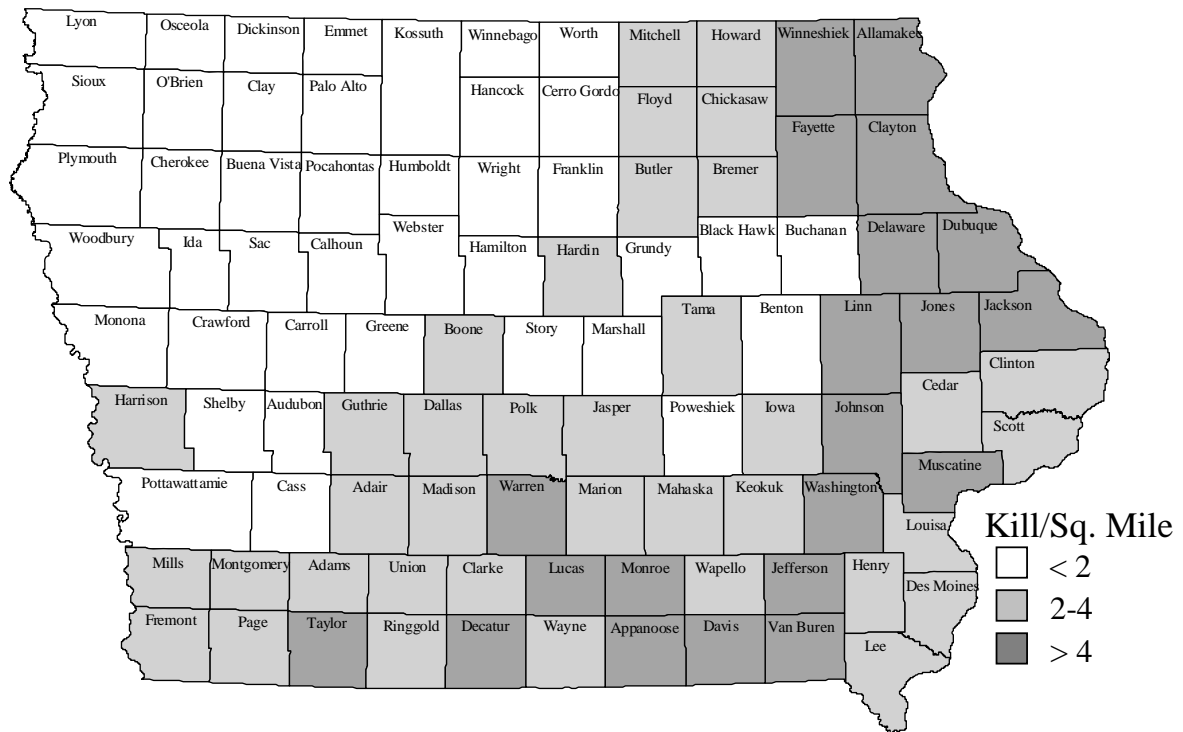


Figure 1.7. The proportion of the reported harvest that were does in each county during the 2007-2008 deer season.

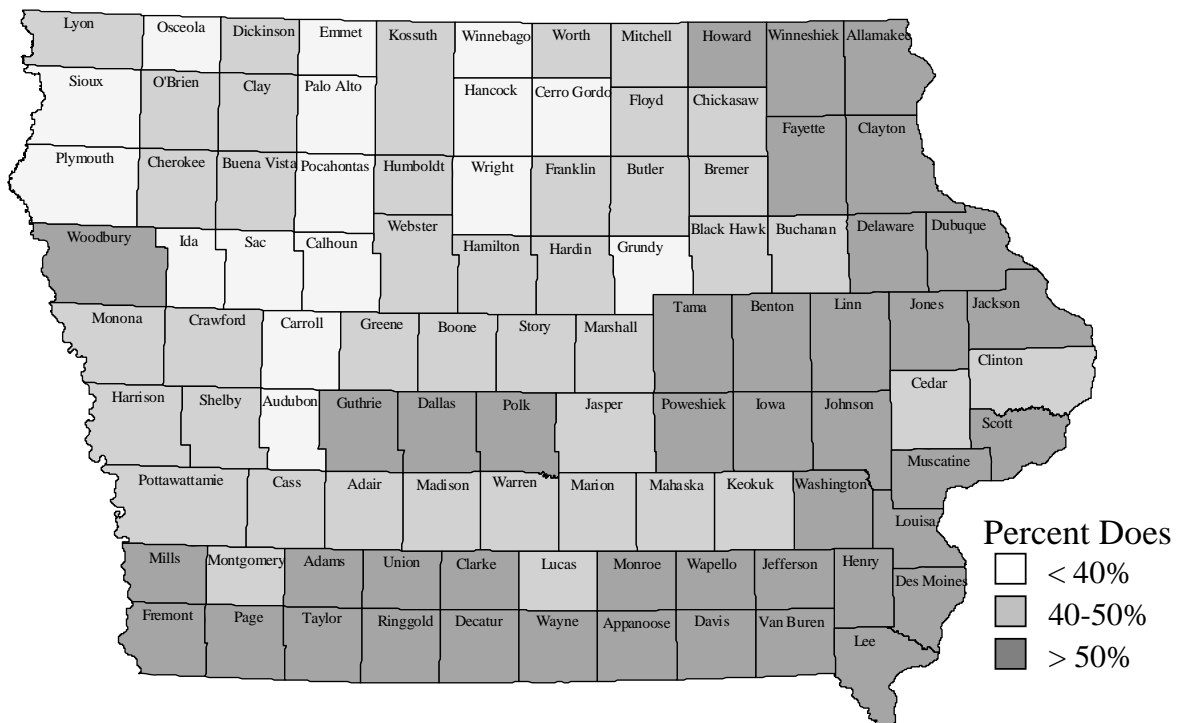


Figure 1.8. A comparison of the results from the statewide population simulation with deer population trend surveys. This simulation uses the 2007 harvest from the reporting system and a reporting rate of 86%.

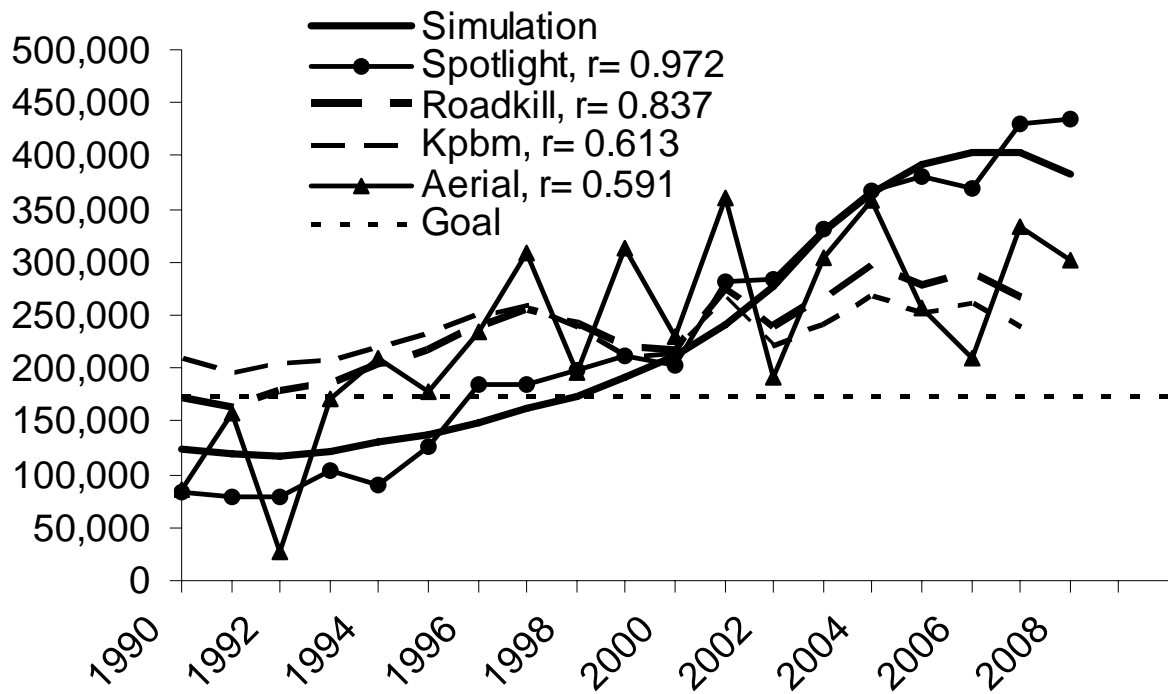


Table 1.1. A summary of the number of licenses issued, the number of deer harvested, and success rates for the 2007-2008 season.

Season		License Type	Licenses Issued		Number of Hunters <i>c</i>	Harvest - <i>d</i>	Success Rate <i>e</i>	
REGULAR GUN								
Season 1	Paid	Either-sex	65,127		65,127	30,384	47%	
		Antlerless	19,459		12,300	10,499	54%	
Season 2	Nonresident	Either-sex	46,179		46,179	17,927	39%	
		Antlerless	16,659		9,876	8,365	50%	
		Both	8,000		4,984	3,670	46%	
		Total	155,424	(-2%) <i>a</i>	138,466	70,845	(-12%)	46%
Season 1 & 2	Landowner	Either-sex	25,679		25,679	7,915	31%	
		Antlerless	15,781		13,306	5,947		38%
		Total	41,460	(+2%)	38,985	13,862	(-7%)	33%
GUN SEASON TOTAL			196,884	(-1%)	177,451	84,707	(-11%)	43%
MUZZLELOADER								
Early	Paid	Either-sex	7,500		7,500	2,748	37%	
		Antlerless	1,800		1,368	812	45%	
	Landowner	Both	3,288		2,874	902	27%	
		Total	12,588	(-1%)	11,742	4,462	(-18%)	35%
Late	Paid	Either-sex	17,864		17,864	4,904	27%	
		Antlerless	12,134		8,309	4,459		37%
	Landowner	Both	4,834		4,203	1,167	24%	
		Both	1,893		1,014	647	34%	
	Nonresident	Total	36,725	(+ 7%)	31,390	11,177	(+19%)	30%
MUZZLELOADER TOTAL			49,313	(+5%)	43,132	15,639	(+6%)	32%
NOVEMBER ANTLERLESS SEASON								
	Paid	Antlerless	10,227		8,127	4,134	40%	
	Landowner	Antlerless	1,328		1,256	392	30%	
		Total	11,555	(-1%)	9,383	4,526	(+9%)	39%
JANUARY ANTLERLESS SEASON								
	Paid	Antlerless	18,988		11,920	7,554	40%	
	Landowner	Antlerless	7,892		7,403	1,475	19%	
		Total	26,880	(+11%)	19,323	9,029	(+37%)	34%
YOUTH	Paid	Both	7,915		7,665	3,401	43%	
	Landowner	Both	194		177	60	31%	
	Disabled	Both	175		137	61	35%	
		Total	8,284	(+39%)	7,979	3,522	(+56%)	43%
ARCHERY	Paid	Either-sex	48,396		48,396	11,833	24%	
		Antlerless	24,535		15,462	8,274		34%
	Landowner	Both	7,060		5,610	2,133	30%	
		Both	5,249		3,148	1,456	28%	
	Nonresident	Total	85,240	(+5%)	72,616	23,696	(+1%)	28%
TOTAL <i>b</i>			389,163	(+3%)	334,444	146,214	(-3%)	

a - the numbers in parentheses are the percent change from 2006-2007, 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 with previous years estimates

d - reported kill, not comparable to previous estimates previous to 2006 hunting season

e - licenses reported successfully filled, not comparable to estimates previous 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.

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

Table 1.3. Reported deer by county for total kill during the 2007-2008 deer season.

County	Antlered		Button Bucks	Shed-antlered Bucks	Total	Percent of kill		Kill/ Sq. Mile
	Bucks	Does				Does	Antlered Bucks a	
Adair	523	592	132	11	1,258	47.1%	42.4%	2.21
Adams	492	825	160	23	1,500	55.0%	34.3%	3.52
Allamakee	1,586	2,326	447	114	4,473	52.0%	38.0%	7.03
Appanoose	830	1,321	287	41	2,479	53.3%	35.1%	4.74
Audubon	163	112	19	1	295	38.0%	55.6%	0.66
Benton	454	750	173	25	1,402	53.5%	34.2%	1.95
Black Hawk	399	414	99	9	921	45.0%	44.3%	1.62
Boone	483	592	131	16	1,222	48.4%	40.8%	2.13
Bremer	504	721	195	38	1,458	49.5%	37.2%	3.32
Buchanan	425	500	122	15	1,062	47.1%	41.4%	1.87
Buena Vista	194	163	28	5	390	41.8%	51.0%	0.68
Butler	535	598	143	11	1,287	46.5%	42.4%	2.21
Calhoun	81	42	13	0	136	30.9%	59.6%	0.24
Carroll	196	153	33	3	385	39.7%	51.7%	0.67
Cass	403	462	114	8	987	46.8%	41.6%	1.77
Cedar	686	938	244	23	1,891	49.6%	37.5%	3.23
Cerro Gordo	306	232	55	10	603	38.5%	52.4%	1.05

Table 1.3 (cont.). Reported deer by county for total kill during the 2007-2008 deer season.

County	Antlered Bucks	Does	Button Bucks	Shed- antlered Bucks	Total	Percent of kill		Kill/ Sq. Mile
						Does	Antlered Bucks a	
Cherokee	298	313	81	6	698	44.8%	43.6%	1.22
Chickasaw	492	687	178	21	1,378	49.9%	37.2%	2.73
Clarke	545	855	186	19	1,605	53.3%	35.1%	3.74
Clay	281	264	66	20	631	41.8%	47.7%	1.11
Clayton	2,380	4,247	814	110	7,551	56.2%	33.0%	9.69
Clinton	650	939	261	27	1,877	50.0%	36.1%	2.71
Crawford	360	299	80	7	746	40.1%	49.2%	1.04
Dallas	553	812	178	12	1,555	52.2%	36.3%	2.60
Davis	856	1,775	380	83	3,094	57.4%	30.3%	6.08
Decatur	667	1,393	247	30	2,337	59.6%	29.8%	4.41
Delaware	825	1,286	284	42	2,437	52.8%	35.6%	4.26
Des Moines	489	890	208	38	1,625	54.8%	32.4%	3.98
Dickinson	133	153	40	2	328	46.6%	41.2%	0.86
Dubuque	991	1,630	374	35	3,030	53.8%	33.9%	4.95
Emmet	136	105	22	6	269	39.0%	52.8%	0.68
Fayette	1,008	1,770	371	48	3,197	55.4%	33.0%	4.39
Floyd	421	549	124	16	1,110	49.5%	39.4%	2.21
Franklin	242	248	47	3	540	45.9%	45.4%	0.92
Fremont	498	687	116	19	1,320	52.0%	39.2%	2.52
Greene	261	279	63	6	609	45.8%	43.8%	1.07
Grundy	80	50	10	1	141	35.5%	57.4%	0.28
Guthrie	728	1,153	257	29	2,167	53.2%	34.9%	3.64
Hamilton	176	170	26	5	377	45.1%	48.0%	0.65
Hancock	146	114	21	8	289	39.4%	53.3%	0.51
Hardin	498	532	115	24	1,169	45.5%	44.7%	2.04
Harrison	645	698	139	6	1,488	46.9%	43.8%	2.14
Henry	535	862	198	22	1,617	53.3%	34.4%	3.68
Howard	399	566	114	17	1,096	51.6%	38.0%	2.33
Humboldt	165	140	32	2	339	41.3%	49.3%	0.78
Ida	112	76	18	2	208	36.5%	54.8%	0.48
Iowa	767	1,213	291	46	2,317	52.4%	35.1%	3.97
Jackson	1,138	1,756	482	44	3,420	51.3%	34.6%	5.31
Jasper	623	782	206	19	1,630	48.0%	39.4%	2.22
Jefferson	541	998	220	23	1,782	56.0%	31.6%	4.09
Johnson	937	1,510	366	51	2,864	52.7%	34.5%	4.63
Jones	857	1,464	346	40	2,707	54.1%	33.1%	4.63
Keokuk	612	834	220	17	1,683	49.6%	37.4%	2.91
Kossuth	245	203	28	10	486	41.8%	52.5%	0.50
Lee	686	1,053	263	28	2,030	51.9%	35.2%	3.85
Linn	880	1,628	399	53	2,960	55.0%	31.5%	4.13
Louisa	493	851	203	14	1,561	54.5%	32.5%	3.87
Lucas	741	973	231	17	1,962	49.6%	38.6%	4.52
Lyon	234	226	49	7	516	43.8%	46.7%	0.88
Madison	822	1,079	248	12	2,161	49.9%	38.6%	3.83
Mahaska	555	641	205	16	1,417	45.2%	40.3%	2.48
Marion	832	1,063	217	20	2,132	49.9%	40.0%	3.76
Marshall	460	522	143	24	1,149	45.4%	42.1%	2.00
Mills	425	592	99	18	1,134	52.2%	39.1%	2.54
Mitchell	429	448	112	11	1,000	44.8%	44.0%	2.14

Table 1.3 (cont.). Reported deer by county for total kill during the 2007-2008 deer season.

County	Antlered Bucks	Does	Button Bucks	Shed- antlered Bucks	Total	Percent of kill		Kill/ Sq. Mile
						Does	Antlered Bucks ^a	
Monona	571	671	144	5	1,391	48.2%	41.4%	1.99
Monroe	689	1,328	272	37	2,326	57.1%	31.2%	5.35
Montgomery	460	591	138	20	1,209	48.9%	39.7%	2.86
Muscatine	610	1,017	280	15	1,922	52.9%	32.5%	4.34
O'Brien	205	168	33	1	407	41.3%	50.6%	0.71
Osceola	109	83	30	2	224	37.1%	49.6%	0.56
Page	561	759	155	31	1,506	50.4%	39.3%	2.81
Palo Alto	230	152	30	7	419	36.3%	56.6%	0.75
Plymouth	322	197	44	13	576	34.2%	58.2%	0.67
Pocahontas	132	71	8	2	213	33.3%	62.9%	0.37
Polk	429	758	158	16	1,361	55.7%	32.7%	2.29
Pottawattamie	702	731	152	20	1,605	45.5%	45.0%	1.67
Poweshiek	417	571	140	6	1,134	50.4%	37.3%	1.93
Ringgold	539	906	207	28	1,680	53.9%	33.8%	3.12
Sac	234	160	33	3	430	37.2%	55.1%	0.74
Scott	391	757	211	6	1,365	55.5%	29.1%	3.01
Shelby	201	199	30	0	430	46.3%	46.7%	0.73
Sioux	198	165	47	9	419	39.4%	49.4%	0.55
Story	277	331	72	13	693	47.8%	41.8%	1.22
Tama	700	983	208	39	1,930	50.9%	38.3%	2.68
Taylor	737	1,281	258	53	2,329	55.0%	33.9%	4.41
Union	495	804	167	30	1,496	53.7%	35.1%	3.52
Van Buren	1,186	2,623	561	103	4,473	58.6%	28.8%	9.18
Wapello	582	899	206	31	1,718	52.3%	35.7%	3.93
Warren	1,073	1,245	271	29	2,618	47.6%	42.1%	4.58
Washington	698	1,315	332	36	2,381	55.2%	30.8%	4.19
Wayne	701	1,122	227	33	2,083	53.9%	35.2%	3.92
Webster	411	408	80	8	907	45.0%	46.2%	1.26
Winnebago	150	108	25	1	284	38.0%	53.2%	0.71
Winneshiek	1,028	1,466	327	52	2,873	51.0%	37.6%	4.18
Woodbury	584	744	141	9	1,478	50.3%	40.1%	1.70
Worth	183	180	51	7	421	42.8%	45.1%	1.05
Wright	222	161	35	7	425	37.9%	53.9%	0.74
Total	52,134	75,073	16,846	2,161	146,214	51.3%	37.1%	2.61

^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 (1987 - present).
Grand Totals include special IAAP licenses (1985-1990), nonresidents, special management unit hunts and special youth licenses.

<u>Year</u>	Regular Gun			Muzzleloader			Archery	Grand Total
	<u>Paid</u>	<u>Landowner</u>	<u>Total</u>	<u>Early</u>	<u>Late</u>	<u>Total</u>		
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

Table 1.5. The dates, hours and zones for shotgun, archery and muzzleloader seasons (1987-present).

Year	Zones	Shotgun		Archery		Muzzleloader	
		Dates	Hours	Dates	Hours	Dates	Hours
1987	1-10e	Dec 5-9	Sunrise to	Oct 1-Dec 4 &	1/2 hr before	Oct 10-18	1/2 hr before
1987	1-10	Dec 12-20	Sunset	Dec 21-Jan 10	sunrise to	Dec 21-Jan 10	sunrise to
1988	1-10	Dec 3-7	"	Oct 1-Dec 2 &	1/2 hr after	Oct 15-23	1/2 hr after
1988	1-10	Dec 10-18	"	Dec 19-Jan 10	sunset	Dec 19-Jan 10	sunset
1989	1-10	Dec 2-6	"	Oct 1-Dec 1 &	"	Oct 14-Oct 22	"
1989	1-10	Dec 9-17	"	Dec 18-Jan 10		Dec 18-Jan 10	"
1990	1-10	Dec 1-5	"	Oct 1-Nov 30 &	"	Oct 13- Oct 21	"
1990	1-10	Dec 8-16	"	Dec 17-Jan 10		Dec 17-Jan 10	"
1991	1-10	Dec 7-11	"	Oct 1-Dec 6 &	"	Oct 12- Oct 20	"
1991	1-10	Dec 14-22	"	Dec 23-Jan 10		Dec 23-Jan 10	"
1992	1-10	Dec 5-9	"	Oct 1-Dec 4&	"	Oct 10-Oct 18	"
1992	1-10	Dec 12-20	"	Dec 21-Jan 10		Dec 21-Jan 10	"
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 <i>f</i>	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 <i>g</i>	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 <i>h</i>	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 <i>h</i>	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 <i>h</i>	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>i</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 <i>h</i>	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 <i>h</i>	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 <i>h</i>	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 <i>h</i>	Dec 4-8	1/2 hr after	Oct 1-Dec 3 &	"	Oct 16- Oct 24	"
2004	Statewide	Dec 11-19	sunset	Dec 20-Jan 10		Dec 20-Jan 10	"
2005	Statewide <i>h</i>	Dec 3-7	1/2 hr after	Oct 1-Dec 2 &	"	Oct 15- Oct 23	"
2005	Statewide	Dec 10-18	sunset	Dec 19-Jan 10		Dec 19-Jan 10	"
2006	Statewide <i>h</i>	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 <i>h</i>	Dec 1-5	"	Oct 1-Nov 30 &	"	Oct 13- Oct 21	"
2007	Statewide	Dec 8-16	"	Dec 17-Jan 10		Dec 17-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 2007-2008.

AREA	WEAPON	# ANTLERLESS	LICENSES	LICENSES	HARVEST
				SOLD	
Amana Colonies	Archery & Firearm	1000		487	304
Ames (City)	Archery	100		11	2
Ames (Perimeter)	Archery & Firearm	100		47	26
Backbone State Park	Firearms	200		142	78
Bellevue State Park (Archery)	Archery & Firearm	100		30	14
Bettendorf & Riverdale (City)	Archery	300		202	146
Cedar Rapids (City)	Archery	700		477	349
Clinton (City)	Archery	300		83	47
Coralville (City)**	Archery	400		256	151
Davenport (City)	Archery	400		372	192
Denison**	Archery	50		15	7
Desoto NWR	Firearms	340		191	52
Dubuque (City)	Archery	400		174	109
Dubuque (County)	Archery & Firearm	700		78	30
Elk Rock State Park	Archery	75		53	27
Geode State Park	Archery	200		101	39
Green Valley State Park	Firearms	50		50	38
Iowa Army Ammunition Plant	Archery & Firearm	950		647	274
IAAP (Perimeter)	Archery & Firearm	400		65	24
Iowa Falls	Archery	50		27	14
Jefferson County Park	Archery	100		68	42
Johnson County	Archery & Firearm	1000		229	85
Jones County Central Park	Archery	100		22	18
Kent Park	Archery & Firearm	160		136	51
Lacey-Keosauqua State Park	Archery	150		67	31
Lake Ahquabi	Firearms	50		50	25
Lake Darling	Firearms	150		80	47
Lake Keomah	Archery	50		25	7
Lake Macbride	Archery	150		110	59
Lake Manawa	Archery	35		33	19
Lake of Three Fires	Firearms	45		28	21
Lake Panorama	Archery & Firearm	230		104	29
Lake Wapello	Firearms	200		53	46
Ledges State Park	Firearms	30		30	12
Linn County	Archery & Firearm	1000		265	99
Maquoketa Caves	Archery & Firearm	50		14	10
Muscatine	Archery	200		105	72
Ottumwa (City)	Archery	300		149	118
Palisades Kepler State Park	Archery	100		39	13
Pikes Peak/McGregor (City)	Archery	200		75	31
Pine Lake State Park	Archery	50		39	19
Polk-Dallas Archery Zone	Archery	1000		791	391
Polk-Dallas Rural Zone	Archery & Firearm	400		55	20
Rock Creek State Park	Archery	75		39	18
Scott County Park	Firearms	100		89	44
Smith Wildlife Area	Firearms	9		9	4
Springbrook State Park	Firearms	105		85	61
Squaw Creek	Archery	150		48	27
Viking Lake State Park	Firearms	50		43	29
Wapsi Environmental Center	Firearms	30		23	10
Waterloo-Cedar Falls (City)	Archery	290		179	84
Washatee	Archery & Firearm	100		42	19
Wildcat Den State Park	Archery	100		23	16
Depredation & Shooting Permits	Archery & Firearm	9,569		4,188	1,848
TOTALS		22,143		10,356	5,044

Table 1.7. Reported deer and ranking for each season by county and for total kill during the 2007-2008 deer season.

County	Harvest							Rank						
	Paid Shotgun	Muzzleloader		Archery	Youth	Non- resident	Total	Shotgun	Muzzleloader		Archery	Youth	Non- resident	Total
		Early	Late						Early	Late				
Clayton	3,848	178	346	869	172	168	7,551	1	1	1	1	1	9	1
Van Buren	1,460	111	265	467	70	327	4,473	7	3	3	5	8	1	2
Allamakee	2,390	133	276	412	69	283	4,473	2	2	2	9	9	2	3
Jackson	1,864	70	148	412	61	123	3,420	3	9	20	10	14	15	4
Fayette	1,746	63	177	414	80	63	3,197	4	11	13	8	5	27	5
Davis	1,100	60	196	309	66	211	3,094	11	14	8	23	11	6	6
Dubuque	1,560	78	80	423	113	40	3,030	5	5	51	6	3	47	7
Linn	1,026	72	184	671	113	34	2,960	15	8	12	2	2	55	8
Winneshiek	1,488	66	203	306	55	137	2,873	6	10	6	24	18	12	9
Johnson	1,184	82	163	567	55	44	2,864	10	4	17	3	17	44	10
Jones	1,370	77	165	395	64	47	2,707	8	6	15	12	12	40	11
Warren	1,192	48	187	565	70	76	2,618	9	26	9	4	7	20	12
Appanoose	862	58	214	334	48	236	2,479	27	16	5	19	21	5	13
Delaware	1,006	77	165	332	91	35	2,437	16	7	16	20	4	52	14
Washington	1,093	29	200	266	49	69	2,381	12	54	7	31	20	24	15
Decatur	676	35	87	247	29	182	2,337	44	47	47	33	51	7	16
Taylor	821	26	134	151	18	283	2,329	30	61	27	55	69	3	17
Monroe	906	38	185	361	29	132	2,326	24	35	11	14	50	13	18
Iowa	1,071	57	154	306	79	44	2,317	13	17	18	25	6	43	19
Guthrie	925	46	137	295	58	152	2,167	22	27	23	27	15	10	20
Madison	918	36	149	419	45	63	2,161	23	43	19	7	23	28	21
Marion	1,030	61	186	385	63	46	2,132	14	13	10	13	13	41	22
Wayne	681	30	173	213	25	241	2,083	43	52	14	40	57	4	23
Lee	941	34	81	270	37	49	2,030	18	48	50	29	35	39	24
Lucas	763	37	145	289	36	140	1,962	31	40	21	28	36	11	25
Tama	934	57	218	268	56	71	1,930	20	18	4	30	16	22	26
Muscatine	888	54	97	407	39	15	1,922	25	21	45	11	30	74	27
Cedar	938	59	106	337	45	23	1,891	19	15	38	17	25	64	28
Clinton	980	39	111	312	34	42	1,877	17	32	35	22	40	45	29
Jefferson	835	14	91	215	13	104	1,782	29	77	46	39	80	18	30
Wapello	652	28	113	261	20	64	1,718	47	59	34	32	64	26	31
Keokuk	927	36	115	160	31	52	1,683	21	42	33	52	45	36	32
Ringgold	720	29	99	125	21	112	1,680	36	55	42	65	63	16	33
Jasper	884	32	120	244	46	28	1,630	26	51	30	34	22	58	34
Des Moines	616	30	71	194	23	51	1,625	52	53	55	44	61	37	35
Henry	700	36	61	224	33	60	1,617	38	44	61	36	41	31	36
Clarke	734	33	47	204	33	63	1,605	35	49	71	43	42	29	37
Pottawattamie	689	49	136	348	45	37	1,605	41	25	25	15	24	50	38
Louisa	848	28	103	217	44	19	1,561	28	58	39	38	26	68	39
Dallas	747	38	110	304	38	37	1,555	34	36	37	26	32	51	40
Page	642	23	98	154	12	71	1,506	48	64	44	54	84	23	41
Adams	590	22	140	125	13	132	1,500	55	66	22	63	81	14	42
Union	626	23	137	122	19	54	1,496	51	65	24	66	66	35	43
Harrison	695	35	126	237	31	85	1,488	40	46	29	35	44	19	44
Woodbury	756	40	136	332	43	25	1,478	32	30	26	21	28	62	45
Bremer	696	54	100	219	67	13	1,458	39	22	41	37	10	77	46
Mahaska	754	19	99	185	25	31	1,417	33	68	43	46	58	57	47
Benton	641	54	72	208	43	20	1,402	49	23	54	41	29	66	48
Monona	659	38	115	182	26	173	1,391	45	37	32	48	56	8	49
Chickasaw	713	55	65	193	50	35	1,378	37	20	58	45	19	53	50
Scott	386	38	59	337	37	8	1,365	69	39	64	18	34	87	51
Polk	424	39	49	338	27	18	1,361	68	34	68	16	54	70	52
Fremont	459	29	132	170	18	104	1,320	64	56	28	50	68	17	53
Butler	682	44	59	168	33	13	1,287	42	28	63	51	43	78	54
Adair	631	15	119	108	16	74	1,258	50	75	31	69	73	21	55
Boone	532	62	80	206	38	55	1,222	59	12	52	42	33	33	56
Montgomery	515	13	101	125	15	63	1,209	61	80	40	64	75	30	57
Hardin	545	56	110	160	31	40	1,169	58	19	36	53	46	48	58
Marshall	655	40	83	151	39	18	1,149	46	31	48	56	31	69	59

Table 1.7 (cont.). Reported deer and ranking for each season by county and for total kill during the 2007-2008 deer season.

County	Harvest							Rank						
	Paid Shotgun	Muzzleloader		Archery	Youth	Non- resident	Total	Shotgun	Muzzleloader		Archery	Youth	Non- resident	Total
		Early	Late						Early	Late				
Mills	427	39	60	183	19	55	1,134	67	33	62	47	65	34	60
Poweshiek	552	38	82	144	36	34	1,134	56	38	49	57	37	56	61
Floyd	593	33	62	112	31	41	1,110	54	50	59	67	47	46	62
Howard	525	37	75	137	30	38	1,096	60	41	53	59	48	49	63
Buchanan	611	25	43	129	35	16	1,062	53	63	74	60	38	73	64
Mitchell	467	36	68	127	27	56	1,000	62	45	57	61	55	32	65
Cass	548	12	70	86	9	65	987	57	81	56	71	91	25	66
Black Hawk	447	44	40	144	28	6	921	66	29	76	58	52	90	67
Webster	453	50	50	126	28	46	907	65	24	67	62	53	42	68
Crawford	463	16	45	68	10	14	746	63	74	72	76	88	75	69
Cherokee	364	15	48	75	30	27	698	70	76	70	73	49	59	70
Story	292	26	56	176	17	18	693	75	62	66	49	70	71	71
Clay	272	28	62	84	24	50	631	78	60	60	72	59	38	72
Greene	311	10	38	75	14	20	609	72	85	80	74	78	67	73
Cerro Gordo	275	21	48	109	22	1	603	77	67	69	68	62	97	74
Plymouth	312	17	59	96	14	7	576	71	70	65	70	77	89	75
Franklin	290	29	32	52	13	35	540	76	57	81	81	82	54	76
Lyon	301	17	38	49	44	17	516	73	71	79	84	27	72	77
Kossuth	295	11	45	64	9	14	486	74	82	73	77	93	76	78
Shelby	230	11	41	72	9	11	430	84	83	75	75	92	82	79
Sac	231	14	28	59	24	3	430	83	78	83	80	60	95	80
Wright	254	17	17	47	17	26	425	79	72	94	85	71	61	81
Worth	235	17	40	63	11	24	421	82	73	77	78	86	63	82
Sioux	235	10	23	60	35	12	419	81	86	88	79	39	80	83
Palo Alto	253	8	39	33	15	4	419	80	91	78	94	76	92	84
O'Brien	210	10	18	52	14	12	407	85	87	93	83	79	81	85
Buena Vista	181	6	27	46	12	10	390	89	94	84	87	85	83	86
Carroll	205	11	18	43	11	4	385	86	84	92	89	87	93	87
Hamilton	177	14	19	52	16	21	377	90	79	90	82	74	65	88
Humboldt	199	10	12	34	13	9	339	88	88	97	93	83	84	89
Dickinson	199	9	29	46	17	1	328	87	89	82	86	72	98	90
Audubon	149	4	19	38	8	13	295	93	95	91	90	95	79	91
Hancock	156	19	25	35	10	8	289	92	69	85	92	90	88	92
Winnebago	167	7	25	45	10	9	284	91	93	86	88	89	85	93
Emmet	125	8	24	37	19	27	269	96	92	87	91	67	60	94
Osceola	137	9	21	19	9	5	224	94	90	89	96	94	91	95
Pocahontas	136	2	15	18	5	4	213	95	98	95	97	96	94	96
Ida	122	0	13	20	4	9	208	97	99	96	95	97	86	97
Grundy	86	4	3	16	1	1	141	98	96	99	99	99	99	98
Calhoun	76	3	8	18	2	3	136	99	97	98	98	98	96	99
Total	67,175	3,560	9,363	20,107	3,401	5,811	146,214							

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 sunrise to	68	26	15	\$ 20 fee.
1986	Oct 11-Dec 5	1/2 hr after sunset	72	38	17	Limit 1/Bow and 1/Gun
1987	Oct 1-Dec 4 & Dec 21-Jan 10	"	68	35		Added late season.
1988	Oct 1-Dec 2 & Dec 19-Jan 10	"	71	35	16	
1989	Oct 1-Dec 1 & Dec 18-Jan 10	"	73	36	20	Bonus 2nd tag for antlerless deer statewide
1990	Oct 1-Nov 30 & Dec 17-Jan 10	"	65	32	19	Bonus tag for antlerless early or any-sex late, statewide
1991	Oct 1-Dec 6 & Dec 23-Jan 10	"	73	28	17	Bonus tag for antlerless deer available only in zones 3a,4a,5a and 6. \$25 fee.
1992	Oct 1-Dec 4 & Dec 21 -Jan 10	"	69	28	15	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
1993	Oct 1-Dec 3 & Dec 20-Jan 10	"	73	32	17	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
1994	Oct 1-Dec 2& Dec 19-Jan 10	"	77	37	16	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
1995	Oct 1-Dec 1& Dec 18-Jan 10	"	76	39	17	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
1996	Oct 1-Dec 6& Dec 23-Jan 10	"	78	37	16	Bonus tag for antlerless deer available only in bonus antlerless zone if no gun tag.
1997	Oct 1-Dec 5& Dec 22-Jan 10	"	71	42	17	Bonus tag for antlerless deer available only in bonus antlerless zone. Could get firearm license also.
1998	Oct 1-Dec 4& Dec 21-Jan 10	"	76	34	15	Bonus tag for antlerless deer available only in bonus antlerless zone. Could get firearm license also.
1999	Oct 1-Dec 3& Dec 20-Jan 10	"	79	37	16	Bonus tag for antlerless deer available only in bonus antlerless zone. Could get firearm license also.
2000	Oct 1-Dec 1& Dec 18-Jan 10	"	80	44	17	Bonus tag for antlerless deer available only in bonus antlerless zone. Could get firearm license also.
2001	Oct 1-Nov 30& Dec 17-Jan 10	"	75	37	17	Bonus tag for antlerless deer available in every county. Could get firearm license also.
2002	Oct 1-Dec 6 & Dec 23-Jan 10	"	66	39	17	Bonus tag for antlerless deer available in every county. Could get firearm license also.
2003	Oct 1-Dec 5 & Dec 22-Jan 10	"	54	44	18	Bonus tag for antlerless deer available in every county. Could get firearm license also.
2004	Oct 1-Dec 3 & Dec 20-Jan 10	"	54	46	18	Bonus tag for antlerless deer available in every county. Could get firearm license also.
2005	Oct 1-Dec 2 & Dec 19-Jan 10	"	54	53	17	Bonus tag for antlerless deer available in every county. Could get firearm license also.
2006	Oct 1-Dec 1 & Dec 18-Jan 10	"	57	29 a	NA	Tags for antlerless deer available in 79 counties. Could get firearm license also.
2007	Oct 1-Nov 30 & Dec 17-Jan 10	"	59	28 a	NA	Tags for antlerless deer available in 77 counties. Could get firearm license also.

a - Not comparable to 2005 and previous.

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 sunrise to	100	17	4	2500 B-O Quota.
	Dec 20-Jan 4	"	43	40	6	Unlimited A-S Quota.
1987	Oct 10-18	1/2 hr after sunset	55	52	8	3000 A-S Quota
	Dec 21-Jan 10	"	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 Any-sex 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	43a	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.

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).

Year	Spotlight Survey		Aerial Survey		Traffic Kill	Traffic Kill Per Billion Vehicle Mi.	
	Mean	Percent	Weighted	Percent		Number	Percent
	Count	Change	Count <i>a</i>	Change			Change
1976	-	-	-	-	2,537	225	-1%
1977	-	-	-	-	2,929	252	12%
1978	6.9	-	-	-	2,872	241	-4%
1979	6.8	-1%	-	-	3,005	259	7%
1980	7.1	4%	-	-	3,743	335	29%
1981	5.9	-17%	-	-	4,164	365	9%
1982	12.0	103%	-	-	4,805	412	13%
1983	13.3	11%	5,903	-	5,335	448	9%
1984	16.4	23%	6,387	8%	6,177	500	12%
1985	15.4	-6%	7,607	19%	5,925	495	-1%
1986	18.5	20%	9,790	29%	7,225	593	20%
1987	18.2	-2%	-	-	8,440	678	14%
1988	20.8	14%	10,289	5% <i>b</i>	9,248	707	4%
1989	26.8	29%	9,672	-6%	8,914	655	-7%
1990	24.0	-10%	7,070	-27%	8,799	607	-7%
1991	23.0	-4%	9,191	30%	8,428	590	-3%
1992	23.0	0%	8,235	-10%	9,135	616	4%
1993	30.0	30%	8,680	5%	9,576	624	1%
1994	25.8	-14%	10,483	21%	10,438	663	6%
1995	35.3	37%	10,877	4%	11,167	699	5%
1996	51.1	45%	12,051	11%	12,276	748	7%
1997	51.1	0%	13,902	15%	13,148	778	4%
1998	55.9	9%	12,651	-9%	12,427	714	-8%
1999	59.9	7%	14,928	18%	11,366	637	-11%
2000	57.2	-5%	15,375	3%	11,114	642	1%
2001	81.4	42%	15,793	3%	14,243	799	24%
2002	80.0	-2%	13,107	-17%	12,377	662	-17%
2003	92.5	16%	15,676	20%	13,720	726	10%
2004	101.1	9%	18,028	15%	15,361	803	11%
2005	104.9	4%	15,324	-15%	14,364	760	-5%
2006	101.8	-3%	12,565	-18%	14,940	783	3%
2007	118.5	16%	13,445	7%	13,730	720	-8%
2008	119.6	1%	13,427	0%			

a - adjusted for missing counts*b* - change form 1986 to 1988

Appendix A

Shotgun and Late Muzzleloader Season Extensions for the 2007/08 License Year

The Natural Resources Commission has approved a 3-day season extension for antlerless-deer only for the Shotgun 1 and Shotgun 2 season hunters. The extended season will run from December 21-23, 2007. Concurrent with this decision, the Commission also extended the Late Muzzleloader deer season by 3 days. This Late Muzzleloader extension will run from January 11-13, 2008.

The purpose of this document is to provide a more detailed description of the process, data, and goals of the season extensions than is allowed in a typical news release document.

First of all, the paid license sales (either-sex and antlerless) for the Shotgun 1 season were down 2% when compared to 2006. As of 13 December, the sales of paid licenses for the Shotgun 2 season were down 4%. By the end of the Shotgun 2 season, paid license sales were down less than 1% and for both seasons combined, total licenses issued (paid resident and landowner/tenant) were down less than 1% (Table 1). These figures are provided to display that a drop in license sales did not fully account for the resulting reported deer harvest.

The opening weekend of the Shotgun 1 season was characterized by extreme weather conditions. The reported harvest was off by 52% on the opening day and the harvest was down by at least 12,000 deer by the end of the weekend when compared to 2006 (Table 2). At the end of the Shotgun 1 season, the reported kill was down by about 17%.

The opening weekend of the Shotgun 2 season was met with only fair hunting conditions and at the end of the first weekend the reported harvest was down by 19%. As of 13 December, the reported kill was down by 14% for the Shotgun 2 season and down 16% for both gun seasons combined. At 0000 hours, 17 December, the reported harvest for both seasons combined was down 14%.

Both shotgun seasons began to recover from the opening weekend setback in the reported harvest but the Shotgun 1 season was unable to completely recover the initial deficit and it was projected that the Shotgun 2 season would have a similar outcome. Figure 1 graphically displays reporting rates for the Shotgun 1 season for 2006 and 2007. A programming error at the Central Bank caused our reporting system to go down for about 4 hours for Web-based and phone users during our peak reporting time on Sunday. It was estimated that reports for about 6,000 deer could have been "lost" during that timeframe. When the system came back up, it appeared that the majority of hunters followed through with their reporting attempts and roughly 4,000 deer were reported that were above the "expected" amounts for the time period.

It was assumed that the harvest reporting rates for 2007 were similar to 2006. We were thus faced with the decision of knowing our shotgun season harvests were below desired levels and taking no action; or attempting some type of season adjustment to try to make up for the deficit. Halfway through the second shotgun

season the harvest was about 13,500 deer behind 2006 (as of 17 December, the reported harvest was down 13,388 deer).

The primary concern over the decline in harvest during the shotgun seasons was the effect it had on Iowa's doe harvest for the 2007/08 hunting season. The shotgun seasons are a very important component of the State's doe harvest and it was determined that the remaining deer seasons would be unable to compensate for the approximately 7,500 doe-harvest-deficit caused primarily by bad weather during the two gun seasons (Table 3 and Figure 2).

The Department is committed to meeting harvest objectives for Iowa's deer herds and to continue to move deer populations back to levels that existed in the mid 1990s. Our best information (harvest reporting) indicated that the kill was well below objective and to do nothing could easily mean that it would take the 2008/09 hunting cycle to just get the herd back to where it was at the beginning of the current 2007/08 hunting cycle. This translates into a 2-year setback before once again making progress towards herd objectives on a statewide basis. It is also fair to say that there were some "political" concerns as well.

It was decided that an extension for shotgun hunters was the most sound method that could be employed to potentially gain the needed doe harvest to meet 2006/07 harvest objectives statewide. The shotgun season hunters have the hunter-base and the weapon type that allows them to harvest large numbers of deer in a short period of time. It is also this fact that allows sportsmen hunting in other weapon types to have the variety and season lengths they currently enjoy in Iowa. In discussing where to place a season extension; anticipated hunter participation, potential for a successful harvest, impacts to already scheduled seasons, and maintaining the opportunity for other strategies were all taken into account.

A 3-day extension running from December 21-23, 2007 was selected for the extension because it fell within the date range that the second shotgun season periodically occupies, the potential for an adequate harvest was highest, the first Friday-Sunday period is typically the lowest harvest weekend during the Late Muzzleloader season, and the mid-December season placement would also allow for possible alternative actions if the harvest during the shotgun season extension fails to meet objectives.

On 13 December there had been 186,012 licenses issued for the shotgun seasons (188,888 licenses by the end of the second season) and it was estimated about 80,000 deer would be reported during the two seasons (as of 17 December, 81,973 deer had been reported). So there would be in excess of 105,000 licenses available to be filled. It was felt that if at least 25% of the licenses were in the field for the extended season and they were 40% successful in being filled, that a harvest of approximately 10,600 antlerless deer would be realized. A harvest of this size would equate to about 8,500 does in the kill which would slightly more than make up the deficit.

The 3-day extension onto the end of the Late Muzzleloader season was initiated to help mitigate for the 3 days that muzzleloader hunters will be sharing the woods with the extended season hunters. The same rules and regulations for the Late Muzzleloader season will apply to this extension. The Department was asked why

the shotgun extension was not proposed for the last weekend period of the Late Muzzleloader season or onto the last 3 days of the muzzleloader season. In 2006, late muzzleloader hunters reported harvesting 975, 1,412, and 2,352 deer on the first, second, and third Friday-Sunday time periods, respectively. Even on the last 3 days of the 2006 Late Muzzleloader season, 2,334 deer were reported. So placing the shotgun extension during the first weekend period was decided to have the least potential impact to the muzzleloader season hunters.

Is this the perfect answer to the situation of trying to increase the harvest of adult does and doe fawns on short notice? Probably not. However, it was felt to be the most workable solution given the time frame that was available to work with. Arguably, there are some counties that may not need the extension, but the opinion was that leaving counties out would make the hunt too complicated for the amount of advance notice that the antlerless extension would have. The doe harvest in the counties with lower deer populations has been proportionately less and it is anticipated that the extended season antlerless harvest in those areas will be also. This should not dramatically affect overall populations as most of the counties falling into this category either had no antlerless license quota or were excluded from the special antlerless seasons (or both). If necessary, we know that we can further tighten antlerless harvest opportunities in those counties to build deer numbers if populations fall below desired levels.

Table 1. A comparison of licenses sales for 2007 to 2006 and 2005 (as of Dec 17th).

Season	License Type		2005	2006	2007	Difference	% Change
Youth	Paid	Either-sex	3,687	5,495	7,647	2,152	39%
		Antlerless	0	141	268	127	90%
	L/T	Either-Sex	265	140	134	-6	-4%
		Antlerless	0	23	60	37	161%
Disabled	Paid	Either-sex	72	105	137	32	30%
		Antlerless	29	28	24	-4	-14%
	L/T	Either-Sex	3	6	5	-1	-17%
		Antlerless	1	4	9	5	125%
E Muzz	Paid	Either-sex	7,509	7,500	7,500	0	0%
		Antlerless	2,116	1,973	1,800	-173	-9%
	L/T	Either-Sex	3,103	2,155	2,207	52	2%
		Antlerless	965	1,036	1,081	45	4%
Nov	Paid	Antlerless	13,825	10,389	10,227	-162	-2%
	L/T	Antlerless	3,016	1,296	1,328	32	2%
Gun 1	Paid	Either-sex	68,976	69,324	65,127	-4,197	-6%
		Antlerless	15,040	17,296	19,459	2,163	13%
Gun 2	Paid	Either-sex	45,984	48,346	46,180	-2,166	-4%
		Antlerless	13,850	14,684	16,659	1,975	13%
Gun 1 & 2	L/T	Either-Sex	42,999	26,149	25,680	-469	-2%
		Antlerless	15,248	14,682	15,783	1,101	7%
L Muzz	Paid	Either-sex	14,893	16,638	11,597	-5,041	-30%
		Antlerless	10,224	11,243	9,146	-2,097	-19%
	L/T	Either-Sex	2,859	1,854	1,393	-461	-25%
		Antlerless	2,742	2,757	2,114	-643	-23%
Archery	Paid	Either-sex	43,195	47,271	48,232	961	2%
		Antlerless	21,620	22,833	24,465	1,632	7%
	L/T	Either-Sex	6,042	3,620	3,893	273	8%
		Antlerless	2,661	2,573	3,143	570	22%
January	Paid	Antlerless	20,437	16,340	9,060	-7,280	-45%
	L/T	Antlerless	10,658	7,807	6,331	-1,476	-19%
Senior Crossbow		Antlerless	0	61	90	29	48%
Special Hunts Depredation		Antlerless	4,424	5,969	6,217	248	4%
		Antlerless	2,314	2,219	3,581	1,362	61%
Nonres	Paid	Either-sex	6,015	6,034	6,072	38	1%
		Antlerless	3,328	9,534	9,317	-217	-2%
Totals	Paid	Either-sex	190,331	200,688	192,492	-8,221	-4%
		Antlerless	107,207	112,717	110,353	-2,357	-2%
	L/T	Either-Sex	55,271	33,924	33,312	-612	-2%
		Antlerless	35,291	30,178	29,849	-329	-1%
	Paid	Either-Sex	245,602	234,637	225,804	-8,833	-4%
		Antlerless	142,498	142,888	140,202	-2,686	-2%
	L/T	Either-Sex	297,538	313,423	302,845	-10,578	-3%
		Antlerless	90,562	64,102	63,161	-941	-1%
Total			388,100	377,525	366,006	-11,519	-3%

Table 2. The reported harvest for the shotgun seasons in 2006 and so far in 2007.

Season	Day	2006	2007	Difference	Cumulative Difference
Gun 1	1	18,168	8,651	-9,517	-9,517
"	2	19,746	12,137	-7,609	-17,126
"	3	9,526	14,990	5,464	-11,662
"	4	5,635	6,362	727	-10,935
"	5	4,795	5,757	962	-9,973
	6	1,610	1,708	98	-9,875
	7	234	229	-5	-9,880
Gun 2	8	8,026	6,084	-1,942	-11,822
"	9	10,570	8,988	-1,582	-13,404
"	10	3,412	3,635	223	-13,181
"	11	1,351	1,360	9	-13,172
"	12	1,225	1,273	48	-13,124
"	13	1,207	1,236	29	-13,095
"	14	1,376	1,661	285	-12,810
"	15	3,632	3,253	-379	-13,189
"	16	4,848	4,649	-199	-13,388
Total		95,361	81,973	-13,388	

Table 3. The reported number of bucks and does killed in the shotguns seasons in 2006 and so far in 2007.

<u>2006</u>					<u>2007</u>				<u>Difference</u>		
Day	Bucks	Does	Total	% Does	Bucks	Does	Total	% Does	Bucks	Does	Total
1	10,090	8,078	18,168	44%	4,944	3,707	8,651	43%	-	-	-
2	10,649	9,097	19,746	46%	6,604	5,533	12,137	46%	-	-	-
3	5,010	4,516	9,526	47%	8,176	6,814	14,990	45%	3,166	2,298	5,464
4	2,923	2,712	5,635	48%	3,393	2,969	6,362	47%	470	257	727
5	2,449	2,346	4,795	49%	2,982	2,775	5,757	48%	533	429	962
6	809	801	1,610	50%	896	812	1,708	48%	87	11	98
7	127	107	234	46%	122	107	229	47%	-5	0	-5
8	3,850	4,176	8,026	52%	3,095	2,989	6,084	49%	-755	1,187	-1,942
9	4,951	5,619	10,570	53%	4,331	4,657	8,988	52%	-620	-962	-1,582
10	1,574	1,838	3,412	54%	1,821	1,814	3,635	50%	247	-24	223
11	663	688	1,351	51%	679	681	1,360	50%	16	-7	9
12	560	665	1,225	54%	619	654	1,273	51%	59	-11	48
13	522	685	1,207	57%	595	641	1,236	52%	73	-44	29
14	620	756	1,376	55%	777	884	1,661	53%	157	128	285
15	1,653	1,979	3,632	54%	1,507	1,746	3,253	54%	-146	-233	-379
16	2,167	2,681	4,848	55%	2,210	2,439	4,649	52%	43	-242	-199
Total	48,617	46,744	95,361	49%	42,751	39,222	81,973	48%	5,866	7,522	13,388

Figure 1. A comparison of reporting rates between 2006 and 2007 for the Shotgun 1 season.

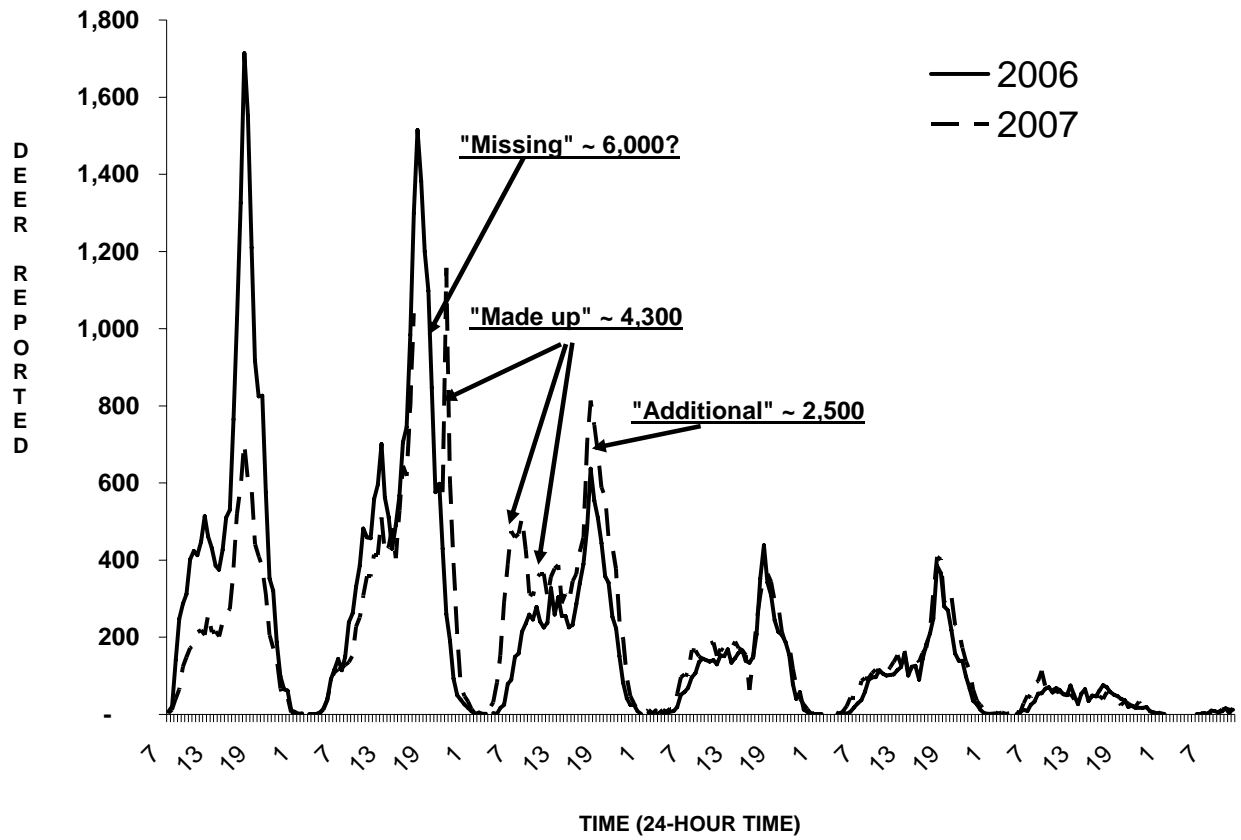
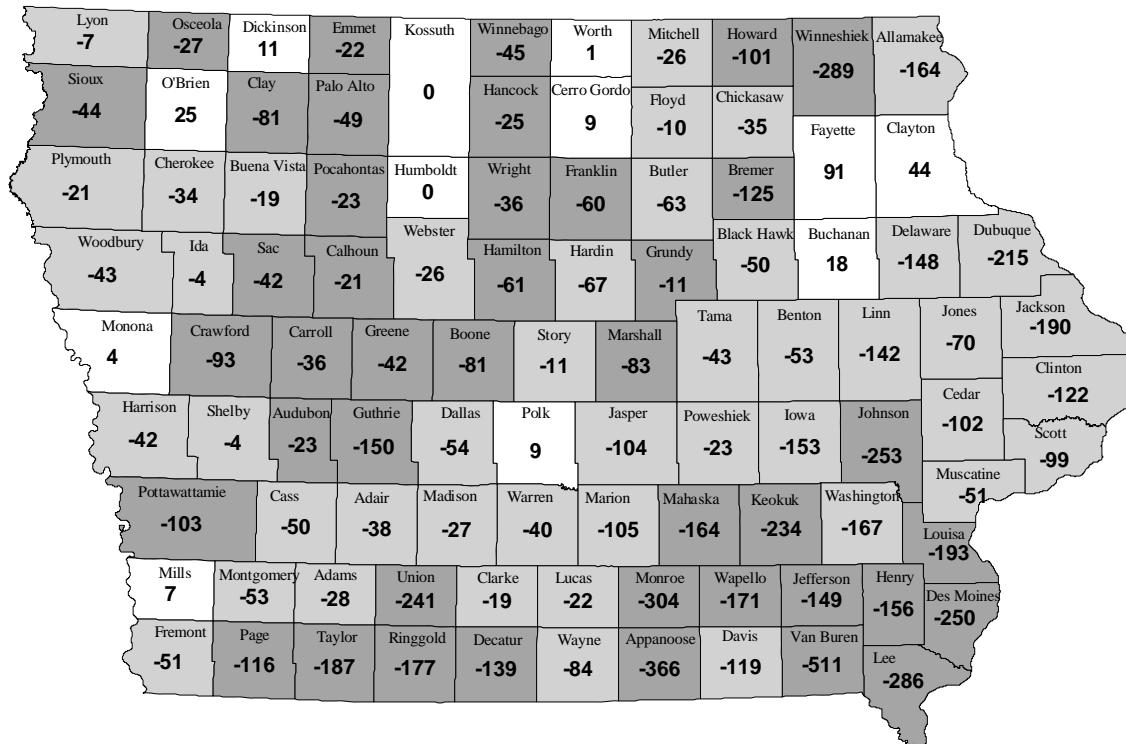


Figure 2. The difference in the number of does reported between 2007 and 2006. The reported kill is down by 15% or more in the dark shaded counties, from 0 – 15% in the light shaded counties and has increased for the unshaded counties.



Appendix B

Reported harvest during the 3 day shotgun season extension.

Despite very poor weather conditions for the 4th weekend in a row nearly 5,200 deer and over 3,600 does were reported during the period from Dec 21st - 24th. Most of the deer reported during this period were killed by participants of the 3-day extension of the shotgun seasons (Dec 21-23). This is about 4,000 more deer and 3,000 more does than if the season extension had not been offered. Ninety percent of the reported kill were antlerless deer and 70% were does. Table 1 contains a more detailed breakdown and comparison of the reported harvest.

Table 1. The reported harvest for the period from December 21-24 in 2007, the reported harvest for comparable days (Friday – Monday) in 2006, and the difference between the 2 years.

License Type	2006			%	2007			%	Difference		
	Bucks	Does	Total		Bucks	Does	Total		Bucks	Does	Total
Muzzleloader and bow	543	651	1,194	55%	670	682	1,352	50%	127	31	158
Shotgun, youth, depredation					945	2,892	3,837	75%	945	2,892	3,837
Total	543	651	1,194	55%	1,615	3,574	5,189	69%	1,072	2,923	3,995

Going into the 3-day extension, the number of does reported was about 7,500 below where it was in 2006. The additional doe harvest during the extension reduced this deficit by nearly 40%. The number of deer reported harvested by hunters with muzzleloader and bow licenses was also higher than in 2006 which helped.

At this point there does not seem to be the need to take dramatic steps to further increase the kill. Depending upon the number of antlerless licenses issued in the next few weeks, there are opportunities to take extra deer during the extension of the muzzleloader season from January 11-13 and during the extended week of the January antlerless season.

Over 19,000 antlerless licenses are currently available in 25 counties located mostly in southern and far northeast Iowa where the biggest need for extra harvest exists. The reported harvest and the number of licenses issued will be evaluated further to determine if any other changes need to be made to reach the Department's harvest goals.

Lyon 42	Osceola 11	Dickinson 13	Emmet 11	Kossuth 26	Winnebago 15	Worth 23	Mitchell 59	Howard 31	Winneshiak 123	Allamakee 128	
Sioux 22	O'Brien 16	Clay 27	Palo Alto 9		Hancock 18	Cerro Gordo 28	Floyd 43	Chickasaw 28	Fayette	Clayton	
Plymouth 21	Cherokee 29	Buena Vista 22	Pocahontas 9		Humboldt 12	Wright 30	Franklin 25	Butler 59	Bremer 59	101	177
Woodbury 71	Ida 8	Sac 21	Calhoun 4		Webster 42	Hamilton 17	Hardin 58	Grundy 3	Black Hawk 42	Buchanan 26	Delaware 66
Monona 54	Crawford 45	Carroll 13	Greene 22	Boone 86	Story 27	Marshall 65	Tama 80	Benton 44	Linn 123	Jones 85	Jackson 127
Harrison 70	Shelby 26	Audubon 16	Guthrie 67	Dallas 72	Polk 40	Jasper 76	Poweshiek 50	Iowa 65	Johnson 113	Cedar 64	Clinton 51
Pottawattamie 81	Cass 29	Adair 53	Madison 91	Warren 150	Marion 70	Mahaska 68	Keokuk 38	Washington 94	Muscatine 84	Scott 61	
Mills 65	Montgomery 46	Adams 58	Union 28	Clarke 43	Lucas 67	Monroe 70	Wapello 62	Jefferson 31	Henry 59	Louisa 44	
Fremont 64	Page 49	Taylor 69	Ringgold 33	Decatur 35	Wayne 52	Appanoose 74	Davis 75	Van Buren 98	Lee 59	Des Moines 46	

County	Obama	McCain	Other
Lyon	13	-22	18
Osceola	-22	18	-17
Dickinson	18	-17	15
Emmet	-17	15	-31
Kossuth	15	-31	8
Winnebago	-31	8	6
Worth	8	6	-71
Mitchell	6	-71	-224
Howard	-71	-224	-102
Winneshiek	-224	-102	34
Allamakee	-102	34	-64
Sioux	-36	34	-43
O'Brien	34	-43	10
Clay	-64	-43	17
Palo Alto	-43	10	-12
Hancock	-10	10	-103
Cerro Gordo	32	-10	-6
Floyd	21	32	30
Chickasaw	-18	21	-58
Fayette	148	-18	6
Clayton	140	148	-111
Plymouth	-13	140	-176
Cherokee	-15	-13	-176
Buena Vista	-3	-15	-176
Pocahontas	-17	-3	-176
Humboldt	11	-17	-176
Wright	-17	11	-176
Franklin	-50	-17	-176
Butler	-36	-50	-176
Bremer	-88	-36	-176
Buchanan	25	-88	-176
Delaware	-117	25	-176
Dubuque	-180	-117	-176
Woodbury	3	-180	-176
Ida	3	3	-176
Sac	-30	3	-176
Calhoun	-20	-30	-176
Webster	-2	-20	-176
Hamilton	-49	-2	-176
Hardin	-32	-49	-176
Grundy	-8	-32	-176
Black Hawk	-23	-8	-176
Tama	-13	-23	-176
Benton	-38	-13	-176
Linn	-71	-38	-176
Jones	-5	-71	-176
Jackson	-103	-5	-176
Clinton	-104	-103	-176
Harrison	10	-104	-176
Shelby	17	-104	-176
Audubon	-12	17	-176
Guthrie	-103	-12	-176
Dallas	-6	-103	-176
Polk	30	-6	-176
Jasper	-58	30	-176
Poweshiek	6	-58	-176
Iowa	-111	6	-176
Johnson	-176	-111	-176
Cedar	-64	-176	-176
Scott	-61	-64	-176
Pottawattamie	-58	-61	-176
Cass	-21	-58	-176
Adair	-5	-21	-176
Madison	31	-5	-176
Warren	65	31	-176
Marion	-54	65	-176
Mahaska	-139	-54	-176
Keokuk	-215	-139	-176
Washington	-114	-215	-176
Muscatine	7	-114	-176
Louisa	-164	7	-176
Mills	56	-164	-176
Montgomery	-37	56	-176
Adams	4	-37	-176
Union	-233	4	-176
Clarke	10	-233	-176
Lucas	3	10	-176
Monroe	-252	3	-176
Wapello	-142	-252	-176
Jefferson	-120	-142	-176
Henry	-119	-120	-176
Des Moines	-225	-119	-176
Fremont	-21	-225	-176
Page	-85	-21	-176
Taylor	-156	-85	-176
Ringgold	-164</		

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 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/mi² of timber per season.

2008: Iowa's 34th modern spring hunting season recorded an estimated 11,329 turkeys harvested, with 54,676 license sold (Table 2.1 and 2.3). This was the twentieth year the entire state was open to spring turkey hunting (Table 2.11). The 38-

day season (11 April through 18 May, 2008) was partitioned into 5 separate seasons: a 3-day youth-only season, and 4 regular seasons (4, 5, 7, and 19-day seasons). A decline in the number (2,141) of licenses were sold for the youth-only season with 536 fewer youth licenses sold (Fig. 2.7). The 4-season format, with unlimited license quota an unlimited license quota for all the periods, resulted in 52,418 resident shotgun licenses issued. An additional record number (5,596) of archery-only licenses were issued. Archery-only licenses harvested 788 turkeys surveys resulting in a 14% success rate in 2008.

Twenty percent of the resident hunters were successful in harvesting a gobbler in 2008 (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 ninetieth spring that

non-residents were allowed to hunt turkeys in Iowa. Quotas in zone 4 (all seasons), zone 5 (all seasons), and zone 6 (seasons 1, 3 and 4), and Zone 8 (all seasons) were filled in 2008. Non-resident hunters harvested 898 wild turkeys (Tables 2.3). Non-residents were more successful than residents in harvesting a spring gobbler (20.5.0% versus 39.8%, respectively) (Table 2.4).

Youth Turkey Season

Iowa's fourth youth spring turkey season has held in April 11-13, 2008. During the 3 day season, youth 15 and younger were allowed to participate with an accompanied licensed adult (adult licensed for one of the regular seasons). In 2006, 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 2,141 youth purchased licenses for the season (Fig. 2.7). Youth season license sales decreased (536 fewer licenses sold) in 2008 for the first time since its inception. This was likely due to the weather of the 2008 youth season, which was cold a raining for the majority of the season.

Since the inception of ELSI (Electronic Licensing System of Iowa) in 2001, hunter age and gender has been recorded. From 2001-2006, youth spring turkey hunters (age 15 and under) increased each year. In 2007 and 2008, youth hunter numbers decreased, but youth ages 6-11 continued to increase, while the total number of licenses sold remained decreased slightly (Fig. 2.7).

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/mi² of forest on the southern Iowa Stephens Forest study area and region-wide densities of at least 40-50/mi²). A cool wet spring in 1981 led to essentially no recruitment just prior to the first fall season. A large carryover of adults from previous successful hatches meant that hunters had high success rates in the fall of 1981, but harvested almost no juvenile turkeys. A slightly better hatch in 1982, coupled with the reduction in available adult

turkeys, led to proportionally more juveniles in the bag in 1982, but the harvest and success rates were reduced. A good hatch in 1983 produced more juveniles in the bag and an increased harvest, suggesting populations were recovering from a 2-year depression. Another good hatch in 1984 resulted in even more juveniles in the bag and again an increased harvest. Fall 1985 was similar to 1984. The greatest effect was felt in southern Iowa where spring weather was least favorable in both 1981 and 1982. Indications of over-harvest on popular public hunting areas were greatest in the years when few juveniles were present to buffer adult turkey harvest. Harvest rates of adult hens (> 2 years old), the most important age class reproductively, were greatest when few juveniles were produced and decreased to tolerable levels when recruitment was good.

A similar scenario developed during the 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.

2007: Wild turkey brood production in 2007 was slightly lower than the 10-year average, with fewer hens seen with poults, and fewer poults per hen and fewer birds per flock (Tables 2.9 and 2.10). Fall turkey hunter success rates increased slightly in 2007 from 2006 (Table 2.8), but still well

below the 2005 and prior estimates. In fall of 2006, mandatory harvest reporting required successful hunters to report turkey harvested, and many hunters likely did not report turkeys harvested. Prior to this, harvest totals were estimated using a postcard survey after the seasons were closed.

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 2007, quotas remained the same as 2005 and 2006. Shotgun/bow license issue (paid and free combined) decreased from the 2006 level to 11,024 for the 47-day season that ran from 15 October through 30 November, 2007 (Table 2.12). Over 53% of the shotgun licenses were issued free to landowners. An additional 1,721 archery-only licenses were issued for a season that ran from 1 October through 30 November, 2007 and 17 December, 2007 through 10 January, 2008. Estimated numbers of active hunters were undeterminable since there was no post card survey after the season (mandatory reporting eliminated the post card survey). Thirteen percent of hunters harvested 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 success rates. Hunter

success rates varied from 13% in zone 7 to 25% in Zone 8 (Table 2.8). Archery only licensed hunters reported a harvest of 105 turkeys in 2007, which was identical to the 2006 archery-only license harvest. The 6% success rate for 2007 archery only licenses was similar to the previous year 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/mi² of forest as determined from empirical population data gathered from Stephens State Forest (IDNR, unpubl. data). In 1986, only 4 counties sustained > 4 hunters/mi² of forest, combined with turkey harvests of > 2/mi² of forest. In 1987, with the large increase in licenses issued, 12 counties had both hunter densities > 4, and turkey harvest > 2/mi² of timber (out of 43 counties with reporting hunters). The high seasonal hunter densities were somewhat reduced by a 28-day season during 1987. No more than 34% of the hunters and 39% of the eligible hunters (those who had not yet bagged a turkey) were afield on any day. The opening 2 days and 4 weekend days were the most popular hunting days. There were no evident relationships between daily hunting pressure and daily success rates. To reduce daily hunter densities, hunter interference rates and increase fall recreation days, the 1988 fall season was extended to 49 days (October 10 - November 27). However, a large increase in licenses issued in 1988 increased the number of counties exceeding allowable harvest and hunter density values to 16 (out of 53 counties with reported turkey harvest). Another record license issue in 1989 resulted in 24 counties (of 49 counties with

reported turkey harvest) exceeding >4 hunters, and >2 turkeys harvested/mi² of timber. Fewer licenses were issued in 1990 and correspondingly only 16 counties exceeded hunter and harvest rate maximums. Due to continued poor brood production, both hunter numbers and harvest was dramatically reduced during 1991 - 1993 and increased only slightly throughout 1994-2000, but decreased slightly in 2001. Unfortunately, the present management concern is how to maintain turkey numbers instead of the enviable situation of being concerned about hunter densities.

The record number of active hunters in 2005 (since 1989) may be related to this being the first season that turkey hunters were 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 return-addressed postcards which are too 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 1976-2007 are summarized in Tables 2.9 and 2.10.

2007: Iowa's 2007 summer wild turkey brood survey showed a slight increase in reproduction of turkeys throughout the state compared to last year, but lower than the 10-year average (Table 2.9 and 2.10). Statewide, more hens (+9%) were observed with broods than the previous year, but the number of young observed per hen remained the same as last year (Fig. 2.4). Turkey flock size observed across the state slightly increased (+1%) from last year, but was still below the 10-year average

(-7%). Regionally, northeast, northwest, and central Iowa experienced increases in reproduction from the previous year. North central Iowa experienced nearly identical reproduction from last year, which was slightly above the 10-year average. East-central Iowa experienced the largest increase (+26%) of hens with broods from the previous year, but the number of poults observed with hens was lower (-15%) than last year. Southern and Western Iowa experienced the most declines in reproduction, a similar trend last year in these regions.

The reproduction rates were likely related to the amount of rainfall during the nesting season (April-May). Southern and western Iowa experienced the most rainfall during the nesting season (4-6 inches above normal), while the other regions experienced near normal to one inch above normal amounts of rainfall in 2007. An early warm-up in March/April followed by below freezing temperatures may have initiated some hens to nest, with the eggs freezing prior to incubation.

This year's brood survey indicated average to above average in the northern half of the state, but below average for the southern parts of the state. Southern Iowa has experienced average to below average reproduction over the past several years, with the lowest flock size also reported this year and the past few years. Even though turkey reproduction and numbers are down in southern Iowa, the population is still in good condition, and at higher levels than many regions of the eastern U.S., with hunter harvest success rates remaining similar.

Literature Cited

- Hanson, G. A. 1988. Iowa's turkey brood survey as an index to productivity and a tool to forecast subsequent harvests. Pages 171-182 in Wildl. Res. and Sur. in Iowa, Annu. Perf. Rep., P.R. Proj. No. W-115-R.
- Leatherberry, E. C., S. M. Roussopoulos, and J. S. Spencer, Jr. 1990. An analysis of Iowa's forest resources, 1990. U.S.D.A. For. Serv. Resour. Bull. NC-142. 67pp.
- Lewis, J. B. 1975a. Statewide wild turkey survey. Missouri Dep. Conserv. Study Completion Rep. P.R. Proj. No. W-12R-28. Job No. 1.
- _____. 1975b. Evaluation of spring turkey seasons in Missouri. Proc. Natl. Wild Turkey Symposium 3:176-183.
- Little, T. W., 1980. Wild turkey restoration in "marginal" Iowa habitats. Proc. Natl. Wild Turkey Symposium 4:45-60.
- Ostrom, A. J. 1976. Forest statistics for Iowa, 1974. U.S.D.A. For. Serv. Resour. Bull. NC-33. 25pp.
- Peterson, W. J. 1943. Come to the turkey valley. Palimpsest 24:358-359.
- Thornton, P. L., and J. T. Morgan. 1959. The forest resources of Iowa. U.S.D.A. For. Serv. Central States For. Exp. Stn. Release 22. 46pp.



Figure 2.1 Iowa spring turkey hunting statewide estimates, 1974-2008.

Active hunters unknown after 2006 due to survey changes.

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

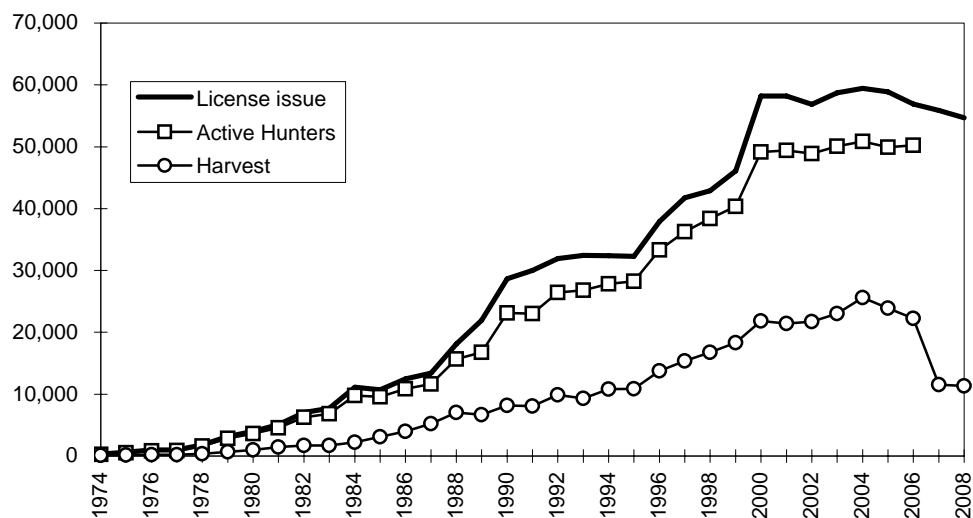


Figure 2.2 Spring turkey hunting zones, 1974 (Fig. a) and 2008 (Fig. b).

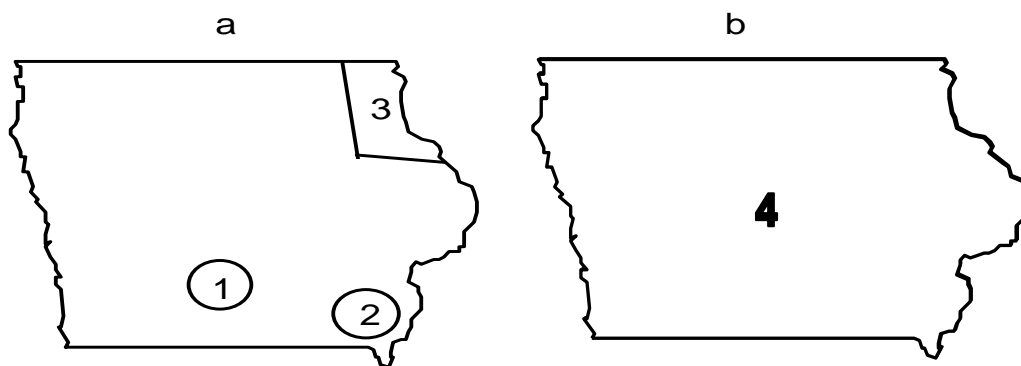


Figure 2.3 Iowa turkey harvest statewide success rates for residents, 1974-2008.

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

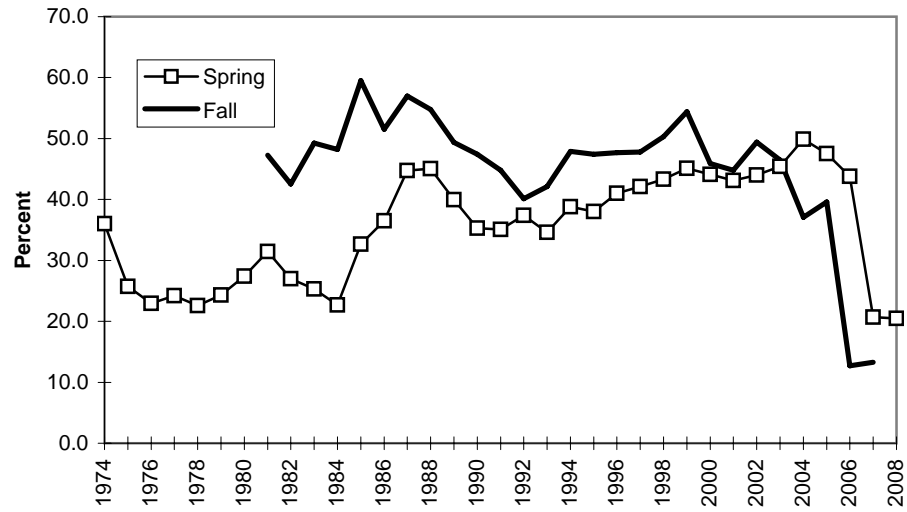


Figure 2.4 Iowa turkey brood survey statewide results, 1976-2007.

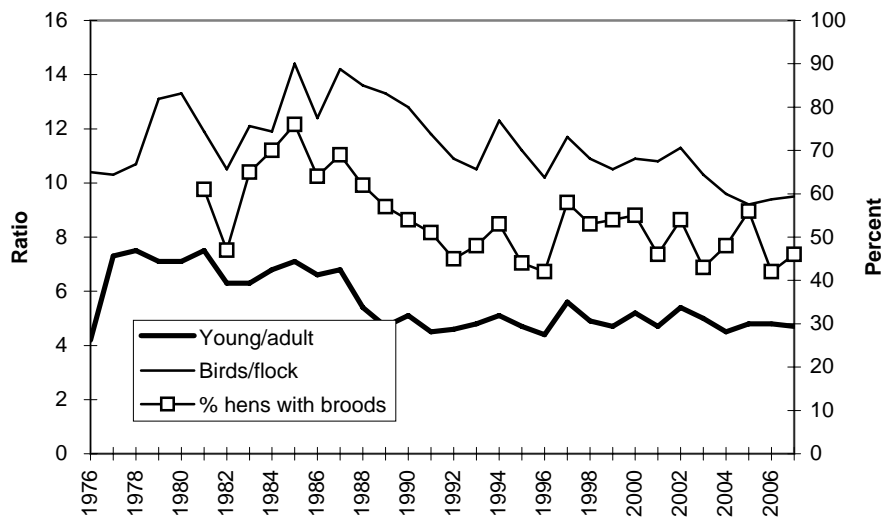


Figure 2.5 Fall turkey hunting zones, 1981 and the present.

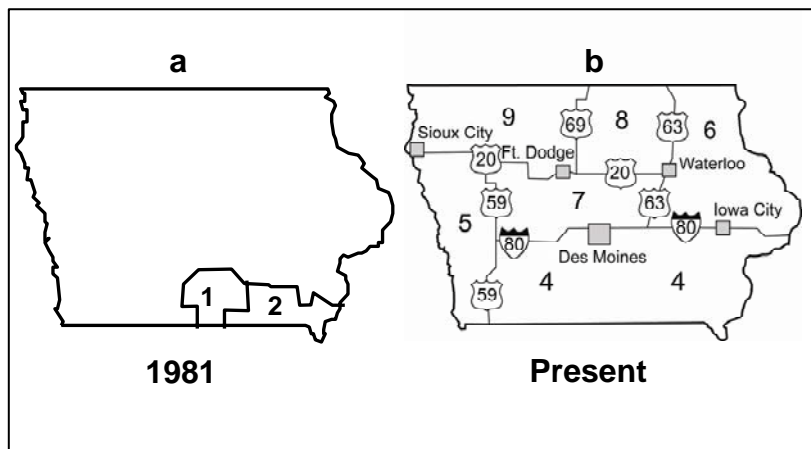


Figure 2.6 Iowa fall turkey hunting statewide estimates, 1981-2007.

Active hunters unknown after 2005 due to survey changes.

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

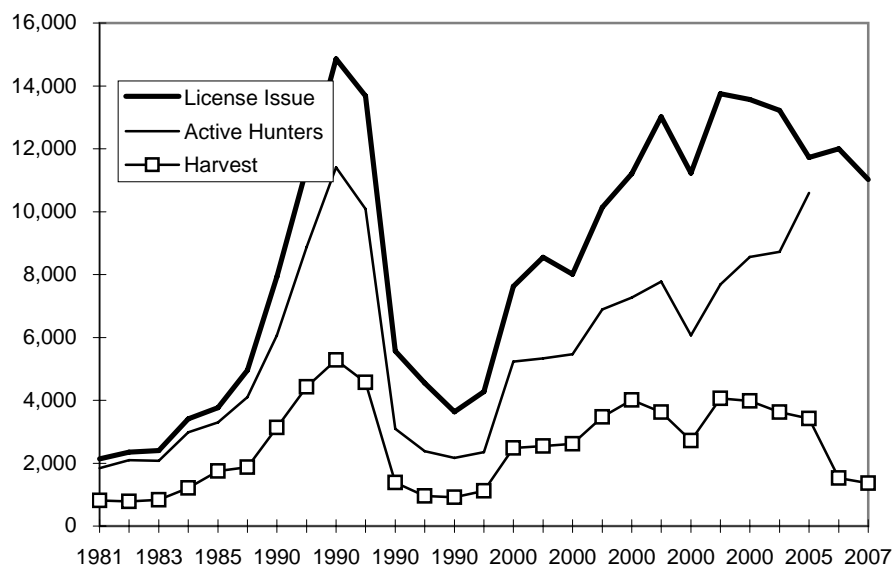


Figure 2.7 Iowa spring turkey license issue, 2001-2008.

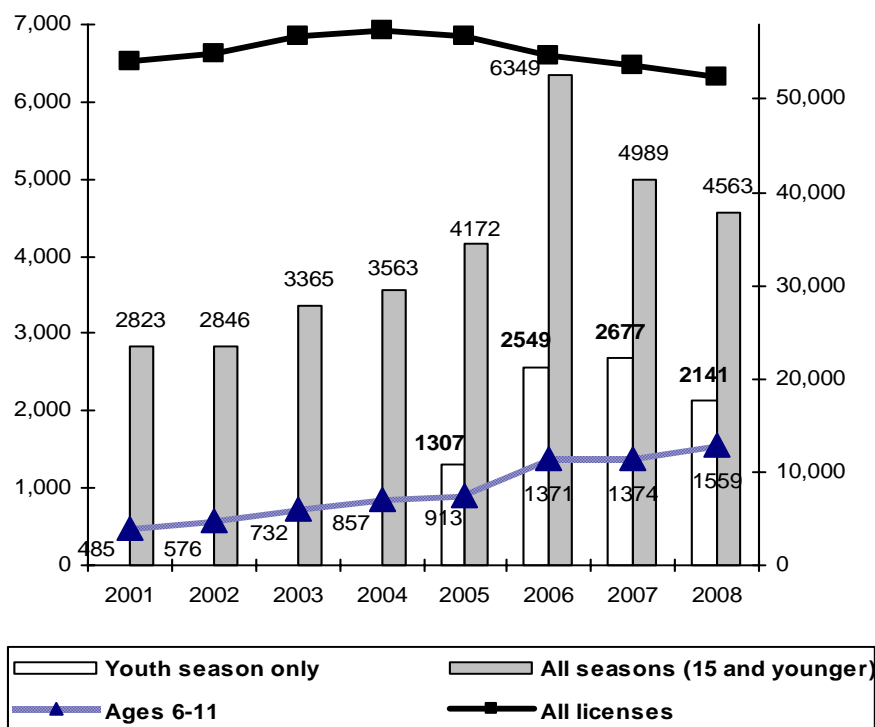


Table 2.1 Number of Iowa spring turkey-hunting licenses issued by zone, 1974-present.

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.

YEAR	ZONE					BOW ONLY	RESIDENT TOTAL	NON- RESIDENT	TOTAL LICENSES
	1	2	3	4	5				
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



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

YEAR	ZONE					RESIDENT	NON-	TOTAL
	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.

YEAR	ZONE					BOW ONLY	RESIDENT TOTAL	NON-RESIDENT	TOTAL HARVEST
	1	2	3	4	5				
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

Table 2.4 Estimated success rate of active Iowa spring turkey hunters by zone, 1974-present. Archery-only hunters not surveyed.

In 2007, survey methods changed from a post-mailing survey to mandatory reporting.

YEAR	ZONE					RESIDENT	NON-
	1	2	3	4	5	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	-	20.7	37.4
2008	-	-	-	20.5	-	20.5	39.8

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.

YEAR	ZONE									BOW	RESIDENT TOTAL	NON- 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

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.

YEAR	ZONE								UNK	BOW	RESIDENT TOTAL	NON- 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.

YEAR	ZONE										RESIDENT		NON-RESIDENT
	1	2	3	4	5	6	7	8	9	UNK	BOW	TOTAL	
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	

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.

YEAR	ZONE									BOW	RESIDENT MEAN	NON- 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	

Table 2.9 Iowa wild turkey brood survey results by region for birds/flock and young/adult, 1976-present.

Y/A=young per adult and B/F=birds per flock.

YEAR	NORTHEAST		SOUTHERN		CENTRAL		WESTERN		EAST-CENTRAL		NORTH-WEST		NORTH-CENTRAL		STATEWIDE	
	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
10-year avg.	4.8	10.5	5.0	9.7	4.6	9.1	4.8	11.8	5.0	10.4	5.2	12.2	4.5	9.3	4.9	10.2
10 year % change	6	-3	-10	-15	0	7	-14	-21	0	-7	6	-18	5	9	-3	-7
1 year % change	6	9	-4	-7	7	21	-9	-18	-15	9	17	2	0	10	-2	1

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

YEAR	NORTHEAST		SOUTHERN		CENTRAL		WESTERN		EAST-CENTRAL		NORTHWEST		NORTH-CENTRAL		STATEWIDE	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
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
10-year avg.		55		47		50		52		47		66		53		50
10 year % change		-3		-22		10		-26		14		-15		3		-7
1 year % change		11		-8		13		-11		26		18		-2		9

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

YEAR	LIMIT	BAG POSSESSION		SEASON				SPLITS	SEASON LENGTH	# ZONES	# SQ. MILES	MAJOR RULE CHANGES
		LIMIT	Youth	1	2	3	4					
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 hunting seasons, 1981-present.

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

FURBEARERS

According to Iowa Code 109.97, every fur dealer must report the number of raw furs purchased from Iowa trappers and hunters by May 15 of each year. Table 3.1 shows the number of raw furs purchased from the 1977-78 season through the present. Earlier information from 1930-31 thru 1976-77 is archived at <http://www.iowadnr.com/wildlife/>. Even though harvest and population trends cannot be equated, harvest information gives a retrospective view of the status of various fur populations not only historically, but from year to year as well.

For example, the muskrat harvest data show that while muskrat harvests are cyclic, the harvests of the 1930s are not much different from the 1960s, 1970s, and 1980s. Drought cycles and water level drawdowns on designated marshes, directly influence muskrat populations and consequently muskrat harvest. During the droughts of the 1930s, 1950s and most recently 1988-89 and 1989-90 muskrat harvests were substantially reduced. The drought followed by extremely high water from 1990 through 1996, plus the reduced fur market are the main reasons why the last 10 years of harvest are at the lowest levels since the 1960-61 season. During the 1993-94 season, a 32 percent increase in the muskrat harvest occurred, yet historically, the harvest was still low. The mere abundance of muskrats still allowed for this substantial increase in harvest. Because of the muskrat's prolific reproductive capability, populations responded quickly as adequate water conditions returned. In fact, 1993 brought modern day record muskrat populations back to the majority of Iowa's marshes. In 1997, after an extended high water period,

"exploding" muskrat populations, and thus emergent vegetation disappeared due to muskrat "eat outs," the population has rapidly declined. In fact for the past 20 years muskrats continue at modern day record low levels throughout most of the marsh country in the United States. The low populations of muskrats have now occurred over the past 2 1/2 decades and natural resource professionals have no clue why their numbers remain at record low levels. Extended natural droughts and/or managed water level draw-downs should allow marshes to re-vegetate and muskrats should increase accordingly. We have not seen the right type of extended drought, so perhaps when the "right" drought does occur, muskrat populations will respond positively on marshes. Unfortunately many of the wetland areas do not have the capability of "artificial" draw-downs. Habitat changes and reduced water quality will likely keep muskrats on those marshes without draw down capability at low levels. The past couple of summers have marked some of the lowest marsh water levels in years, however, high fall and winter water levels have returned each year and that has not allowed adequate re-vegetation to occur. The true test of the status of muskrat populations on marshes will occur when/if vegetation does emerge. It will be interesting to see if muskrat population increases abundantly. Stream and river valley corridors will likely continue to have low muskrat populations because of deteriorating habitat and declining water quality. If muskrat populations continue to remain low and we do not see positive upward cycles, I predict that they might become a species of special concern sometime in the future.

Muskrats will most certainly be a species to watch closely.

Mink harvests were higher in the 1930s and 1940s then remained somewhat lower in the 1950s and 1960s with the 1986-87 harvest similar to the 1930s once again. Low numbers for both mink and muskrats in 1939, reflect the statewide season closure except for the Mississippi River. A similar situation occurred for muskrats in 1947. The 1989-90 through 1991-92 mink harvests were substantially reduced due to overall lower fur values and consequently less trapper effort. During 1994-95, mink harvest increased primarily because of the fact that fur value speculation increased trapping pressure on mink because muskrat populations were so low. Recent mink harvest trends generally show declines, likely due to overall reduced trapping effort that is occurring with muskrat trapping as the two species are often times trapped concurrently with on another.

Raccoons have been an interesting species with comparatively low harvests until 1967 and then noticeably increased harvests through 1986-87 when a record 390,800 raccoon were taken (Fig. 3.1). A quarter million raccoons were harvested annually for 15 years (1973-1987) and yet the population remained very high. It is likely that the high raccoon harvests have kept raccoon disease increases such as distemper at low levels resulting in very healthy raccoon populations. For a decade' decade, the raccoon harvest has leveled off at near 100,000. This also is indicative of the suppressed raccoon fur values of the past several years. However, renewed interest and increasing pelt values were responsible for a slow increase in raccoon harvest in the late 1990s, with the 2001-02 harvest approaching 1.5 million raccoon pelts. The entire fur market, including raccoons,

was substantially higher than it has been for several years due to extreme interest in fur fashion in China and other oriental countries.

Spotted skunk (civet cat) harvest levels indicate that their numbers have declined substantially before the season was closed in the mid-1970s. During the 1970s and 1980s the DNR did not receive more than 1 or 2 spotted skunk reports year. Since 1992 the only recent spotted skunk report to the DNR was a roadkill in 2001 in Ringgold County. Spotted skunks should at least be considered a threatened, if not, endangered species, and perhaps they should even be designated as extirpated.

Red fox harvests have increased significantly since the mid-1960s, stabilizing between 12,000 and 20,000 fox pelts over the past couple of decades. The red fox population is making a very slow comeback in the modern day traditional fox areas of northwest and north-central Iowa. For the past 2 decades active fox dens, however, are a rarity compared to the 1970s and 1980s. An outbreak of mange in the early 1980s and the suppressed fur market greatly reduced the fox population as well as the harvest during the past 20 seasons. Coyotes have also move into what once considered fox rich portions of the state and that, coupled with the persistent of mange will likely keep the red fox population suppressed for several years.

Similar trends occurred with coyotes, with harvest figures ranging between 6,000 and 12,000 pelts. Nearly 10,300 coyote pelts were purchased during the 1992-93 fur season. That is not a record coyote harvest, but is double the previous season. The 1994-95, 1995-96 and 1996-97 seasons showed a decrease in the coyote harvest, but the population remains high statewide. The late 1990s

harvest remained stable to slightly declining. As society changes and hunter and trapper recruitment declines, all fur harvests will likely show general declines.

Beaver seasons were closed in the 1930s and early 1940s. During that period beaver were live captured and transplanted throughout the state to restore their statewide presence. The season reopened in the mid-1940s on a restricted basis and harvests has increased in the past decade to between 6,000 and 17,000 hides. About 50 percent fewer beaver were purchased from Iowa dealers during the 1991-92 season, as compared to 1987-88 season. There has been a somewhat increasing beaver market for the past few years but the hard work and difficult weather conditions for trapping beaver, keep the beaver harvest relatively low. Increasing interest in beaver fur did bring some increase in pelts purchased in 1992, but that increase was supplemented by beaver hides that were kept frozen from previous years and dumped on the market in hopes of capitalizing on a higher beaver pelt values. The 1993 and 1994 beaver take decreased about 25 percent and it declined somewhat more in 1995. The beaver population is relatively high and they continue to generate many complaints from landowners over beaver flooding and foraging on crops, and backing water up tiles.

Several factors need to be considered when reviewing these data. Water levels certainly affect the harvest of aquatic furbearers such as muskrats and beaver. Freeze-up and season opening dates also have some effect. Higher fur values usually mean higher harvest levels. Weather greatly impacts the harvest of many furbearing animals such as raccoon, fox, and coyotes. Mild weather and open winters are generally more favorable for all trappers and coon hunters. Fox and

coyote hunters harvest more animals when cold, snowy weather exists. Very notable to the entire furbearer season in 2000-2001 was the fact that cold weather froze marshes earlier and record cold and snows made this season one of the most difficult ever for fur pursuing enthusiasts. Weather conditions did, in fact, reduce the harvest of most furbearer species in 2000-2001. During 2001-2002 season, weather conditions were nearly the opposite of the previous winter. These warm, mild, and comparatively dry conditions were conducive to better harvests of several species. The 2002-2003 season started out very mild but turned much colder later in the season providing great opportunity for fur harvesters early in the season but the later colder weather slowed fur harvesting considerably. The weather conditions of the 2006-2007 season, provided greater and longer opportunity for trappers and coonhunters to pursue their quarry. With the exception of the spotted skunk and perhaps weasel, these harvest data and other qualitative information indicate that most furbearers have adapted well to the changing environment that humans have created. We do however need to keep a closer watch on muskrat and both red and gray fox populations.

There appears to be a declining trend in the pelts harvested in nearly all species except for raccoon which tends to be the 'bread and butter' species for furharvesters. It will be interesting to see if the declining trends continue.

Because of the squabbles and debates that occur between hunters and trappers over their "rightful share" of the resource, the DNR in 1975 began asking fur buyers to estimate the percent of foxes, coyotes and raccoons taken by hunters versus that taken by trappers. The DNR believes the information is helpful

in determining the impact of hunters and trappers on furbearer populations. The breakdown by year is shown in Table 3.2. Fox hunters historically have had greater impacts on the population in years when snow conditions make “spotting” foxes easier, while in mild open winters trappers do better. Because there were considerably more fox hunters than fox trappers, in years with more snowfall, hunters have a greater impact on the fox population than trappers. Fox hunter numbers have declined substantially as has the red fox population. An extensive outbreak of mange in foxes throughout the northern half of the state has greatly reduced fox numbers, and has also contributed to reduced fox harvest during the decade of the 1990s and the early 2000s.

Mild open winters benefit both raccoon hunters and trappers, again because raccoon hunters outnumber raccoon trappers, they have the higher impact on the population. With the advent of the furharvester license, in 1986 it is likely that the demarcation between hunter and trapper harvests will become less distinct as one license allows them to pursue both hunting and trapping.

Coyote hunters take substantially more coyotes than trappers, but this relates to the fact that there are considerably more coyote hunters than coyote trappers. Also, coyotes are certainly more difficult to trap than foxes and raccoons, thus there is generally lower percentage of coyotes trapped each year as compared to those hunted. This is supported by the information on Table 3.2.

In 1978 the Iowa DNR initiated a Raccoon and Deer Spotlight Survey in an effort to establish population trend index for raccoon and deer. Table 3.3 shows the results of the survey through present.

Based on the mean number of raccoons observed per route it appears that the raccoon population has fluctuated considerably (Fig. 3.2). Low harvests appear associated with increased raccoons observed per route the subsequent spring. The raccoon spotlight survey index of the 1990s has been the highest ever recorded since the survey began in 1978. Reduced raccoon harvest since 1987 is most likely the major reason for the record high population of recent years. Recent years have shown a slow stable to declining trend in raccoon numbers according to the raccoon-deer spotlight survey. In 2005 there were 21.1 raccoons observed per raccoon spotlight survey while in 2004, 20.9 were observed. If the spotlight survey is a true indicator of population trends, then the raccoon population has been fairly stable, but at high levels for the past several years.

Raccoon pelt values still account for over 2/3's of the total value of furs purchased in Iowa (Table 3.4). A record harvest of 390,000 raccoons occurred during the 1986-87 season, but, by 1989-90, over a quarter of a million less raccoons have been harvested. During the last 3 years of the 1990s, the raccoon market has softened considerably and this will likely reduce pressure on the raccoon population. However, since 2004, and particularly in 2005 and 2006, raccoon fur values are showing some significant increase.

Historically, pelt prices of mink peaked in the mid-1940s and have fluctuated since then between about \$10 and \$20 (Fig. 3.4). Red fox prices peaked in the late 1970s at about \$65. Iowa's total fur value reached a record \$15.5 million in 1979. During the past 6 years between \$1 and \$1.8 million of fur pelts have been harvested. Historical season dates are presented in Table 3.5.

Iowa's, first ever, regulated river otter harvest season occurred in 2006-2007. A statewide quota of 400 animals was allowed with a 72 hour grace period after the quota was reached to reduce all otter trapping opportunities. The season bag limit per furharvester was 2. A total of 469 river otter were harvested in 13 days. Harvest information is shown in figures in the river otter logbook update.

Iowa's second driver otter season regulation remained the same except the grace period was reduced to 48 hours. It did take about 10 days longer to reach the quota but most of that was attributed to early cold weather and the fact that the newness had probably worn off a little.

A very restrictive regulated bobcat harvest occurred during the 2007-2008 season. The first bobcat season occurred with very few problems. Harvest information on Iowa's first ever bobcat harvest (Hunting and Trapping) season is shown in figures in the bobcat logbook update. Our second season will include an increase in the quota to 200 and besides the lower 2 tiers of counties that will remain open, 4 counties along the Missouri River (Pottawattamie, Harrison, Monona, and Woodbury) will be open to bobcat hunting and trapping.

The European Union, EU (formerly called the European Economic Community, EEC) had threatened to discontinue the importation of furs from countries still allowing the use of leg-hold/foot-hold traps. This has been scheduled to go into effect on January 1, 1995, 1996, and again in 1997. Fortunately a compromise was reached when the U.S. embarked upon a best management practice (BMPs) study of trapping systems to show the most effective, efficient and humane trapping systems in the United States.

If the EU ever actually discontinue

the importation of wild furs it could mean the collapse of the U.S. commercial fur harvest and trade, as we currently know it today. Oriental countries such Korea and China are developing a fur economy/trade, and that has helped increase fur values considerably. Currently the European countries account for over 75 percent of the U.S. fur market. International trade, fur fashion trends, tariff, and governmental politics will determine what ultimately happens.

In late 1997, an "understanding" was reached with the European Union, the United States and other countries involved. The European markets would remain open to the U.S. fur trade. Over the next several years the U.S. is developing scientifically based best management practices (BMP's) for trapping animals with restraining traps. The Iowa Department of Natural Resources, in cooperation with 3 local trappers, was involved in testing 4 types of traps for raccoons in 1998. These were 1.5 coil spring with offset jaws, the #11 long-spring, the #11 long-spring with offset jaws, and the Tomahawk cage trap. Ohio, Wisconsin and Missouri did the same trap tests in their states. Several BMP studies are complete and results are being periodically published. Iowa was to partake in a BMP effort to check the efficiency of 1 ½ coil spring and 110 Conibear traps for primarily mink and muskrat trapping, however extenuating circumstances did not allow this to happen to the needed desired extent that it should have.

Some controversies have developed between the furharvester ranks and the Fur Resources Technical Committee of the International Association of Fish and Wildlife Agencies. Some of the most used traps of the past (particularly the 1 ½ coil spring

trap) have not scored well under the BMP process, particularly for trapping raccoons. The self-mutilation of raccoons chewing their foot or leg when in certain foothold traps present challenges for trappers and the type of trapping systems they use. More information and research will have to occur before we can finalize the BMPs for raccoons. The BMP drafts are now available and is being distributed nation wide. Reception to that BMP has predominately been favorable. Drowning sets are not considered "humane" and that has been very frustrating for trappers as well as some professionals. While the "understanding" with the

European Union is not a binding agreement, we see it as a victory for the continued legitimate use of the restraining/foot hold trap into the 21st century. Hopefully the BMP process will also help us improve restraining foothold traps to allow their continued use into the future. The BMP process is in the waning stages of its research efforts. The data collected is resulting in some very good information that will allow the most effective, efficient, and humane way to trap various species of animals. Only time will tell how well the trapping public will accept the results.



Table 3.1 Furbearer harvest in Iowa listed by species (1930-present). Data for each year includes harvest for the winter of the succeeding year, eg. 1930=1930+1931(winter).

(Year summaries prior to the first year given are archived at <http://www.iowadnr.com/wildlife/>)

Year	Muskrat	Mink	Skunk	Raccoon	Civet	Red	Gray	Opossum	Weasel	Coyote	Badger	Beaver
						Fox	Fox					
1977	257,237	13,037	3,588	264,367	7	22,831	1,640	36,186	36	12,011	1,900	3,432
1978	467,721	23,277	6,545	251,985		24,348	2,115	26,160	82	10,627	1,936	4,327
1979	741,403	31,270	10,022	308,277		17,629	3,093	10,978	122	7,745	3,274	12,498
1980	739,419	32,950	5,616	235,717		20,602	2,175	11,664	32	6,847	2,427	11,831
1981	521,945	28,455	1,913	291,227		22,385	1,710	18,730	16	9,860	1,946	5,705
1982	428,252	21,307	1,194	255,926		18,527	1,953	16,761	16	8,930	1,754	5,809
1983	464,793	22,245	1,152	261,875		21,257	1,185	16,179		9,636	1,298	8,563
1984	372,466	28,346	1,032	334,179		18,916	1,896	21,455		7,809	1,754	16,323
1985	254,412	17,116	1,861	270,805		16,346	1,114	16,296		7,858	975	14,931
1986	482,811	31,139	2,540	390,773		19,740	1,593	30,760		10,582	2,520	17,778
1987	515,611	27,712	1,198	307,587		19,666	1,091	27,623		10,348	1,642	13,509
1988	192,214	13,996	712	190,556		15,445	769	19,824		4,650	1,043	18,459
1989	73,415	8,293	245	118,653		13,359	374	8,114		4,073	468	8,706
1990	70,133	7,363	189	103,468		14,268	393	6,243		5,068	503	9,246
1991	91,206	8,469	211	110,342		15,463	429	7,411		5,213	572	8,943
1992	124,638	12,839	791	110,203		14,660	1,036	8,192		10,286	621	15,839
1993	163,842	13,946	643	118,463		12,986	836	6,243		7,313	571	11,788
1994	178,683	11,819	510	112,686		12,243	789	6,782		6,986	502	11,643
1995	158,241	20,392	786	118,136		14,136	948	9,781		8,462	614	10,678
1996	123,460	18,946	693	123,698		12,402	721	7,643		7,159	832	10,481
1997	113,621	16,832	649	149,492		12,896	768	6,012		6,992	796	11,122
1998	90,126	16,461	536	106,641		11,646	681	5,123		5,786	642	10,336
1999	86,998	15,931	528	101,233		11,968	631	4,649		5,231	597	10,108
2000	84,972	15,235	469	94,989		11,103	576	3,922		5,348	506	10,478
2001	78,867	14,162	398	143,206		12,349	529	3,361		6,702	487	11,287
2002	89,421	14,986	417	118,531		14,869	507	2,905		5,746	402	10,431
2003	54,919	10,711	842	177,315		10,608	365	6,184		8,178	912	8,591
2004	45,516	11,662	930	179,185		7,122	198	5,858		5,197	761	6,221
2005	79,328	13,162	793	163,746		8,587	219	5,916		7,381	606	8,698
2006	64,799	7,706	1434	156,379		2,013	20	2,254		4,258	704	5,675
2007	55,476	7,967	1256	143,271		2,143	178	2,673		45,135	536	5,303

Table 3.2 Percentage of foxes, raccoons and coyotes purchased from hunters and trappers determined from furbuyer reports (1975-present). Data for each year includes harvest from the succeeding year, eg. 1930=1930+1931(winter).

Year	Fox			Raccoon			Coyote		
	% by trapper	% by hunter	% by unknown	% by trapper	% by hunter	% by unknown	% by trapper	% by hunter	% by unknown
1975	45	48	7	28	60	12	18	72	10
1976	55	41	4	28	66	6	28	68	4
1977	36	55	9	24	68	8	18	72	10
1978	37	58	5	31	61	8	17	74	9
1979	53	32	15	30	58	12	30	59	11
1980	66	29	5	33	60	7	33	60	7
1981	38	46	16	42	46	12	20	74	6
1982	47	45	8	35	53	12	25	69	6
1983	33	59	8	37	50	13	17	67	16
1984	49	31	20	33	41	26	26	60	14
1985	39	54	7	37	52	11	23	65	12
1986	59	35	6	46	49	5	34	62	4
1987	53	43	4	49	47	4	32	62	6
1988	58	34	8	49	46	5	30	67	3
1989	48	28	24	35	45	20	24	61	15
1990	43	46	11	38	55	7	28	66	6
1991	44	49	7	41	51	8	25	67	8
1992	40	52	8	45	50	5	36	54	6
1993	43	50	7	43	52	5	34	57	9
1994	39	55	6	44	46	10	33	59	8
1995	41	52	7	47	45	8	30	65	5
1996	44	48	8	48	48	4	32	58	10
1997	40	47	13	48	46	5	29	62	9
1998	46	48	6	46	47	5	33	63	4
1999	45	46	9	42	53	5	34	61	5
2000	34	58	8	38	46	16	31	58	11
2001	52	43	5	43	47	10	36	56	8
2002	56	38	6	48	42	10	32	59	9
2003	52	44	4	49	43	8	35	58	7
2004	49	45	6	43	49	8	32	60	8
2005	53	38	9	39	52	9	30	64	6
2006	51	45	4	49	47	4	34	58	8
2007	44	51	5	48	46	6	37	57	6
Average	46.4	45.2	8.3	40.5	50.5	8.9	29.0	62.8	8.1

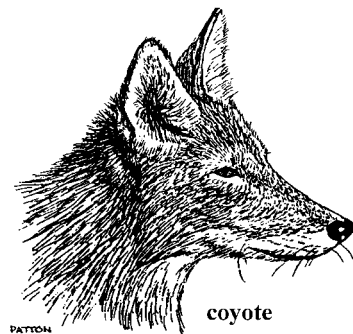


Table 3.3 Results of the Iowa raccoon spotlight survey with raccoon harvest and pelt price (1978-present). The spotlight survey is conducted in April each year. Harvest is from previous year.

Year	# Routes	Raccoon harvest	Mean # observed	Pelt Prices
1977	57	264,367	10.3	22.27
1978	83	251,985	11.2	31.18
1979	82	308,277	8.2	29.97
1980	85	235,717	8.9	21.47
1981	85	291,227	10.4	27.69
1982	84	255,926	12.8	16.54
1983	82	261,875	12.9	14.23
1984	84	334,179	11.5	18.94
1985	83	270,805	10.5	13.91
1986	80	390,773	11.3	18.22
1987	79	307,587	12.0	16.65
1988	83	190,556	14.8	7.96
1989	84	118,653	17.0	4.74
1990	86	103,468	16.7	4.62
1991	84	110,342	18.2	4.96
1992	82	110,203	21.5	5.36
1993	84	118,463	20.8	5.81
1994	89	112,686	21.1	6.89
1995	87	118,136	24.4	6.83
1996	89	123,698	23.5	8.26
1997	88	149,492	21.9	7.79
1998	88	106,641	23.3	7.21
1999	88	101,233	22.3	8.13
2000	88	94,989	24.3	9.26
2001	88	143,206	20.7	11.69
2002	88	118,531	21.1	12.16
2003	88	177,313	20.8	10.11
2004	88	179,185	21.1	9.62
2005	82	163,746	19.4	11.43
2006	81	156,379	19.4	10.18
2007	78	143,271	20.8	13.43
2008	58		23.8	



Table 3.4 Value of important furbearer species taken in Iowa (1930-present). Data for each year includes harvest from the winter of the succeeding year, e.g. 1930 = 1930 & 1931 (winter).

(Year summaries prior to the first year given are archived at <http://www.iowadnr.com/wildlife/>)

	Mink		Muskrat		Raccoon		Red Fox		All Species
	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Total Value
1977	12.44	162,180	4.77	1,227,020	22.27	5,887,453	49.53	1,130,819	8,871,156
1978	14.48	337,050	4.49	2,100,067	31.18	7,856,892	64.65	1,574,098	12,516,946
1979	19.04	595,380	5.64	4,181,512	29.97	9,239,061	48.71	858,708	15,499,322
1980	18.20	599,690	5.88	4,347,783	21.47	5,060,843	42.88	883,413	11,269,768
1981	17.99	511,905	3.84	2,004,268	27.69	8,064,075	46.29	1,036,201	12,021,854
1982	11.18	238,212	2.18	933,589	16.54	4,233,016	28.85	534,503	6,235,053
1983	16.03	356,481	2.30	1,152,686	14.23	3,726,481	33.16	704,882	6,180,169
1984	14.22	403,080	2.88	1,072,702	18.94	6,329,350	25.24	477,439	8,574,748
1985	11.76	201,274	1.89	480,838	14.34	3,883,343	16.70	272,978	5,163,651
1986	20.79	647,379	3.39	1,636,729	18.22	7,119,884	20.73	409,210	10,335,629
1987	20.76	575,301	3.32	1,711,828	16.65	5,121,323	18.07	355,365	8,097,250
1988	22.06	308,751	2.05	394,038	7.96	1,516,825	12.15	187,656	2,602,695
1989	16.34	138,890	1.02	76,500	4.74	568,800	9.70	135,800	1,018,622
1990	18.26	134,448	2.08	145,876	4.96	513,201	10.22	145,898	1,074,761
1991	15.49	131,184	1.96	178,764	5.36	591,433	9.63	148,909	1,198,863
1992	19.46	249,846	1.58	196,928	6.36	700,891	8.43	123,078	1,579,821
1993	16.78	234,014	1.83	299,831	5.81	688,270	8.98	116,614	1,388,729
1994	14.13	167,003	1.95	348,432	6.89	706,686	9.86	120,716	1,409,848
1995	18.01	367,259	1.78	281,670	6.83	808,371	8.76	123,831	1,745,504
1996	19.36	336,795	1.56	182,598	8.92	1,103,386	8.43	104,549	1,661,687
1997	17.86	302,303	1.51	171,568	7.79	1,169,643	7.04	90,788	1,729,199
1998	16.05	264,199	1.66	149,609	7.21	768,882	8.21	95,637	1,203,362
1999	19.16	255,583	1.55	134,847	8.13	823,024	9.68	115,850	1,329,304
2000	15.46	235,533	2.09	177,591	9.26	879,598	9.86	109,476	1,378,689
2001	17.23	244,011	2.43	191,647	11.69	1,674,078	10.86	134,110	2,168,918
2002	14.96	244,191	1.85	165,429	12.16	1,441,37	11.36	168,912	2,069,896
2003	10.51	112,573	2.06	113,133	10.11	1,792,655	19.16	203,441	2,589,802
2004	10.27	119,769	1.85	85,115	9.62	1,723,760	14.68	104,551	1,965,131
2005	12.03	158,339	6.15	487,867	11.43	1,871,612	12.81	109,999	2,827,822
2006	13.07	100,703	5.79	375,339	10.18	1,591,938.22	15.13	36,503	2,204,483
2007	14.76	116,876	3.08	170,886	12.34	1,442,250	13.55	29,038	1,757,223

Table 3.5 Iowa's furbearer seasons

(Year summaries prior to the first year given are archived at <http://www.iowadnr.com/wildlife/>)

YEAR	SPECIES	OPENING START TIME	____TRAPPING____		____HUNTING____	
			SEASON DATES		SEASON DATES	
			OPENING	CLOSING	OPENING	CLOSING
1996-97	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 2	Jan 31		
	be	8 a.m.	Nov 2	Apr 15		
	rf, gr	8 a.m.	Nov 2	Jan 31	Nov 2	Jan 31
	ra, op	8 a.m.			Nov 2	Jan 31
	wc	8 a.m.			Jun 15	Oct 31
	co	8 a.m.	Nov 2	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
1997-98	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 1	Jan 31		
	be	8 a.m.	Nov 1	Apr 15		
	rf, gr	8 a.m.	Nov 1	Jan 31	Nov 2	Jan 31
	ra, op	8 a.m.			Nov 2	Jan 31
	wc	8 a.m.			Jun 15	Oct 31
	co	8 a.m.	Nov 2	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
1998-99	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 7	Jan 31		
	be	8 a.m.	Nov 7	Apr 15		
	rf, gr	8 a.m.	Nov 7	Jan 31	Nov 7	Jan 31
	ra, op	8 a.m.			Nov 7	Jan 31
	wc	8 a.m.			Jun 15	Oct 31
	co	8 a.m.	Nov 7	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
1999-2000	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 6	Jan 31		
	be	8 a.m.	Nov 6	Apr 15		
	rf, gr	8 a.m.	Nov 6	Jan 31	Nov 6	Jan 31
	ra, op	8 a.m.			Nov 6	Jan 31
	wc	8 a.m.			Jun 15	Oct 31
	co	8 a.m.	Nov 6	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2000-01	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 4	Jan 31		
	be	8 a.m.	Nov 4	Apr 15		
	rf, gr	8 a.m.	Nov 4	Jan 31		
	ra, op	8 a.m.			Nov 4	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 3	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2001-02	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 3	Jan 31		
	be	8 a.m.	Nov 3	Apr 15		
	rf, gr	8 a.m.	Nov 3	Jan 31		
	ra, op	8 a.m.			Nov 3	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 3	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	

Table 3.5 Iowa's furbearer seasons

(Year summaries prior to the first year given are archived at <http://www.iowadnr.com/wildlife/>)

YEAR	SPECIES	OPENING START TIME	____TRAPPING____		____HUNTING____	
			SEASON DATES		SEASON DATES	
			OPENING	CLOSING	OPENING	CLOSING
2002-03	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 2	Jan 31		
	be	8 a.m.	Nov 2	Apr 15		
	rf, gr	8 a.m.	Nov 2	Jan 31		
	ra, op	8 a.m.			Nov 2	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 2	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2003-2004	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 1	Jan 31		
	be	8 a.m.	Nov 1	Apr 15		
	rf, gr	8 a.m.	Nov 1	Jan 31		
	ra, op	8 a.m.			Nov 1	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 1	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2004-2005	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 6	Jan 31		
	be	8 a.m.	Nov 6	Apr 15		
	rf, gr	8 a.m.	Nov 6	Jan 31	Nov 6	Jan 31
	ra, op	8 a.m.			Nov 6	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 6	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2005-2006	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 5	Jan 31		
	be	8 a.m.	Nov 5	Apr 15		
	rf, gr	8 a.m.	Nov 5	Jan 31	Nov 5	Jan 31
	ra, op	8 a.m.			Nov 5	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 5	Jan 31	cont open season	
	spsk, bc, ot, gwo		cont closed season		cont closed season	
2006-2007	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 4	Jan 31		
	be	8 a.m.	Nov 4	Apr 15		
	rf, gr	8 a.m.	Nov 4	Jan 31	Nov 4	Jan 31
	ra, op	8 a.m.			Nov 4	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 4	Jan 31	cont open season	
	ot *k	8 a.m.	Nov 4	Jan 31		
	spsk, bc, gwo		cont closed season		cont closed season	

Table 3.5 Iowa's furbearer seasons

YEAR	SPECIES	OPENING START TIME	____TRAPPING____		____HUNTING____	
			SEASON DATES OPENING	CLOSING	SEASON DATES OPENING	CLOSING
2007-2008	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 3	Jan 31		
	be	8 a.m.	Nov 3	Apr 01		
	rf, gr	8 a.m.	Nov 3	Jan 31	Nov 3	Jan 31
	ra, op	8 a.m.			Nov 3	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 3	Jan 31	cont open season	
	ot *i	8 a.m.	Nov 3	Jan 31		
	bc *m	8 a.m.	Nov 3	Jan 31	Nov 03	Jan 31
	spsk, gwo		cont closed season		cont closed season	
2008-2009	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 1	Jan 31		
	be	8 a.m.	Nov 1	Apr 01		
	rf, gr	8 a.m.	Nov 1	Jan 31	Nov 1	Jan 31
	ra, op	8 a.m.			Nov 1	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 1	Jan 31	cont open season	
	ot *n	8 a.m.	Nov 1	Jan 31		
	bc *m	8 a.m.	Nov 1	Jan 31	Nov 01	Jan 31
	spsk, gwo		cont closed season		cont closed season	

Saturday of October through February 15 in 1973 and 1974 and January 31 in 1975. Zone 2b is remainder of state.

*d) During 1971-72 through 1978-79 seasons except for beaver water sets were permitted only during the open mink and muskrat season.

*e) During 1974-75 through 1987-88 seasons a more restrictive beaver trapping season occurred on the Federal Upper Mississippi River Refuge north of Interstate 80.

*f) Weasel season was closed during 1976-77 season; reopened 1988-89 season.

*g) Spotted skunk season was continuous closed season from 1976-77 through the present.

*h) Bobcat season officially listed as closed in 1985-86 regulations, however, it was essentially protected in prior years.

*i) Permanent woodchuck hunting rule season dates of June 15 to October 31 established with 1976-77 season.

*j) First restricted coyote trapping season.

*k) First regulated river otter harvest (Trapping) season. Statewide Quota of 400 otters plus 72 hour grace period. Season bag 2/furharvester

*l) Same regulations as last year only the grace period is reduced to 48 hours.

*m) First ever regulated bobcat harvest (Hunting and Trapping) season. 150 quota in Open zone of the southern 2 tiers of counties only plus a 48 hour grace period.

Season bag limit of 1/furharvester. CITES tags are required on both river otters and bobcats.

*n Third regulated otter harvest (trapping) season. Statewide quota of 500 otters plus 48 hour grace period.

Season bag limit of 1/furharvester. CITES tags are required on both river otters and bobcats.

*o Second regulated bobcat harvest (Hunting and Trapping) season. 200 quota Open zone quota of the southern 2 tiers of counties plus the 4 counties immediately above them along the Missouri River only plus a 48 hour grace period. Season bag limit of 1/furharvester.

CITES tags are required on both river otters and bobcats.

Figure 3.1 Iowa raccoon & red fox harvest, (1930 - present)

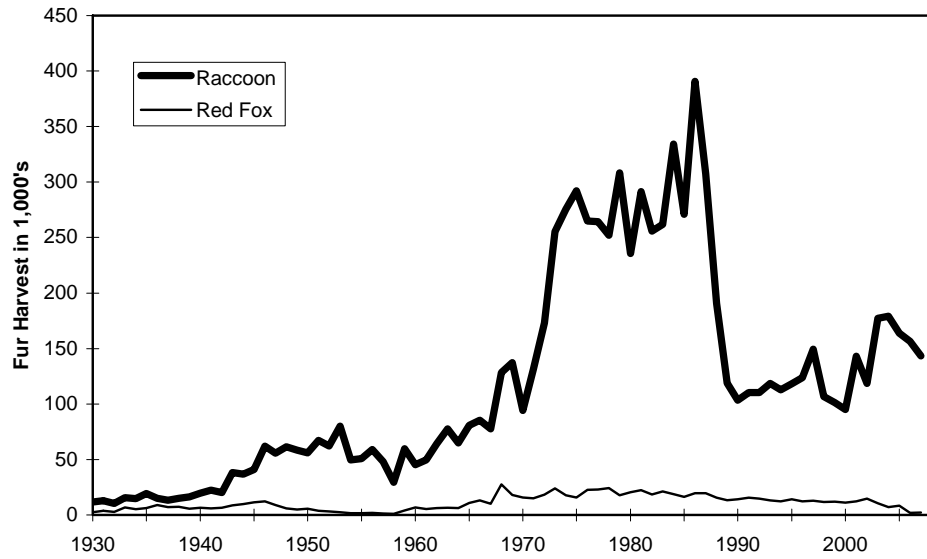


Figure 3.2 Relationship of the spotlight index and raccoon harvest.

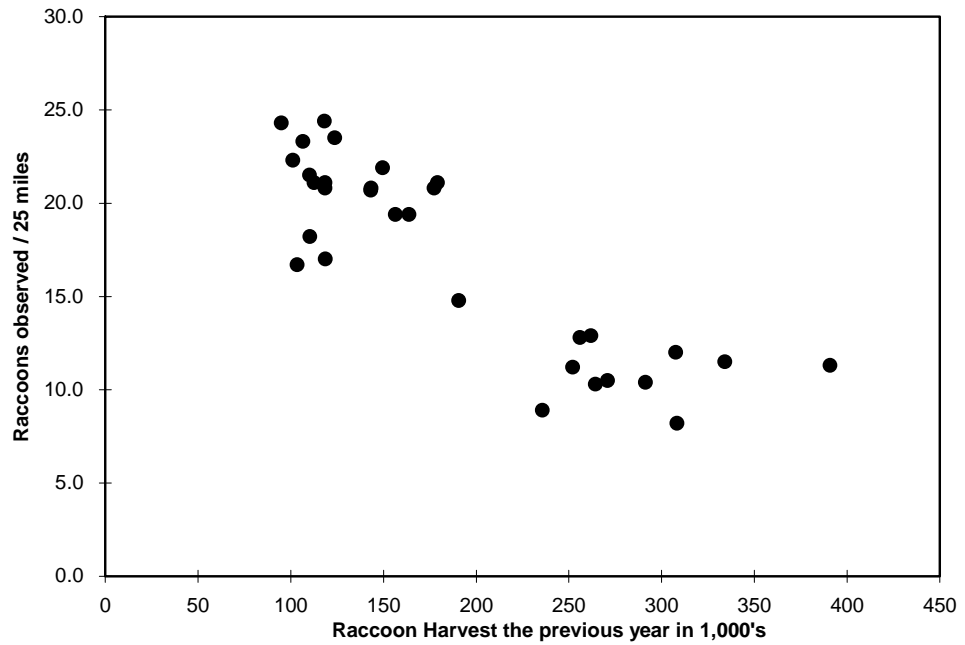


Figure 3.3 Pelt price fluctuations of important Iowa furbearers.

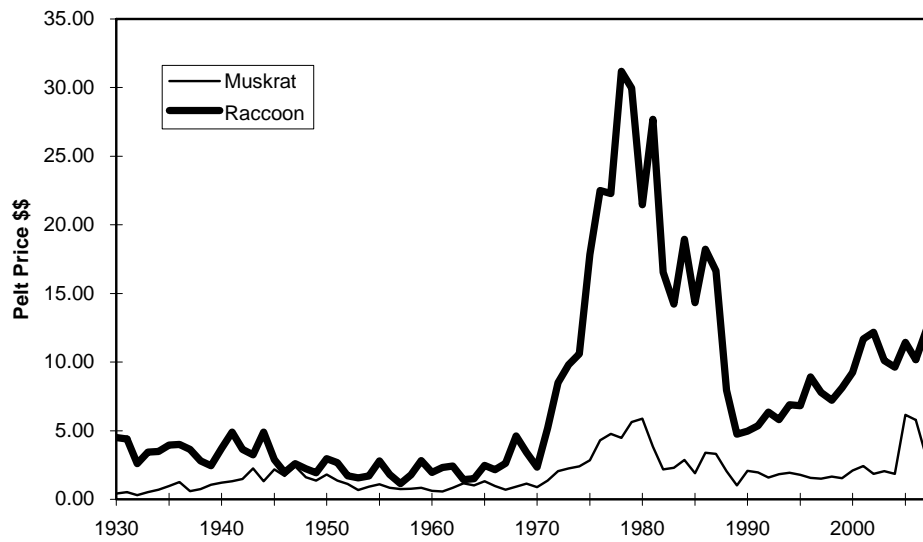
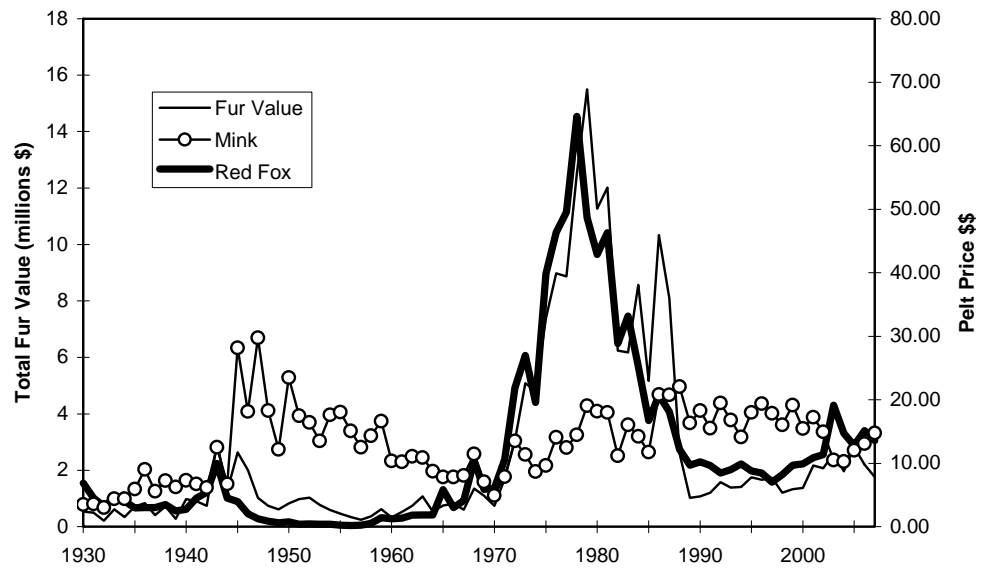


Figure 3.4 Pelt price fluctuations of mink and fox, and the value of Iowa furs.



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 U.S. Fish and Wildlife Service (USFWS), Canadian Wildlife Service, provincial and state conservation agency personnel. 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 these ducks; a portion of each population (potentially 20% 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). There is also a slight decreasing trend in numbers of breeding mallards, but this trend is less pronounced due to the large numbers of breeding mallards seen in the late 1990's. 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 the vagaries of 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, the forerunner to the Iowa Dept. of Natural Resources (IADNR), in 1964 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 to declining in recent years (Fig. 4.2). Each summer, biologists and technicians estimate the numbers of adult Canada geese and young produced within their wildlife units. To obtain a statistically valid estimate of this population, an aerial survey is also conducted annually. The results of the aerial survey in 2000 and 2001 indicated that the spring population was just about 55,000. The results of the aerial survey conducted during April 2008 indicated the population was 88,784 ($\pm 13,620$), somewhat lower but not statistically different from the 2007 estimate of 93,367 ($\pm 16,370$). Prior to 2005, the

population estimates made by wildlife biologists were very similar 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.

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 12,000 to 32,000 during 1999-2008. During the 1998-2007 regular light goose seasons, the harvest ranged from 500 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 generally 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 harvest of local giant Canada geese while limiting the harvest 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 surveying wood ducks during the spring breeding season is not possible. The IADNR has consistently cooperated with USFWS and MFC banding programs and has one of the top wood duck banding programs in the nation having banded over 10% of all the 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 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 declining.

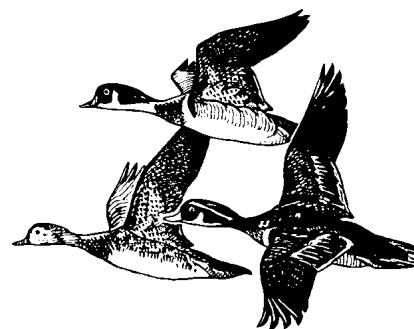
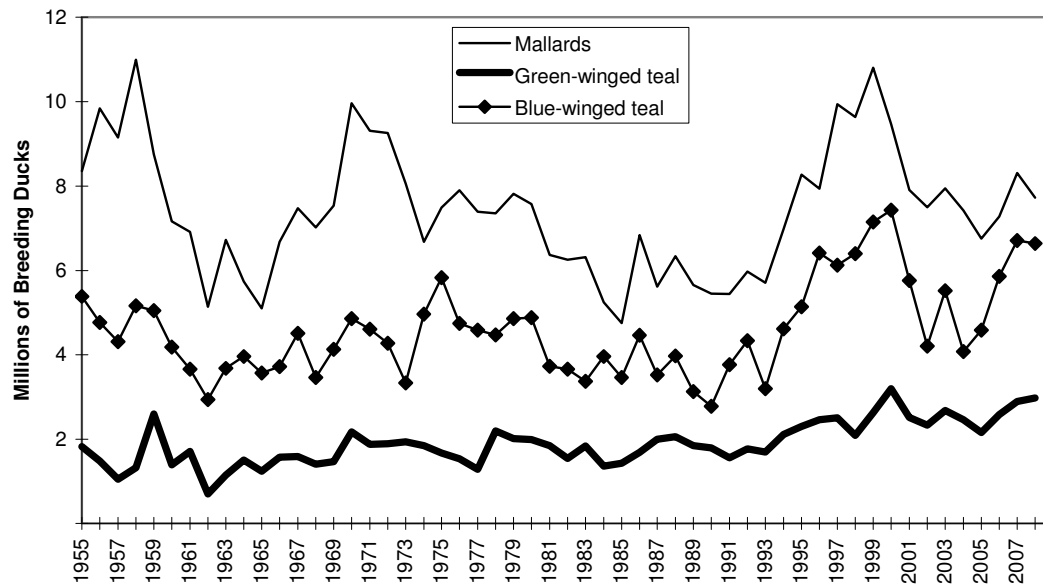
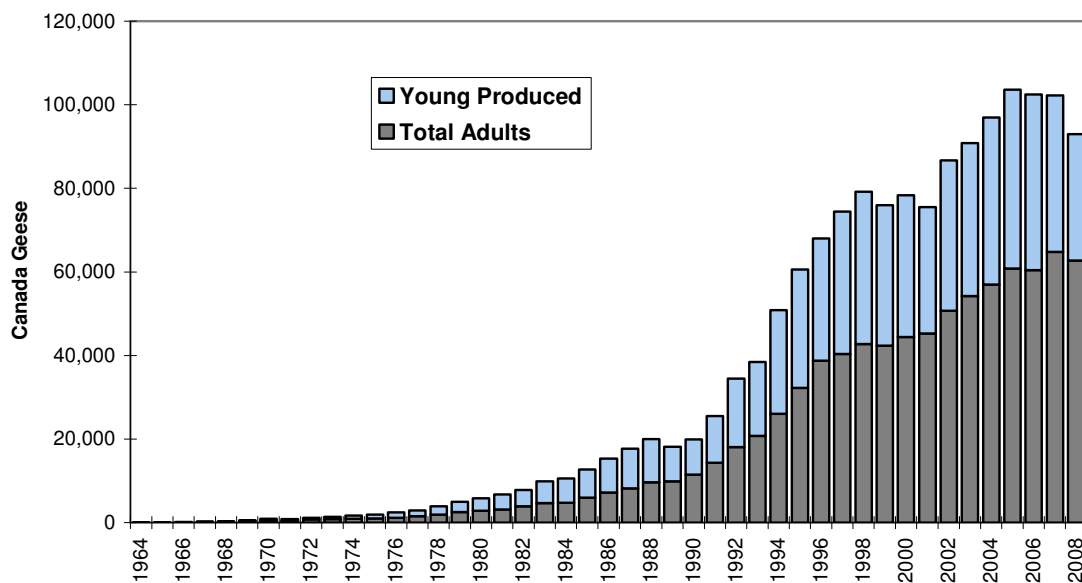


Figure 4.1 Breeding populations of important ducks to Iowa.



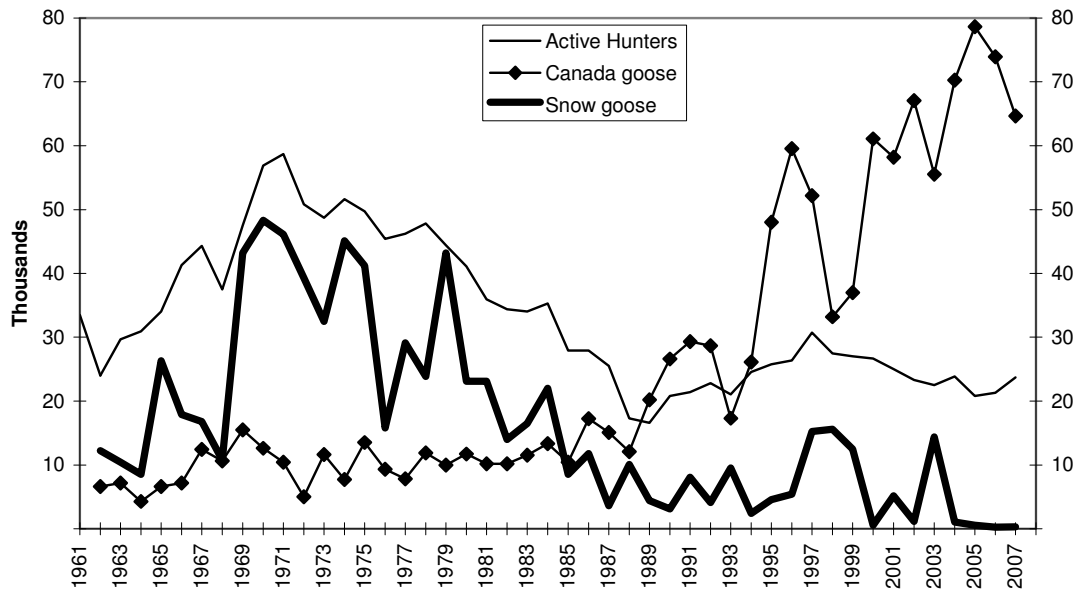
Source: USFWS

Figure 4.2 Iowa's giant Canada goose population.



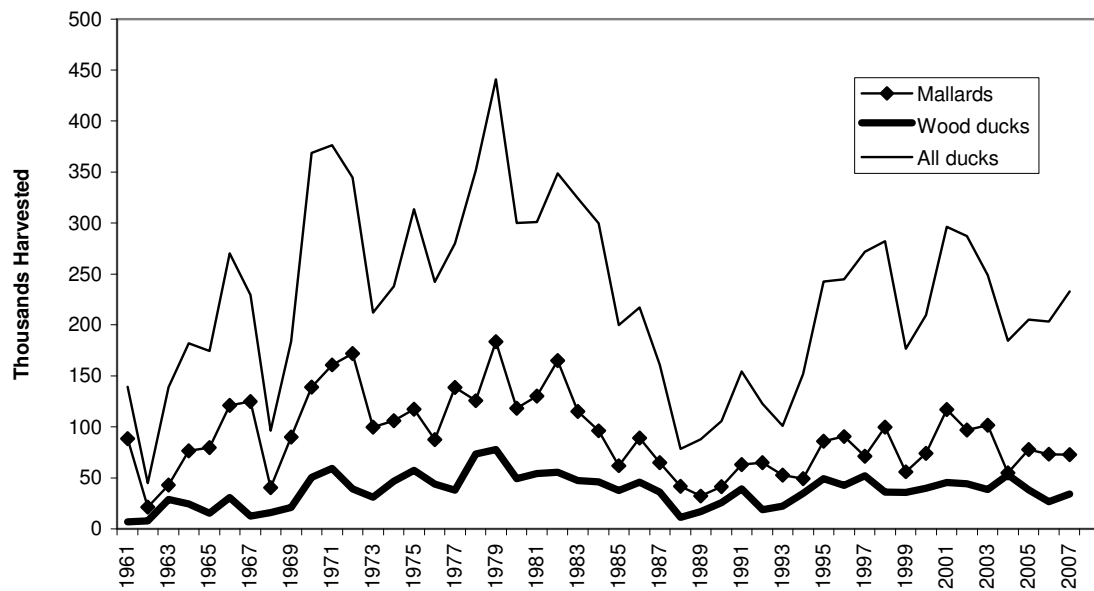
Source: Iowa DNR

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 traditional survey region in N. America. (Source: USFWS)

YEAR	MALLARD	GAD- WALL	AMERICAN WIGEON	GREEN -	BLUE -	NORTHERN SHOVELER	NORTHERN PINTAIL	RED- HEAD	CANVAS -	SCAUP
				WINGED TEAL	WINGED TEAL				BACK	
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
Percent Change in 2008 from:										
2007	-7%	-19%	-11%	3%	-1%	-23%	-22%	5%	-43%	8%
1955-07 Av.	4%	57%	-4%	58%	46%	58%	-35%	66%	-14%	-26%
1955-08 Statistics										
Average	7,430	1,759	2,582	1,903	4,590	2,245	3,987	646	566	5,058
Maximum	10,994	3,897	3,703	3,194	7,431	4,553	9,897	1,056	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										
2008	-11%	70%	-25%	30%	25%	67%	-59%	39%	-16%	-51%

Table 4.2 Waterfowl harvest and hunter activity estimates for Iowa. Source is USFWS.
Data for 2001-07 are based on the Harvest Information Program.

YEAR	DAYS AND HARVEST (1,000's)							DAYS HUNTED	FEDERAL	AVE.	ACTIVE
	MALLARD	WOOD DUCK	B-W TEAL	G-W TEAL	ALL DUCKS	CANADA GEESE	SNOW GEESE		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	Not avail.	11.4	23,700

Table 4.2 - continued: Waterfowl harvest and hunter activity estimates for Iowa. Source is USFWS.
Data for 2001-06 are based on the Harvest Information Program.

YEAR	DAYS AND HARVEST (1,000's)								FEDERAL	AVE.	ACTIVE
	MALLARD	WOOD DUCK	B-W TEAL	G-W TEAL	ALL DUCKS	CANADA GEESE	SNOW GEESE	DAYS HUNTED	DUCK STAMPS	SEASONAL DUCK BAG	ADULT HUNTERS
Percent Change in 2007 From:											
2006	-1%	28%	45%	24%	15%	-13%	10%	17%		1%	11%
1961-06 Avg.	-20%	-9%	25%	52%	3%	160%	-98%	-48%		65%	-29%
1961-06 Statistics											
Average	90.9	37.4	32.3	26.2	226.9	25.8	16.3	290.8	39,704	7.0	33062.8
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	0.2	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
2001-07	84.9	40.1	37.9	30.2	236.9	66.9	3.3	169.9	29,679	11.2	22,929

Table 4.3 Duck and coot seasons in Iowa.

YEAR	SEASON LENGTH	SEASON DATES	SHOOTING HOURS	LIMITS		Additional Bag Limit Information
				DUCK	COOT	
				BAG/POSS	BAG/POSS	
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		Additional Bag Limit Information
				DUCK BAG/POSS	COOT BAG/POSS	
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		Additional Bag Limit Information	
				DUCK BAG/POSS	COOT BAG/POSS		
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		
1983	50	NORTH ZONE (1) SOUTH ZONE (1)		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.
		Sep 17-21 Oct 15 - Nov 28	Sep 17-21 Oct 22 - Dec 5				
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.
1987 (*SH)	40	NORTH ZONE (2) SOUTH ZONE (2)		1/2 SR to SS	PS *ad	15 /30	
		Sep 19-23 Oct 17 - Nov 20	Sep 19-21 Oct 24 - Nov 29				
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		Additional Bag Limit Information
				DUCK BAG/POSS	COOT BAG/POSS	
		NORTH ZONE (2)	SOUTH ZONE (2)			
1993	30	Oct 2 - 4 Oct 23 - Nov 18	Oct 23 - 29 Nov 6 - 28	1/2 SR to SS	3 / 6 *ae	15 /30
1994	40	Sept 17 - 19 Oct 15 - Nov 20	Oct 1 - 3 Oct 22 - Nov 27	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. 5 merg., only 1 Hm.
1995	50	Sept 23 - 27 Oct 15 - Nov 28	Sept 23 - 25 Oct 21 - Dec 6	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. 5 merg., only 1 Hm.
1996	50	Sept 21 - 25 Oct 19 - Dec 2	Sept 21 - 23 Oct 19 - Dec 4	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. 5 merg., only 1 Hm.
	Youth Day	Oct 5	Oct 5	1/2 SR to SS	5 /10 *ah	
1997	60	Sept 20 - 24 Oct 11 - Dec 4	Sept 20 - 24 Oct 18 - Dec 11	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. 5 merg., only 1 Hm.
	Youth Day	Sept 27	Sept 27	1/2 SR to SS	6 /12 *ai	15 /30
1998 (*HIP)	60	Sept 19 - 23 Oct 10 - Dec 3	Sept 19 - 23 Oct 17 - Dec 10	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. 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 Oct 16 - Dec 9	Sept 18 - 22 Oct 16 - Dec 9	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 & 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 Oct 14 - Dec 7	Sept 23 - 27 Oct 14 - Dec 7	1/2 SR to SS	6 /12 *ak	15 /30
	Youth Day	Oct 7 - 8	Oct 7 - 8	1/2 SR to SS	6 /12 *ak	15 /30
2001	60	Sept 22 - 26 Oct 13 - Dec 6	Sept 22 - 26 Oct 13 - Dec 6	1/2 SR to SS	6 /12 *ak	15 /30
	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 Oct 12 - Dec 5	Sept 21 - 23 Oct 19 - Dec 14	1/2 SR to SS	6 /12 *al	15 /30 *al) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, & 3 Sc. 5 merg., only 1 Hm. Closed sea. on Cb
	Pintail	Sept 21 - 25 Oct 12 - Nov 5	Sept 21 - 23 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 Oct 11 - Dec 4	Sept 20 - 22 Oct 18 - Dec 13	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 & 3 Sc. 5 merg., only 1 Hm.
	Pintail	Sept 20 - 24 Oct 11 - Nov 4	Sept 20 - 22 Oct 18 - Nov 13			
	Canvasback	Oct 18 - Nov 16	Oct 25 - Nov 23			
	Youth Day	Oct 4 - 5	Oct 4 - 5	1/2 SR to SS	6 /12 *ak	15 /30
2004	60	Sept 18 - 22 Oct 16 - Dec 9	Sept 25 - 26 Oct 16 - Dec 12	1/2 SR to SS	6 /12 *ak	15 /30
	Pintail	Sept 18 - 22 Oct 16 - Nov 9	Sept 25 - 26 Oct 16 - Nov 12			
	Canvasback	Oct 23 - Nov 21	Oct 23 - Nov 21			
	Youth Day	Oct 2 - 3	Oct 9 - 10	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		Additional Bag Limit Information	
				DUCK BAG/POSS	COOT BAG/POSS		
		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 & 2 Sc. 5 merg., only 1 Hm.
		Oct 15 - Dec 8	Oct 22 - Dec 15				
	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 & 2 Sc. 5 merg., only 2 Hm.
		Oct 14 - Dec 7	Oct 21 - Dec 14				
	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 & 2 Sc. 5 merg., only 2 Hm.
		Oct 13 - Dec 6	Oct 20 - Dec 13				
	Youth Day	Oct 6 - 7	Oct 6 - 7	1/2 SR to SS	6 /12 *ao	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.

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 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 (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.

(*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 occurring were exempt. In addition, no person could hunt waterfowl in the zone bounded on the west by the Missouri River, on the south by I-680, on the east by I-29 and on the north by the Soldier River, while possessing any shotshells loaded with shot other than steel shot.

From 1987 to the present, no person could hunt migratory game birds except woodcock on all lands and waters within the State of Iowa while possessing any shotshell loaded with shot other than steel shot, or copper or 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, 1 Ca + 1 WF, or 2 Wf.
	Sn/Wf	70	Oct 3 - Dec 11		5 / 5 *e	
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, 1 Ca + 1 WF, or 2 Wf. Pos. lim.= 5 w/ only 2 Ca, 1 Ca + 1 WF, or 2 Wf.
	Sn/Wf	70	Oct 7 - Dec 15		5 / 5 *f	
1973	Ca	40	Oct 1 - Nov 9	SR to SS	1 / 2 *g	*g) Bag lim.= 5 w/ only 1 Ca & 2 Wf. Pos lim.= 5 w/ only 2 Ca & 2 Wf.
	Sn/Wf	70	Oct 1 - Dec 9		5 / 5 *g	
1974	Ca	45	Oct 1 - Nov 14	SR 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. Pos lim.= Bag lim.
	Sn/Wf	70	Oct 1 - Dec 9		5 / 5 *h	
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
	Sn/Br	80	Sep 30 - Dec 18	Oct 14 - Jan 1		7 / 14 *j
	Wf	70	Sep 30 - Dec 8	Oct 14 - Dec 22		2 / 4 *j
1990	Ca/Wf/Br	70	Sep 29 - Dec 7	Oct 13 - Dec 21	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
	Sn	107	Sep 30 - Jan 10	Oct 14 - Jan 10, 1996		10 /20 *k
			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
	Ca/Wf/Br	70	Sep 28 - Dec 6	Oct 5 - Oct 13	1/2 SR to SS	2 / 4 *m
	Sn	107	Oct 19 - Dec 18		1/2 SR to SS	10 /30
			Oct 12 - Jan 10, 1997			
			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
	Sn/Ro	107	Oct 18 - Dec 17		1/2 SR to SS	10 /30
			Oct 4 - Dec 31			
			Feb 21 - Mar 10, 1998			
1998	Ca	2	Sep 12 - 13 ^b	None	1/2 SR to SS	2 / 4 *l
	Ca/Wf/Br	70	Oct 3 - Dec 11	Oct 3 - Oct 11	1/2 SR to SS	^a 2 / 4 *m
	Sn/Ro	107	Oct 17 - Dec 16		1/2 SR to SS	20 /none
			Oct 3 - Dec 31			
			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
	Sn/Ro	107	Oct 16 - Dec 15		1/2 SR to SS	20 /none
			Oct 2 - Dec 26			
			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
	Sn/Ro	107	Nov 4 - Dec 27		1/2 SR to SS	20 /none
			Sep 30 - Jan 14, 2001			
			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
	Sn/Ro	107	Nov 10 - Dec 26		1/2 SR to SS	20 /none
			Sep 29 - Jan 13, 2002			
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
			Nov 9 - Dec 25			
	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
	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

Table 4.4 continued: Goose seasons in Iowa.

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 = Possession limit
SW ZONE(1)	= that portion of the state south and west of a line running from the Iowa-Missouri state line along US Hwy 71 to 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.
(*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	The 15-day special Canada goose season was only open in the Des Moines and Cedar Rapids/Iowa City zones.

Table 4.5 Waterfowl banded in Iowa. (Numbers include both state and federal bandings.)

Year	Canada		Wood Ducks	Blue- winged Teal	Trumpeter Swans	Other Waterfowl Species	Total Waterfowl	Mourning Doves
	Geese	Mallards						
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
Totals	84,157	35,865	107,713	35,710	782	2,236	266,463	8,378
1998-2007								
Average	4,080	223	3,543	21	78	0	7,946	838

Table 4.6 Giant Canada goose production and populations in Iowa, 1964-2008.

						% CHANGE
YEAR	YOUNG PRODUCED	NESTING ADULTS	NONBREEDING ADULTS	TOTAL ADULTS	TOTAL GEESE	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%

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

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

HISTORICAL SUMMARY OF POPULATIONS AND HARVEST

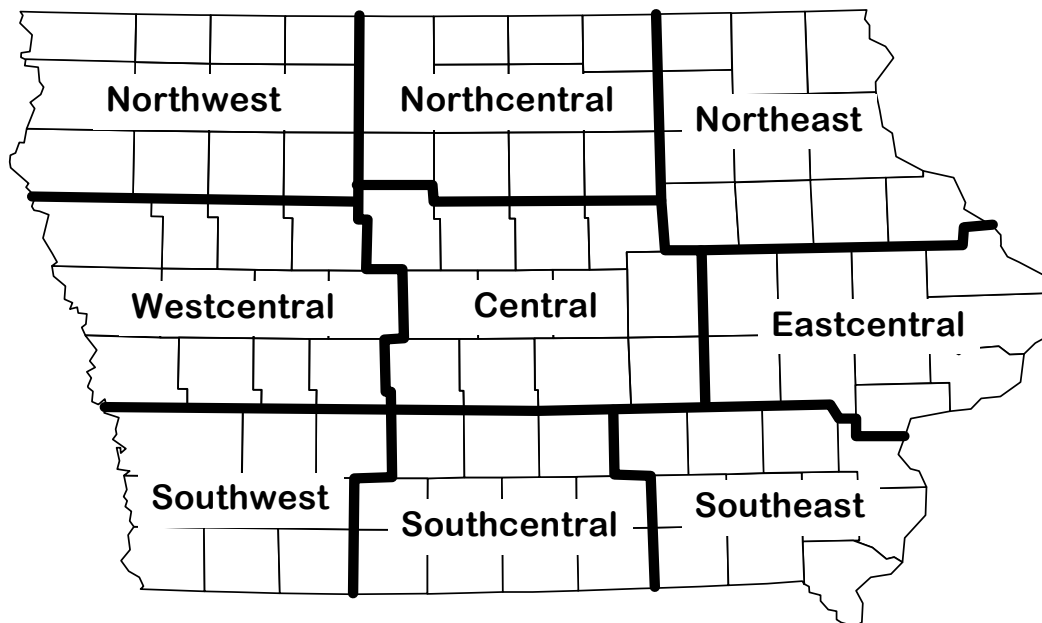
Ring-necked Pheasant

The 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. Pheasant were first introduced into Iowa in September of 1900 or 1901 when a severe windstorm wrecked the pens of a game breeder named William Benton of Cedar Falls releasing approximately 2,000 birds. Benton's birds spread west and north and constitute the foundation stock of Iowa's north-central counties. In 1904 an unsuccessful planting was made in Keokuk county. In 1907 a successful stocking was made in Kossuth county and in 1908 successful stockings were made in O'Brien county. Private individuals made all of these early stockings. It is uncertain just when the state began stocking pheasants. Department records only date back to 1921, but it is certain by 1913 large state stockings were being made annually. Records show Butler county received 500 state birds in 1913 and 400

400 in 1915. The first state game farm was authorized in 1913, probably at Spirit Lake, because records show 200 state birds escaped from that game farm in 1915. Between 1915-18 all northeastern Iowa counties received plantings of 200-800 birds, with 1 large stocking of 2,500 at Pilot Knob State Park in Winnebago county. Stockings were usually

farmers collected 60,000 wild eggs and trapped 7,000 birds from Butler and Winnebago counties. Most southern Iowa counties received large stockings in 1905-17, 1924-25, and 1928-30, but all were considered a failure. In 1905, it was generally assumed that southern Iowa had better pheasant habitat than northern Iowa. The existence of this belief is supported

Figure 5.1. Survey regions for the August Roadside Survey.



made on timbered land leased by the state from private individuals. In 1915 the state established 2 more game farms at Clive and Lansing. Both game farms remained in operation until 1931. Between 1913-32 the state released an estimated 100,000 to 150,000 pheasants, both wild trapped and pen-raised birds. Virtually all of the original releases made in the northern half of the state were a success. Widespread abundance was first attained in Winnebago county in 1916, Dickinson in 1917, Floyd by 1919, Humboldt by 1920, Hardin and Hamilton counties by 1924, and Sac by 1927. In 1925, pheasants had become so abundant in Iowa's north-central counties that the state began to trap and gather eggs for southern Iowa. In 1925 farmers

belief is supported by the fact that up until 1913 it was customary to make stockings in timber.

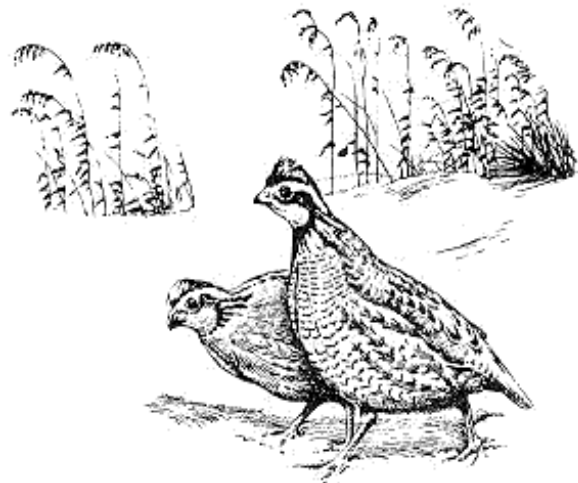
It is interesting to note Iowa's pheasant populations reached their highest abundance in the Des Moines Lobe landform. The early success, 1920-40's, of pheasants in north central Iowa was undoubtedly due to the abundance of grassy habitats (tame and native hay, oats, flax, and prairie pothole wetlands) interspersed with weedy crop fields. 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, and 2000-01 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, and 2001 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 2004 estimate of 4.1 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

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 landuse 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).

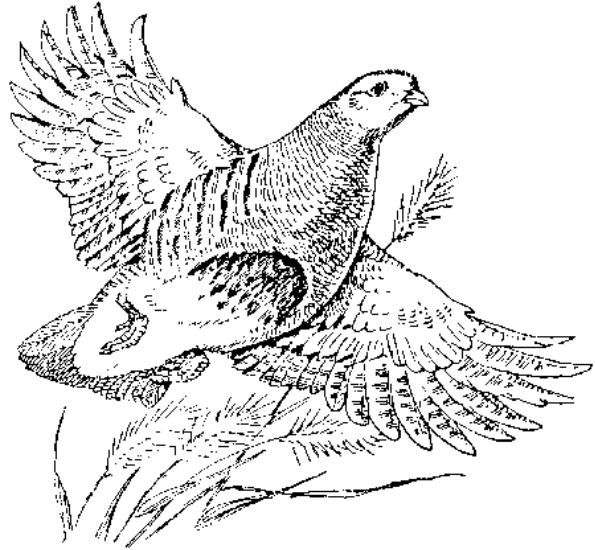
Bobwhite Quail



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

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, and 2000-01 (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

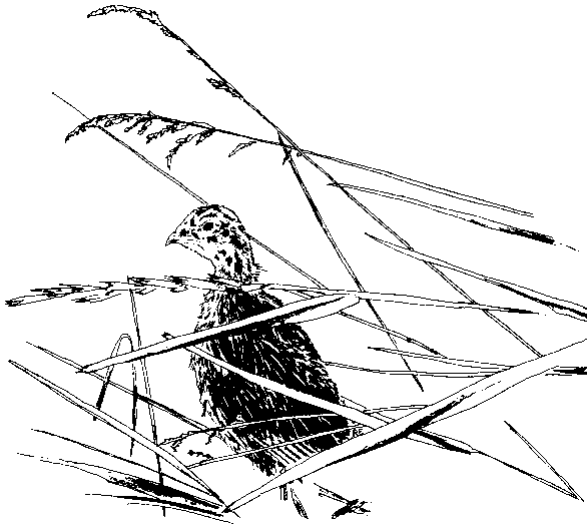
Little is known about the presettlement distribution of cottontail rabbits in Iowa. Cultivation by man no doubt favored rabbits much the same way it favored quail at the turn of the century. Cottontails prefer habitats similar to quail, favoring shrubby-grassy edge habitats. Cottontails may have up to 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

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.



2007 Small Game Harvest Survey Results

A random survey of licensed hunters was conducted following the 2007 small game season to determine the size and distribution of Iowa's small game harvest. Survey questionnaires were mailed to 8,138 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 3,416 usable questionnaires for a response rate of 42%. Based on these returns Iowa had 238,033 licensed hunters in 2007-08 and of these 121,105 indicated they hunted small game. This is a -10% decrease in small game hunters compared to the year before. By residency, the number of resident small game hunters decreased -10%, while the number nonresident small game hunters declined -11%. Pheasant were the most commonly reported species hunted by small game hunters (90%), while cottontails were the second most sought after species with 26% of small game hunters indicating they hunted rabbits.

Nonresident small game hunter numbers fell from 27,646 in 2006 to 24,508 in 2007. Hunters from 42 different states visited Iowa last fall to pursue small game. Over 50% of Iowa's nonresident small game hunters came

hunters came from 5 states, Minnesota, Wisconsin, Missouri, Michigan, and Illinois. Nonresident hunters from Minnesota accounted for 22% of Iowa's nonresident small game hunters. The typical small game hunter reported hunting 7.7 days last fall.

Ring-necked Pheasant - An estimated 109,229 pheasant hunters (46% of licensed hunters, 90% of small game hunters) took to Iowa's fields last fall and harvested 631,638 roosters (Tables 5.6 & 5.9). The number of pheasant hunters declined -8%, while total harvest declined -16% compared to 2006 figures. According to the survey, 23,426 of Iowa's pheasant hunters were nonresidents. Iowa's peak year for nonresident pheasant hunters was 1997 with 50,349 (Table 5.7). Resident hunter numbers decline -6% while the number of nonresident pheasant hunters declined -13%. This year estimate of 109,229 pheasant hunters (-49% below the historic average) sets a new all time low for pheasant hunter numbers in Iowa. This is half the pheasant hunters Iowa had 10 years ago.

Resident hunters hunted an average of 7 days last fall and harvested 6 birds during the season. Nonresident pheasant hunters averaged 5 days afield and harvested 6 birds for the season. Hunter success (harvest/day) was highest during the first 9 days of the season. Approximately 63% of the total pheasant harvest occurred in the first 9 days of the 2007 season. Ninety percent of pheasant hunters reported hunting 15 days or less and over 50% hunted 4 days or less. Resident hunters accounted for 79% of the total pheasant harvest. In addition to the regular pheasant season, an estimated 3,839 adults took 7,111 youth pheasant hunters (under the age of 16) hunting during Iowa's special 2-day youth pheasant season. These young hunters harvested an estimated 5,781.

This year's harvest estimate is the second lowest ever recorded for Iowa. The

harvest estimate was -25% below the 10-year average, and -40% below the historical average harvest of 1.24 million roosters. This marks the first time Iowa's pheasant harvest has fallen under 1 million birds for 4 consecutive years in a row (Table 5.6).

Bobwhite Quail - Approximately 18,234 quail hunters (8% of licensed hunters, 15% of small game hunters) harvested 54,444 quail during the 2007 quail season (Tables 5.6 & 5.9). Hunter numbers declined -19% and harvest declined -28% compared to 2006 estimates. Hunter numbers are a new all time low for Iowa, while this past year's harvest was the 3 lowest ever recorded. Quail hunters averaged 7 days a field and harvested 3 birds for the season. Forty-nine percent of the quail harvest occurred in the first 9 days of the 2007 season. Over 90% percent of quail hunters hunted 15 days or less and over 50% hunted 4 days or less. Resident quail hunters accounted for 79% of the total quail harvest (Table 5.7).

Gray Partridge - Some 3,819 partridge hunters (1% of licensed hunters, 3% of small game hunters) harvested 4,885 partridge in 2007 (Tables 5.6 & 5.9). This year's hunter numbers and harvest were both the lowest ever recorded for partridge in Iowa. Resident hunters accounted for 79% of the total partridge harvest (Table 5.7). The average partridge hunter spent 5 days pursuing partridge and harvested 1 bird for the season.

Rabbits - Some 31,106 cottontail rabbit hunters (13% of licensed hunters, 26% of small game hunters) harvested 131,250 rabbits last fall, a -16% decrease compared to the 2006 harvest estimate (Tables 5.6 & 5.9). Total number of rabbit hunters declined -9% compared to last year. The average rabbit hunter hunted 5 days and harvested 4 rabbits. Fifty percent of rabbit hunters hunted 3 days or less, while greater than 90% reported hunting

hunting 10 days or less. Resident rabbit hunters accounted for 95% of the total cottontail harvest (Table 5.7). For the second year in a row the cottontail harvest set a new all time low.

According to this year's survey 1,502 small game hunters also harvested 1,262 jackrabbits in 2007 (Tables 5.6 & 5.9). Only 0.6% of Iowa's licensed hunters stated they hunted jackrabbits, and most of this hunting is likely incidental to other types of hunting.



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, and 01. Abnormally wet weather occurred during 1974, 83, 84, 93, 99 & 04 nesting 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		
Statistics:												
10 Year Avg.	53.6	39.8	20.3	26.2	42.9	30.9	20.5	13.5	23.4	31.6		
Long-term Avg	40.6	50.2	44.5	50.5	48.1	47.9	61.1	38.2	28.4	44.6	3.4	69%
Percent Change from:												
2006	-14.4	-3.0	9.2	9.6	-1.9	22.1	-36.9	-37.5	-1.3	-4.7		
10 Year Avg.	-22.9	-12.0	-0.9	-0.9	-15.8	-19.3	-37.5	-58.7	-15.4	-18.5		
Long-term Avg	1.8	-30.2	-54.9	-48.6	-24.8	-47.9	-79.0	-85.4	-30.4	-42.2		

^a Hens per cock.

^b Percent cock harvest calculated as $\left[\frac{(\text{hens/cock})-1}{(\text{hens/cock})}\right] \times 100$ (Wooley, J.B. et al. 1978. IA WL Res Bull No 24.)

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

YEAR	NORTH WEST		NORTH CENTRAL		NORTH EAST		WEST CENTRAL		CENTRAL		EAST CENTRAL		SOUTH WEST		SOUTH CENTRAL		SOUTH EAST		STATEWIDE	
	BROODS		BROODS		BROODS		BROODS		BROODS		BROODS		BROODS		BROODS		BROODS		BROODS	
	CHICKS		CHICKS		CHICKS		CHICKS		CHICKS		CHICKS		CHICKS		CHICKS		CHICKS		CHICKS	
	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD	PER 30 MI	PER BROOD
1962	10.1	5.1	11.5	5.7	10.1	6.3	9.6	7.7	8.0	7.5	4.2	5.4	5.5	5.8			1.0	7.3	7.7	6.3
1963	17.2		16.6		11.7	5.2	12.3		8.4	5.9	5.8		15.4	5.4	3.4		2.6	5.4	10.4	5.4
1964	12.1	5.2	17.0	6.1	22.7	7.3	13.0	5.8	7.3	5.3	6.5	6.2	12.1	6.4	3.1	8.7	1.8	6.3	9.8	6.1
1965	5.9	5.9	8.0	6.2	5.7	5.7	8.7	5.0	4.7	5.8	4.8	7.6	13.3	5.8	5.9	6.0	2.5	6.0	6.2	6.0
1966	5.5	5.6	9.2	5.9	7.7	4.5	8.1	5.9	6.2	6.4	7.7	6.3	19.0	6.3	5.1	6.2	1.8	7.4	7.2	6.0
1967	3.9	4.6	6.7	5.3	7.1	5.4	5.3	4.8	7.0	5.0	7.5	5.5	13.9	5.4	6.0	5.6	2.3	5.1	6.3	5.2
1968	5.2	5.1	6.4	6.2	6.3	6.3	7.3	5.1	7.1	5.8	8.5	5.6	16.8	5.8	5.5	5.9	2.3	6.4	6.8	5.8
1969	2.3	4.9	5.4	6.0	7.5	6.7	5.2	5.8	7.0	5.6	8.7	5.0	10.8	5.4	6.4	5.5	3.3	5.4	6.0	5.5
1970	5.4	5.9	7.0	5.7	7.7	6.1	7.4	5.7	12.3	5.9	11.7	6.2	18.0	6.4	8.8	5.9	4.6	6.4	8.8	6.0
1971	4.2	5.5	6.3	5.4	6.8	5.0	9.6	4.9	10.7	6.2	14.0	5.8	15.0	5.7	7.4	5.4	6.8	5.8	8.5	5.5
1972	5.2	5.3	5.9	5.7	8.6	5.4	8.1	5.0	9.8	5.9	11.2	6.0	15.1	6.1	7.7	5.7	3.8	4.8	8.0	5.6
1973	6.4	4.6	7.2	5.6	8.8	5.5	8.6	4.7	11.8	5.1	13.0	5.6	9.7	5.4	7.5	5.9	4.1	5.5	8.6	5.3
1974	6.7	4.6	7.3	4.8	6.9	5.5	8.5	5.0	5.4	4.7	8.3	4.4	12.1	5.4	7.8	5.0	2.2	5.2	7.0	4.9
1975	1.4	5.4	4.1	5.0	8.3	4.9	4.7	5.3	6.4	4.8	9.1	5.1	7.4	5.4	6.5	5.8	4.4	5.2	5.7	5.2
1976	2.3	5.1	6.0	5.1	9.7	5.1	6.3	5.2	8.9	4.6	11.3	5.3	9.7	5.2	7.8	5.4	3.9	4.9	7.2	5.1
1977	4.6	4.9	6.4	5.7	12.8	5.6	10.7	4.6	7.7	4.7	13.1	4.8	12.3	5.2	7.1	5.1	4.1	4.7	8.3	5.0
1978	5.9	5.2	3.5	5.4	9.1	5.4	9.9	5.0	6.9	5.4	8.8	5.5	11.1	5.5	7.4	5.5	4.0	5.8	7.1	5.4
1979	6.7	4.5	4.0	5.7	5.5	5.3	7.3	5.4	5.4	5.9	6.1	5.0	11.1	5.8	8.7	5.2	3.3	5.0	6.3	5.3
1980	8.1	4.9	9.4	5.2	12.1	5.2	16.6	4.9	11.3	5.0	9.9	4.8	13.5	4.5	11.6	5.3	5.8	5.2	10.7	5.0
1981	11.4	4.4	8.7	4.9	11.2	5.4	15.5	4.8	10.0	4.6	11.5	5.0	16.9	4.4	8.8	5.2	5.5	4.7	10.7	4.8
1982	4.4	4.3	4.1	5.3	6.2	4.9	8.9	4.7	3.6	5.6	3.0	4.5	6.9	4.3	6.8	5.4	2.9	4.2	5.0	4.9
1983	1.6	4.7	1.9	4.9	3.1	5.2	2.8	4.9	1.8	5.4	3.6	5.4	5.9	5.3	7.5	5.9	3.8	5.8	3.4	5.3
1984	1.3	5.9	1.5	5.7	2.8	5.3	3.5	5.2	2.3	5.0	3.6	5.1	3.6	4.4	5.8	5.2	4.1	4.8	3.1	5.2
1985	3.5	5.4	4.2	5.3	4.9	6.1	5.8	5.3	5.4	5.5	3.9	5.4	8.9	5.7	12.2	5.3	5.7	6.1	6.0	5.5
1986	3.9	5.9	2.9	5.0	7.1	5.5	5.6	3.8	4.1	4.7	4.9	4.4	8.1	4.9	10.3	5.3	3.8	4.9	5.4	5.0
1987	5.8	6.2	5.0	6.2	8.5	5.8	9.3	5.1	6.3	4.9	4.8	5.6	9.9	5.0	10.5	5.4	5.7	5.4	7.1	5.5
1988	5.3	5.1	5.0	5.6	5.8	6.6	9.7	5.1	4.0	6.1	3.5	5.8	7.8	4.9	8.5	4.9	4.3	5.5	5.7	5.5
1989	3.8	5.2	5.0	5.9	8.2	5.1	10.9	5.3	8.1	5.4	5.5	5.4	6.9	4.6	6.5	5.2	5.5	5.9	6.5	5.4
1990	5.2	5.0	6.9	5.4	9.6	5.4	9.8	4.5	6.6	4.9	3.9	4.7	7.3	4.9	5.8	4.4	4.1	5.2	6.4	4.9
1991	5.8	4.7	6.4	5.4	7.7	5.4	12.5	4.8	7.1	4.3	4.9	5.0	11.5	4.2	7.9	5.1	6.6	5.2	7.5	4.9
1992	4.3	4.0	7.1	5.6	4.6	4.9	6.9	4.4	6.8	4.4	5.7	5.2	5.1	4.1	4.2	3.9	5.6	4.7	5.7	4.6
1993	2.4	4.8	3.4	5.4	2.3	4.9	8.9	5.1	3.8	5.2	3.6	5.4	5.8	4.3	3.7	5.5	4.2	5.2	4.0	5.1
1994	7.5	4.6	11.2	5.5	5.7	4.5	14.2	4.5	9.4	4.8	10.0	5.4	8.9	4.1	6.8	5.4	8.7	5.4	9.1	5.0
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
Statistics:																				
10 Year Avg.	9.4	4.5	6.8	4.5	3.4	4.6	4.6	4.4	7.2	4.5	4.7	5.2	3.8	3.9	2.2	4.6	3.7	5.0	5.3	4.6
Long-term Avg.	6.5	4.9	6.9	5.3	6.8	5.3	7.8	4.9	7.2	5.1	6.8	5.4	9.0	4.8	5.8	5.3	4.1	5.4	6.7	5.2
Percent Change from:																				
2006	-1.0	-11.9	-13.1	6.5	-1.5	2.2	-0.6	18.0	-3.2	0.7	12.6	4.3	-39.9	-7.7	-45.7	-6.5	8.5	-0.3	-6.0	0.5
10 Year Avg.	-18.4	-5.9	-9.3	-5.0	-0.4	-10.4	0.3	7.8	-11.8	-4.9	-6.3	-16.5	-36.5	-6.6	-65.8	-8.8	-9.4	2.1	-14.8	-5.4
Long-term Avg.	17.4	-14.3	-10.9	-18.2	-50.9	-21.8	-40.4	-4.2	-11.4	-16.1	-34.6	-19.6	-72.8	-25.2	-87.0	-20.9	-18.2	-5.2	-31.7	-15.8

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	CENTRAL		EAST	SOUTH	SOUTH	SOUTH		RABBITS
YEAR	WEST	CENTRAL	EAST	CENTRAL	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0.02
Statistics:												
10 Year Avg.	0.00	0.00	0.06	0.21	0.16	0.54	1.85	1.98	1.77	0.67	0.04	0.04
Long-term Avg.	0.06	0.01	0.30	0.49	0.28	0.90	3.88	5.33	3.33	1.50	0.17	0.17
Percent Change from:												
2006				146.2	-100.0	167.2	-62.1	-29.6	2.7	-1.5	-63.5	-63.5
10 Year Avg.			-100.0	266.4	-100.0	158.3	-66.2	-23.1	86.6	21.5	-54.5	-54.5
Long-term Avg.	-37.6	-100.0	-100.0	59.9	-100.0	55.9	-83.9	-71.5	-0.9	-46.0	-88.5	-88.5

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
Statistics:										
10 Year Avg.	7.98	4.16	2.99	2.34	4.11	1.07	0.02	0.03	0.09	2.78
Long-term Avg.	12.40	9.78	3.07	3.09	4.54	1.18	0.10	0.14	0.19	4.21
Percent Change from:										
2006	-12.3	-41.0	9.5	-8.4	-17.8	-0.8			-100.0	-19.6
10 Year Avg.	-72.5	-29.7	-23.0	-16.2	-29.3	-20.7	-100.0	775.0	-100.0	-41.9
Long-term Avg.	-82.3	-70.1	-25.0	-36.6	-36.0	-27.8	-100.0	103.1	-100.0	-61.6

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
Statistics:										
10 Year Avg.	3.1	2.6	4.6	4.3	4.5	6.2	7.5	14.3	8.2	6.0
Long-term Avg.	2.8	2.6	4.3	5.1	3.8	5.1	9.5	16.0	8.7	6.2
Percent Change from:										
2006	-57.0	-6.7	-20.2	-35.4	-34.5	5.9	-31.9	-59.1	2.8	-31.7
10 Year Avg.	-46.6	-1.5	-9.0	-16.6	-37.8	-1.6	-23.7	-57.5	-3.0	-28.0
Long-term Avg.	-40.2	1.6	-4.0	-28.8	-25.4	18.6	-40.0	-62.1	-7.6	-30.2

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
Statistics:							
10 Year Avg.	836,151	80,037	220,782	2,971	208,327	12,704	2,266
Long-term Avg.	1,236,328	412,732	811,511	23,587	687,530	40,126	7,046
Percent Change from:							
2006	-15.6	-27.7	-15.8	26.3	2.6	-54.4	-58.4
10 Year Avg.	-24.5	-32.0	-40.6	-57.5	-18.6	-61.5	68.1
Long-term Avg.	-39.5	-81.8	-80.8	-95.8	-76.0	-73.3	30.0

^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).

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

YEAR	Pheasant				Quail			
	Resident		Non Resident		Resident		Non Resident	
	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest
1987	178,203	1,129,395	33,915	251,613	70,026	181,378	13,727	64,760
1988	170,323	902,226	33,682	237,373	59,230	212,646	13,792	76,946
1989	173,017	1,122,951	38,569	319,039	69,591	381,321	10,380	44,981
1990	171,016	1,047,529	39,829	359,473	61,219	269,896	11,667	51,597
1991	161,741	852,158	40,578	286,305	49,713	184,195	11,271	47,623
1992	139,681	677,670	36,749	247,453	47,641	155,919	8,646	23,906
1993	138,619	999,149	27,642	226,857	43,027	175,793	6,318	25,667
1994	147,841	876,365	41,824	369,216	41,504	156,413	8,754	22,176
1995	155,308	1,118,638	44,995	324,368	39,653	193,544	11,185	27,454
1996	155,889	1,059,385	49,704	307,675	33,996	62,438	10,978	18,601
1997	154,855	1,037,620	50,349	302,432	24,927	134,418	10,546	46,607 b
1998	141,838	936,181	42,748	301,797	26,393	83,067	5,985	17,527
1999 ^a	142,521	684,596	39,152	214,578	32,306	86,058	8,811	24,070
2000	134,873	781,143	32,648	220,724	33,114	114,110	6,843	26,718
2001	99,125	352,469	23,781	117,620	20,459	24,812	4,132	7,414 c
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
Statistics:								
10 Year Avg.	110,947	642,141	31,191	194,007	21,283	63,529	5,270	16,507
Long-term Avg.	135,998	821,167	35,702	246,280	35,874	130,631	8,093	29,304
Percent Change from:								
2006	-6.4	-13.7	-13.4	-21.0	-20.0	-14.0	-16.0	-54.3
10 Year Avg.	-22.7	-25.0	-24.9	-22.7	-33.2	-32.6	-24.0	-29.5
Long-term Avg.	-36.9	-41.3	-34.4	-39.1	-60.3	-67.2	-50.5	-60.3

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

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

^c Fourth worst winter in Iowa records for total snowfall.

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

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

YEAR ^a	RESIDENT					NON-RESIDENT					HUNT PRESERVE ^h
	FURHARVESTER		TOTAL ^c	RESIDENT HUNT ^d	LIFETIME over 65	HUNTING		TOTAL LICENSE ^e	HABITAT STAMP ^f	IA DUCK STAMP ^g	
	over 16 ^b	under 16				over 18	under 18				
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
Statistics:											
10 Year Avg.	14,443	892	15,335	194,532	1,974	38,188	1,736	40,983	239,617	36,780	3,099
Long-term Avg.	16,950	1,952	18,902	265,735	1,974	38,188	1,736	23,141	254,197	44,401	1,994
Percent Change from:											
2006	4.7	11.8	5.1	-2.3	-0.2	-9.7	-11.6	-9.7	-3.8	0.0	-10.7
10 Year Avg.	0.0	-6.5	-0.4	-5.3	-0.2	-7.6	-7.6	-10.0	-7.1	-13.0	-2.9
Long-term Avg.	-14.8	-57.3	-19.2	-30.7	-0.2	-7.6	-7.6	59.3	-12.4	-27.9	51.0

^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.

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

Statistics:

10 Year Avg.	142,120	26,553	38,464	1,654	33,250	6,622	1,569
Long-term Avg.	215,534	61,858	105,536	9,544	87,711	20,242	4,333

Percent Change from:

2006	-8.0	-19.2	-9.3	-24.5	-16.5	-31.2	-51.1
10 Year Avg.	-23.1	-31.3	-19.1	-9.2	-30.3	-42.3	-5.1
Long-term Avg.	-49.3	-70.5	-70.5	-84.3	-73.6	-81.1	-65.6

^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.

Table 5.10 Iowa's ring-necked pheasant hunting seasons.

YEAR	DATES	SEASON LENGTH	SHOOTING HOURS	LIMIT - BAG/POSS		# COUNTIES OPEN
	REGULAR / YOUTH			REGULAR	YOUTH	
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	SEASON LENGTH	SHOOTING HOURS	LIMIT - BAG/POSS		# COUNTIES OPEN
	REGULAR / YOUTH			REGULAR	YOUTH	
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	76/3	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

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

Table 5.13 Iowa's cottontail and jackrabbit seasons.

YEAR	DATES	SEASON LENGTH	SHOOTING HOURS	LIMIT - BAG/POSS		AREA OPEN
	COTTONTAILS / JACKRABBITS			COTTONTAILS	JACKRABBITS	
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/30 OCT-1 DEC	181/33	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

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

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

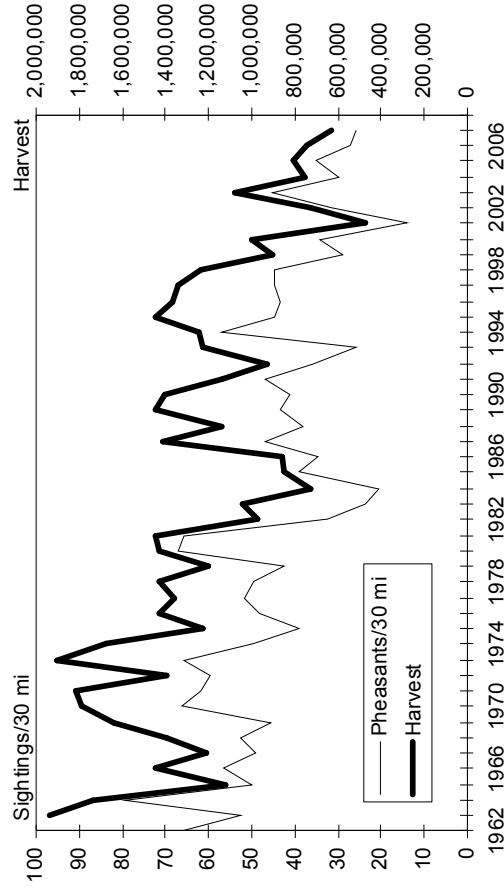


Figure 5.3 Statewide trends in pheasant broods and average brood size from August roadside survey

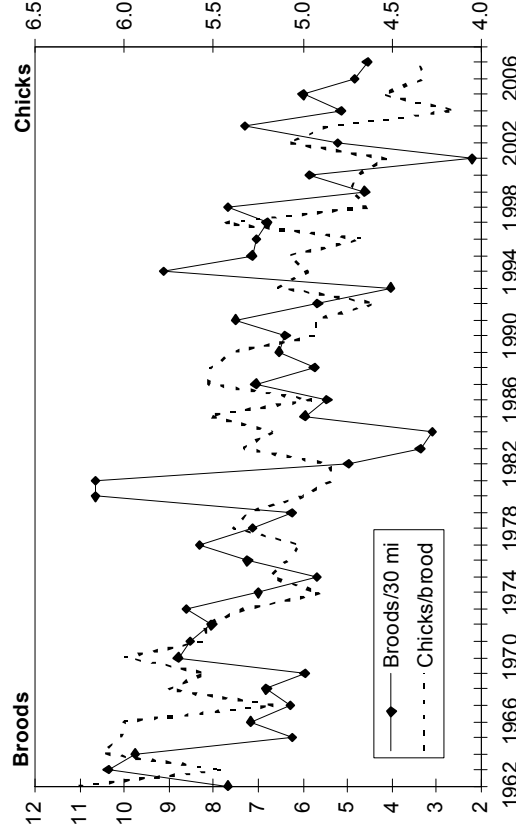


Figure 5.4 Statewide sex ratio and estimated cock harvest from winter pheasant surveys

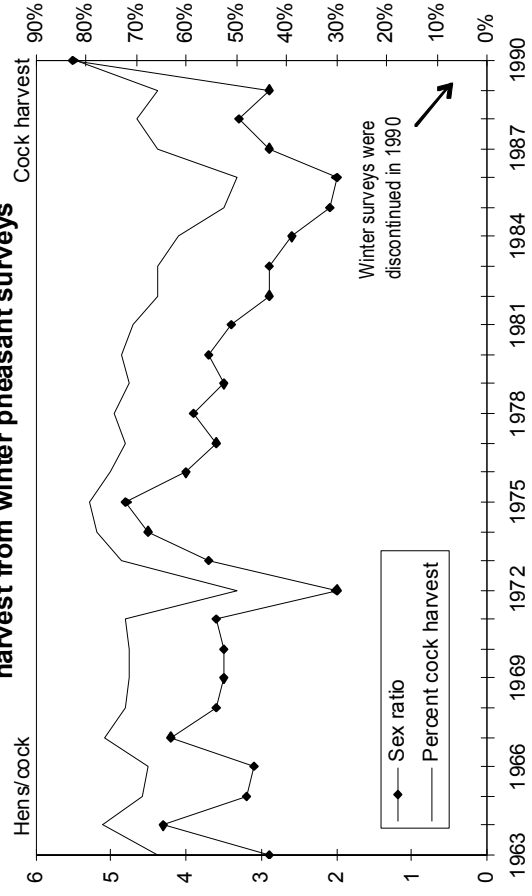


Figure 5.5 Statewide trends in pheasant hens with and without broods from August roadside survey

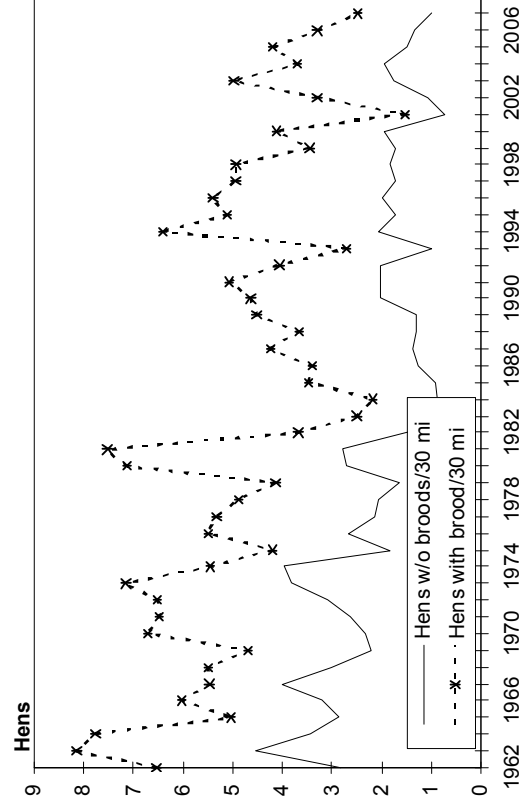
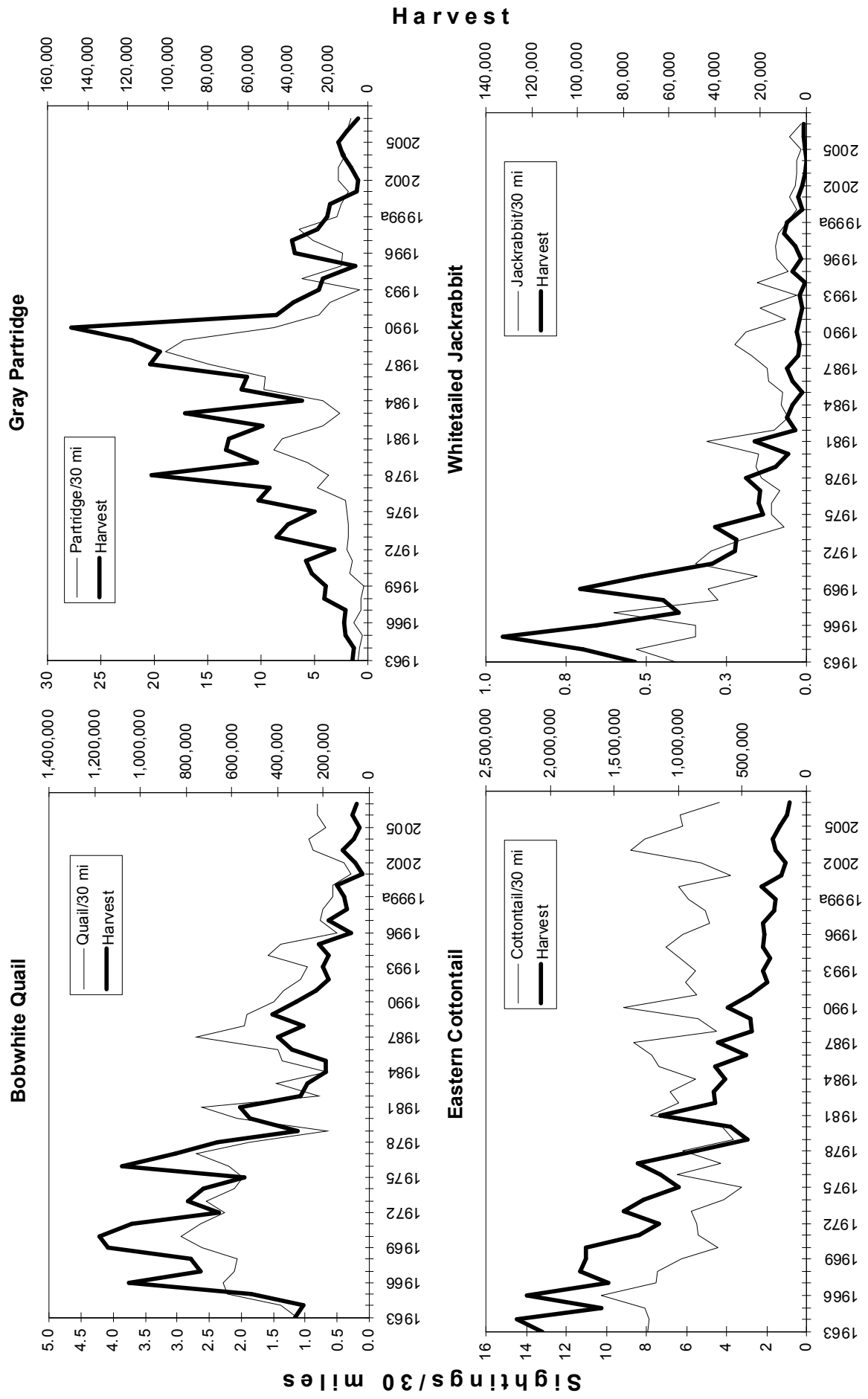


Figure 5.6 Statewide trends in small game harvests and August roadside survey counts



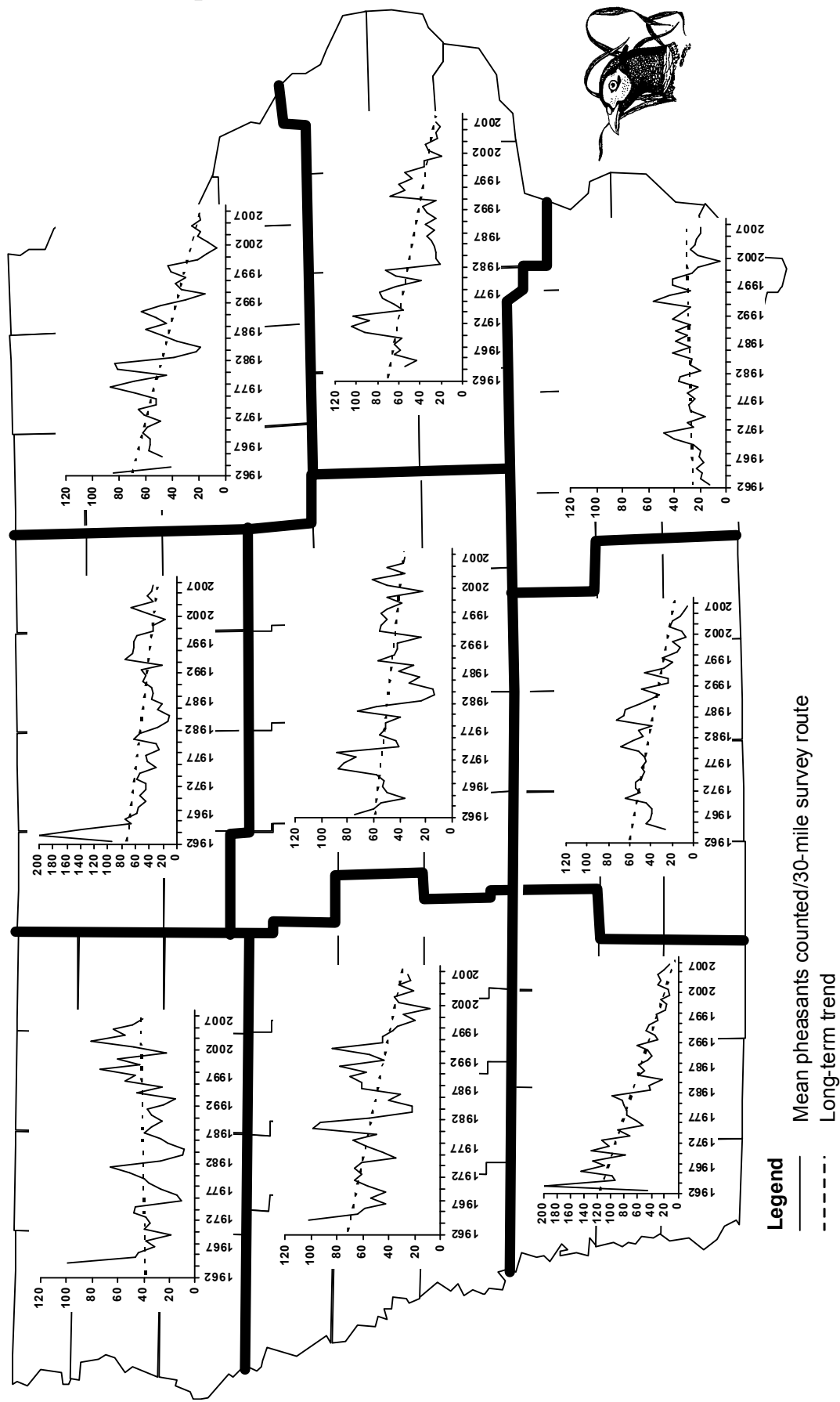


Figure 5.7 Regional trends in ring-necked pheasant numbers from the August roadside survey (1962-present).

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

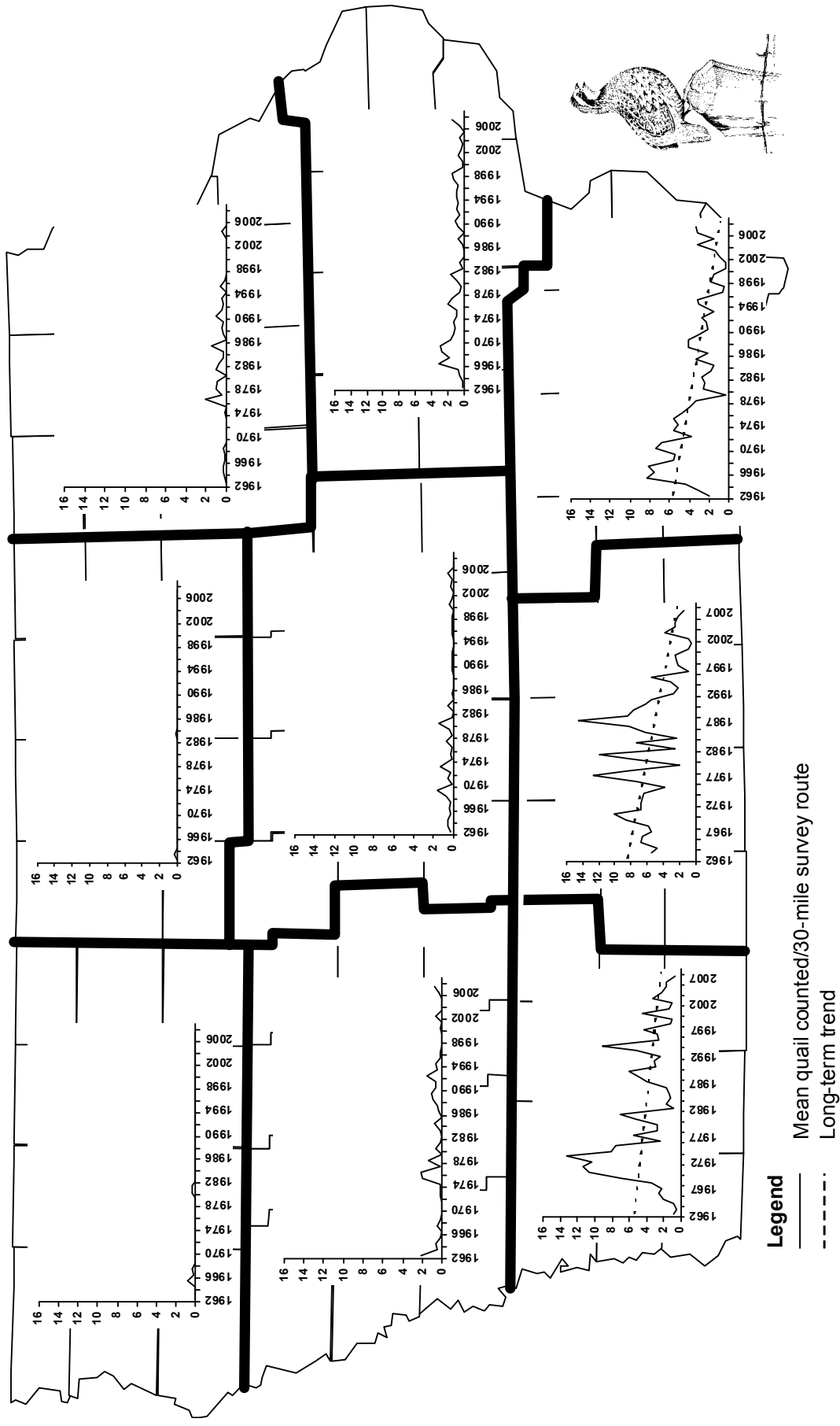


Figure 5.8 Regional trends in bobwhite quail numbers from the August roadside survey (1962-present).

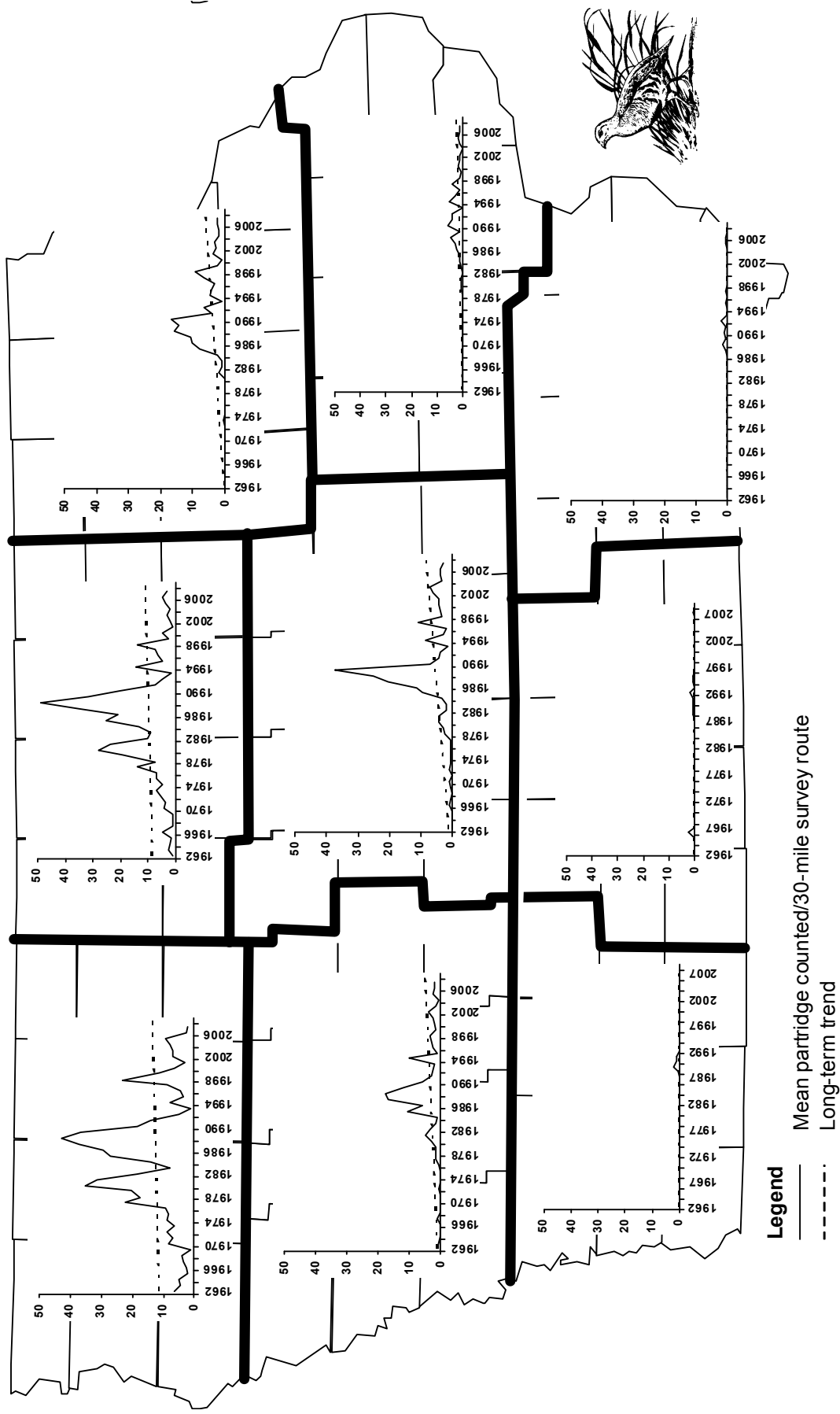


Figure 5.9 Regional trends in gray partridge numbers from the August roadside survey (1963-present).

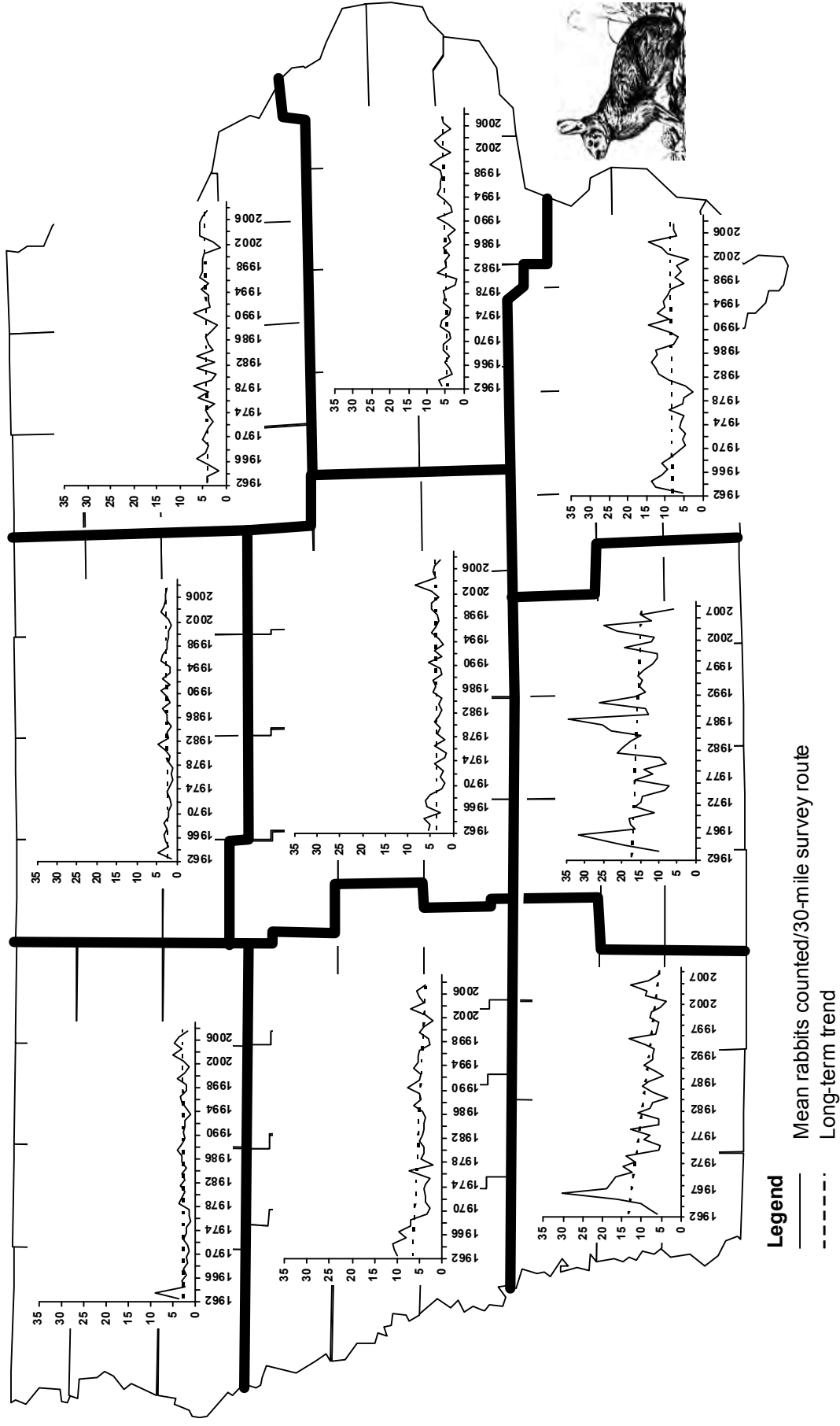


Figure 5.10 Regional trends in cottontail rabbit numbers from the August roadside survey (1962-present).

Figure 5.11 Sales of Iowa hunting licenses

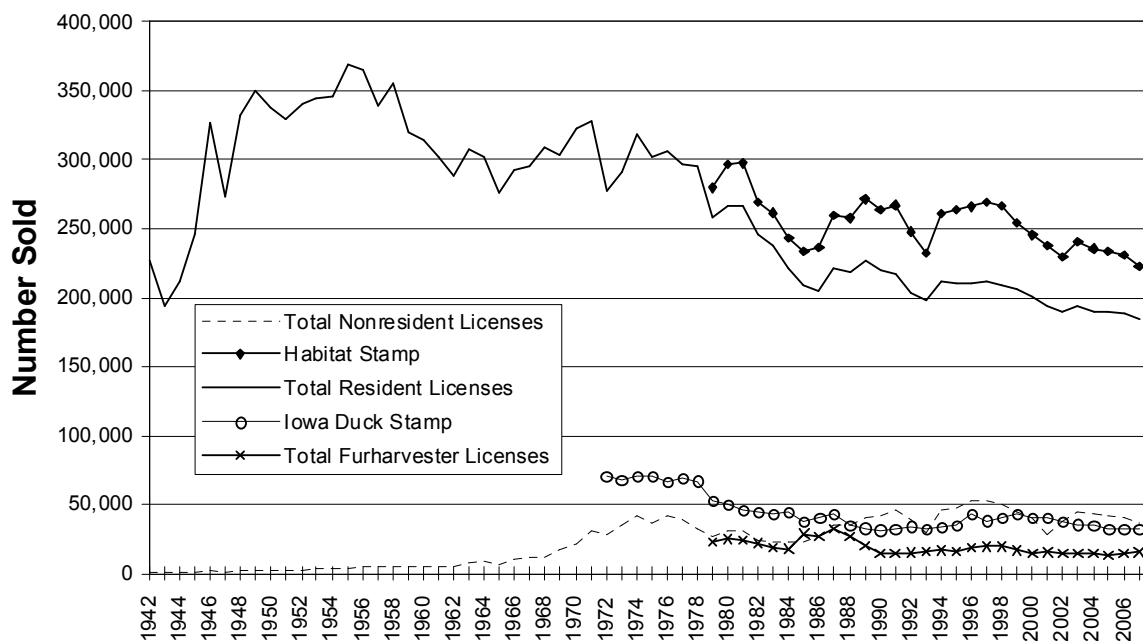
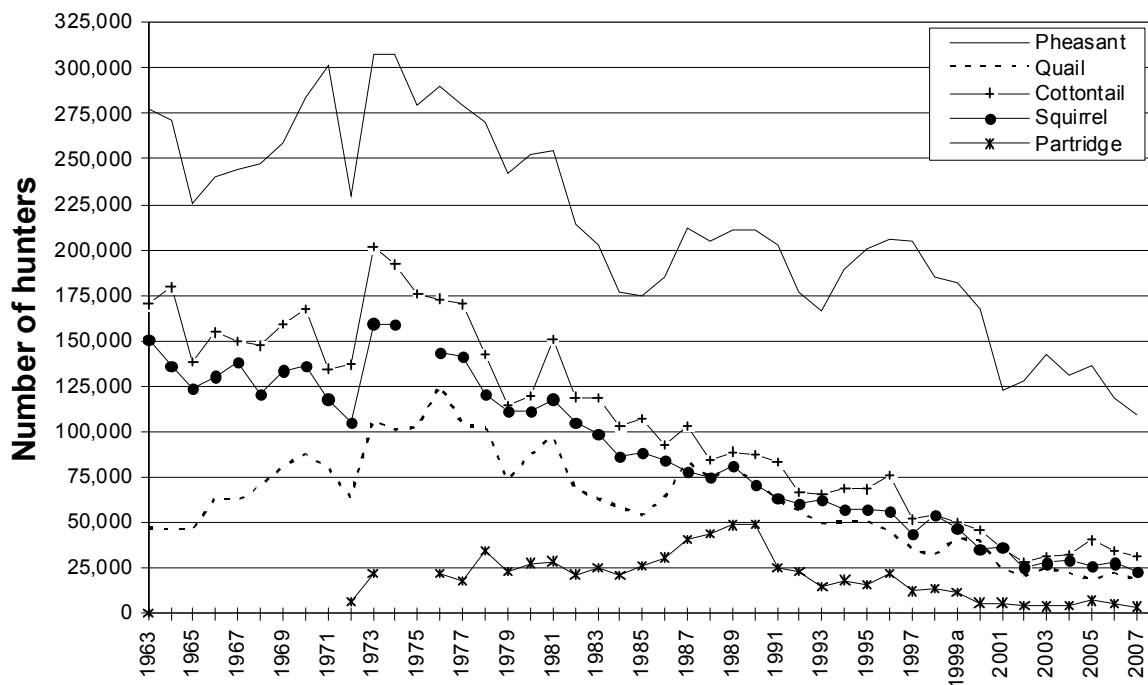


Figure 5.12 Estimated number of Iowa small-game hunters (resident and NR hunters combined)



WILDLIFE RESTORATION – 2007-2008 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 trichomoniasis (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 pseudo-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.

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

Firststar 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.

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.

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, hatched in 1999 at Muncie, Indiana paired with three-year-old male P/D, hatched 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 hatched 25 young from the site between 1996 – 1998, reported a male was seen intermittently throughout the summer.

Also in 2002 eight young falcons were hatched 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.

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 hatched 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.

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.

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.

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 hatched 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 female at this site is 63/B, (Woodman Tower, Omaha, NE. '04)(four young '07) Male is 93T (Cedar Rapids '90) here for 15th year (produced 37 young). 93T maintains a second territory at 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.

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) Female at this site is 63/B, (Woodman Tower, Omaha, NE. '04)(seven young '07) Male is 93T (Cedar Rapids '90) here for 16th year (produced 40 young).

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.

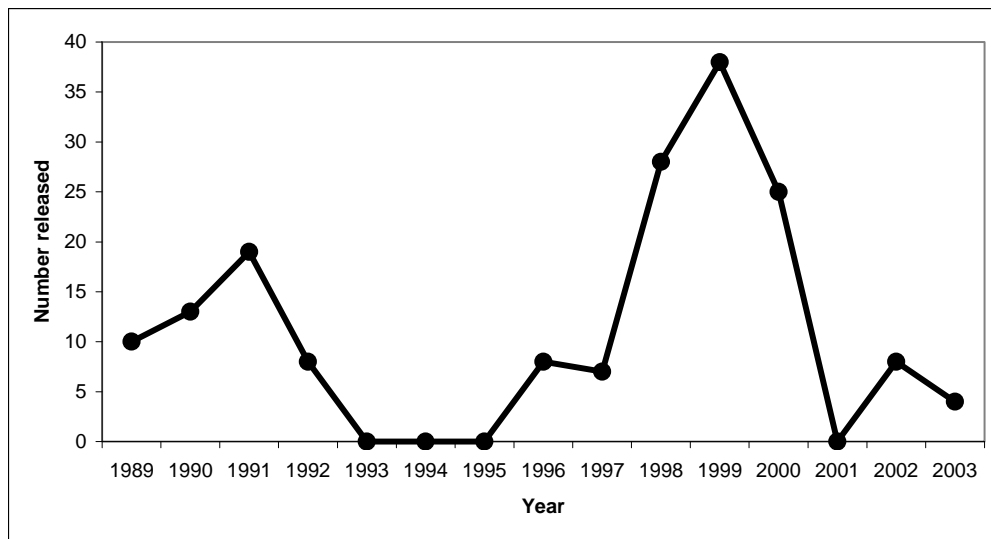
At Chillicothe (five young since '05), Ottumwa Generating Station with Alliant Energy, Judi Johnson reports nine-year-old female Z/V (NSP Riverside, Mpls. MN. '99) (produced 12 at Louisa and Chillicothe) and an unidentified male were unsuccessful. Three eggs were discovered June 13, but area was subjected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

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

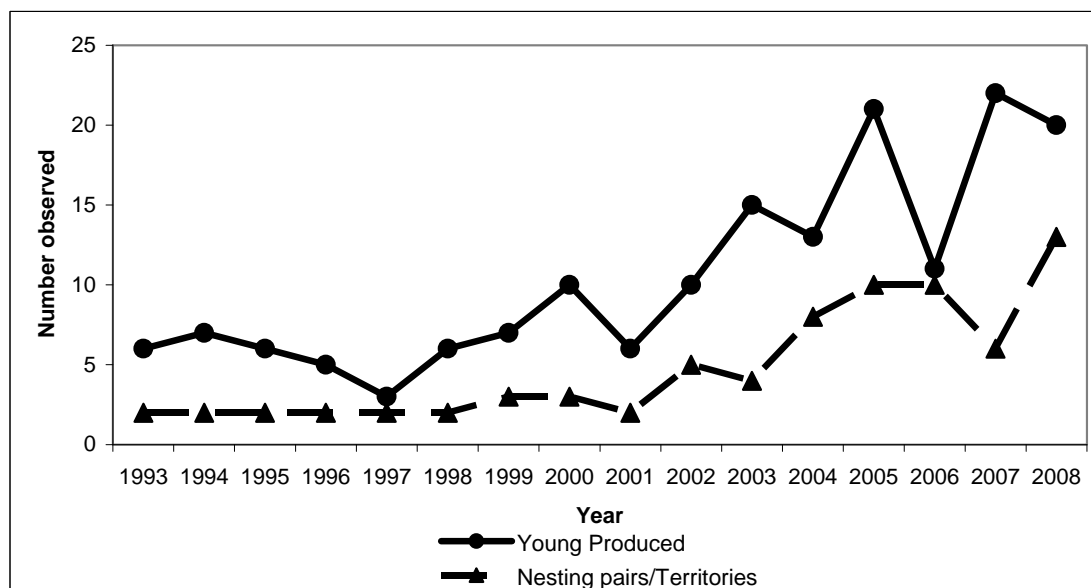
LITERATURE CITED

- Allert, O. P. 1939. Notes on certain raptors in Allamakee, Clayton, and Dubuque counties, Iowa. *Iowa Bird Life* 9:34-36.
- Anderson, R. M. 1907. The birds of Iowa. *Proc. Davenport Acad. Sci.* 11:125-417.
- Bailey, B. H. 1902. The duck hawk--(Falco peregrinus anatum)--in Iowa. *Proc. Iowa Acad. Sci.* 10:93-98.
- Bailey, B. H. 1918. The Raptorial Birds of Iowa. *Iowa Geological Survey Bull. No. 6.* 238pp.
- Berger, D. and H. C. Mueller. 1969. Nesting Peregrine Falcons in Wisconsin and adjacent areas. Pp. 115-122 in J. J. Hickey, ed. *Peregrine Falcon populations: their biology and decline.* Univ. of Wis. Press, Madison. 596pp.
- DuMont, P. A. 1931. *Birds of Polk County, Iowa.* Des Moines: Des Moines Audubon Society, 72pp.
- Keyes, C. R. 1906. Prolific duck hawk. *Auk* 23:99-100.
- Pierce, F. J. 1940. Kentucky warbler Carolina wren, and duck hawk in Allamakee County. *Iowa Bird Life* 10:27.
- Redig, P. T. and H. B. Tordoff. 1994. Midwest Peregrine Falcon restoration, 1994 report. *Univ. of Minn.* 76pp.
- Roosa, D. M. and J. Stravers. 1989. Nesting of Raptors Uncommon in Iowa: Summary and New Records. *Jour. Iowa Acad. Sci.* 96(2):42-49.
- Tordoff, H. B. 1986. A Peregrine Falcon life table. *Natural History Leaflet. No.3.* Bell Museum of Nat. Hist. 4pp.
- Tordoff, H. B., M. S. Martell, P. T. Redig, and M. J. Solensky. 2000. Midwest Peregrine Falcon Restoration, 2000 Report. Bell Museum of Natural History, Minneapolis, Minn. 47pp.

Peregrine falcons released in Iowa as part of the Midwestern Peregrine Recovery Project.



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



RIVER OTTER RESTORATION

1800

Prior to Iowa settlement, the river otter was common along major rivers and streams throughout the state. However, otter populations were reduced by a combination of factors including unregulated trapping, polluted waters, and agricultural activities. By the early 1900s there were few otter sightings on Iowa's interior streams. The species was extirpated from most of the state, except for a small remnant otter population along and adjacent to the Mississippi River in northeastern and east central Iowa through most of the 1900s.

1985

Efforts to restore the river otter to other parts of Iowa began in 1985 when 16 otters (8F, 8M) from Louisiana were released at the upper end of Red Rock Reservoir in Marion County. These otters were obtained through a three-way trade in which the Iowa DNR provided wild turkeys to Kentucky who, in turn, bought 16 otters from Louisiana, for \$400 each, to be released in Iowa. Two turkeys were traded for each otter received. Each otter was tagged in both ears and on the webs of both hind feet for future identification. Radio transmitters were implanted in the otters at Red Rock to monitor movements, mortality, and habitat use.

1989-90

After the apparent success of the initial release, additional otters were released at sites throughout Iowa (Fig. 7.1). Otters were obtained through the same 3-way trade mentioned earlier until 1989. In 1989, the Mitchell County Conservation Board and local schools provided the funds to purchase 8 animals.

In 1990, 38 additional otters were released on the Cedar River in Mitchell County as well as on the Winnebago River in Cerro Gordo County. These releases were funded through local fund-raising efforts and T-shirt sales from the Iowa Trappers Association, Furtakers of Iowa, ISU Fisheries and Wildlife Biology Club, and the Iowa DNR.

Between 1985 and 1990, 222 otters were released at 11 sites (Table 7.1). To help reduce trapping mortality at each release site, a portion of the stream was closed to trapping within 10 yards of a beaver lodge or den, because these areas were commonly used by otters. In 1997, this restriction was deemed unnecessary and, consequently, removed, with the exception of Linn County. In 2008 the Linn County restriction was eliminated. However, many trappers voluntarily maintained the 10-yard rule while trapping.

1997

Two additional sites received otters in 1997. Indian Creek Nature Center in Linn County provided funding for 17 animals, and Chichaqua Wildlife Area in Polk County where the Polk County CCB received a Resource Enhancement and Protection (REAP) grant that provided funding for 10 animals.

Two release sites were added in 1998, both in Cedar Falls. The Black Hawk CCB provided funds for 12 animals. Half were released on the Cedar River at Hartman Reserve Nature Center and the remaining 6 were released on the other side of the Cedar River at George Wyth State Park. In 1999, no animals were

purchased from Louisiana for release. From 1985-1999, 261 Louisiana River Otters have been released into Iowa's rivers and lakes.

1999-2000

Otter populations in several localized release sites across the state were experiencing road-kills and incidental trappings. The Iowa DNR wanted to determine the viability of these localized "hot spots" by live trapping and trans-locating some of the animals and monitoring the population changes at both site of capture and the site of release. In 1999, 5 otters were trans-located from the Des Moines River in Boone County to Peterson Pits along the Skunk River in Story County. An additional 3 otters were trans-located from the Little Sioux River in Buena Vista County to the Boyer River in Sac County.

2000-2001

During the fall and winter of 2000-2001, 5 additional otters were released to Buena Vista County Boyer River Site. Five were captured and released on the East Nishnabotna River near Audubon. Three were captured and released at Miami Lakes in Monroe County. Two were released on Cedar Creek east of Albia. During the fall and winter of 2001-2002, 5 more otters were captured and released on the East Nishnabotna River near Audubon. The Iowa River Greenbelt Trust also funded the release of 11 river otters to the Iowa River at the Hardin City Access near Steamboat in 2000-01.

The DNR delisted the river otter from the threatened list in 2001 but otters were given protected status until the first harvested season occurs.

2001-2002

In 2001-02, a record 32 additional

river otters were trapped and released at other sites across the state. (Table 7.1)

2002-2003

In 2002-2003, only 11 otters were trans-located to other parts of Iowa. This was surprising, as the trapping conditions early in the season were relatively mild. I do not think the lower numbers are indicative of reduced otter populations but rather a reduction of effort on the part of our contract trappers. Select Contract Trappers received \$100 per each otter caught plus mileage to and from the release site.

2003-2004

In 2003-2004 we discontinued translocation of River Otters within the state. A concerted effort was made to collect otter teeth and reproductive tracts from all remaining river otter carcasses within the state to determine the population, age, and reproduction of Iowa otters. Pooling this data with previous collections has given us an adequate sample to develop a population model and population estimate of Iowa's River Otters.

2005

A river otter habitat model for Iowa has been developed from Iowa GIS information. These are important steps in meeting the requirements of the Scientific Authority of the Fish and Wildlife Service before Iowa is allowed a regulated River Otter harvest season. Nearly 100 otter teeth and reproductive tracts have been collected to further add evidence to the validity of a regulated river otter season. Our goal is to have this season by no later than 2006. A river otter harvest management plan has been developed from all data gathered. Initial seasons will be conservative, and all Iowa otters will

be required to be tagged within 48 hours of capture.

Otter releases have been monitored by searching for tracks, mudslides, snow slides, and by soliciting observations from DNR and CCB personnel, and the public. Thus far, the results are encouraging; otters have been observed at all release sites and in all 99 counties across the state. Reproduction has been documented in over 85 of Iowa's 99 counties (figure 7.1). Major mortality causes are incidental trapping and roadkills. The goal of the otter restoration project is to have statewide distribution and ultimately some type of regulated, though conservative otter harvest season in most portions of the state.

As the otter population increases, we are receiving more otter depredation complaints, particularly on farm ponds. Some fishery interests are also showing concern of otter depredation of certain fish species on certain localized rivers and streams.

Areas in southern Iowa have apparently benefited from otter releases in Missouri. Areas in southern Minnesota are benefiting from Iowa releases. Nearly everyone closely associated with furbearer resources in Iowa believe in Iowa, River Otters are doing extremely well.

2006

A notice of intended action to establish a conservative river otter harvest season occurred in late 2005. Six public hearings were held and the public was also able to express their opinions on the proposed season via the DNR website. About 450 responses were tallied with about 85% of the inputs supportive of the regulated river otter harvest season as proposed. In May, the DNR Commission unanimously voted to move forward with the season. We have also requested and

anticipate the Scientific Authority of the Fish and Wildlife Service will approve Iowa river otter season under the CITES (Convention in Trade of Endangered Species) Treaty.

Dr. Bill Clark's, Professor at Iowa State University, Iowa River Otter population model projected that there are a conservative 7000 otters in the state. Taking 400 of these animals will still their population to increase and expand

The parameters for Iowa River otter season are as follows: Opening 8:00 a.m. November 4, 2006 and closing January 31, 2007 or when the statewide quota of 400 otters has been reached. Each licensed fur harvester (trapping only,) could take 2 otters during the entire open season. A valid fur harvester license, 16 years of age and over--\$21, and habitat fee, \$8.50, is required.

Trappers will be allowed a 72-hour grace period after the quota is reached to clear their traps of river otters and relinquish any number over the legal 2 per season that they have taken. River otters found in traps during the grace period may be kept even though the quota is exceeded, as long as the trapper has not reached his or her personal bag limit of 2 per season. River otters trapped after the grace period or in excess of the seasonal bag limit must be turned over to the department; the trapper will not be penalized. Trappers found holding otters after the grace period would be subject to citation including a fine and possible revocation of their fur harvester license.

Reporting requirements are as follows: Trappers, who bag a river otter, including landowners and tenants not required to have a fur harvester license, must report their harvest to a DNR conservation officer within 24 hours. The trapper must arrange to receive a CITES tag from the officer within 72 hours of the

time it is reported and the tag must be placed on the animal before it is skinned.

Upon receiving a telephone report from a trapper that a river otter has been legally taken, conservation officers will call the department's harvest reporting system. The number of river otters taken will be updated daily and a message recorded on the department's telephone system. The number taken will be available 24 hours a day. Trappers may check the message daily to determine when the season closes and the grace period begins and ends. The department will use all practical means to publicize these dates.

Every river otter that may legally be kept by a trapper must have a CITES tag attached. Tags will be supplied by the conservation officer. The tag must remain with the pelt until the pelt is sold or used for other purposes that render it no longer available for sale. A secondary carcass tag will remain with the otter carcass so needed reproductive and age structure data can be collected. Persons displaying river otters as taxidermy mounts or other decorative items must keep the tag in their possession as proof of legal harvest.

Persons that accidentally capture a river otter during a closed season or after the person's individual bag limit has been reached will not be penalized as long as the following circumstances occur: (1) the river otter is captured during a legal trapping season or as part of a legal depredation control process. (2) A conservation officer is contacted within 24 hours and the river otter and all parts thereof are turned over to a conservation officer as soon as practical.

The Scientific Authority and a group of fur technical resource professionals continue to work on a protocol to streamline all requests made to establish river otter harvest seasons. They

failed to reach their initial goal of having this new protocol in place by January 1, 2006. The new protocol streamlined protocol is still pending but very slow progress is being made. They have yet to reach an agreement as of January 2008.

We believe that Iowa's River Otter population is very healthy and increasing and that as we collect data associated with our River Otter harvest season, the population will be able to continue to increase and the harvest parameters will likely be liberalized.

2006-2007

The results of Iowa's first River Otter harvest are shown in Figures 1-5. The season opened up the first Saturday of November, with the other traditional furbearer harvest seasons. We realized that that may not be the most optimum time of otter pelt primeness but because we expected many of the otter to be caught incidental to beaver and raccoon trapping, we believed that this currently is the most appropriate opening date. Perhaps after a few years of River Otter harvest seasons we can open up the otter season on a date different than the traditional opening, although my impression is that will be difficult to accomplish because of all the early pressure to capture furbearers and because river otters are vulnerable to capture in raccoon and beaver trap sets.

The statewide quota of 400 otters occurred in the first 10 days of the season. With the 72 hour grace period a total of 469 otters were taken. Figure 1 gives the county by county breakdown of River Otter trapped. Although there are some differences, these harvest numbers generally are parallel and reflective of where we would consider the best otter habitat is located in the state. The River Otter harvest sex ratio is nearly 50:50

males and females, with 17 % of the animals not being identified to sex. (See Figure 2) Figure 3 gives the breakdown of otters harvested by trap type and as expected

54 % of the otters were captured in foothold traps, 34 % in Conibear traps, and 6 % in snares. Nearly 2/3's of the otters were caught incidentally to trapping other animals, primarily raccoon and beaver. (See Figure 4). A total of 359 trappers caught at least 1 otter. With 110 trappers caught their season bag limit making the average take per trapper 1.28 (Figure 5). Population age structure of the harvested river otters is still being analyzed.

Concern that trappers taking more than limit would end up in the bag of other household members were unfounded as there were only 16 instances where more than one household member were involved in tagging otters and only 7 of those households limited out for the season. Very few problems or concerns occurred with Iowa's first ever River Otter Season.

The slogan for Iowa's River Otter restoration was "They Otter Be In Iowa." With that theme in mind, the River Otter harvest season of 2006-2007 is the first new open harvest season since 1973 (34 years), when another restored wildlife species, the wild turkey season, opened.

2007-2008

The season parameters for the 2007-2008 River Otter season remained the same except the grace period was shortened to 48 hours instead of the 72 from the previous season. This paralleled the bobcat season which we believe makes it easier from a furharvester perspective to follow all the appropriate regulations.

I predicted that it may take a little longer to reach the 400 river otter

statewide quota than last year because it was not the first ever season. Also weather conditions were unusually warm last year and in normal weather conditions it would likely take longer to reach the quota. As predicted, while the 400 statewide quota of river otters was reached, it took somewhat longer.

Results of the 2007-2008 season are shown in figures 6, 7, 8, 9, and 10. The sex ratio of the River Otter harvest of 2007 split out 46 % males and 44% females with 10 % nondetermined which was very similar to last year's first regulated otter harvest season. The average otter harvest was 1.29 otters per furharvester. About 2/3s of the otters were captured incidentally to other trapping activities, primarily from raccoon and beaver trappers. Foothold traps took 55 % of the otters harvested and Conibear traps harvested 33%. The remainder was taken miscellaneously. These data very much parallel last year's harvest data. Data from these first 2 regulated river otter seasons closely parallel each other.

Our slogan was "They Otter be in Iowa" additionally should read "and now most certainly they are."

Table 7.1 River otter release sites in Iowa, 1985 – present.

Year	Males	Females	County	Nearest Town	River / Area
1985	8	8	Marion	Runnells	Red Rock Reservoir
1986	10	10	Tama	Chelsea	Otter Creek WMA
1986	10	10	Hamilton	Stratford	Boone River
1986	10	10	Guthrie	Guthrie Center	Springbrook Park
1987	10	10	Clay	Peterson	Little Sioux River
1987	10	10	Lucas	Russell	Rathbun Reservoir
1988	10	10	Bremer	Tripoli	Sweet Marsh WMA
1988	10	10	Linn	Waubeeek	Wapsipinicon River
1988	10	10	Montgomery	Morton Mills	Nodaway
1989	5	3	Mitchell	Otranto	Cedar River
1990	7	8	Mitchell	Otranto	Cedar River
1990	13	10	Cerro Gordo	Mason City	Winnebago River
1997	9	8	Linn	Cedar Rapids	Indian Creek
1997	6	6	Polk	Chichaqua	Skunk River
1998	7	5	Black Hawk	Cedar Falls	Cedar River
1998-1999*	5 sex unknown		Story	Ames	Peterson Pits
1998-1999	3 sex unknown		Sac	Reiff Park	Boyer River
1999-2000	5 sex unknown		Sac	Reiff Park	Boyer River
1999-2000	5 sex unknown		Audubon	Audubon	E. Nishnabotna River
1999-2000	3 sex unknown		Monroe	Miami Lake	Miami Lake
1999-2000	2 sex unknown		Wapello	Cedar Creek	Cedar Creek
2000-2001	5 sex unknown		Audubon	Audubon	E. Nishnabotna River
2000-2001	11 sex unknown		Hardin	Steamboat Rock	Iowa River
2001-2002	3 sex unknown		Hardin	Steamboat Rock	Iowa River
2001-2002	2 sex unknown		Clayton	Eldorado	Turkey River
2001-2002	4 sex unknown		Pottawattamie	Oakland	W. Nishnabotna River
2001-2002	2 sex unknown		Marion	Hamilton	North Cedar Creek
2001-2002	2 sex unknown		Cass	Atlantic	E. Nishnabotna River
2001-2002	5 sex unknown		Poweshiek	Brooklyn	English River
2001-2002	14 sex unknown		Worth	Northwood	Shellrock River
2002-2003	2 sex unknown		Pottawattamie	Avoka	W. Nishnabotna River
2002-2003	9 sex unknown		Grundy	Grundy Center	Blackhawk Creek

GRAND TOTAL of Males and Females = 345

*Coincides with the capture of otters to translocate during the succeeding trapping seasons. No otters were translocated during the winter of 2004-2005.

Figure 1. River Otters Harvested Per County 2006

Legend:

- 0
- 1-10
- 11-20
- 21-30
- # of Otters Originally Released

469 otters harvested

Figure 2. River Otters Harvested Per County 2007

Legend:

- 0
- 1-6
- 7-12
- 13-18
- # of Otters Originally Released

424 otters harvested

Figure 3. 2006 Otter Harvest Sex Ratio

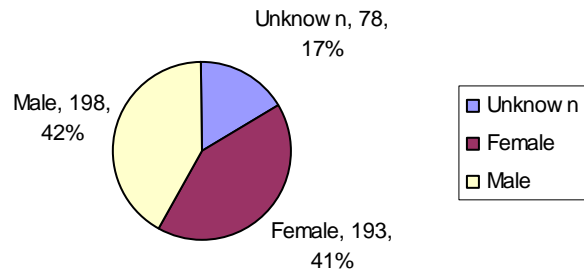


Figure 4. 2007 Otter Harvest Sex Ratio

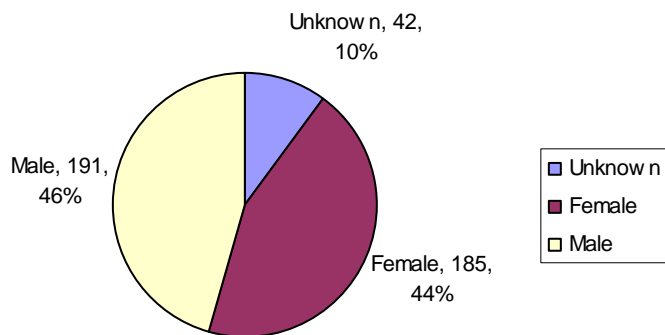


Figure 5. 2006 Otter Harvest Methods

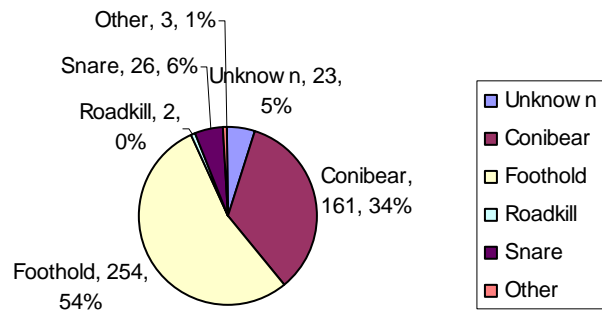


Figure 6. 2007 Otter Harvest Methods

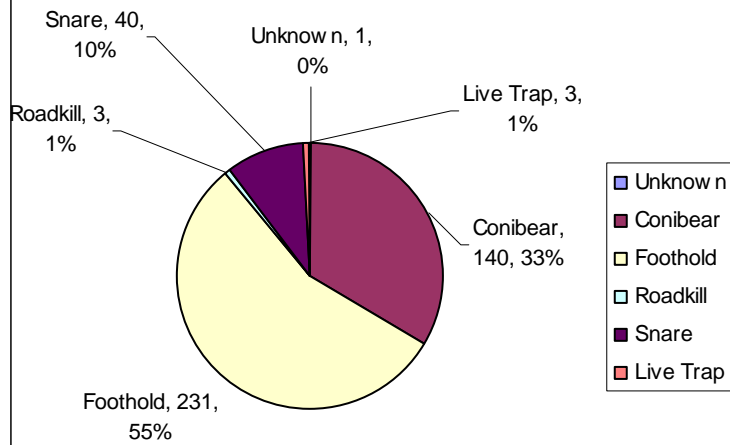


Figure 7. Otters Intentionally Targeted 2006

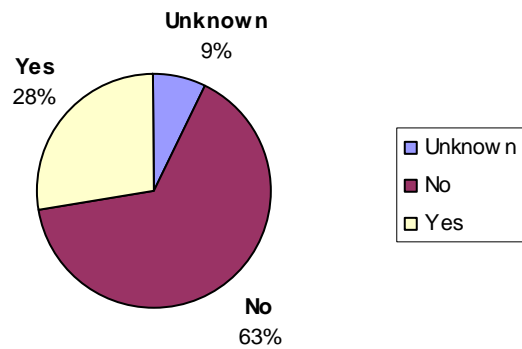
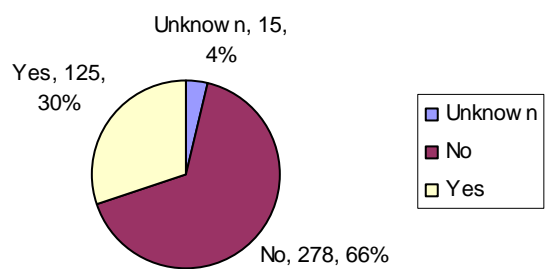


Figure 8. 2007 Otters Intentionally Targeted



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. During 1980, reliable sightings were reported both near the release area and up to 19 miles away. The KFGC was unable to secure additional birds for stocking in 1981; however, observations continued. 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.

Following mild winters in 1981

and 1982, KFGC personnel decided to attempt a different trapping approach. Chickens were rocket-netted on leks in April as they displayed. This trapping method proved successful, and 48 chickens were transported to Iowa for release at the same area in the Loess Hills in 1982. Rather than simply turning the birds loose from transport crates, as was done during the first release, the birds were banded and put in a large holding pen with separate cells for each sex. The objective was to give the chickens a chance to settle down after transport and to acclimate to the new area. Males were held overnight and released the next morning. Females were released 24 hours later. 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 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. The release was made by slowly raising the pen door from a distant location. Most males simply walked out of the pen, moved randomly about for a few minutes, and then wandered near the females' side of the pen. They remained there for 15 to 45 minutes before walking or flying off. Females were released under similar conditions the following morning. Most walked from the pen and flew short distances to taller grass cover.

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. The release site was on the Ringgold Wildlife Area located two miles north of the Missouri border in Ringgold County in south central Iowa (Fig 8.1). Wildlife personnel considered this region to be the best potential prairie chicken habitat in Iowa. 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. A major change was restoration of around 200 ha of prairie on the Ringgold Wildlife Area.

The birds for this reintroduction 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.*).

No prairie chickens were released in 1990 or 1991. Reproductive conditions for gallinaceous birds were poor in this area throughout that time; however, brood sightings were made each year. By 1991, prairie chickens appeared to be firmly established on the 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: Based on the success of the Dunn Ranch, the IDNR continued the restoration program with more translocations from Kansas. An agreement with KDWP 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 (Fig. 8.1). The Mount Ayr site is 28 km northwest and the Kellerton site is 24 km northeast of the Ringgold Wildlife Area. The Mount Ayr site was dropped in 1993, and the Orient site was added. Orient is 90 km northwest of the Ringgold Wildlife Area. All of the sites contained high quality grasslands and open landscapes. Most 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, while live trapping Sharp-tailed Grouse for IDNR's restoration project in the Loess Hills, South Dakota Game Fish and Parks (SDGFP) employees incidentally trapped three prairie chickens in 2001. Rather than release these birds at the trap site, SDGFP offered them to IDNR. The offer was accepted, and 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.*).

There were sightings of prairie chickens immediately south of the Iowa border in the spring of 1998, and it is probable that adjacent areas in Iowa have prairie chickens as a direct result of Missouri's stocking efforts. Jeff Telleen and Bruce Fistler picked up a road-killed prairie chicken in Monroe County just south of Melrose on June 7, 1998. The bird was not banded and was mostly likely a pioneering bird from one of Missouri's latest releases. Thunderbird Lake, Missouri, is the release site closest to Melrose. Missouri's releases at Thunderbird Lake are very close to the Iowa border and may act as repayment for Iowa's 1987 releases that reestablished birds on the Dunn Ranch (Larry Mechlin, MDC, *pers. comm.*).

BOOMING GROUND SURVEY

Methods

Attempts are 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. Lek sites are glassed or flushed to determine the number of booming males. New leks are located by driving gravel roads and stopping periodically to listen for booming. Because of the large area of potential habitat and limited manpower, the number of booming males observed is considered minimal. It is highly probable that a number of booming grounds have not been located. MDC personnel make similar counts on and around the Dunn Ranch, where the birds are part of the same regional population.

Results

1998: Department personnel observed booming activity in Adair, Decatur, and Ringgold Counties in 1998. Forty-three males were observed on nine leks (Table 8.2). This represents a 139% increase in the number of booming males and a 125% increase in active leks over 1997. Upland bird nesting conditions greatly improved across southern Iowa in 1997, as evidenced by a 60% increase in pheasant numbers during 1997. Mel Moe reported the first prairie chicken brood on June 6, 1998: a brood of 12 in Section 33, Monroe Township, Ringgold County

1999: Department personnel observed booming activity in Adams, Decatur, and Ringgold Counties in 1999. Thirty-nine males were observed on eight leks (Table 8.2). This represents a 9% decrease in the number of booming males and 11% decrease in active leks over 1998. Due to the abnormally wet nesting season in south central Iowa last year, pheasant counts were at an all time low for the region. The fact that prairie chicken numbers remained essentially unchanged from 1998 is a very positive sign for Iowa's population. The location of known active leks is shown in Figure 8.2.

2000: Booming prairie chicken males were observed in Decatur, Ringgold, and Wayne Counties in 2000 (Table 8.2). This was the first time a lek was recorded in Wayne County. Forty-four males were active on six booming grounds. This was the highest number of booming males recorded in Iowa and the highest total number of males per lek. The number of booming males increased 13% over 1999, but the number of active leks decreased from eight to six (-25%). The six-year mean total number of booming males is 34.8; therefore, the number observed in

2000 is 26% above the mean. The same trend was observed for total number of males per lek; 7.3 is 28% above the six-year mean of 5.7. Known active lek locations are shown in Figure 8.2.

2001: Booming activity was observed by department personnel again in Decatur, Ringgold and Wayne Counties in 2001 (Table 8.2). Birds were active on seven booming grounds, an increase of one site (16.6%) from the previous year. However, the number of booming males dropped to 28 in 2001, a 36.4% decline from 2000 and a 16.7% decline from the seven-year mean total of 33.6. The 2001 mean of four males per lek represented a 45.2% decline from 2000. Known active lek locations are shown in figure 8.2.

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.

DISCUSSION

Prairie chicken reintroduction efforts initiated in Iowa in 1987 and in Missouri in 1993 have resulted in a small, somewhat stable population of prairie chickens across a wide area of southern Iowa and northern Missouri. Large areas of habitat in this area still lack prairie chickens, and additional stocking may help fill in the gaps and augment existing local populations. Proposed stockings in Iowa would include releasing additional hens onto all known booming grounds and establishing new release sites in suitable habitat.

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 recently was targeted for additional acres in the CP-38 SAFE program with the goal of restoring habitat specifically for chickens. It 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. Partners such as TNC and the Iowa Natural Heritage Foundation continue to be cooperators in purchasing nearby grassland management areas.

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 this year was undertaken to evaluate the potential problem of low

genetic diversity and the results of the study should help the department make a decision about additional reintroductions.

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 Partners in Flight (PIF) grassland Bird Conservation Areas (BCA). The Kellerton Bird Conservation Area (KBCA) was formally designated in 2001 and is PIF's 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. At least three current or recently used booming grounds 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. The total estimated cost of this acquisition based on 1998 prices was \$2,000,000. For this reason, acquisition of the 2,100-acre core area was proposed to occur in increments.

A 680-acre parcel was the first desired purchase aimed to protect Iowa's largest greater prairie chicken lek. The cost was \$530,000. 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. In 2007 two parcels totaling 315 acres were purchased, both near the Ringgold wildlife area.

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.

Wildlife Biologist Mel Moe implemented a management plan that includes a viewing area for prairie chickens. An old osage orange hedge row was cut in the spring of 1999 to open the vista of the new area, and a viewing platform and spotting scope were added in 2000. Large portions of the area continue to be managed for native grasses. Area cropland has been converted as mixed native seedings. The year 2004 marked an inaugural Greater Prairie chicken public viewing event for the Kellerton Bird Conservation Area.

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.

LITERATURE CITED

Christisen, D. M. 1985. The greater prairie chicken and Missouri's land-use patterns.

Terrestrial Series No. 15. Missouri Department of Conservation. Jefferson City.
51 pp.

Ehresman, B. L. 1996. Greater Prairie-Chicken. Pages 130 -131 *in* L. S. Jackson, C.A. Thompson, and J. A. Dinsmore, editors. The Iowa Breeding Bird Atlas. University of Iowa Press, Iowa City, Iowa, USA

Rodgers, R. 1983. Evaluation of the re-establishment potential of sharptailed grouse in western Kansas. Federal Aid Project No. W-23-R-20, Study No. 18, Job Q-1, Kansas Fish and Game Commission. Pratt. 7pp., mimeo.

Stempel, M. E., and S. Rodgers, Jr. 1961. History of prairie chickens in Iowa. Proceedings of the Iowa Academy of Science 68:314-322.

Table 8.1. Dates, numbers, and locations of greater prairie chicken releases in Iowa, 1980-2001. 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

* 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 male greater prairie chickens observed on active leks in Iowa, 1998-2008.

Legal Description					Number of Booming Males ^a										
County	Township Name	Twp.	Rge.	Sec.	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Adair	Orient	74N	31W	3											
Adair	Orient	74N	31W	11											
Adair	Lee	75N	31W	26	1										
Adams	Union	72N	32W	24		3									
Decatur	High Point	69N	24W	1	8										
Decatur	High Point	69N	24W	2					4						
Decatur	High Point	69N	24W	11	1	1									
Decatur	Grand River	69N	27W	16									1	1	
Decatur	Grand River	69N	27W	22								3	1	2	
Decatur	Franklin	70N	25W	9	2										
Decatur	Franklin	70N	25W	20											
Decatur	Garden Grove	70N	24W	36	10	6	7	4		3					
Ringgold	Athens	68N	28W	4	5	5	3	1	2			3	2		2
Ringgold	Athens	68N	28W	16	12	11	14	11	10	10	11	11	11	9	14
Ringgold	Athens	68N	28W	8							3				
Ringgold	Athens	68N	28W	17						5					
Ringgold	Athens	68N	28W	2					1						
Ringgold	Athens	68N	28W	20						2					
Ringgold	Poe	68N	29W	?		2									
Ringgold	Rice	68N	30W	24	1										
Ringgold	Rice	68N	30W	13				3	2	1	1				
Ringgold	Liberty	69N	29W	3		4		5		4	2				
Ringgold	Liberty	69N	29W	10			8								
Ringgold	Monroe	69N	28W	2				1							
Ringgold	Monroe	69N	28W	12			7			4	4				
Ringgold	Monroe	69N	28W	28		7									2
Ringgold	Monroe	69N	28W	33	3										
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				5	3		2	1	2	1	
Wayne	Jackson	68N	21W	14						2					
Total Booming Males ^b		mean=	17.82		43	39	44	28	22	32	22	24	16	14	19
Total Active Leks		mean=	4.12		9	8	6	7	7	9	6	5	5	4	4
Total Males/Lek		mean=			4.78	4.88	7.33	4.00	3.14	3.56	3.67	4.80	3.20	3.50	4.75

^a underlined numbers indicate birds were observed, but not booming.

^b Males not observed booming are not included in totals.

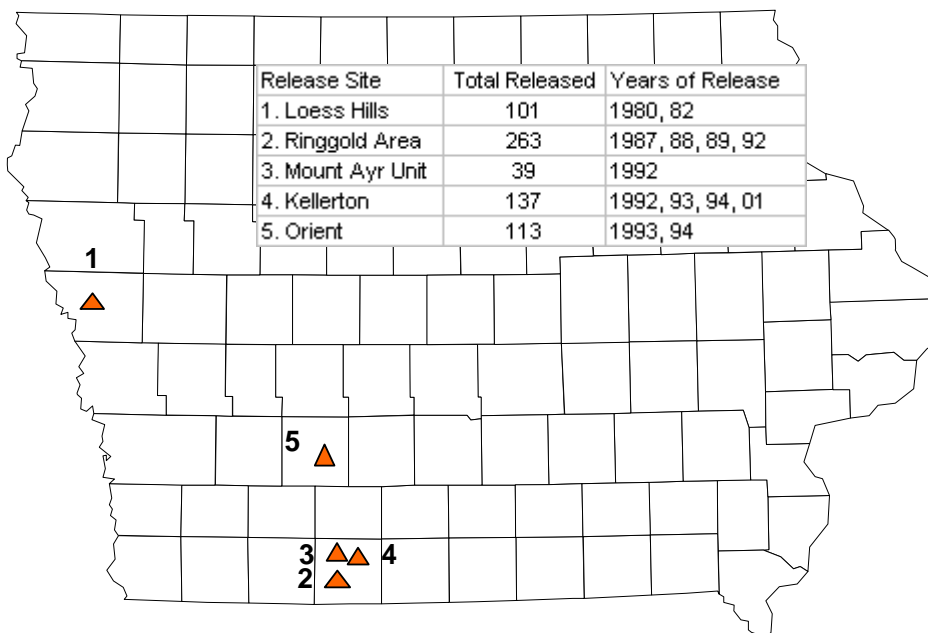
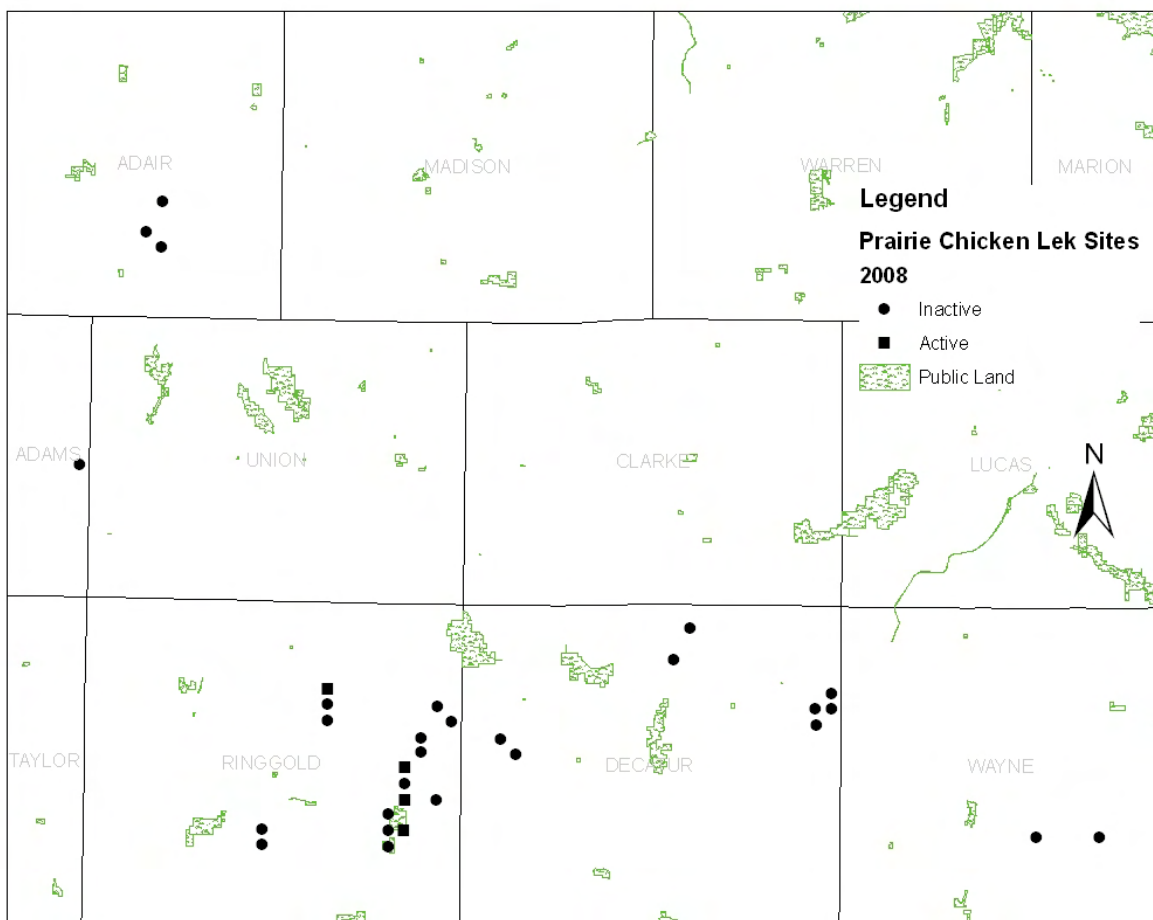
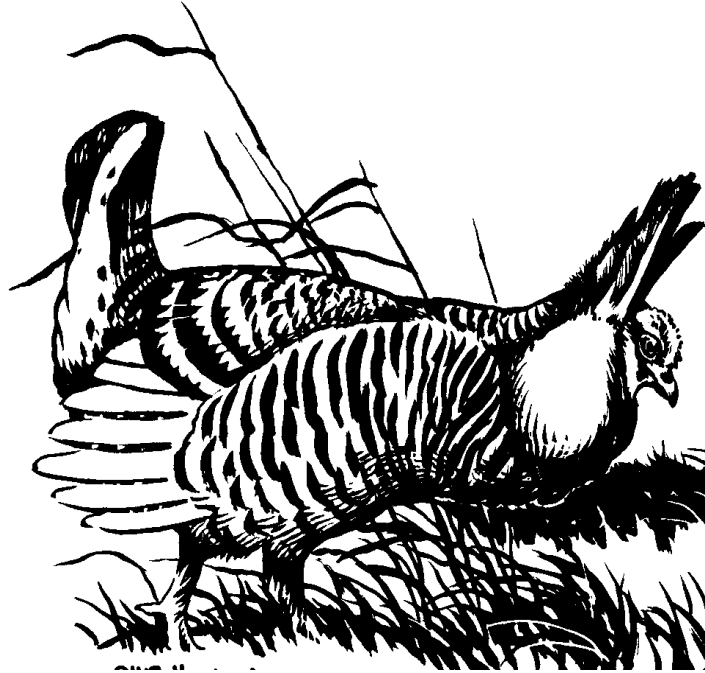


Figure 8.1 Location of release sites and total number of prairie chickens released in Iowa, 1980-2001.

Figure 8.2. Location of past and presently active prairie chicken lek sites in Iowa, 1998-2008.





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 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. We have establishing flightless breeder pairs at appropriate sites, the young of which the DNR releases for free flight. Fifty partnership breeding pair sites are currently established. 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 then.

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 a million dollars. The Trumpeter Swan Program was also awarded a State Wildlife Grant (SWG) in 2004.

Table 12.1 and Fig 12.1 show the number of trumpeter swans released and their release sites in Iowa since 1994. 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 trumpeter were released in Iowa and 18 in Arkansas. Iowa has the largest trumpeter swan observation database. After 8 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 fine 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 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. In 2007-2008, over 200 trumpeters wintered in Iowa each of the past 2 years. 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. 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 metal USFWS leg bands. This does create problems analyzing both movements and mortality of Iowa Trumpeter Swans.

A review of the last 10 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. We continue to obtain several cygnets from other states and zoos across the nation, including the National Zoo in Washington D.C. and the Great Plains Zoo in Sioux Falls, South Dakota. Over 65 swans were released in 2008 by the Iowa DNR. The DNR is excited about the future of trumpeter swans in the state.

Thru 2007, 117 known mortalities to date includes: 28 have died in power line collisions, 39 poached by violators, 8 died due to lead poisoning, 5 due to apparent malnutrition, 22 to disease, and 11 died of unknown causes. Several other mortalities have likely occurred from unknown 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. During the summer of 2008, we tallied 24 nest attempts and we know of at least a record 30 wild nest attempts in 2007. The decline of swan nest attempts in 2008 can be attributed to either the normal cyclic nature of wildlife

populations and likely we lost a few trumpeter nests early as record heavy rains and flooding likely destroyed some nests prior to the time we could verify their presence. Each year there could also be 2 or 3 other nest attempts that we do not know about as we have had at least 2 families of swans show up in the state in what we would consider earlier than normal southward migration.

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. Five free flying swans have bonded and mated with 7 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 Canada shore of the boundary waters 2008.

High mortality of adults from illegal shootings had us greatly concerned that we would 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. A record 30 trumpeter swans nesting attempts occurred in 2007.

Figure 12.2. 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 re-nest attempt 1 cygnet hatched. In 2008 the pair was not present but one cygnet remains in the area of where it hatched in two 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.

Since 1998, 150 known trumpeter swan nests have occurred in Iowa, 88 of which hatched at least one egg. Also see the attached addendum for a fact sheet review of Iowa's up-to-date Trumpeter Swan Restoration successes. In 2005 Iowa had 26 known wild trumpeter swan nest attempts. In 2006 and 2007, we tallied 29 and 30 known nest attempts respectively.

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, the Mississippi Flyway Council, and the Fish and Wildlife Service and release 18 trumpeter swans in Arkansas. The plan was to release up to 40 swans (we only managed to capture and release 18 this first year) that had flew in Iowa to hopefully get their "compass readings" and release them on the Buffalo National River and Holla Bend NWR in Arkansas. 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. As of September 2008, we are only aware of 1 of those 18 swans that has returned to Iowa. It was sighted in molting condition at Willow Slough in Fremont County in July of 2008. As far as we know the remainder of the swans are still in the vicinity of where they were released at.

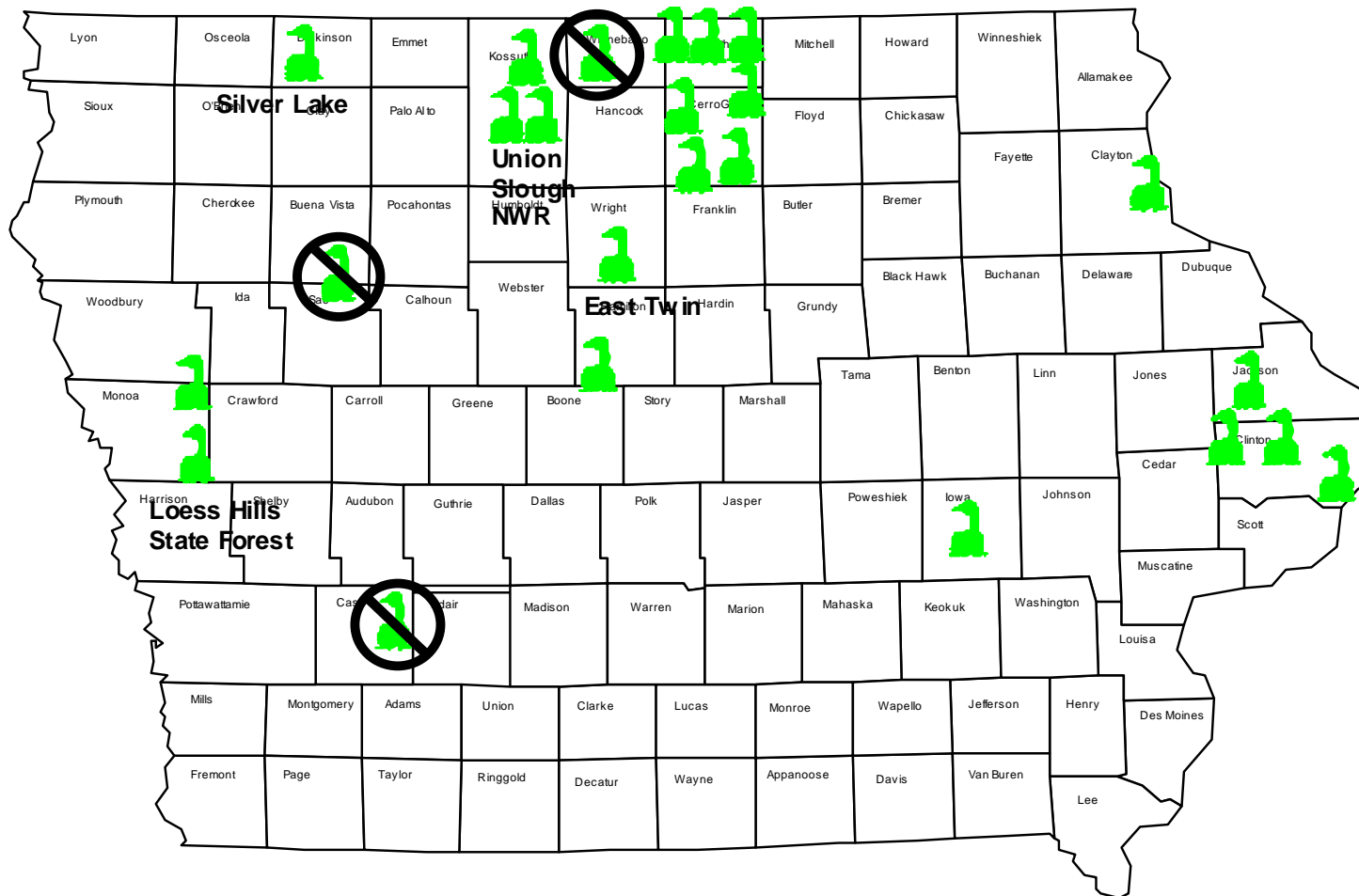
The Trumpeter Swan Society has made this one of their goals since its inception. Iowa trumpeter swan production will allow this goal to be tested to see if additional southward migration can be enhanced. The project is to continue for 2 more years with hopefully larger samples of cygnets and possibly including family groups of swans with the presence of some adults.

The attached addendum is a summarized fact sheet of Iowa's up-to-date trumpeter swan restoration successes.



Wild Trumpeter Swan Nest in 2008

(24 nest attempts)



Successful



Unsuccessful

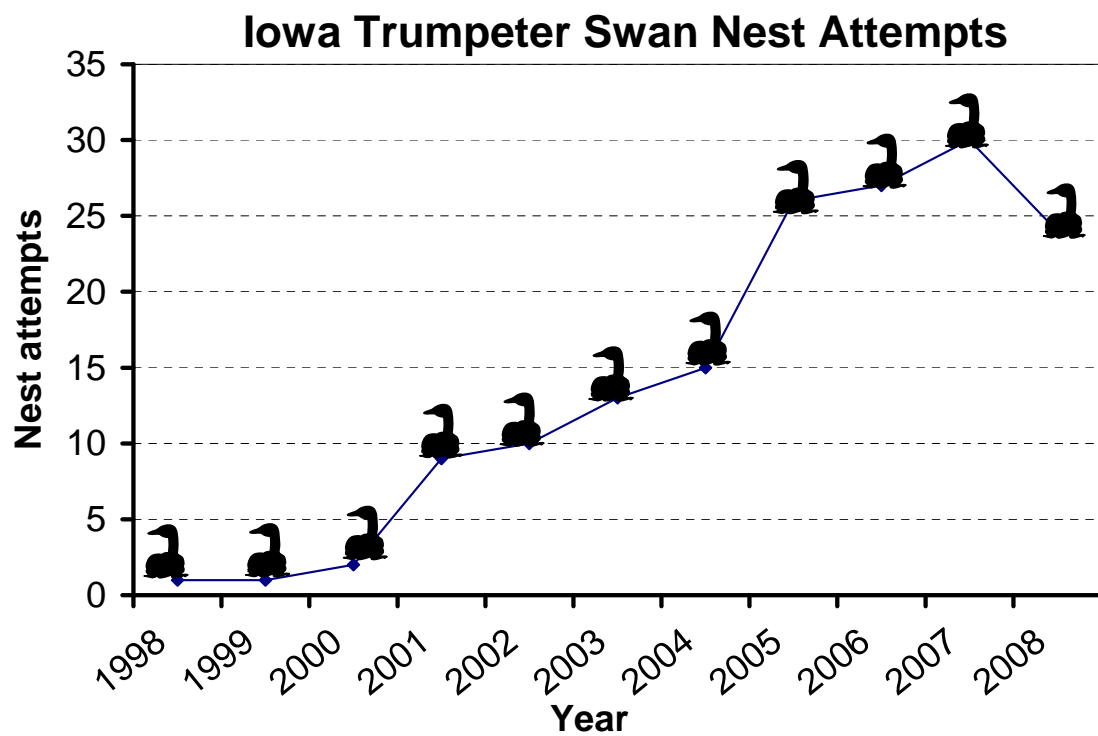


Table 12.1 Trumpeter swans released in Iowa, 2007-2008.

<u>Year</u>	<u>Area</u>	<u>County</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
2007	Anderson Lake	Hamilton	1	1	2
	Anderson Wildlife Area	Montgomery	1	1	2
	Archer Wetland	Appanoose	1	1	2
	Beaver Valley Wetland	Blackhawk	1	1	2
	Bjorkboda Marsh	Hamilton	1	1	2
	Blue Wing Marsh	Cerro Gordo	1	1	2
	Bruegmann Recreation Area	O'Brien	1	1	2
	Cardinal Marsh	Winneshiek	1	0	1
	Cherokee County	Cherokee	1	1	2
	Chuck Lenze Wetland	Dallas	2	2	4
	Clark Lake	Cerro Gordo	1	1	2
	Clear Lake	Cerro Gordo	0	1	1
	Cones Marsh	Louisa	1	1	2
	Coulter Marsh	Franklin	0	2	2
	County Home Wetlands	Winnebago	1	1	2
	Crawford Creek	Ida	1	1	2
	DU Marsh	Clay	1	1	2
	Folliets	Clinton	1	1	2
	Gordon Garrison's Wetland	Emmet	0	2	2
	Gordon's Marsh	Hamilton	1	1	2
	Hayesville Bend Wildlife Area	Keokuk	1	1	2
	Johnson-Sauk Trail State Park	Henry, IL	1	1	2
	Kattleson's Hogback	Dickinson	1	1	2
	Kiowa Marsh	Sac	1	1	2
	Lake Anita	Cass	2	0	2
	Little Storm Lake	Buena Vista	1	1	2
	Lost Island Marsh	Palo Alto	1	1	2
	Maberry Pond	Livingston, MO	1	1	2
	Merideth Marsh	Hancock	1	1	2
	Pickeral Lake	Buena Vista	1	1	2
	Pintail Marsh	Palo Alto	1	1	2
	Schlensig Wildlife Area	Pocahontas	1	1	2
	Shimon's Marsh	Pocahontas	1	1	2
	Stark's Ponds	Hamilton	2	1	3
	Strucek Wetland, Kossuth	Kossuth	2	0	2
2008	Brownsville Wildlife Area	Mitchell	1	1	2
	Bruegmann Recreation Area	O'Brien	1	1	2
	Cedar Island Wildlife area	Blackhawk	1	1	2
	Christoferson-Taylor Wildlife Area	Worth	1	1	2
	Coulter Marsh	Franklin	0	2	2
	Crawford Creek	Ida	1	1	2
	DU Marsh	Clay	1	1	2
	Gomer's Marsh	Clinton	0	2	2
	Gordon Garrison's Wetland	Emmet	1	1	2
	Kiowa Marsh	Sac	1	1	2
	Chuck Lenze Wetland	Dallas	2	2	4
	Little Storm Lake	Buena Vista	1	1	2
	Lost Island Marsh	Palo Alto	1	1	2
	Maskunky Marsh	Mahaska	1	1	2
	Merideth Marsh	Hancock	2	2	4
	Rush Lake	Osceola	1	2	3
	Kattleson's Hogback	Dickinson	1	1	2
	Siems wetlands	Marshall	1	1	2
	Steines Marsh	Clinton	1	1	2
	Strucek Wetland	Kossuth	1	1	2
	Sunken Grove	Pocahontas	1	1	2
	Buffalo National River	Newton, AR	5	0	5
	Holla Bend NWR	Pope, AR	5	8	13
			Total		136

Table 12.2. Wild free flying Trumpeter swans banded and released in Iowa, 1997 - present.

<u>Year</u>	<u>Area</u>	<u>County</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
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

Iowa's Trumpeter Swan Restoration Program Summary February 2008

- Last Historical Nesting 1883 @ Twin Lakes in Hancock Co.
- 1994 Mississippi Flyway Sanctioned and Approved. Field Work Initiated in 1995.
- Goals—(1) 15 Wild nesting pairs by 2003. Revised Goal 25 pair by 2006.
(2) Promote the Many Values of Wetlands.
- First Modern Day Nesting Pair in 1998 & 99 Private Pond Dubuque Co.
- Second pair 2000 Thorpe Park Wetlands, Winnebago Co.
- 2001, 9 Wild Nesting Attempts. 26 cygnets hatched: ~ 19 to flight stage.
- 2002, 10 Wild Nesting Attempts. 37 cygnets hatched: ~ 27 to flight stage.
- 2003, 13 Wild Nesting Attempts. 53 cygnets hatched: ~ 36 to flight stage.
- 2004, 15 Wild Nesting Attempts. 44 cygnets hatched: ~ 36 to flight stage.
- 2005, 26 Wild Nesting Attempts. 87 cygnets hatched: ~ 67 to flight stage.
- 2006, 29 Wild Nesting Attempts. ~80 cygnets hatched: ~ 52 to flight stage.
- 2007, 29 Wild Nesting Attempts. ~88 cygnets hatched: ~ 60 to flight stage.
- Several of the Iowa released Trumpeters Swans have nested in Southern Minnesota and Wisconsin and one successful nest occurred in Missouri in 2005 and one in Illinois in 2006.
- To date, over 835 Trumpeter Swans have been released; 113 were released in 2005. We released 85 in 2006 and 73 in 2007.
- We have 55 Flightless Partnership Pairs that produce the greatest share of our one year old cygnets for release. We are also obtaining cygnets from U.S. Zoos as the opportunities arise.
- Iowa Trumpeter Swans have been reported in 15 states and 2 provinces of Canada.
- Traditional migration/wintering sites in Iowa are developing including ~100 near Webster City, ~40 @ Atlantic, 12 near Wheatland, IA., 15 near Mason City. Scattered (smaller #s) at other sites.
- ~180 Trumpeter Swans wintered in Iowa during the winter of 2006-07.
- Over 200 known mortalities have occurred to date—43 from power line collisions, 46 poached by violators, 25 from diseases, 9 from Lead poisoning, 9 from predators and ~90 from unknown causes.
- Shooting Trumpeter Swans in Iowa results in a \$1500 fine and court costs and possible hunting license revocation.
- Iowa Trumpeter Swans were initially neck-collared with green, then red collars' both with white Alpha-numeric codes & a corresponding plastic leg band & currently with FWS stainless lock on bands. Green neck collars are now being used on Arkansas released swans.
- The Iowa Trumpeter Swan database currently exceeds 3,500 observations.
- For Additional Trumpeter Swan information see the following web sites: Iowa Department of Natural Resources www.iowadnr.gov , the ISU Trumpeter Swan committee <http://www.stuorg.iastate.edu/swan/> , the Trumpeter Swan Society www.trumpeterswansociety.org .
- A 3 year experimental migration study in cooperation with Arkansas attempting to encourage southward migration of trumpeter swans was initiated during the winter of 2008.

For more information or questions concerning Trumpeter Swans contact Ron Andrews or Dave Hoffman, Iowa Trumpeter Swan Coordinators 1203 North Shore Drive, Clear Lake, IA. 50428. Office Phone # 641-357-3517. E-mail Address: Ron.Andrews@dnr.iowa.gov or David.Hoffman@dnr.iowa.gov

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.

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 had been released at seven sites. Eight wild Ospreys had been produced in Iowa.

2006

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.

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 eight 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.

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. meteorological

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 twelve Osprey nest attempts with five successful nests producing 12 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.

Three 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.

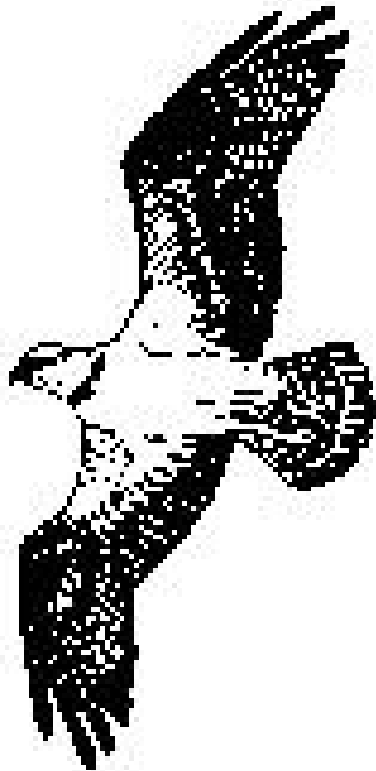
At Spirit Lake Dickinson CCB, Tim Waltz with DNR, and volunteers placed four Minnesota young.

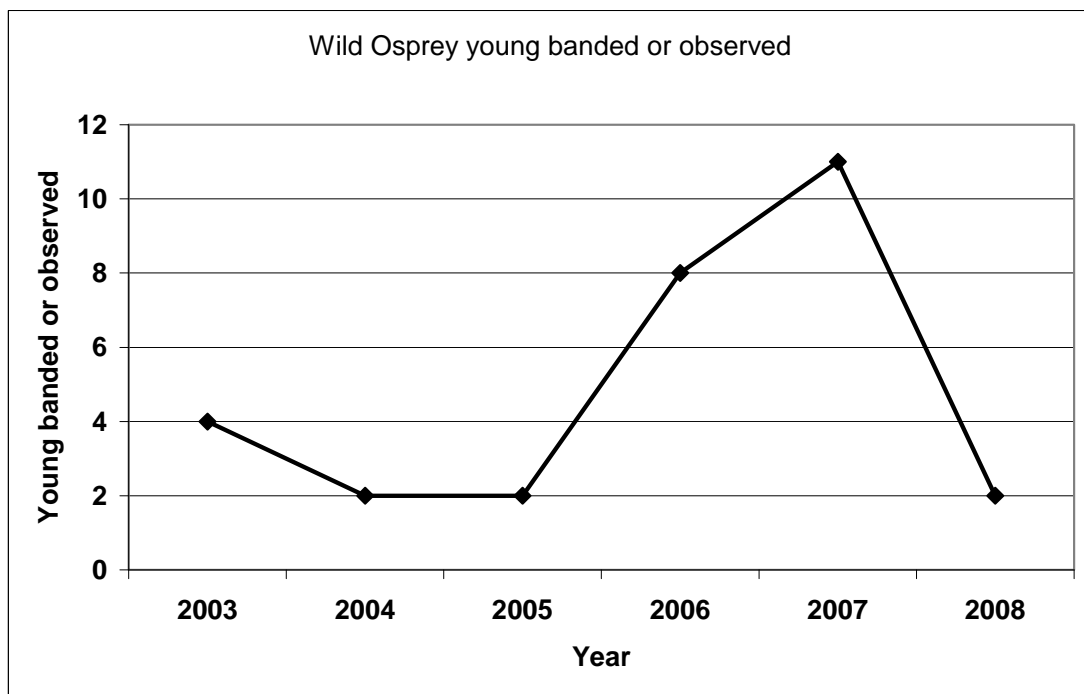
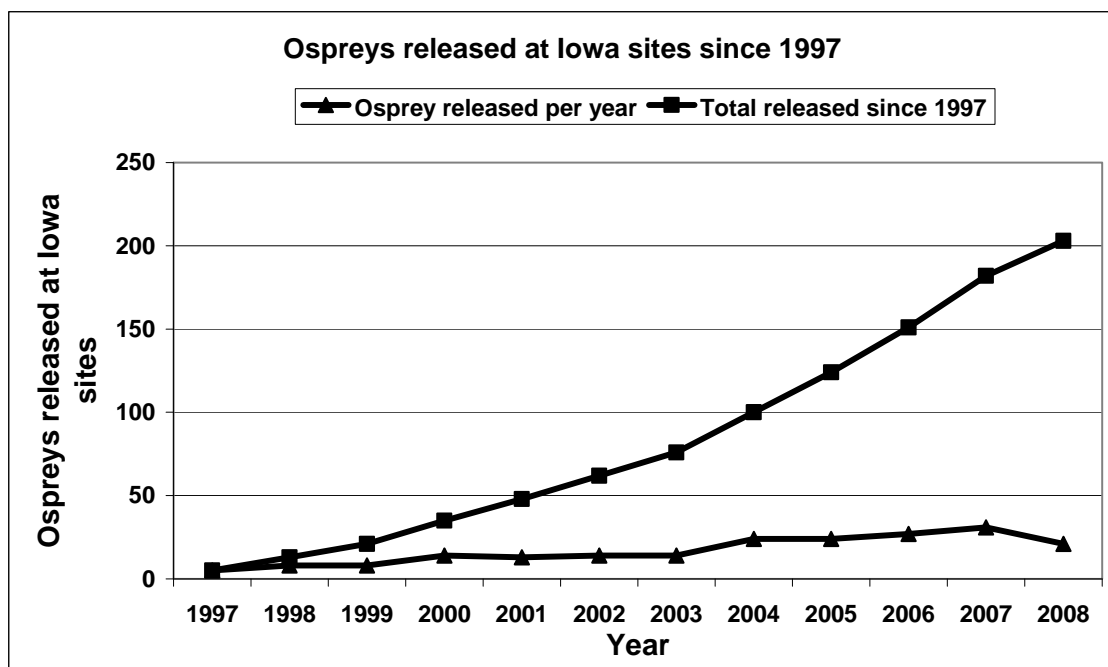
At Mudlake in Dubuque the Dubuque CCB and University of Dubuque volunteers released four Wisconsin Ospreys at this new site.

Since 1997 209 Ospreys have been released at ten sites. 33 wild Ospreys have been produced at 16 successful nests since 2003.

This project is in keeping with the IA DNR mission to protect,

propagate, increase, and preserve the wildlife of the state (Section 456A.23, Code of Iowa, 1997). Establishing an Osprey population will improve the state's wildlife diversity and increase the public's appreciation of wetland ecology. There was a goal of five nesting pairs by 2006.





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

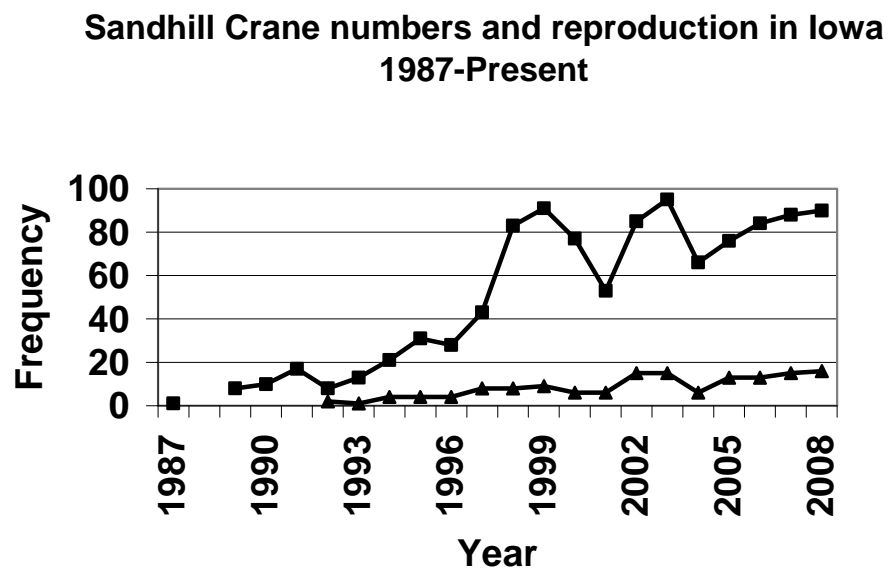
In 2007 Sandhill Crane sightings were included in three new counties: Palo Alto, Greene, and Madison Counties. Also Crane reproduction was noted at Chichaqua Bottoms in Polk Co. bringing our total to 18 counties with cranes successfully nesting.

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.

Reproduction **Sightings**



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 four new counties (Hancock, Cedar, Greene, and Lee) reported eagle nests in 2007. In 2008, eagle nesting was confirmed in only two more counties, Davis and Pottawattamie, so that eighty-three counties have now documented eagle nesting (Figure 15.1).

As the number of active nests increased since 1977, so has the number of young produced (see Figure 15.2). A slow but steady increase in the number of nests occurred until 1990, when seven of the eight active nests successfully fledged 13 youngsters. For several years, there was an increase of about seven active nests per year, and in 1995, 58 young fledged from 31 successful nests. In 1998, 47 successful nests fledged at least 82 young, although there were 15 nests for which the nesting outcome was unknown that year. For the years 1999 to present, recording eagle nesting activity for every nest has become less of a priority for IA DNR. Records are still kept for all nests reported, with an emphasis placed on documenting new

eagle nests. However, data for nest activity and nest success is not nearly as complete as for years prior to 1999. Projected eagle nest numbers (based on number of new nests reported each year and average nest increase rate since 1995) is shown in Figure 15.3 for 1999-2007. The number of new eagle nests reported has averaged about 20 nests per year since 1999. In 2004, at least 28 new nests were documented, with an estimated 175 total active eagle nests. During 2005, an additional 25 new nests were reported, and it was estimated that there were 190 total active eagle nests. Now, as prime eagle nesting habitat is becoming saturated, it appears that the rapid growth rate of eagle nesting is beginning to taper off. Still, there have been about 15 new nesting territories reported during each of the last three nesting seasons. DNR estimates that there were approximately 210 active nests in the state this year, and these nests are located within the 364 different bald eagle territories identified since 1977.

Concerning the number of young produced per nest, there is fairly complete information recorded for this through 1998. The average number of young for 22 years in Iowa is 1.7 young per successful nest. Of further interest is the fact that 13.6% of Iowa nests produced three young each during this time. In 1996 alone, 10 of the 40 (25%) successful Iowa nests produced three young each.

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 1991 (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. This last winter, cold weather returned, and Iowa's January count found 4,002 bald eagles within Iowa borders

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.

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 continues to pose a threat to eagles, and the removal of large, mature cottonwoods along Iowa streams limit where eagles can nest and find foraging perches. Two central Iowa eagle winter roost were severely logged, and fewer eagles are being seen at both of these sites. Logging in the vicinity of eagle nests also can affect the nesting outcome. 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. 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 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 2008 had approximately 210 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 20,000 and 30,000 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 have watched over 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.

LITERATURE CITED

- Anderson, R. M. 1907. The birds of Iowa. *Proceedings of the Davenport Academy of Science* 11:125-417.
- Broley, C. L. 1958. The plight of the American Bald Eagle. *Audubon* 60:162-171.
- Carson, R. L. 1962. *Silent Spring*. Houghton Mifflin Co., New York.
- Dinsmore, J. J., T. H. Kent, D. Koenig, P. C. Petersen, and D. M. Roosa. 1984 *Iowa Birds*. Iowa State University Press, Ames. 356pp.
- Grier, J. W. 1988. Northern states Bald Eagle recovery team report. *Report of Raptor Research Foundation*, Minneapolis, Minnesota.
- McKay, K. J., J. W. Stravers, and U. Konig. 1995. Report assessing the impacts of human activity on Bald Eagle reproductive success along the Upper Mississippi River during the 1994 breeding season. *Technical Report: U. S. Fish and Wildlife Service Upper Mississippi River Fish and Wildlife Refuge*. McGregor, Iowa. 51pp.
- Roosa, D. M. 1977. Endangered Iowa birds: (An annotated list of endangered, threatened, extirpated or 'status undetermined' birds of Iowa). *Special report of the Preserves Board* No. 4.
- Roosa, D. M., and J. Stravers. 1989. Nesting of raptors uncommon in Iowa: Summary and new records. *Journal of the Iowa Academy of Science* 96(2):41-49.

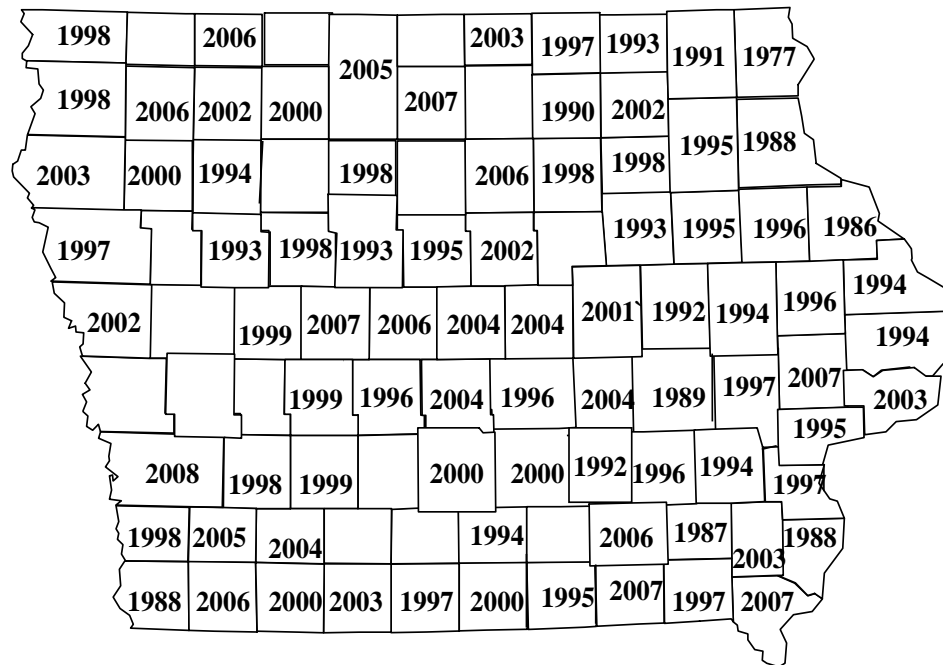


Figure 15.1. First year in which a bald eagle nest was reported for 83 counties, 1977 through 2008.

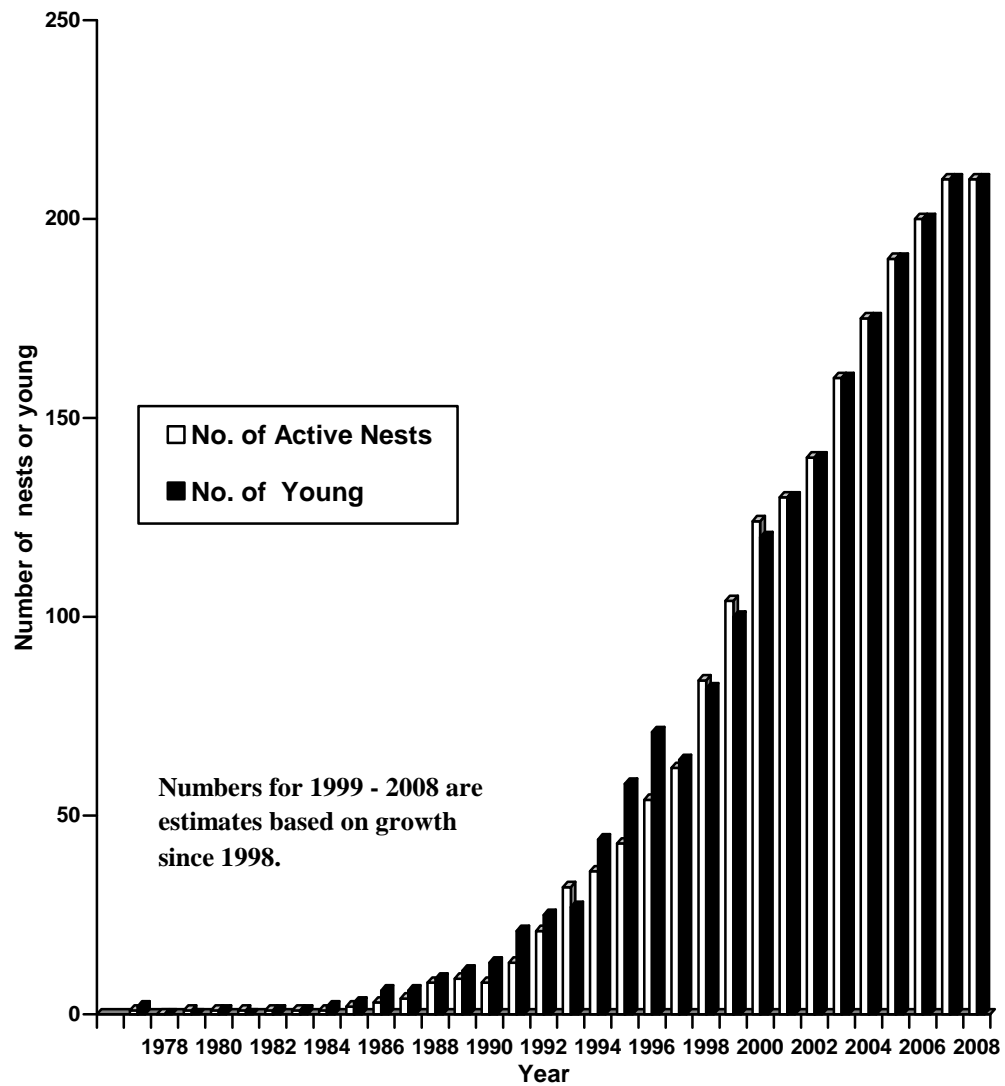
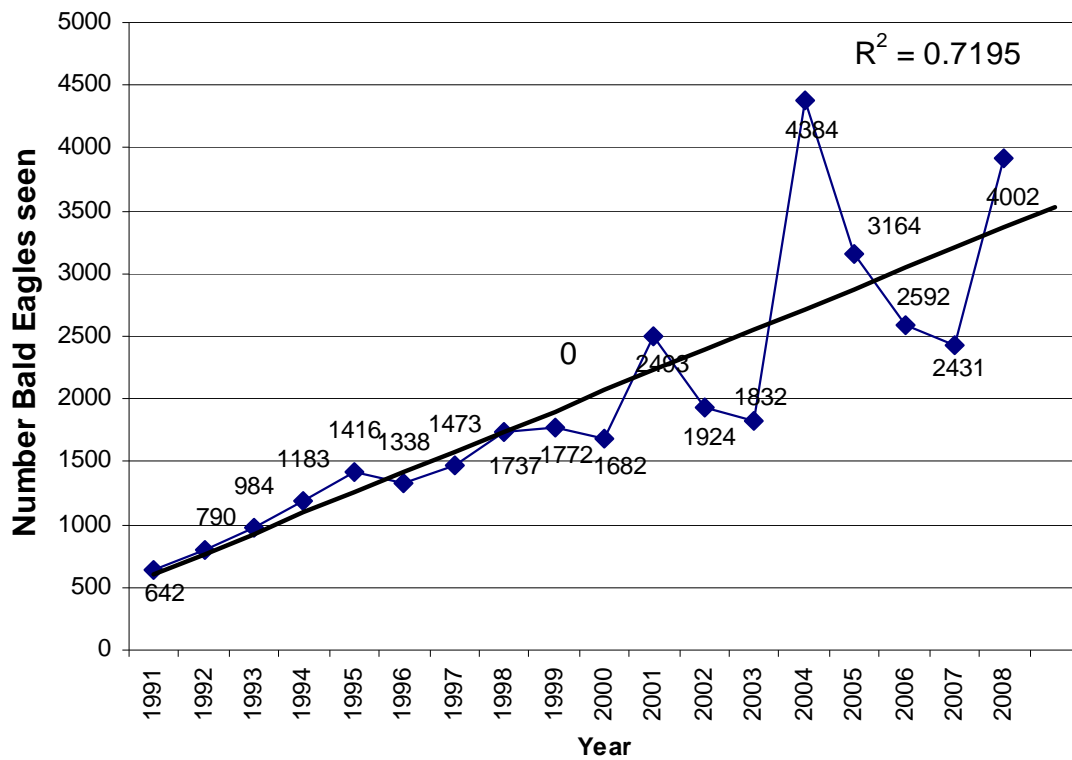


Figure 15.2. Number of Bald Eagle active nests and young produced in Iowa, 1977 through 2008.

Figure 15.3. Number of Bald Eagles seen during Iowa Mid-Winter survey 1991-present



BOBCAT STATUS IN IOWA

2000 to Present

by

Ron Andrews, Iowa DNR

Prior to settlement, bobcats were found throughout Iowa. Historically they were the most abundant of Iowa's three native cat species - the bobcat, lynx, and mountain lion/cougar. By the late 1800s, historical records mention little of bobcats in Iowa.

In the 1930s and 1940s small numbers of bobcats were reported in all corners of Iowa, although they were most numerous in the northeast corner of the state. Between the 1940's and mid-1980s, bobcats were infrequent throughout most of the state.

During the past 20 years, increasing numbers of bobcat sightings, road kills, and several incidentally trapped bobcats have occurred. Some landowners in southern and western Iowa consider them commonplace. Over 200 dead bobcats were turned over to the DNR during the fall/winter of 2006-2007.

Figure 13.1 shows that at over 75 counties now have known bobcat presence within their boundaries. Several other counties probably have bobcat presence but they have not been officially confirmed. This past year we continue to have had few fairly reliable reports of bobcat sightings in more northerly areas of the state including Winnebago, Cerro Gordo, and O'Brien Counties. This information needs to be continually updated to monitor what appears to be an expansion of bobcats northward in Iowa. Nebraska, Kansas, and Missouri show similar bobcat expansion and increases near Iowa's southern and western borders. In fact, Missouri now has a statewide bobcat harvest season.

Their harvest has been record breaking for each of the past 7 years and the highest harvest density of bobcats occurs adjacent to Iowa's southern border.

Dr. Jim Pease, Extension Wildlife Specialist, at Iowa State University, worked with graduate student, Anne Avery, on a more elaborate survey of bobcat sightings and the public's perception of predators in the state. Her M.S. thesis was completed in September, 2003.

The Iowa DNR de-listed the bobcat from threatened status in September 2003. They are, however, given complete protection until we implemented our first regulated harvest season in 2007. An attempt was made to get a conservative bobcat harvest season in a portion of the state, implemented in the fall of 2006. That effort was thwarted by bio-politics.

Reproductive and population age structure data is being collected from all bobcat carcasses obtained from road killed and incidentally trapped animals. We will continue to monitor the increase and modern day expansion of bobcats in Iowa.

The Iowa DNR and Iowa State University are conducting a research study to monitor bobcat's movements, mortality, habitat use, and demographics in south-central Iowa. The first phase has been completed and a continuation of the first phase, as well as, an in-depth study of bobcat genetics is being evaluated in phase two of the bobcat study. Forest Game Biologist, Todd Gosselink, is the DNR project leader. Dr. Bill Clark is ISU professor and major advisor. M.S.

graduate student, Stephanie Koehler/Tucker, has completed the first phase of the population ecology of bobcats in southern Iowa. PhD and ISU graduate student, Dawn Reding, is working on the genetics component of the study. A summary of the results to date by Field Project Advisor, Todd Gosselink, is attached. The information collected from this study will be very useful in determining the population dynamics of Iowa bobcats and the future management of the species as well as their relationship with other Midwest bobcat populations.

The bobcat population increase and expansion has been phenomenal during the last 20 years. Iowa's bobcat population is healthy enough and that is why the bobcat has been de-listed from threatened status. An ultra conservative bobcat harvest season has been approved and did occur during the fall of 2007.

Approved parameters for this first conservative bobcat season are as follows:

(1) An open zone quota of 150 bobcats was allowed.

(2) Only 21 counties in the southern 2 tiers of Iowa were open to harvest. The bobcat harvest season would be closed throughout the rest of Iowa.

(3) Both hunting and trapping would be allowed including all current legal means and methods of hunting. Hunters must have a furharvester's license and pay a habitat fee.

(4) The season would open 8:00 a.m. the first Saturday of November (November 3 in 2007) and close January 31 or when the quota of 150 harvested bobcats occurred plus a 48 hour grace period.

(5) Only 1 bobcat per season per licensed fur harvester would be allowed.

(6) All bobcats would have to be CITES tagged. Procedures for obtaining are spelled out in the Iowa Hunting and

Trapping Synopsis.

(7) All dead Bobcats taken in the closed zone, after the season closes, or in excess of the 1 bobcat allowed per season, would have to be relinquished to the Iowa DNR.

(8) All live trapped bobcats should be released when taken after the season closes, after the furharvester takes his first one bobcat season bag limit, and in the closed portion of the state.

(9) People possessing or taking bobcats illegally would be subject to a citation, fine, and possible revocation of their fur harvester license.

(10) Carcass tags will be provided to each furharvester taking a bobcat so that the DNR can obtain enough data to continue, expand, and perhaps liberalize future bobcat harvest seasons. Reproductive and population age structure data and DNA material will be collected from as many bobcats as possible.

The first bobcat harvest season results are self explanatory and are shown in figures 1 through 5.

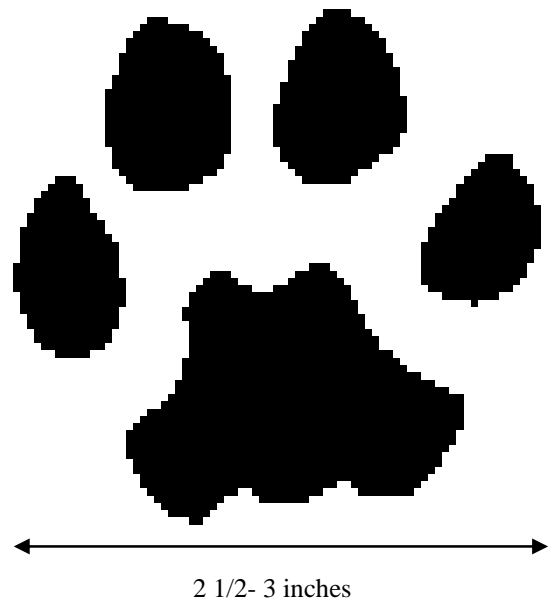
For the 2008 season we have added the 4 counties of Pottawattamie, Harrison, Monona, and Woodbury Counties to the open zone and increase the open zone quota to 200 bobcats. All other parameters and CITES tagging procedures will be the same.

The public can be assured that such a harvest will be closely monitored to allow for a healthy, sustainable bobcat population to remain in Iowa.

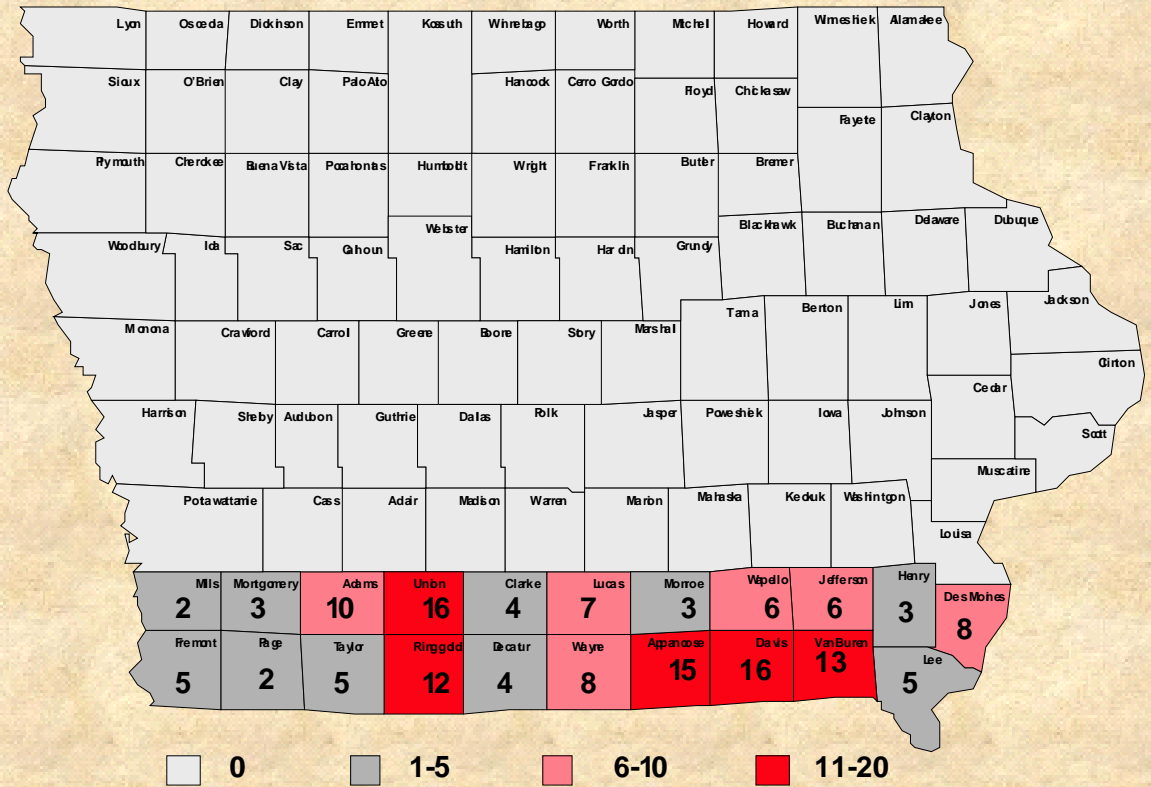
An archer survey to monitor several wildlife populations, including bobcats, was begun in 2004 to monitor wildlife population trends of several wildlife species. This should be a very useful piece of data to monitor bobcat population trends throughout the state and particularly in monitoring the bobcat population expansion throughout the state.

Two websites to help with identification of bobcat tracks, listen to a bobcat growl, and a wealth of other information is: <http://www.bear-tracker.com/bobcat.html> and <http://www.geocities.com/Yosemite/9152/bobcat-trackers.html>.

Must reading for all interested in **bobcats and Iowa** wildlife: A COUNTRY SO FULL OF GAME by Dr. James J. Dinsmore



Bobcats Harvested Per County 2007



153 bobcats harvested

Figure 2. Bobcat Harvest Sex Ratio

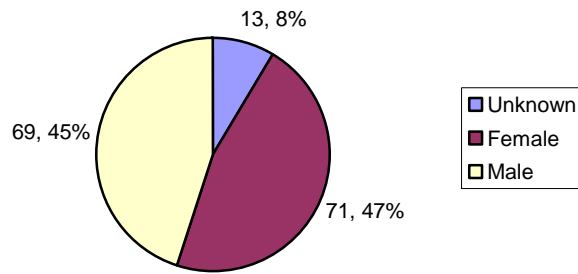


Figure 3. Bobcat Harvest Method of Take

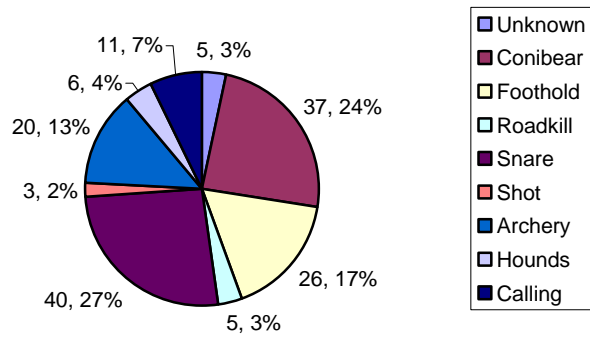


Figure 4. Bobcats Intentionally Targeted

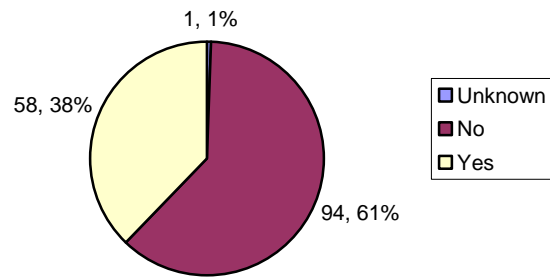
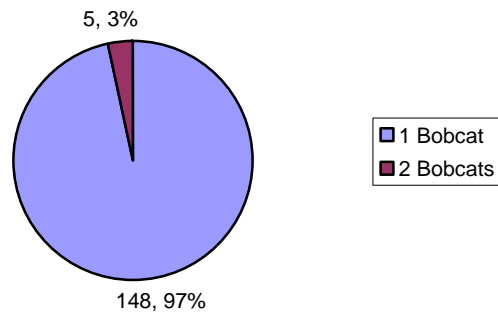


Figure 5. Harvest Per Household



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 very 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, and northern Missouri have reported increased mountain lion/cougars sightings during the past 7+ years.

Figure 1 is a map showing reported observations that appear to be credible, confirmed mountain lion/cougar tracks, 3 visual sightings, a road-kill near Harlan and 2 shot animals, one near Ireton and the other near Chariton, which could possibly indicate that a very few wild mountain lions/cougars have roamed into the state. 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/cougar during there hunting activities. With the methods of deer hunting that takes place in Iowa this is where one would expect to see more and actually have a few more killed than in any other Iowa activities. Actually it seems that we get more reports of mountain lion/cougar sightings during the summer when wildlife cover is at its maximum then we do in the winter when it is at its minimum.

In November 2004, a confirmed, ground truth, photo of a mountain lion/cougar was taken near Albion, IA in Marshall County on a trail master, motion sensitive camera. In spite of the many other photos supposedly of Iowa mountain lions circulating the internet, this photo is the only validated photo of a free ranging Iowa mountain lion and it is the last documented report through August 2008.

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. Since then, there have been numerous reports in 2005, 2006, and 2007 but none officially validated. Reports continue to still come in to the Clear Lake office during 2008 at about an average of 3 to 4 sightings per week from points all over the state. It has been over

3½ years since we have had a validated mountain lion/cougar carcass, photo or sighting in the state.

Currently the mountain lion/cougar 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/cougar and the black bears 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 should 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 "politics" again reined and the legislation did not get any consideration. "Politics" will continue to make this legislation difficult but we hope a coalition of folks will build to help get this enacted. 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 created a website (<http://defender5.dordt.edu/~mahaffy/mtlion/mtlionshort.htm>) listing his assessment of mountain lion/cougar sightings in Northwest Iowa. He has recorded several sightings along the Big Sioux and Doon Rivers and in the eastern edge of South Dakota and the western edge of Iowa. Numerous other mountain lion/cougar sightings have been generated from these reports. We attempted to map only those 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 1,500 mountain lion sightings have been reported since 2000. Tracks, photos, video or other evidence is necessary before we can officially place them on our map. Although the DNR does not advocate indiscriminate killing of mountain lion/cougar, another road-kill, shooting, or a clear photo or video would help add credibility and confidence to all the mountain lion/cougar sightings that we are currently receiving.

Poor quality mountain lion/cougar sighting videos from Harrison, Taylor, and Fremont Counties still make it difficult to definitely determine whether these are actually mountain lion/cougar sightings but some DNR personnel believe they are.

Photos of a large cat-like animal were

taken near Newell, IA. Admittedly, the initial view of these photos leaves one with the appearance that this is a mountain lion/cougar photo and the media blew this incident out of proportion about the presence of mountain lion/cougars in Iowa. With some CSI (Cat Scene Investigations) involving a full size mountain lion/cougar silhouette cutout, the DNR determine that the photo was that of a barn cat rather than a mountain lion/cougar photo, although the local folks involved in taking the photo were unconvinced. The media did however do their best to help us recover from all the "puma" paranoia that the photos and the first new articles promoted.

We have very little evidence of livestock depredation due to mountain lions/cougars. We have had reports of horses with claw marks (scratches) on the hind flank and a few reports of sheep and other livestock that some property owners believe were taken by mountain lions/cougars. Solid evidence to validate these reports is difficult to ascertain. However, mountain lion/cougar 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, and 1 in Calhoun County) from people who believe that they have seen mountain lion cubs. Several additional reports of mountain lion/cougar cubs have been reported this past year. At this point most DNR personnel are skeptical of those reports. All of 3 mountain lions/cougars killed in Iowa and others in the Midwest 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 in shape; with 4 toes and a heel pad that has 3 posterior lobes and a less than prominent M shape on the forepart of the heel pad. 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, plaster casts of suspected tracks will aid greatly in their identification.

We will continue to monitor and attempt to sort and map reliable sightings, but because there are still many mountain lion/cougar sightings based on poor visuals and so few tracks found, they are increasingly 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, (http://www.mountainlions-texas.org/be_lion_safe.htm). 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 your 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.

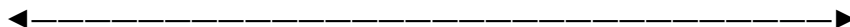
In 2006 the DNR published a 4 fold brochure on the Status of Mountain Lions/Cougars in Iowa - - Myth or Reality. The brochure is attached and also available on the Iowa DNR website.

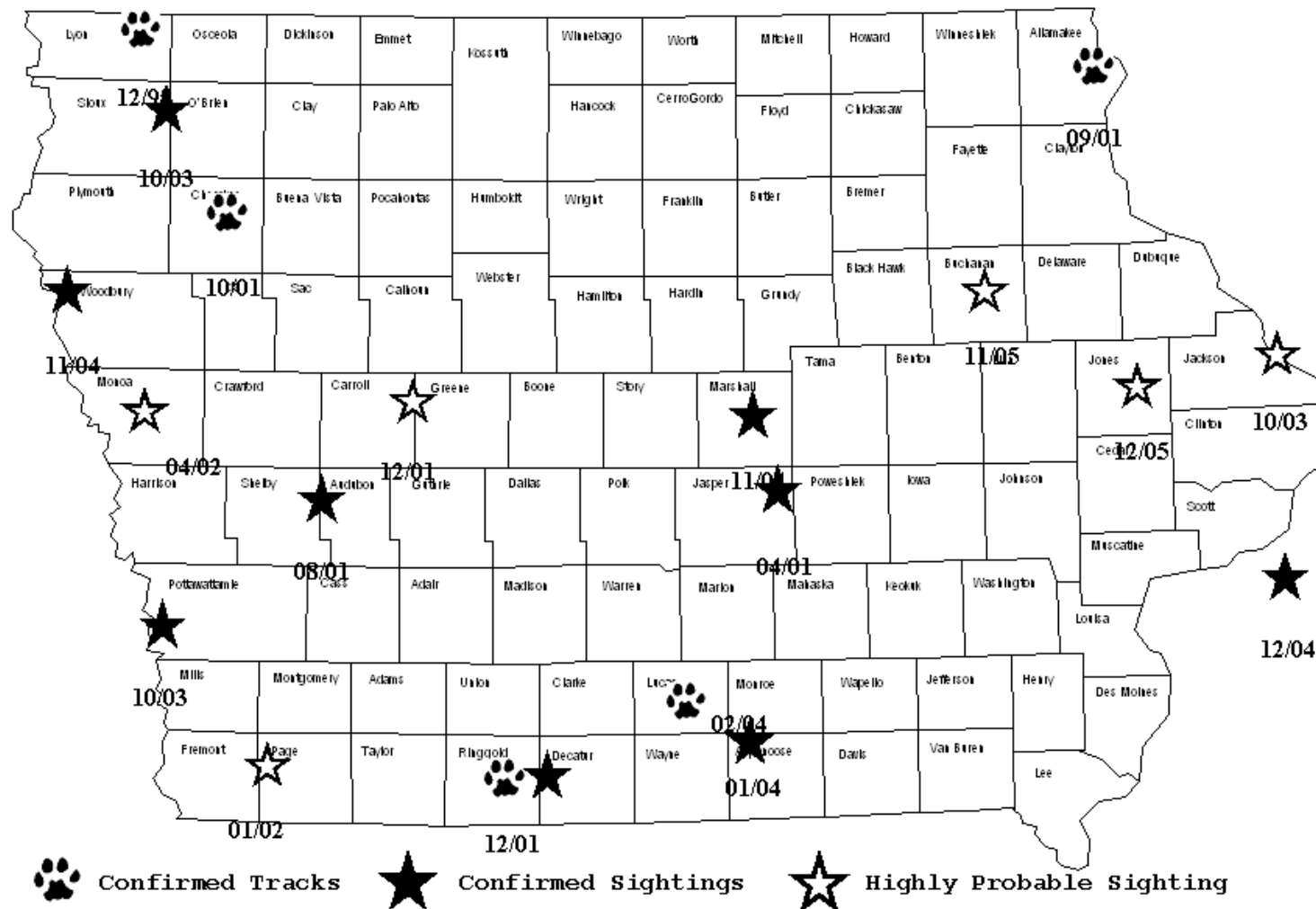
Since the first modern reports of mountain lion/cougars sightings began to increase significantly in 2001, I have given well over 200 public informational meetings statewide regarding the status of mountain lions/cougars in Iowa and the Midwest.

*Drafted by Ron Andrews, Iowa DNR,
1203 North Shore Dr., Clear Lake, IA
50428 Ph# 641-357-3517 Sept. 2008*



4 inches





Mountain Lion Reports 1995-2008

Numerous additional sighting have been reported, but are not mapped because of less than credible information

08-18-08

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 of the exploits of early-day “Davy Crocketts” in Iowa have been recorded in journals and diaries.

There are pre-1900 records of black bears from 48 Iowa counties, two-thirds of them from counties in the eastern half of Iowa. The last recorded historical bear sighting in the 1800s was one found near Spirit Lake in 1876. Although a Fish Commission had been established in 1873 nothing really happened in terms of a Game/Wildlife Commission until after the last black bear had disappeared. Thus they are not recognized as a designated wildlife in the Iowa Code. In the 1960s, black bear reports begin 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 southern Missouri. These populations are expanding their range towards Iowa from both the north and south. Figure 18.1 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. Thus far in 2008, a surge of 5 black bear sightings has occurred, 1 in each of the following counties: Davis, Johnson, Winneshiek, as well as one shot in Franklin and Fremont counties a week apart. Although not validated as yet, the circumstantial evidence seems to indicate that the one in Franklin County may have been and escaped or released bear while the one in Fremont County, appears to be wild. Black bear sightings are usually more reliable than mountain lion/cougar sightings because they do not necessarily flee when sighted, the 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 is currently considering 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. Senator Mary Lunby of Cedar Rapids introduced wildlife designation status for the black bear, but it did not get debated during the 2006 and 2007 legislative sessions. Agricultural politics seemed to thwart this effort. However the public outcry over the 2 black bears shot in mid 2008 seems to point to the fact that the majority of the public is in favor of some type of legal black bear status is appropriate. 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 it would appear that the DNR is developing develop a more uniform and standard policy concerning bear sightings in Iowa. 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 hunger and need they will 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.

Much of the historical information in this report was paraphrased from Dr. James J. Dinsmore's book "A County So Full of Game—The Story of Wildlife in Iowa".

GRAY WOLF (TIMBER WOLF) STATUS IN IOWA 2001 to Present

Two large wolf-like mammals were frequently encountered by early settlers in Iowa. 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 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 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 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. During the early 2000s, the gray wolf was down listed from Endangered to Threatened and in 2007 it was taken off the Threatened list in Minnesota. 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 in Minnesota if their DNR decides to do so.

Under the Iowa Code, the gray (timber) wolf is designated as a furbearer with state protected status. 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 the state. 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 during the past year 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 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

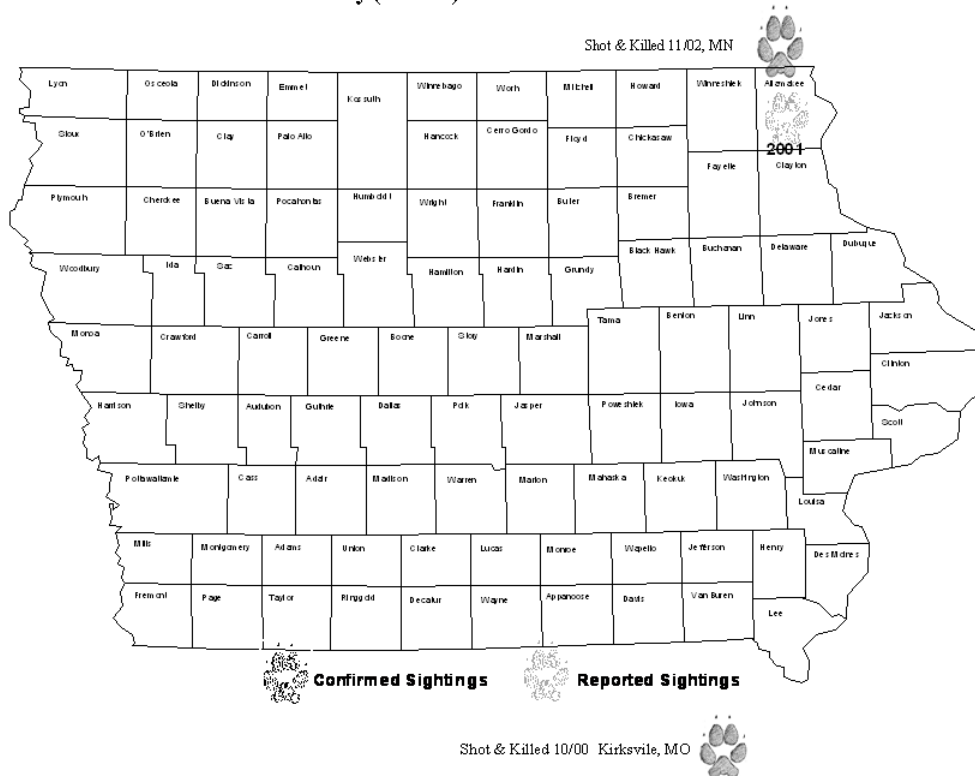
are very mobile animals and as they extend their range southward more will likely frequent Iowa.

The Rocky Mountain wolf population was delisted from threatened allowing them to be killed 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.

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. Figure 1 shows the few documented wolves that have been seen in Iowa during the past decade.

Gray (Timber) Wolf Status In Iowa



APPENDICES

1. 2007 Bowhunter Observation Survey

2007 BOWHUNTER OBSERVATION SURVEY

BACKGROUND

The Iowa Department of Natural Resources (DNR) conducted the annual Bowhunter Observation Survey during October 1 – November 30, 2007. This survey 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.

METHODS

Participants for the 2007 survey were selected from a list of bowhunters who had purchased a license for each of the 3 years prior to 2007 (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.

RESULTS & DISCUSSION

Responses were obtained from 2,498 bowhunters who recorded their observations during 35,596 hunting trips, yielding 123,697.5 hours of total observation time (3.48 ± 0.02 hours/trip; mean \pm 95% CL). Bowhunters reported a median of 14 trips during the 61-day season. Regionally, the number of bow hunting trips (and hours hunted) ranged from 2,132 (6,761 hours) in northwest Iowa (Region 1) to 6,187 (21,960 hours) in northeast Iowa (Region 3). The raw survey response rate was 27.8%.

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 $\pm 15\%$ 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.

regions are NOT entirely related to regional differences in population size.

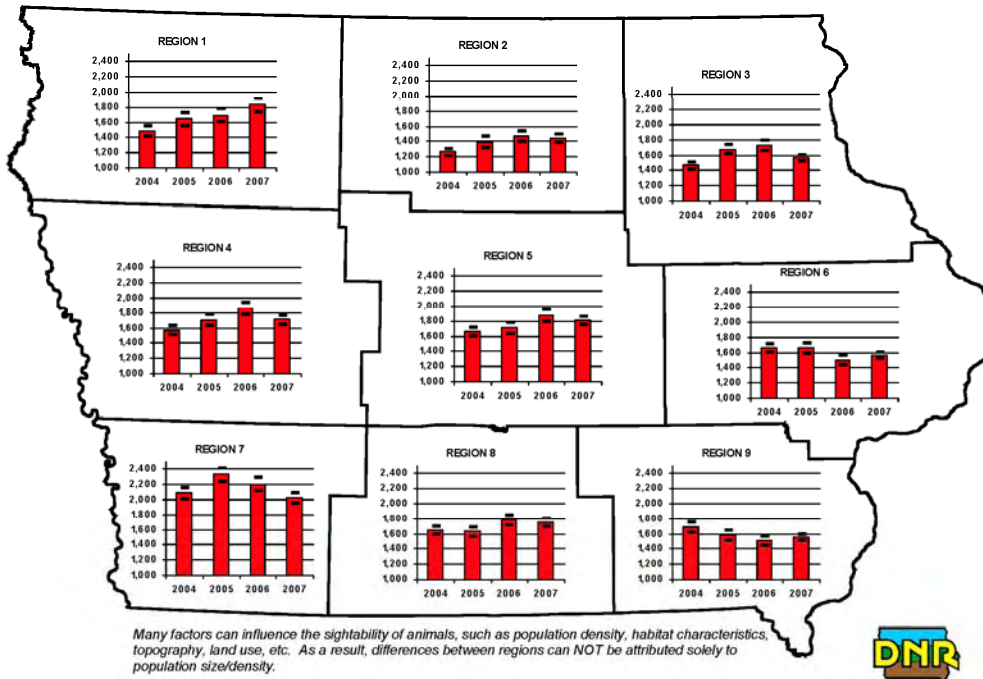
The number of hunters who cooperated with the survey increased by $>85\%$ in 2007 because bowhunters' interest was pre-screened prior to the mailing of surveys. As additional years are added to the bowhunter observation data, we will be able to examine population status and trends for each selected species in each region.

The DNR thanks all hunters who participated in the 2007 Bowhunter Observation Survey, and hopes that hunters who are selected for this survey will participate in the future. 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 provided could never be duplicated by the staff of biologists, technicians, and conservation officers of the Iowa DNR. The success of this survey will continue as long as the bowhunters continue to provide this valuable data.

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

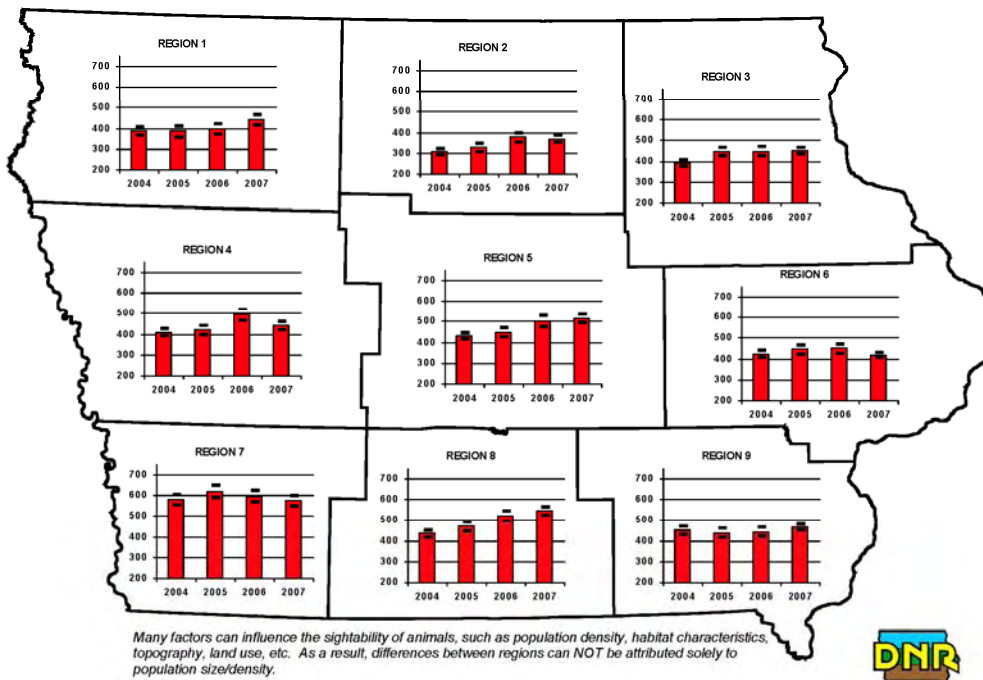
Total Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



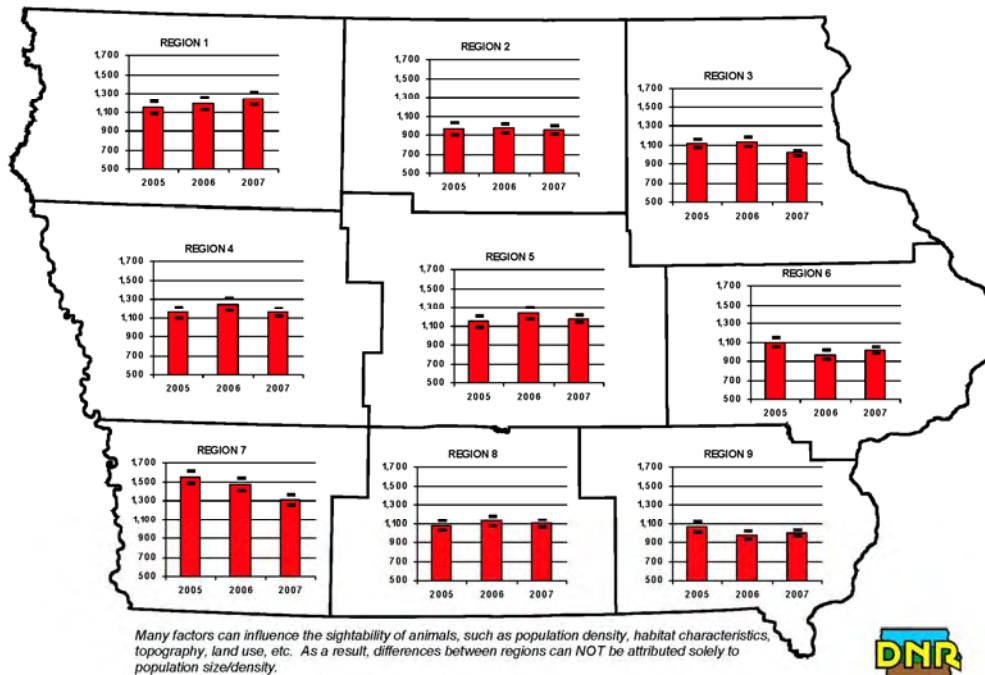
Antlered Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



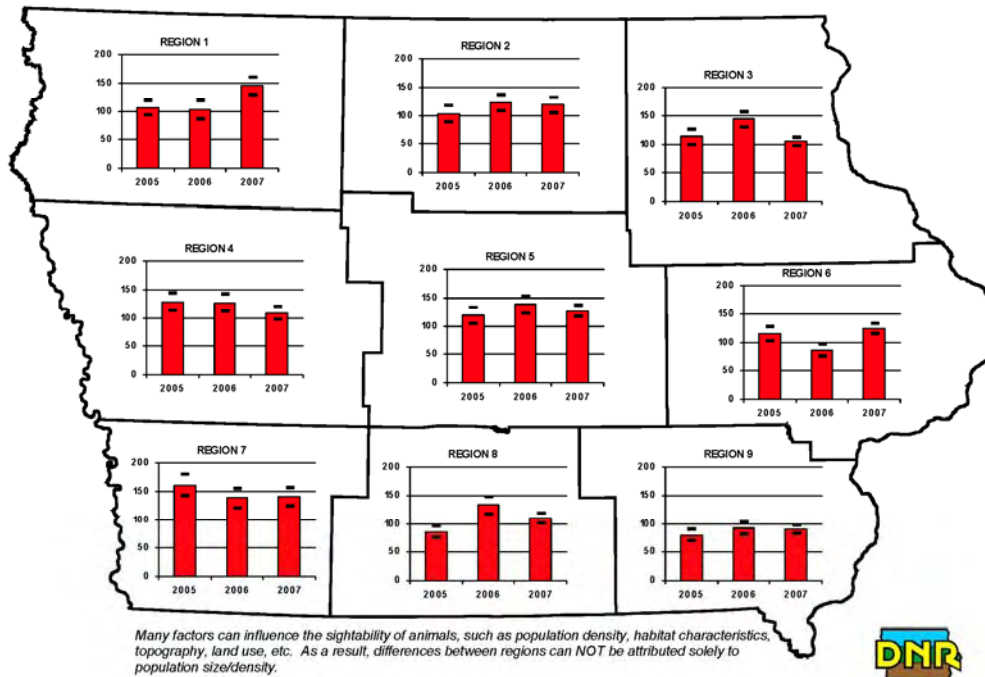
Antlerless Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



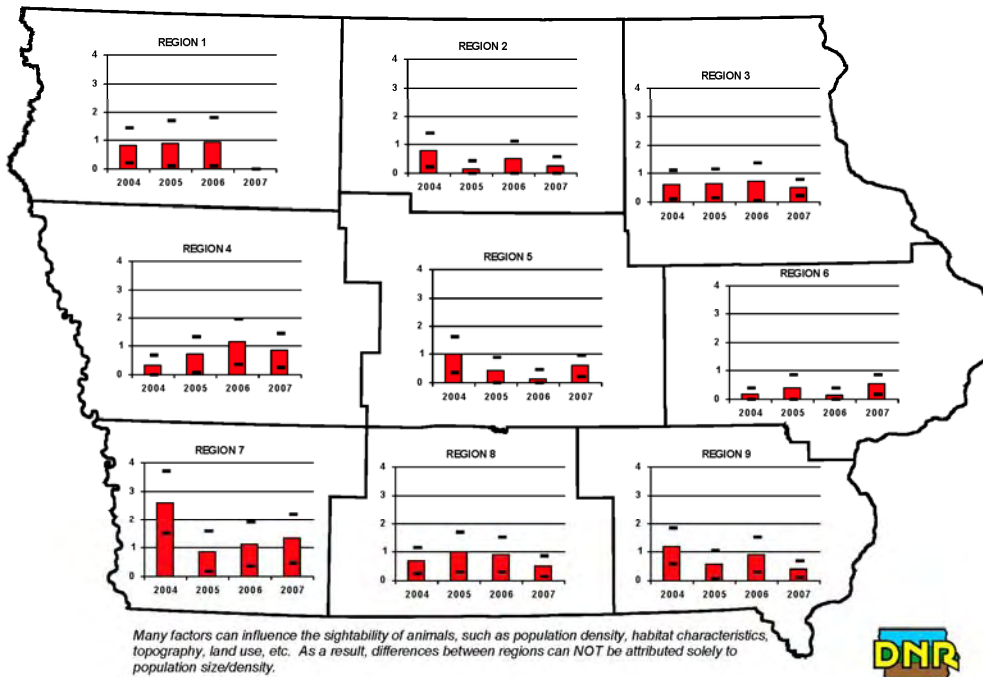
Unknown Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



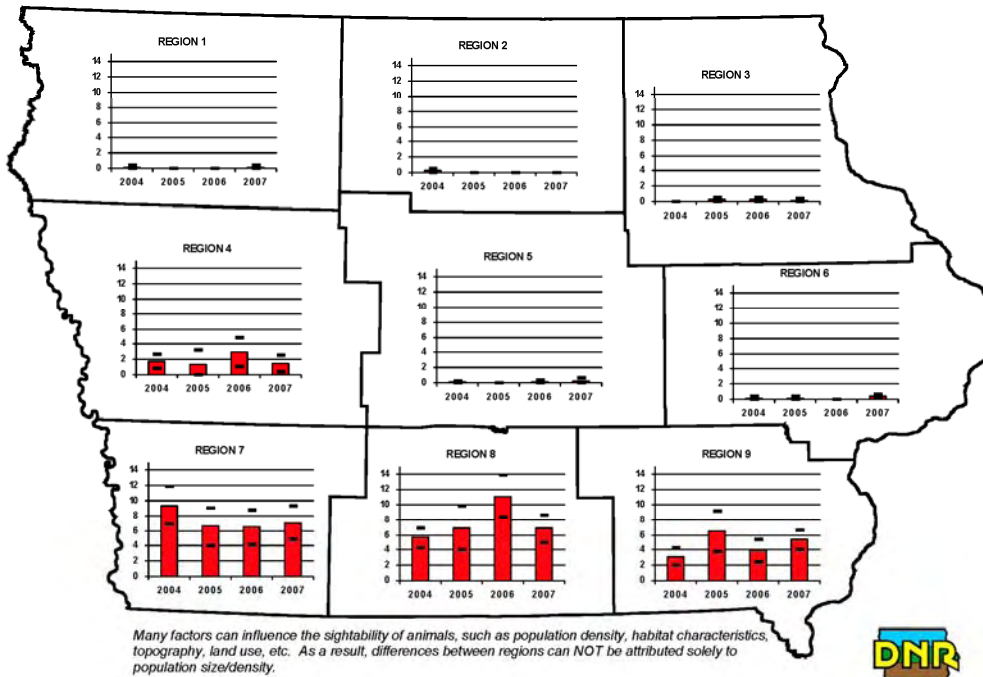
Badger Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



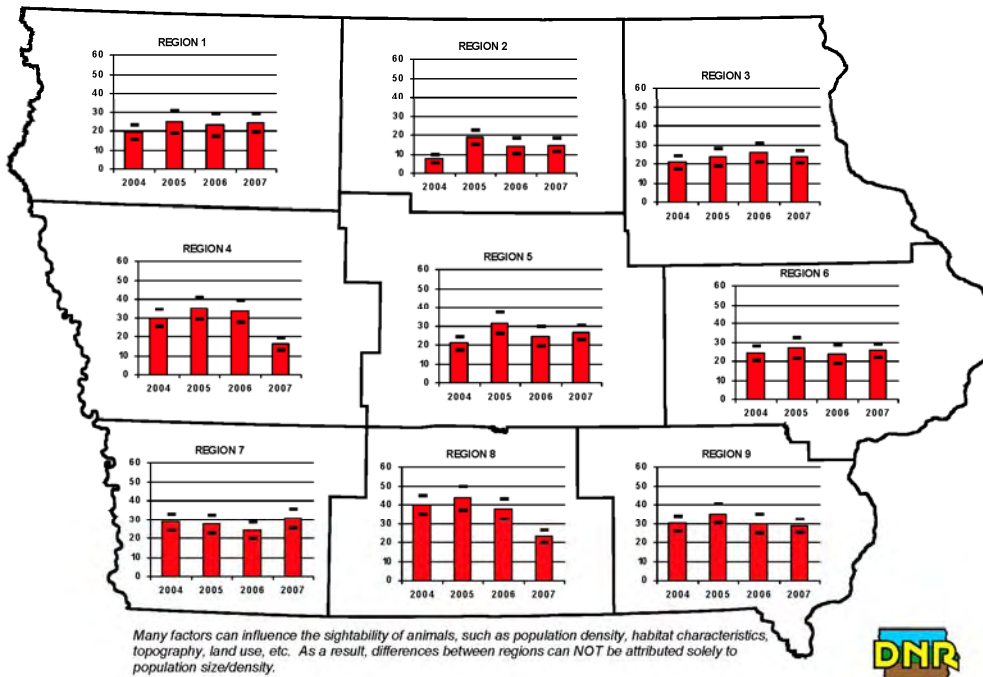
Bobcat Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



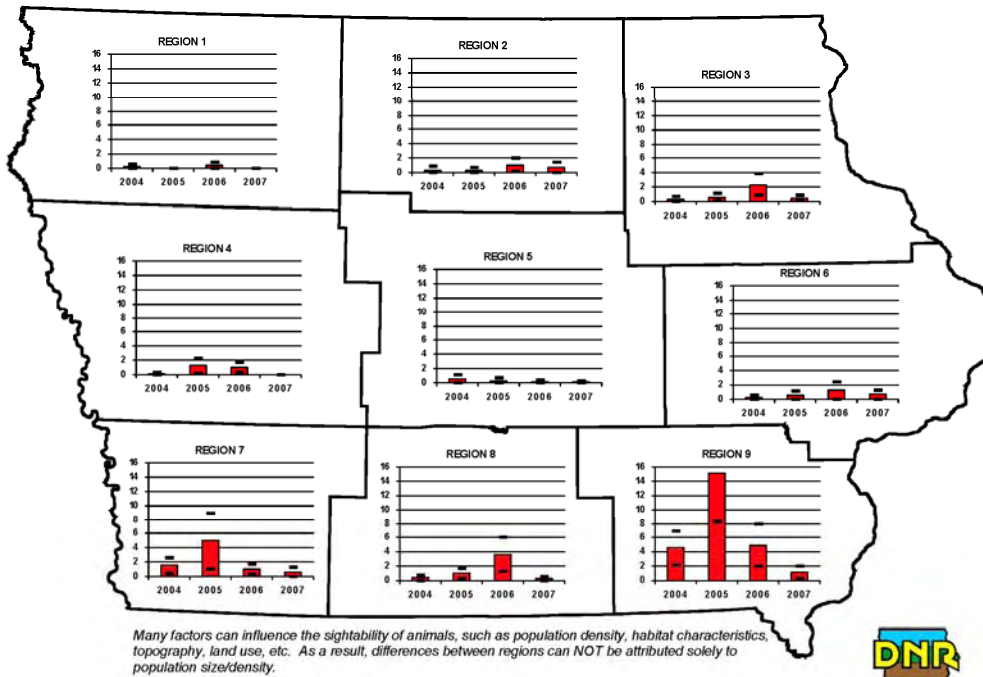
Coyote Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



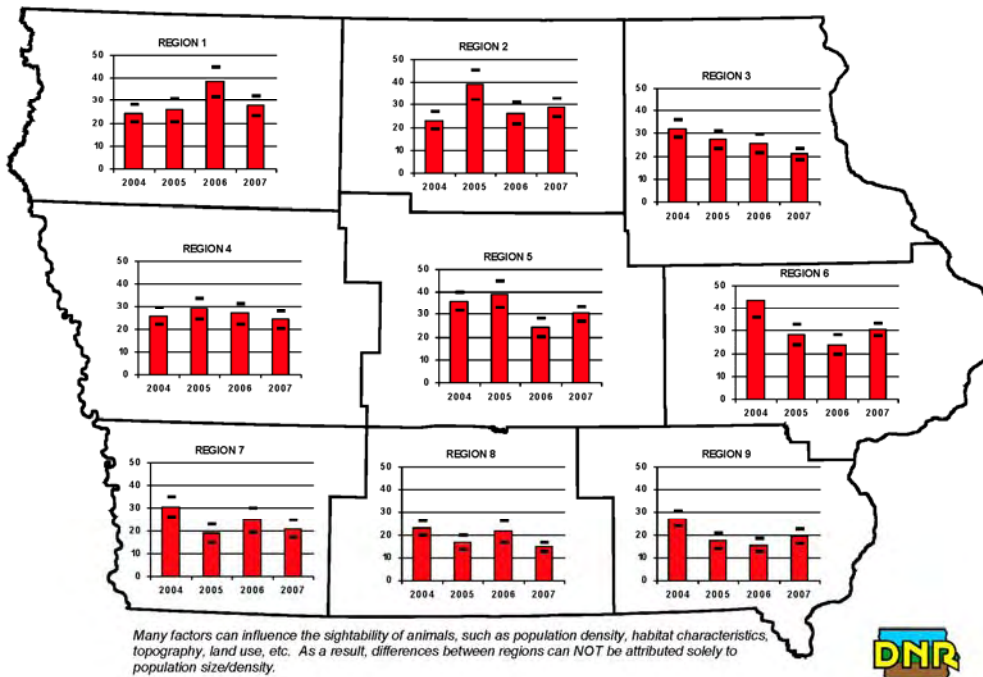
Gray Fox Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



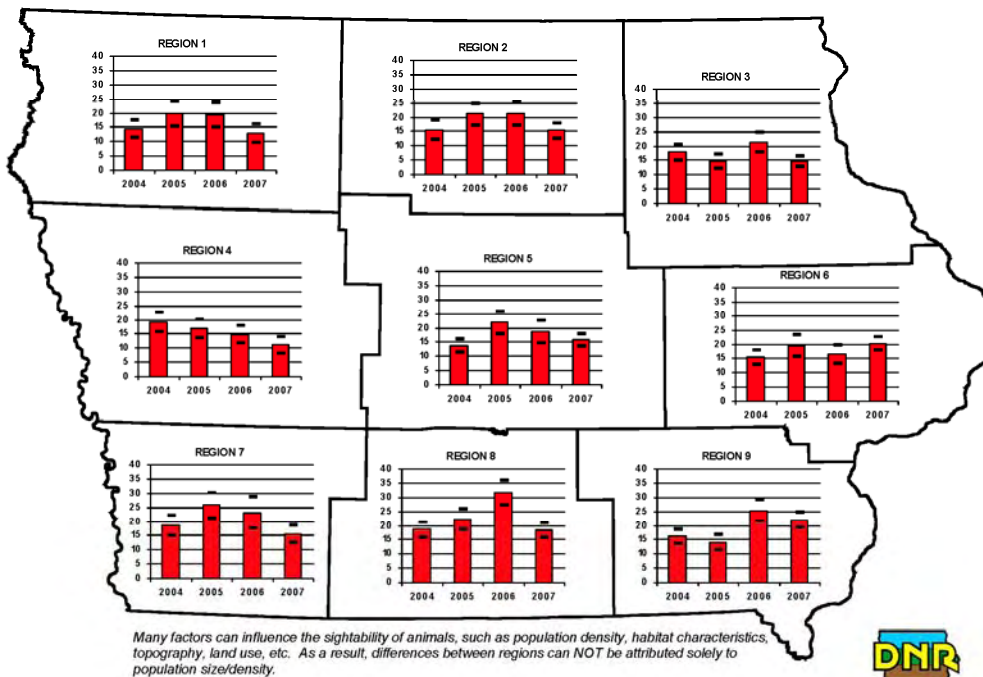
House Cat Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



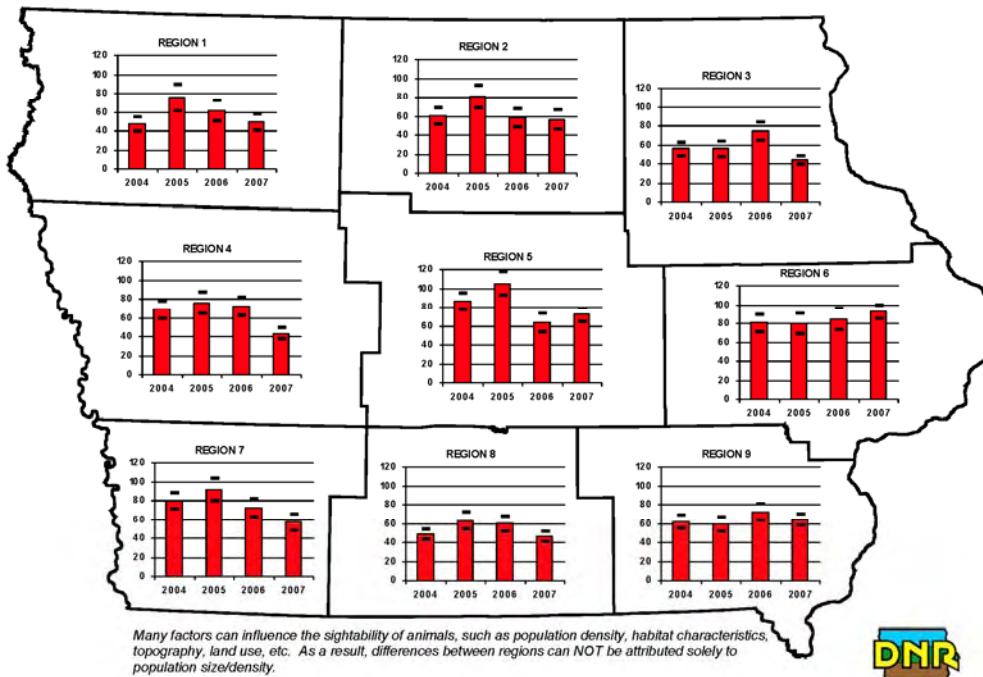
Opossum Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



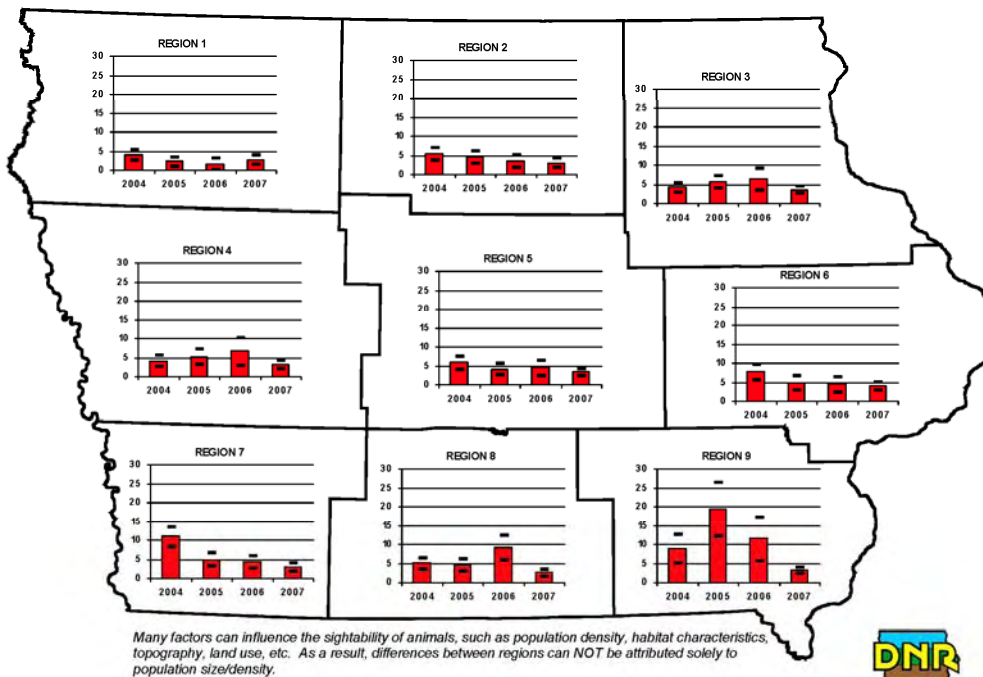
Raccoon Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



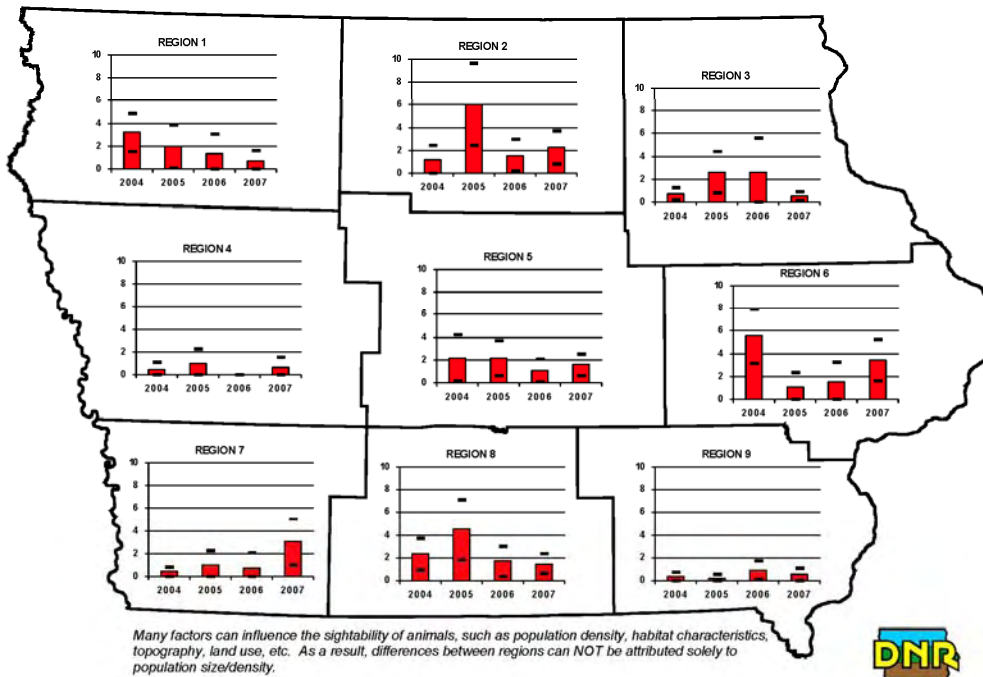
Red Fox Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



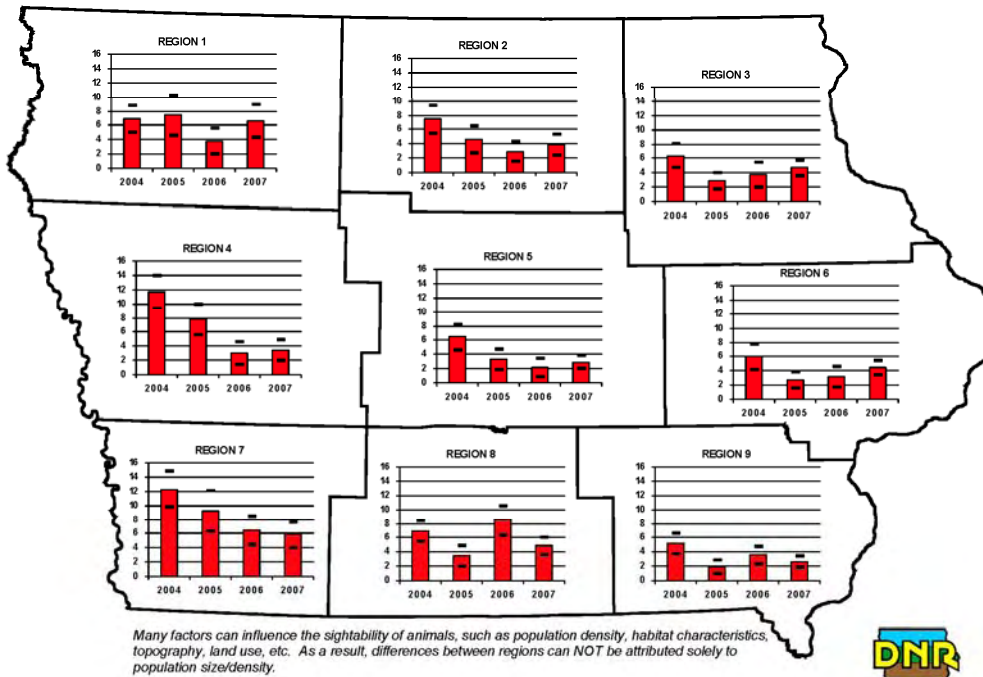
River Otter Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



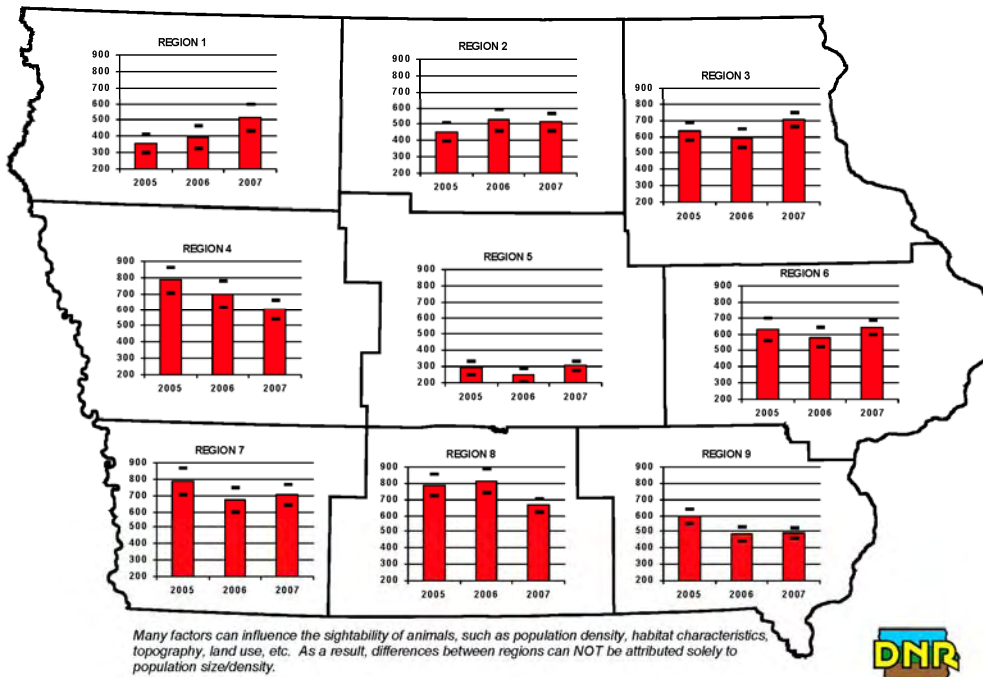
Striped Skunk Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



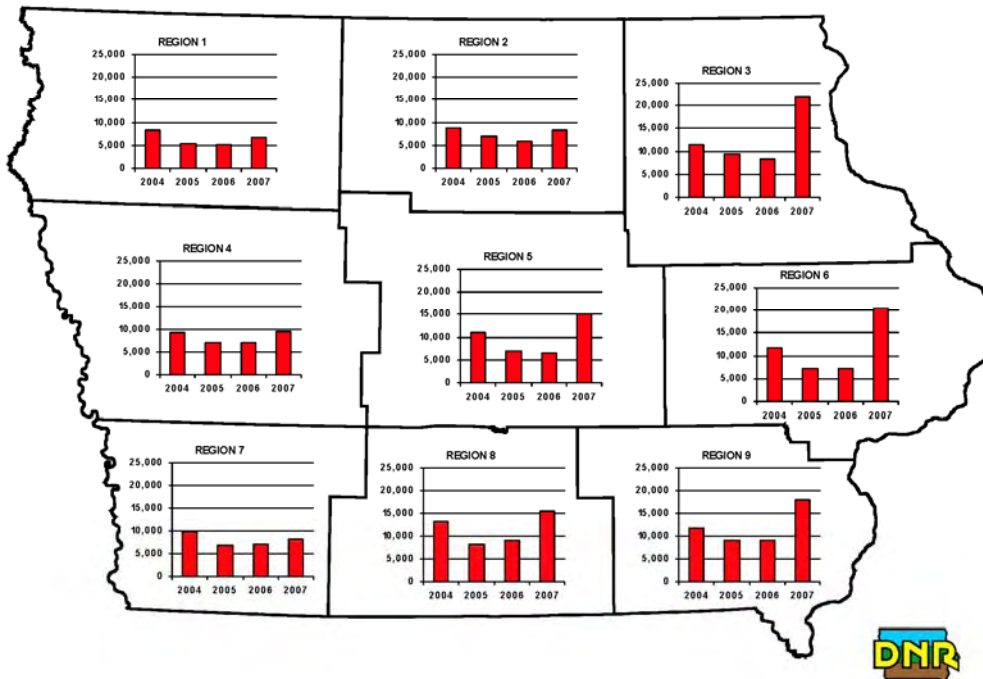
Wild Turkey Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



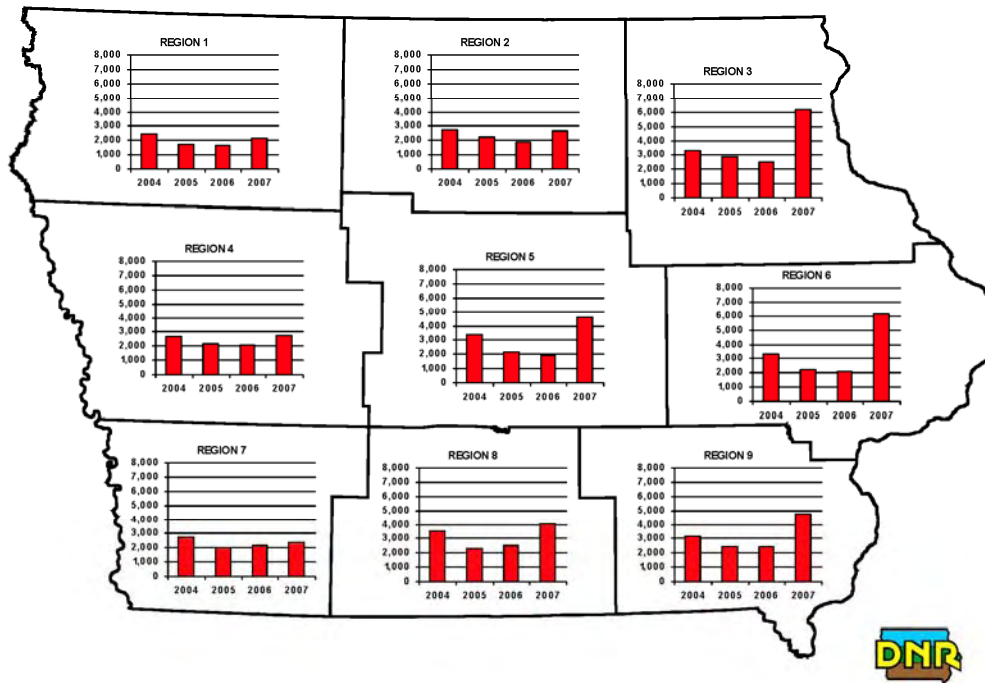
Hours Hunted by Survey Participants

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



Bowhunting Trips by Survey Participants

Bowhunter Observation Survey, Iowa Dept. of Natural Resources



Average Hours Hunted/Bowhunting Trip

Bowhunter Observation Survey, Iowa Dept. of Natural Resources

