

**2010**  
**WISCONSIN CANADA GOOSE**  
**HARVEST REPORT**  
**Volume 20, Issue 3**



*Kent Van Horn*  
*Bureau of Wildlife Management*

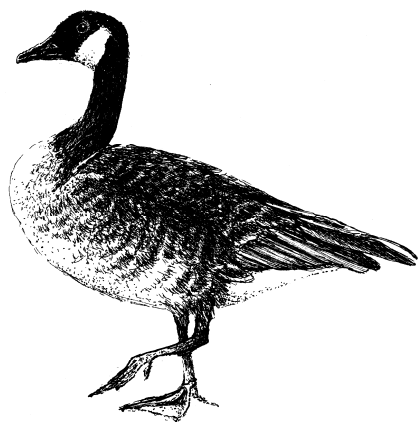
*James Christopoulos*  
*Bureau of Wildlife Management*

*Brian Dhuey*  
*Bureau of Science Services*

Season/ Zone	2010 Estimated Canada Goose Harvest
Early	19,900
Collins	233
Horicon	8,397
Exterior	33,818
<b>TOTAL</b>	<b>62,348</b>

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# WISCONSIN 2010 CANADA GOOSE HARVEST REPORT

## INTRODUCTION

The management of Canada goose populations and hunting recreation has been a social and biological challenge for the state of Wisconsin since the 1950's (Miller 1998). Continental Canada goose management is based on several different breeding populations. The fall harvest of Canada geese in Wisconsin consists primarily of 2 populations. One population is the Mississippi Valley Population (MVP) that breeds along the southern Hudson Bay Coast in Ontario and migrates south primarily through Wisconsin and Michigan, and then Illinois, Indiana, and western Ohio. Traditionally, many MVP geese wintered in Kentucky and Tennessee, and sometimes as far south as Mississippi (Brooke and Luukkonen 2010, Leafloor et al. 2003). However, in recent years many are wintering as far north as northern Illinois and southern Wisconsin. A second major population of geese contributing to Wisconsin's harvest is the resident or giant race which breeds in WI. Based on banding data, a small percentage of Wisconsin's goose harvest (~3%) also comes from the Eastern Prairie, Tall Grass Prairie and Southern James Bay Populations. The Mississippi Flyway Council (MFC) was established in 1952 to work cooperatively among the states, provinces, and federal governments in the management of migratory birds and in 1956 the MFC established a Canada Goose Committee to manage the harvest and distribution of several Canada goose populations in the Flyway.

In the 1950's the MVP was the primary population of Canada geese in Wisconsin while the giant race was considered nearly extinct in the Flyway. During this period, the Horicon National Wildlife Refuge (NWR) in WI began managing specifically to support migrating MVP during the fall. Landscape changes, Horicon refuge management and an expanded refuge system in Illinois all contributed to an increase in fall/winter Canada goose populations and harvest levels in both states. In 1960 Wisconsin and Illinois agreed to establish a harvest quota system to cooperatively manage goose harvest and despite a number of changes, a quota system remained through 2006. During the early 1960's MVP geese steadily increased in numbers at Horicon with fall numbers exceeding 100,000 geese and harvest near 1,000 geese per day for only a 9 to 11 day season. This growing fall goose population began to cause significant agricultural crop depredation in WI and complaints by hunters in states to the south that WI was short stopping geese (Miller 1998). In 1965 agricultural damage payments began as a result of goose depredation in east central WI. Over a period of several years in the 1960's social, political, and biological forces surrounded goose management and resulted in actions such as hazing and a harvest of 30,000 geese in 3 days of shooting in 1966. In 1965 the MFC agreed to a winter Flyway population objective of 200,000 and in 1969 this was increased to 300,000. Several states in the Flyway wished to see an increase in the MVP goose population and a greater distribution of these birds to the south of WI while WI managers continued to express concern over increased goose concentrations in east central WI.

In the 1970's up to 80% (250,000-300,000 birds) of the MVP winter population stopped at the Horicon and surrounding areas (Miller 1998). Agricultural and biological concerns over this concentration of birds led to the 1976 management strategy to reduce the peak fall population

and encourage birds to move south. Altering land management in the Horicon NWR, and increased harvest and disturbance helped to move geese out of the refuge but not necessarily to locations outside of WI. However, many hunters and goose watchers in Wisconsin opposed these efforts to redistribute goose concentrations. A number of biological and political concerns complicated management efforts. In 1979 the MFC prepared the first Flyway-wide management plan for the MVP in an attempt to create a more scientifically based management strategy. Revisions of this plan continue to guide the management of the MVP population with the most recent revision in 2010 (Brook and Luukkonen 2010).

Meanwhile, a few small remnants of the giant race of Canada geese were discovered in southern WI and elsewhere in the Flyway during the 1950's and 1960's. Restoration efforts to increase this population began in the 1960's and involved the releasing of birds from captive reared populations, translocation of birds within and among states and provinces, and closure of Canada goose hunting in some areas (MF Giant Canada goose management plan 1996). Now giant Canada geese are the most abundant subspecies in the Flyway (Leafloor et al. 2003). The increase in the giant population began in urban and rural areas of southeast WI and this area remains an area of increasing resident goose densities. Giant Canada geese have adapted well to the urban, suburban, and agricultural landscapes in Wisconsin resulting in an increasing population and expanding distribution across the state. With this increasing population and distribution come both problems with agricultural damage and urban nuisance geese as well as increased hunting and viewing opportunities. Harvest derivations indicate that giants are currently about 40% of the WI regular season Canada goose harvest and nearly all of the early September season harvest. The Wisconsin breeding population of giants steadily increased during the 1980's and 1990's but appeared to have stabilized from 2005-09. The last 2 years, Wisconsin's Canada goose breeding population is showing signs of an increase.

The MVP management plan provides the basis for evaluation and management of the MVP population and harvest. The annual harvest quota of the past years has been determined using the breeding population estimate (breeding adults) produced by the Ontario Ministry of Natural Resources as a trigger to determine different harvest levels. Based on the total MVP harvest level, the harvest quota in 2006 was distributed among the major and minor harvest states as follows; WI –35%, IL –33%, MI 20%, KY 12% and the minor harvest states a collective harvest of 80,500 geese. Annual harvest derivations for each state indicated the percentage of the annual Canada goose harvest for each state that comes from MVP, resident giants or other populations. The total harvest quota for the state of Wisconsin was determined by applying more recent derivations to the MVP harvest limit. This was the system that continued to guide the Canada goose season framework for Wisconsin up until 2006.

### **Changing Canada Goose Harvest Management in the Mississippi Flyway**

Historically, there has been an emphasis on maintaining a high abundance of MVP geese via population objectives and harvest restraint. The simultaneous growth of giant Canada goose populations has provided more harvest opportunities, but has also expanded management challenges (e.g., human-goose conflict). There is some evidence that the annual regular hunting

season changes intended to reduce harvest on MVP geese in low population years had also reduced harvest on resident giants, allowing greater growth of that population. In addition, at the Mississippi Flyway level nearly 70% of the total Canada goose harvest consists of resident giant Canada geese. Therefore, it is believed that the resident giant population can “buffer” the MVP and other interior Canada goose populations from harvest impacts in most locations. In order to test this theory, in 2007 the MVP harvest states in the flyway set stable seasons for five years. By creating a stable hunting season framework and monitoring outcomes, the ability of giants to “buffer” the harvest of migrants will be tested. On a flyway-wide level, the effects of this new strategy are predicted to increase overall harvest and harvest rate of giant Canada geese and thus slow or stabilize giant Canada goose population growth. Predicted effects on migrant goose populations include either an insignificant increase in harvest rate or an initial larger increase in harvest rate followed by declining abundance and declining harvest rate. Preliminary data indicate that from 2003-2006 the rate of harvest on adult MVP geese ranged from 9-11% while in the first 2 years (2007, 2008) of the stable regulations the harvest rate was 8% and 10%. However, in 2009 the MVP produced few young birds because of a harsh spring which resulted in a higher proportion of the fall population consisting of adult birds. This caused an increase in the adult MVP harvest rate to 13.5%. In comparison, the 2003-2006 rate of harvest on adult giant Canada geese in Wisconsin ranged from 19-22%. This includes Canada geese banded in Wisconsin but harvested anywhere. Most of the harvest of Wisconsin banded Canada geese occurs in Wisconsin and Illinois. From 2006-08, the 3 year combined rate of harvest for Wisconsin banded giant Canada geese was 24%. These data suggest that the desired results of maintaining a relatively low harvest rate on MVP Canada geese while increasing the rate of harvest on giant Canada geese through these regulations are being achieved.

Harvest quantity, distribution and hunter participation are all important pieces of information for the evaluation of this harvest strategy and management of Canada geese. This report is a summary of the 2010 management of harvest. This series of reports has been and continues to be instrumental in making decisions for the management of Canada geese in Wisconsin.

## **BREEDING POPULATIONS**

In 2010, the breeding surveys for MVP geese in northern Ontario indicated average production but showed a significant increase from the late spring with record poor production observed in 2009. Early spring progression in 2010 provided good nesting conditions compared to recent years, though high predation was noted (Brook and Hughes, June 2010). The adult breeding population was estimated at 339,310, which is 6% percent below the 1989-2009 average. In Wisconsin, the 2010 breeding population estimate for resident giant Canada geese was up for a second year at 165,853, though the trend over several earlier years seemed to indicate the population was leveling off at around 120,000.

## **METHODS**

The Wisconsin Department of Natural Resources collects Canada goose harvest data via 2 different methods in the 3 Canada goose management zones. In the statewide Early September season and in the Exterior zone during the regular season, all Canada goose hunters are required to report their harvest using the 1-800-99-GOOSE telephone call-in system within 48 hours. With this system hunters report the following information: DNR customer number, date of harvest, county of harvest, and number of geese harvested. This information is electronically recorded and summarized in a harvest database that is reviewed at least weekly during the season to track harvest levels. Department law enforcement personnel around the state conduct field checks of Canada goose hunters to assure compliance with the reporting system. Results of these field checks provide a compliance rate that is used to adjust the harvest records to estimate total Canada goose harvest.

### **Horicon/Collins Mail Survey**

Canada goose hunters in the Horicon and Collins zones were mailed a hunter questionnaire to obtain harvest information. The questionnaire was sent to 100% of permit holders for the Collins Zone and 83% of the Horicon Zone permit holders. The questionnaire was mailed to hunters at the end of each time period. The Horicon hunters were selected randomly in proportion to the number in each time period. Response rates for questionnaires (Table 1) for the Collins Zone decreased slightly in 2010 when compared to 2009 (46% and 49%, respectively). The 2010 response rate for the Horicon Zone remained consistent at 52%.

## **RESULTS AND DISCUSSION**

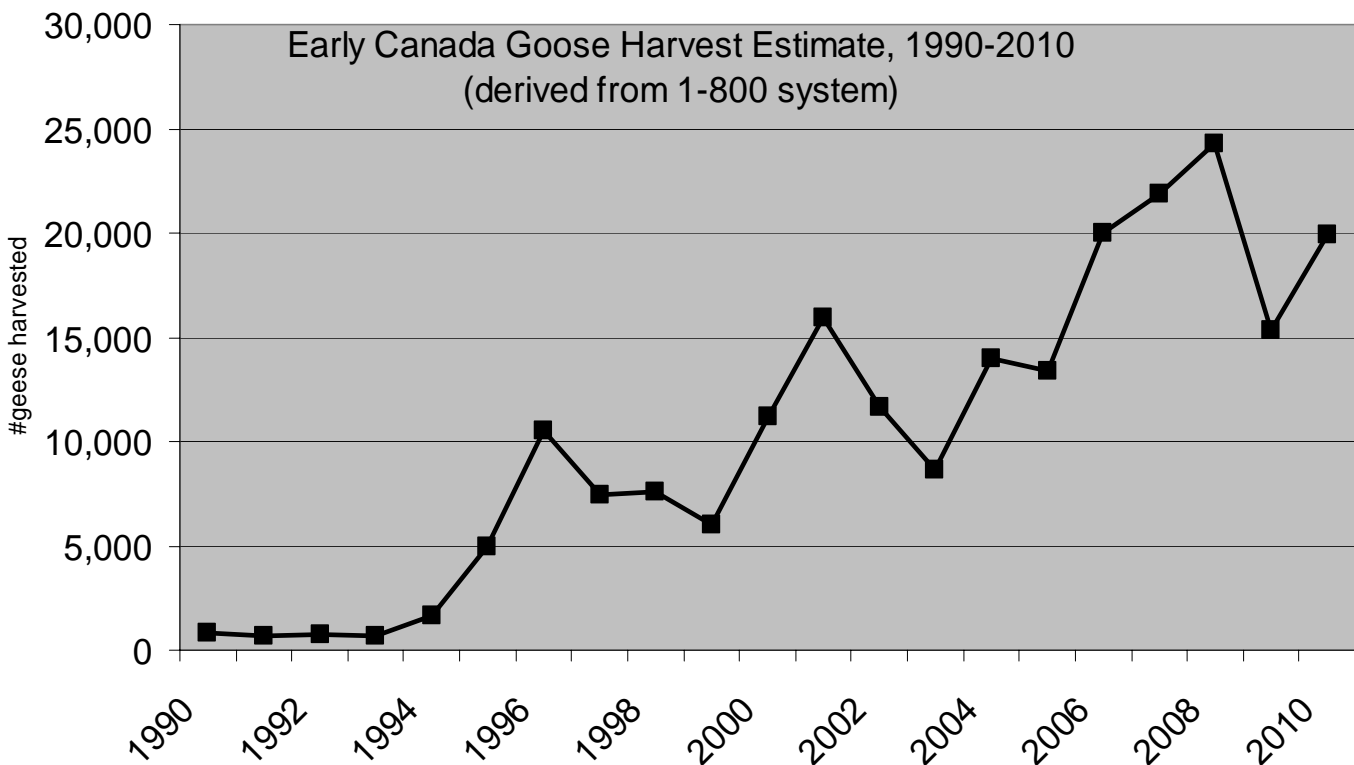
### **Early September Canada Goose Season Hunter Participation and Harvest**

The Early September season is an important part of Wisconsin's Canada goose management program. This season offers hunters an additional recreational experience outside of the regular season and helps to direct harvest pressure onto our resident giant Canada geese. For a number of years, the breeding population for our resident geese has had a fairly consistent increasing trend. More recent years' data seemed to indicate that the population was leveling off, but it increased again in 2009 and 2010. In some areas these higher goose numbers have resulted in nuisance problems. In 2010 the season was open from September 1-15 which was unchanged from previous years.

The number of applicants for the Early September Canada Goose permit was again down slightly from the last few years (Table 19). This is most likely a result of a continued decline in Conservation Patron permit holders (due to cost increases of this license twice in the past several years) rather than a reflection of a decrease in the number of hunters with the intent to hunt the Early season. We have no data to assess the percent of the total applicants that actively hunt

during this period. Conservation Patron license customers are offered an Early September Canada goose permit as part of the combined license package so some of these permit holders may have had little intent to hunt during this season even though they had a permit. The harvest figures for 2010 suggest that hunters who received a permit were considerably more successful this year than in 2009. This idea is supported by the numbers of hunters who shot one or more geese in the Early season in 2010 vs. 2009 (4,277 vs. 3,775).

At an estimated 19,900 geese, the 2010 Early Canada goose harvest was up significantly from 2009 and was the fourth highest since it began. All of the counties with the highest Early season harvest were similar to 2009 and previous years, except Dodge county rejoined the top counties and Walworth dropped off. This list indicates that the opportunity and need for the Early season is distributed across the state. It also suggests that we are successfully targeting different geese and different hunter interest than during the regular season. Counties like Polk, Door and Barron are in the top 10 Early season harvest counties but rank lower during the regular season.



Top 10 counties - Early season harvest - 2010			
County	Rank	Estimated Kill	Percent of Early Total
Manitowoc	1	1,186	5.61%
Brown	2	877	4.41%

Door	3	798	4.01%
Kewaunee	4	709	3.56%
Barron	5	680	3.42%
Polk	5	680	3.42%
Waukesha	6	606	3.05%
Dodge	7	595	2.99%
Winnebago	7	595	2.99%
Sheboygan	8	593	2.98%

### **Regular Season Hunter Participation and Characteristics**

In 2010, 83,520 individuals received a Wisconsin Canada goose regular season hunting permit (Exterior, Horicon, or Collins). This was a decline of 5,123 or -5.8% from 2009. As with the early season permit, an increase in cost of the Conservation Patron license in recent years may have been the primary cause of this decline, which would suggest that this is not a direct decline in active Canada goose hunters. As part of the combined license package, a Conservation Patron holder is offered an Exterior Zone Canada goose permit, which means a hunter may opt to receive the permit even if there is only a slim chance they will actually hunt geese. In 2010, the number of Exterior Zone permit holders declined by 2,816 from 2009. In order to hunt Canada geese in the Horicon and Collins Zones a hunter must apply for a permit and the number of Horicon permit holders decreased by 1,374 while Collins permits decreased by 45 from 2009.

### **Exterior Zone**

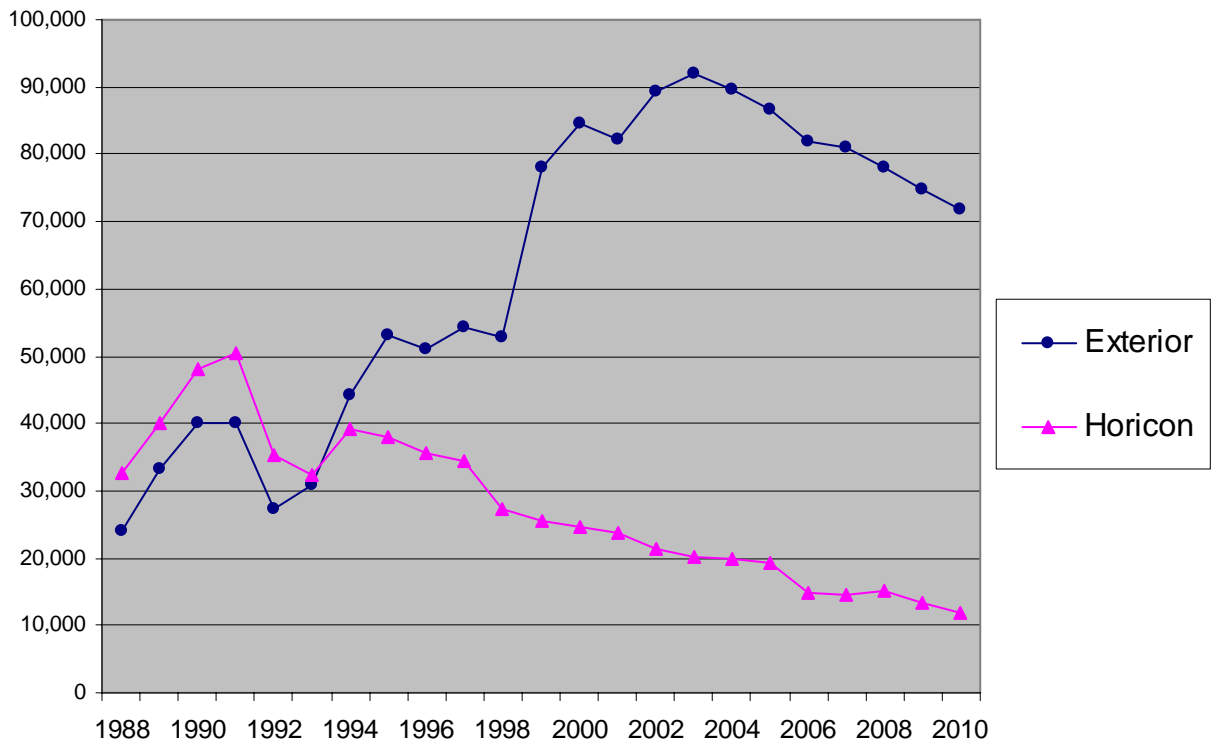
Exterior Zone permits totaled 71,005 in 2010. This represents 85% of the total regular season permits, which is similar to recent years. However, we have no estimate of how many were actively hunting geese. Estimates of the number of active Wisconsin goose hunters derived from USFWS HIP estimates for 2010 will not be available until July, 2011. However, previous comparisons of state and federal hunter estimates suggest that about 50% of the Exterior zone permit holders are active goose hunters. This would indicate about 36,000 of the Exterior zone permit holders were actively hunting geese.

The 5 counties with the highest total Exterior Zone goose permits were similar when compared to recent years (Table 3). In descending order, the counties with the highest number of permits issued were Brown, Dane, Manitowoc, Racine, and Kewaunee. Three of these counties also have some of the highest human populations in the state.

## Horicon Zone

The Horicon Zone is a large area that includes all of Green Lake and parts of Dodge, Columbia, Fond du Lac, Marquette, Washington, and Winnebago counties. Horicon zone permit holders received 6 tags in 2010; this tag number is part of the stable season trial. There has been a gradual decline in the number of Horicon Zone permits over the last 16 years. The total number of Horicon permits issued in 2010 was 12,006. The percentage of total regular season hunters represented by the Horicon permits in 2010 was 14% which was similar to 2009 (15%) (Table 2). The percentage of active Horicon zone hunters (those who actually hunted) from all time periods was also similar between 2009 (64%) and 2010 (63%). In 2010, the mean number of trips taken by active hunters in period 1 increased from 4.5 in 2009 to 4.6 in 2010 and in period 2, mean number of trips increased from 4.2 to 4.3 in 2010 (Table 7). Although hunter effort increased slightly, the reduction of permit holders predictably resulted in reduced harvest.

**Horicon and Exterior Permits Issued**



Horicon zone hunters are primarily hunters that have previous experience in this zone. In 2010, 95.1% of the Horicon zone hunters had hunted the Horicon zone in previous years (Table 4). This high proportion of repeat hunters is consistent with other years. The Horicon time periods

serve to distribute hunter harvest pressure across the fall season. Since 2008, there have been only 2 periods, roughly splitting the 92 days season in half, with no overlap. Except for 2008 when there was some confusion over the revised time periods, there is typically a strong preference for time Period 1 (8,410 applicants) compared with only 3,596 applicants for Period 2. (Table 2).

About half of the Horicon zone hunters are spending the majority of the time hunting on private lands which is similar to previous years (Table 16). After several years of 66-68% of the Horicon zone goose hunters also engaging in duck hunting, this proportion increased to 70% in 2009 and 72% in 2010. This may reflect the loss of hunters whose only waterfowl hunt was an annual trip to the Horicon zone for goose hunting.

### **Collins Zone**

The Collins Zone is a very small zone surrounding the Collins Wildlife Management Area. The number of applicants for the Collins zone remains very low compared to the statewide number of Canada goose hunters (Table 2). A total of 509 Collins zone permits were issued in 2010. As with the Horicon Zone hunters, these hunters are mostly returning to this zone from previous years (85.3%, Table 4) and most hunted geese the previous year (85.1%, Table 5). Although 2008 showed a spike in the number of permits awarded, there has been a generally decreasing trend over the last 21 years. The percentage of those actively hunting in 2010 was 48% (Table 2), a decrease from 51% in 2009. In 2010 hunters continued to show a preference for time period 2, and the number that hunted ducks the previous year was 62.8%, which was again up from prior years (Table 6).

As a result of reduced interest in the Collins Zone and increased opportunity for Canada goose hunting in the surrounding area, the Collins Zone special regulations are eliminated for 2011. Canada goose hunting in this area will now be managed as part of the Exterior zone. From surveys sent to all Collins zone hunters, 82% supported this change while only 6% were opposed.

### **Regular Season Harvest**

#### **Statewide**

The statewide regular season Canada goose harvest in 2010 was 42,448 (Table 8). Statewide harvest figures suggest that our season structure continues to effectively manage harvest despite annual changes in production. The 2010 statewide regular season harvest was a 3% higher than the 2009 harvest but lower than 2006-08.

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#### **Permit Issuance**

##### **Collins Zone**

<b>2010=</b>	<b>509</b>
<b>2009 =</b>	<b>554</b>
<b>2008 =</b>	<b>620</b>
<b>2007 =</b>	<b>343</b>
<b>2006 =</b>	<b>357</b>
<b>2005 =</b>	<b>455</b>
<b>2004 =</b>	<b>457</b>
<b>2003 =</b>	<b>494</b>
<b>2002 =</b>	<b>475</b>
<b>2001 =</b>	<b>615</b>
<b>2000 =</b>	<b>583</b>
<b>1999 =</b>	<b>662</b>
<b>1998 =</b>	<b>699</b>
<b>1997 =</b>	<b>845</b>
<b>1996 =</b>	<b>839</b>
<b>1995 =</b>	<b>950</b>
<b>1994 =</b>	<b>887</b>
<b>1993 =</b>	<b>724</b>
<b>1992 =</b>	<b>781</b>
<b>1991 =</b>	<b>969</b>
<b>1990 =</b>	<b>1,197</b>
<b>1989 =</b>	<b>1,303</b>
<b>1988 =</b>	<b>975</b>

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When combining the harvest from all zones by county the top 10 harvest counties in 2010 were:

**Top 10 counties - Statewide harvest for 2010  
(all zones-Reg. season)**

County	Rank	Estimated Kill	% of Statewide Total
Dodge	1	5,298	12.5%
Brown	2	2,081	4.9%
Fond Du Lac	3	2,049	4.8%
Manitowoc	4	1,924	4.5%
Dane	5	1,729	4.1%
Racine	6	1,323	3.1%
Kewaunee	7	1,250	2.9%
Sheboygan	8	1,237	2.9%
Kenosha	9	1,220	2.9%
Outagamie	10	1,197	2.8%

This county level distribution illustrates the continued concentration of geese and goose harvest in areas associated with the Horicon zone (Dodge and Fond du Lac counties) which have high MVP harvest. The five counties with the highest harvest have remained unchanged for several years. The rest of the top harvest counties have all been in the top 10 in recent years.

**Exterior**

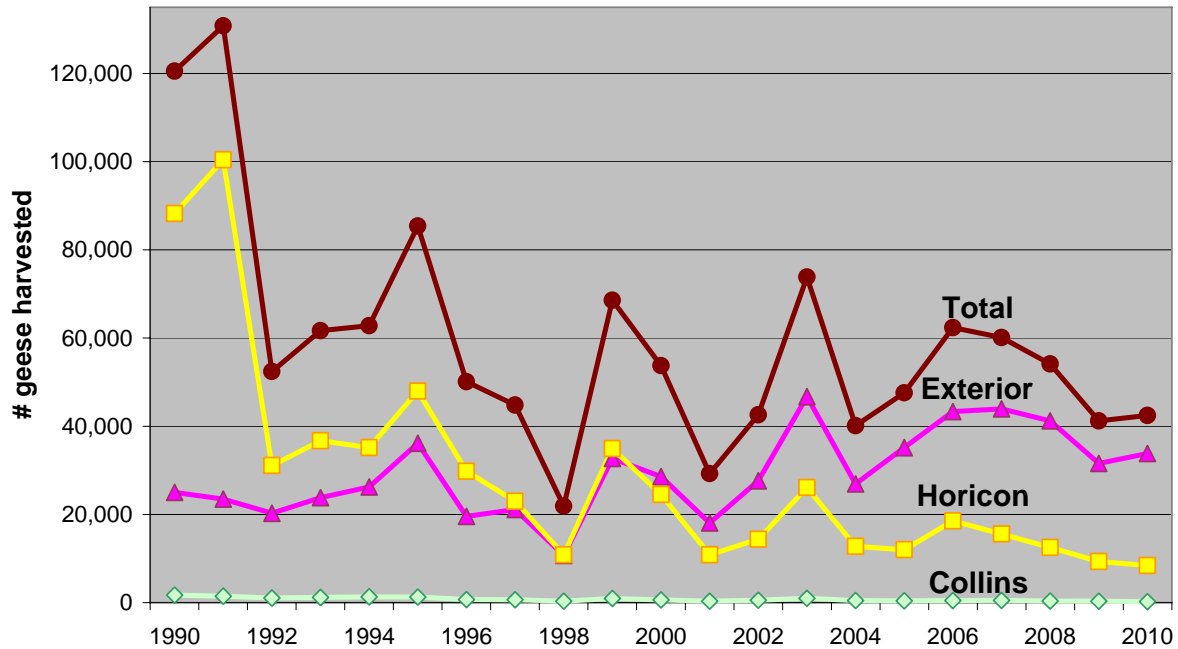
The Exterior zone represents all areas of the state open to goose hunting outside of the Horicon and Collins zones. The opening of the Exterior Zone begins sometime after the close of the Early Canada goose season which is always September 15. Generally the objective for higher harvest on giant Canada geese in relation to MVP Canada geese would support an early opening date for the Exterior Canada goose season before many of the MVP geese arrive in Wisconsin. However, the decision on when to open the Exterior Zone is made each year based on the harvest objectives and hunter input. In response to requests for a later Canada goose hunting season in the Exterior Zone by some hunters and to test whether higher harvest may result from a Saturday versus week-day opener, for a third year the Exterior Zone was opened the third Saturday in September (18<sup>th</sup>) rather than the earliest possible opening date of September 16<sup>th</sup>. To evaluate the impact of this regulatory decision, we reviewed the proportion of the total season harvest that occurred on the opening day. Comparing the proportion of the harvest represented by opening day is a better comparison than actual harvest since other variables impact the year to year variation in total season harvest. The estimated opening day harvest on Saturday, September 18 was 1,678 or 5.0% of the total season harvest. In 2009, the opening day harvest on Saturday, September 19<sup>th</sup> was 4.2% of the total season harvest. The opening day for the Exterior Zone was Saturday September 17 in 2005, Saturday September 16<sup>th</sup> in 2006 and Sunday September 16<sup>th</sup> in 2007 but the opening day harvest represented only 1.4%, 1.7% and 2.6% of the total season harvest, respectively. As a result, it does not appear that this increased harvest in 2008

and 2009 was simply the result of the opening day being scheduled on a weekend. We conducted an analysis of another possibility and that is whether days without hunting between the end of the early season and the beginning of the Exterior Zone season would impact the opening day harvest in the Exterior Zone. We found a positive correlation ( $P < 0.05$ ) between increasing the days between the end of the Early season and the opening day harvest of the Exterior season. In other words, each additional day (range 0-4 days from 2003-2010) closed to hunting between the end of the Early season and the beginning of the Exterior Zone season increased the opening day harvest. However, there are some trade-offs with delaying the opening date of the Exterior Zone season. Delaying the opening date shifts days of Canada goose hunting from September to December. A day of Canada goose hunting in late September or early October results in much higher participation and harvest than a day of Canada goose hunting in December (see graph pg 13). In addition, MVP Canada geese begin migrating into Wisconsin around the 3 week of September so a later date has the potential for a higher proportion of MVP geese in the regular season opening day harvest. Considering the available data and trade-offs it appears that delaying the opening day of the Exterior Zone season has some advantage as long as the delay is in the range of 2-5 days but not longer.

The total Exterior zone harvest was 33,818 in 2010, which was 80% of the statewide regular season harvest (Table 8). This proportion of the statewide total was similar to recent years (77% in 2009, 76% in 2008). The harvest increased from 2009 and was the 6th highest since 1990. The list of the top 10 harvest counties was similar to recent years and represents the southern and eastern portions of the state, excluding those areas in the Horicon and Collins management zones. These counties also overlap with several of the counties that have the highest human populations, suggesting we are taking advantage of harvest potential in areas where high goose numbers have greater potential to create nuisance problems.

Note: This figure is based on state estimates

## Canada Goose Harvest in All Regular Season Zones, 1990-2010



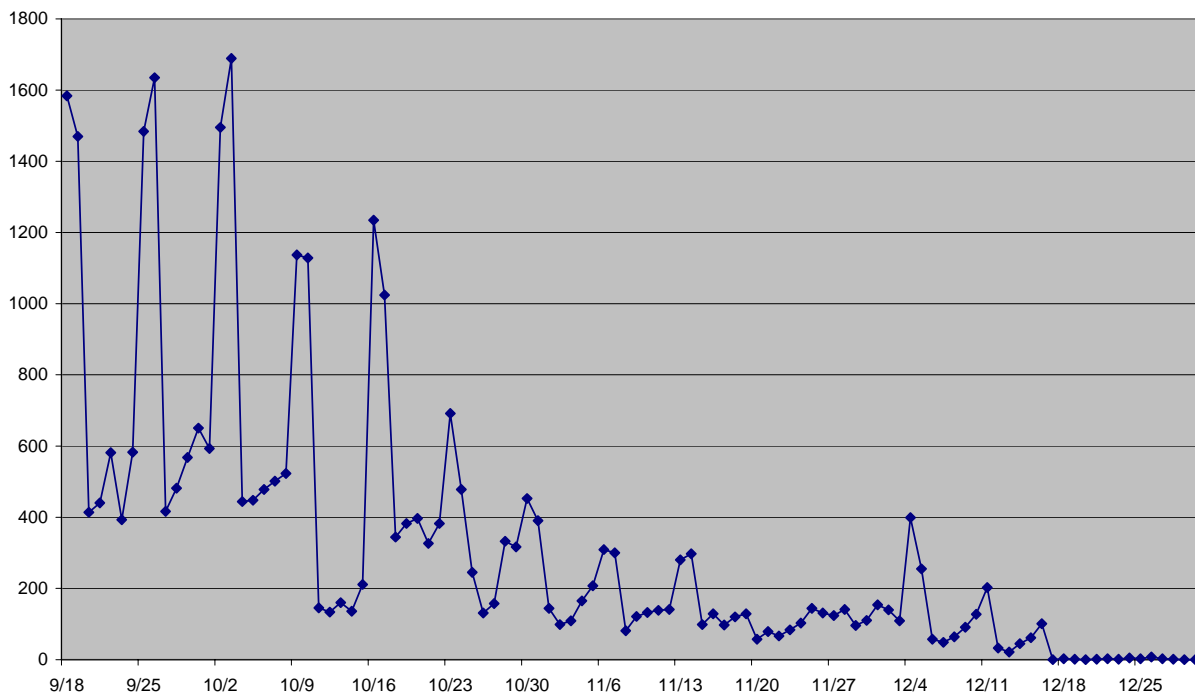
### Top 10 counties - Exterior harvest - 2010

County	Rank	Estimated Kill	% of Exterior Total
Brown	1	2,081	6.2%
Dane	2	1,729	5.1%
Manitowoc	3	1,691	5.0%
Racine	4	1,323	3.9%
Kewaunee	5	1,250	3.7%
Sheboygan	6	1,237	3.7%
Kenosha	7	1,220	3.6%
Outagamie	8	1,197	3.5%
Door	9	1,135	3.4%
Waukesha	10	1,122	3.3%

Harvest of Canada geese continues to be highest on weekends and most of the Exterior zone harvest occurs in late September and October (graph pg. 13 & Table 11). While the Exterior

Zone season did not begin until September 18, there were a total of 8 Canada geese reported harvested during the 2 days of closed hunting between the Early September and Exterior Zone seasons. It is likely that these reports were a result of late early season reports or user error with the harvest reporting system, however, they are reported for data summary purposes. Daily and weekly harvest levels drop off considerably during November and December. In 2010, marshes began to freeze by late November and the first significant snowfall and cold snap arrived in early December, with most of the waters of the state iced over shortly thereafter. Good field hunting opportunities remained right up to the season close, but throughout the season reports also indicated that geese were often utilizing areas where they were not accessible to hunters (within municipal areas closed to hunting). Canada goose harvest is particularly low during the gun deer hunting season at the end of November and 2010 was no exception, but there was a higher than usual increase in harvest the first weekend after the deer season closed. In 2010, 8,245 (11.6%) of permit holders harvested at least one goose out of 71,005 Exterior zone permit holders (Table 15). This proportion has remained relatively unchanged for several years. While these figures may seem low we have no measure of how many of these permit holders actively hunted geese because Conservation Permit holders can automatically obtain this permit. Thirty-two percent of the successful hunters harvested a single goose and 30% harvested 2 geese. These percentages are nearly identical to 2006, 2007, and 2009 but differ from 2008 when 52% of hunters harvested just 1 goose, and only 21% harvested 2 geese.

### 2010 Exterior Zone- Estimated goose kill by day



## **Horicon Zone**

The total Canada goose harvest for the Horicon Zone was 8,397 in 2010, which was 20% of the statewide regular season harvest (Table 8). This total was lower than 2009 (9,326), 2008 (12,543) and other prior years and is in line with the management objective of reducing harvest pressure on MVP geese. The overall number of Horicon zone permit holders was down from 2009 but participation and success rates remained stable or increased slightly (Tables 2, 13, and 14). The areas directly adjacent to the Horicon National Wildlife Refuge and Wildlife Management Areas (portions of Dodge and Fond du Lac Counties) continue to represent a high percentage of the Horicon Zone harvest (81%). If Green Lake County harvest is included, then these 3 counties account for 89% of the total Horicon zone harvest which suggests that harvest in the portions of the other counties within zone is relatively minor. Only 18% of active Horicon zone hunters in Period 1 harvested more than 2 geese (14% in Period 2) and just 5% of Period 1 hunters (4% in Period 2) filled all 6 of their harvest tags (Table 13).

## **Collins zone**

The Collins zone is a relatively small harvest management zone that represents an area with relatively high harvest potential (Tables 13 and 14). Manitowoc County is the 4th highest in Canada goose harvest when combining the harvest from all regular season zones, and though Collins remains an area of concentration for geese, the bulk of the harvest in Manitowoc County now comes from outside this zone. In 2011 the Collins zone area will become part of the Exterior zone. The total harvest for the Collins zone in 2010 was 233 geese (Table 8).

## **MANAGEMENT IMPLICATIONS**

Two primary populations of Canada geese are found in Wisconsin, the Wisconsin nesting giant Canada geese and the northern Ontario nesting geese of the Mississippi Valley Population (MVP). The management of the MVP is guided by a cooperative management plan among several states and Ontario and is acknowledged by the US Fish and Wildlife Service for management of this population (Brooke and Luukkonen 2010). Similarly, the management of the giant Canada goose population in the Mississippi Flyway is also guided by a cooperative management plan (Zenner et al. 1996). Wisconsin's Canada goose management is guided by these 2 plans as well as the Wisconsin Waterfowl Strategic Plan 2008-2018 (Van Horn and Benton 2007). The goal of Canada goose management in Wisconsin is to manage the two populations in a way that balances the different and sometimes conflicting societal perspectives of Canada geese. This goal is reached through the following:

- Provide for both abundant and quality Canada goose hunting opportunities and monitor statewide and local harvest levels
- Work with flyway partners in cooperative monitoring of MVP and resident giant Canada goose populations, survival and harvest with the objective of maintaining a higher rate of harvest on giant Canada geese than MVP Canada geese

- Address conflicts between abundant Canada goose populations and people through integrated management techniques including hunting where appropriate
- Seek to manage the statewide Wisconsin breeding population of Canada geese near 125,000

The monitoring of harvest as described in this report is an important part of implementing these strategies along with annual population surveys and banding efforts.

In 2007, a 5 year trial of a stable hunting season was agreed to among MVP states to determine if we could simplify hunting regulation changes and increase harvest on giant Canada geese without negatively impacting the MVP population. We use our harvest monitoring system as part of the evaluation of this harvest strategy. Wisconsin's total Canada goose harvest was up 10% from 2009, and the 2010 Exterior zone harvest was up or similar to recent years (42,448 in 2010, 31,570 – 2009, 41,215 – 2008, 43,958 - 2007). The season length and early winter weather in 2010 were similar to 2008 and 2009 as well as the date of opening day (third Saturday in September, 2-4 days after the close of the Early season). Under the previous variable season structures of 2003-06, the Exterior zone harvest ranged from 26,902 – 46,699. In the winter of 2012, the MVP committee of the Mississippi Flyway Council will be evaluating the 5 year stable season trial. Changes in annual goose production and fall weather are likely driving much of the total harvest variation observed over these years.

While giant Canada geese provide about 40% of Wisconsin's regular Canada goose harvest and nearly all of the early season harvest, we are still dependent upon MVP Canada geese for 57% of our annual regular season goose harvest. This is in contrast to most other Mississippi Flyway states where well over 50% of their Canada goose harvest consists of resident giant Canada geese. The MVP population has been relatively stable for the last 20 years. The rate of adult MVP harvest was in the targeted range of 8-10% from 2003-2008 with stable regulations from 2006-2008. However, in the low production year of 2009 the adult MVP harvest rate increased to 13.5%. To be consistent with the MVP management plan and in the long term interest of maintaining the MVP population as a sustainable resource, harvest management decisions need to continue to take steps to maintain a relatively low harvest on MVP geese. Several management steps have been taken to implement this. The earlier opening of the Exterior Zone Canada goose season provides for the high harvest in the early part of the season but with a lower proportion of MVP geese. This harvest report documents this high early harvest and daily harvest records are helping us to adjust the season dates to reduce MVP harvest while maintaining an abundant harvest opportunity. In the future, we will continue to look for ways to adjust the opening day of the Exterior season to increase early harvest but keep the opening week earlier than the mid-October peak of MVP presence in the state.

The area around the Horicon Marsh contained within the Horicon zone is known as a focal area of MVP migration through Wisconsin, so a shift in harvest pressure from this area to other part of the state is helpful in reducing the harvest rate on this population. Over the last several years, these harvest reports have shown a decline in Horicon zone hunter permits and Horicon zone harvest while maintaining a quality hunting experience. Further, these reports have shown that

few hunters (~5%) fill the maximum 6 harvest tags during the entire season demonstrating that this regulation is not limiting individual harvest opportunity. Despite these restrictions, 17% of the statewide regular season Canada goose harvest in 2010 came from the 2 counties (out of 72) containing the Horicon Marsh (Dodge and Fond du Lac) so the potential for a high Canada goose harvest in this area remains. Because a disproportionate number of these birds are MVP, there is a continued need for special harvest management in this zone. However, the county level harvest data are also indicating that parts of the Horicon zone are being under utilized, so shrinking the zone to better represent the core around Horicon Marsh is a possible management change that will be considered.

During the last 20 years the Wisconsin nesting population of giant Canada geese has grown but at a lower rate in the last 10 years. This increasing population has provided an additional hunting resource better distributed around the state than the MVP but has also generated considerable conflict between abundant geese and people. Many of the same management strategies designed to reduce harvest on MVP are also intended to provide hunters with an opportunity to harvest the abundant giant Canada goose resource and help address human-goose conflicts. We have liberalized and simplified Canada goose harvest regulations in the last several years with 100 days of Canada goose hunting available across most of the state along with fewer subzone restrictions. From 1995 to 2004, these harvest reports have documented a decline in Horicon Zone permit holders but an increase in Exterior Zone permit holders as Canada goose hunters shifted to this new hunting opportunity. We believe the one of the primary causes of the decline in Canada goose permit holders since 2004 was the increase of the Conservation Patron license from \$110 to \$140 in 2004 combined with the increase from \$140 to \$165 in 2005. We also documented a steady increase in the Early Canada goose season harvest as that zone was established and the regulations became more liberal. The county level data shown in this report indicate that our Early Canada goose and Exterior Zone Canada goose hunting are highest in many of the same counties where our human population is highest and where many Canada goose control operations are requested.

The annual changes in Canada goose breeding populations of MVP and Wisconsin giants illustrate the need for continued breeding surveys, banding, and harvest monitoring in order to effectively manage Canada geese in Wisconsin. Breeding populations, fall distribution, and harvest of Canada geese is a constantly changing picture. Each year the information collected has been used to evaluate and adjust our season structure and banding efforts. We continue to refine our banding plan annually as these data provide us the information needed to document any changes in harvest distribution and the population of our resident giants in relation to the MVP, allowing us to make the necessary adjustments to the management and harvest of Canada geese in Wisconsin.

Agricultural crop damage from Canada geese in fall and especially the spring continues to be a concern for farmers in Wisconsin in the Horicon area and other locations where Canada geese concentrate. Consideration of agricultural damage issues remains important in our overall approach to managing Wisconsin's Canada goose populations. The Department may issue a spring agricultural damage permit for those with eligible claims, which authorizes the removal of

Canada geese by shooting from May 15-August 31. Applicants must have (or expect to have) crop damage in excess of \$1000 and be enrolled in the wildlife damage abatement and claims program.

Similarly, consideration of Canada goose problems in urban areas is part of the overall management of Canada geese in Wisconsin. Our resident breeders have shown a generally increasing population trend since we began monitoring this population in 1986, although in recent years it appears to have stabilized. Much of this increase has been in more suburban and urban counties, however, resident breeders continue to increase in distribution across the state. As we monitor breeding populations and harvest we can evaluate our effectiveness at using recreational harvest to assist in managing problems that result from concentrations of Canada geese in urban areas. To target these birds in the fall, the Early Canada goose season remains an important part of our management strategy and contributes a significant proportion of the overall harvest. In addition, site specific Canada goose control measures will continue to be implemented in urban and agricultural areas to mitigate nuisance goose problems. Beginning in 2010, in addition to the Federal requirement, Wisconsin has added its own mandatory reporting for nest and egg depredation permits to better monitor control efforts around the state.

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## HARVEST AND PARTICIPATION DATA

**Table 1.** *Number of surveys mailed, returned, and response rate for the 2010 Canada goose season.*

Zone and Period	# Mailed	# Returned	Percent Response
Horicon 1	7,001	3,586	51.2%
Horicon 2	2,960	1,567	52.9%
Collins 1	166	41	24.7%
Collins 2	247	152	61.5%
Collins 3	99	43	43.3%
<b>Total</b>	<b>10,473</b>	<b>5,389</b>	<b>51.5%</b>

**Table 2.** *Permits issued, active hunters, percent active, and number of successful hunters by zone and time period. Active and successful hunters derived from questionnaire data. Percent successful applies to active permit holders, except for Exterior Zone where it applies to all permit holders.*

Zone and Period	Permits Issued (hunters)	Active Hunters	% Active	# Successful	% Successful
Horicon 1	8,410	5,672	67.4%	2,606	45.9%
Horicon 2	3,596	1,893	52.7%	649	34.3%
Collins 1	164	44	26.8%	36	81.8%
Collins 2	246	147	59.9%	73	49.5%
Collins 3	99	51	51.2%	14	27.3%
Exterior	71,005			8,245	11.6%
<b>Total</b>	<b>83,520</b>			<b>11,623</b>	<b>13.9%</b>

**Table 3.** Number of goose permit applicants by zone and county of residence. (Continued on next page).

County	Horicon		Collins		Exterior	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Adams	8	0.07			174	0.25
Ashland	2	0.02	1	0.2	289	0.41
Barron	17	0.14	6	1.18	1,022	1.44
Bayfield	6	0.05	2	0.39	216	0.3
Brown	48	0.4	28	5.5	2,507	3.53
Buffalo	14	0.12	1	0.2	419	0.59
Burnett	4	0.03	1	0.2	428	0.6
Calumet	9	0.07	42	8.25	570	0.8
Chippewa	18	0.15	7	1.38	779	1.1
Clark	13	0.11	2	0.39	331	0.47
Columbia	623	5.19	8	1.57	1,174	1.65
Crawford	26	0.22			331	0.47
Dane	561	4.67	22	4.32	4,238	5.97
Dodge	1,296	10.79	9	1.77	428	0.6
Door	4	0.03	2	0.39	669	0.94
Douglas	8	0.07	3	0.59	513	0.72
Dunn	18	0.15	1	0.2	558	0.79
Eau Claire	56	0.47	3	0.59	1,013	1.43
Florence	2	0.02			50	0.07
Fond Du Lac	1,282	10.68	5	0.98	769	1.08
Forest	2	0.02			158	0.22
Grant	116	0.97	1	0.2	476	0.67
Green	39	0.32	2	0.39	557	0.78
Green Lake	507	4.22	3	0.59	227	0.32
Iowa	40	0.33	2	0.39	307	0.43
Iron	5	0.04			117	0.16
Jackson	10	0.08	1	0.2	207	0.29
Jefferson	143	1.19	12	2.36	1,864	2.63
Juneau	34	0.28	2	0.39	575	0.81
Kenosha	69	0.57	2	0.39	1,082	1.52
Kewaunee	1	0.01	4	0.79	624	0.88
La Crosse	211	1.76	3	0.59	1,710	2.41
Lafayette	26	0.22			191	0.27
Langlade	12	0.1			272	0.38
Lincoln	56	0.47	3	0.59	632	0.89
Manitowoc	24	0.2	47	9.23	1,622	2.28
Marathon	135	1.12	6	1.18	1,479	2.08
Marinette	12	0.1	6	1.18	775	1.09
Marquette	99	0.82	3	0.59	518	0.73
Menominee			1	0.2	4	0.01

County	Horicon		Collins		Exterior	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Milwaukee	891	7.42	10	1.96	2,306	3.25
Monroe	22	0.18			504	0.71
Oconto	13	0.11	8	1.57	709	1
Oneida	81	0.67	2	0.39	856	1.21
Outagamie	206	1.72	56	11	3,029	4.27
Ozaukee	175	1.46	6	1.18	1,125	1.58
Pepin	1	0.01			173	0.24
Pierce	13	0.11	2	0.39	612	0.86
Polk	9	0.07	3	0.59	1,110	1.56
Portage	92	0.77	5	0.98	1,062	1.5
Price	10	0.08	2	0.39	298	0.42
Racine	125	1.04	13	2.55	2,244	3.16
Richland	29	0.24	4	0.79	130	0.18
Rock	147	1.22	5	0.98	1,850	2.61
Rusk	1	0.01	1	0.2	243	0.34
St. Croix	15	0.12	4	0.79	1,245	1.75
Sauk	117	0.97	4	0.79	964	1.36
Sawyer	6	0.05	2	0.39	419	0.59
Shawano	34	0.28	2	0.39	642	0.9
Sheboygan	96	0.8	35	6.88	1,861	2.62
Taylor	4	0.03			334	0.47
Trempealeau	38	0.32	3	0.59	546	0.77
Vernon	84	0.7	3	0.59	392	0.55
Vilas	46	0.38	1	0.2	428	0.6
Walworth	60	0.5	4	0.79	1,371	1.93
Washburn	5	0.04	1	0.2	520	0.73
Washington	652	5.43	2	0.39	1,676	2.36
Waukesha	1,018	8.48	13	2.55	4,192	5.9
Waupaca	64	0.53	6	1.18	1,021	1.44
Waushara	23	0.19	4	0.79	457	0.64
Winnebago	614	5.11	43	8.45	2,449	3.45
Wood	95	0.79	6	1.18	1,543	2.17
Unknown	548	4.56	7	1.38	2,226	3.13
Non. Resident	1,116	9.3	11	2.16	2,593	3.65

**Table 4.** *Goose hunting in past zones.*

Current Zone	Past Collins	Past Horicon	Past Exterior
Collins	85.3%	0.0%	14.7%
Horicon	0.3%	95.1%	4.7%

**Table 5.** *Percent hunting geese in 2010 that also hunted in 2009.*

Zone	% That Hunted in 2009
Collins	85.1%
Horicon	86.4%

**Table 6.** *Past and present duck hunting by goose permit.*

Zone	Duck Hunted in 2009	Duck Hunted in 2010
Collins	62.8%	71.3%
Horicon	62.2%	72.2%

**Table 7.** *Mean number of hunting trips by zone and time period. Applies to active permit holders only.*

Zone/Period	Mean # of Trips	Maximum # of Trips
Collins 1	7.7	20
Collins 2	5.1	18
Collins 3	5.5	17
Horicon 1	4.6	40
Horicon 2	4.3	40

**Table 8.** Harvest by zone and time period. The estimated harvest was derived from questionnaire data in the Collins and Horicon zones. Reported harvest in the Exterior Zone is from mandatory reporting. The reported harvest for the Exterior zone was adjusted by an overall compliance rate of 82.4% to obtain the estimated harvest.

Zone/Period	Estimated Harvest	Reported Harvest
Collins 1	84	
Collins 2	133	
Collins 3	16	
Horicon 1	6,693	
Horicon 2	1,704	
Exterior	33,818	27,857
<b>Total</b>	<b>42,448</b>	

**Table 9.** Exterior zone goose harvest by county (continued on next page).

County of Kill	Reported Kill	Expanded Kill	Percent
Adams	243	295	0.87%
Ashland	105	127	0.38%
Barron	660	801	2.37%
Bayfield	66	80	0.24%
Brown	1,714	2,081	6.15%
Buffalo	277	336	0.99%
Burnett	305	370	1.09%
Calumet	486	590	1.74%
Chippewa	442	537	1.59%
Clark	324	393	1.16%
Columbia	307	373	1.10%
Crawford	179	217	0.64%
Dane	1,424	1,729	5.11%
Dodge	186	226	0.67%
Door	935	1,135	3.36%
Douglas	145	176	0.52%
Dunn	104	126	0.37%
Eau Claire	83	101	0.30%
Florence	24	29	0.09%
Fond Du Lac	297	361	1.07%
Forest	27	33	0.10%
Grant	92	112	0.33%
Green	152	185	0.55%
Green Lake	2	2	0.01%
Iowa	93	113	0.33%
Iron	23	28	0.08%
Jackson	36	44	0.13%
Jefferson	494	600	1.77%
Juneau	176	214	0.63%
Kenosha	1,005	1,220	3.61%

County of Kill	Reported Kill	Expanded Kill	Percent
Kewaunee	1,030	1,250	3.70%
La Crosse	283	344	1.02%
Lafayette	21	25	0.08%
Langlade	75	91	0.27%
Lincoln	136	165	0.49%
Manitowoc	1,393	1,691	5.00%
Marathon	587	713	2.11%
Marinette	331	402	1.19%
Marquette	316	384	1.13%
Milwaukee	10	12	0.04%
Monroe	232	282	0.83%
Oconto	571	693	2.05%
Oneida	61	74	0.22%
Outagamie	986	1,197	3.54%
Ozaukee	660	801	2.37%
Pepin	21	25	0.08%
Pierce	99	120	0.36%
Polk	784	952	2.81%
Portage	313	380	1.12%
Price	135	164	0.48%
Racine	1,090	1,323	3.91%
Richland	48	58	0.17%
Rock	501	608	1.80%
Rusk	300	364	1.08%
Sauk	209	254	0.75%
Sawyer	243	295	0.87%
Shawano	283	344	1.02%
Sheboygan	1,019	1,237	3.66%
St. Croix	499	606	1.79%
Taylor	313	380	1.12%
Trempealeau	215	261	0.77%
Vernon	178	216	0.64%
Vilas	55	67	0.20%
Walworth	768	932	2.76%
Washburn	263	319	0.94%
Washington	666	809	2.39%
Waukesha	924	1,122	3.32%
Waupaca	645	783	2.32%
Waushara	201	244	0.72%
Winnebago	587	713	2.11%
Wood	400	486	1.44%
<b>Total</b>	<b>27,857</b>	<b>33,818</b>	

**Table 10.** Horicon Zone goose harvest by county. The estimated harvest was derived from questionnaire data.

County	Total Estimated Harvest	% of Harvest
Columbia	294	3.5%
Dodge	5,072	60.4%
Fond du lac	1,688	20.1%
Green Lake	730	8.7%
Marquette	168	2.0%
Washington	327	3.9%
Winnebago	118	1.4%
<b>Total</b>	<b>8,397</b>	

**Table 11.** Exterior zone goose harvest by date. Bold numbers indicate weekends (continued on the next page).

Date of Kill	Reported Kill	Expanded Kill	Cumulative Harvest	Percent	Cumulative Percent
<b>09/18/2010</b>	<b>1,382</b>	<b>1,678</b>	<b>1,678</b>	<b>4.96%</b>	<b>4.96%</b>
<b>09/19/2010</b>	<b>1,275</b>	<b>1,548</b>	<b>3,226</b>	<b>4.58%</b>	<b>9.54%</b>
09/20/2010	353	429	3,654	1.27%	10.81%
09/21/2010	356	432	4,086	1.28%	12.08%
09/22/2010	480	583	4,669	1.72%	13.81%
09/23/2010	336	408	5,077	1.21%	15.01%
09/24/2010	482	585	5,662	1.73%	16.74%
<b>09/25/2010</b>	<b>1,229</b>	<b>1,492</b>	<b>7,154</b>	<b>4.41%</b>	<b>21.15%</b>
<b>09/26/2010</b>	<b>1,442</b>	<b>1,751</b>	<b>8,905</b>	<b>5.18%</b>	<b>26.33%</b>
09/27/2010	348	422	9,327	1.25%	27.58%
09/28/2010	399	484	9,812	1.43%	29.01%
09/29/2010	466	566	10,377	1.67%	30.69%
09/30/2010	533	647	11,024	1.91%	32.60%
10/01/2010	503	611	11,635	1.81%	34.40%
<b>10/02/2010</b>	<b>1,254</b>	<b>1,522</b>	<b>13,157</b>	<b>4.50%</b>	<b>38.91%</b>
<b>10/03/2010</b>	<b>1,412</b>	<b>1,714</b>	<b>14,872</b>	<b>5.07%</b>	<b>43.98%</b>
10/04/2010	367	446	15,317	1.32%	45.29%
10/05/2010	368	447	15,764	1.32%	46.61%
10/06/2010	391	475	16,238	1.40%	48.02%
10/07/2010	414	503	16,741	1.49%	49.50%
10/08/2010	432	524	17,266	1.55%	51.05%
<b>10/09/2010</b>	<b>939</b>	<b>1,140</b>	<b>18,405</b>	<b>3.37%</b>	<b>54.43%</b>
<b>10/10/2010</b>	<b>931</b>	<b>1,130</b>	<b>19,536</b>	<b>3.34%</b>	<b>57.77%</b>
10/11/2010	111	135	19,670	0.40%	58.17%
10/12/2010	114	138	19,809	0.41%	58.57%

Date of Kill	Reported Kill	Expanded Kill	Cumulative Harvest	Percent	Cumulative Percent
10/13/2010	126	153	19,962	0.45%	59.03%
10/14/2010	110	134	20,095	0.39%	59.42%
10/15/2010	205	249	20,344	0.74%	60.16%
<b>10/16/2010</b>	<b>1,023</b>	<b>1,242</b>	<b>21,586</b>	<b>3.67%</b>	<b>63.83%</b>
<b>10/17/2010</b>	<b>846</b>	<b>1,027</b>	<b>22,613</b>	<b>3.04%</b>	<b>66.87%</b>
10/18/2010	283	344	22,957	1.02%	67.88%
10/19/2010	312	379	23,336	1.12%	69.00%
10/20/2010	321	390	23,725	1.15%	70.16%
10/21/2010	255	310	24,035	0.92%	71.07%
10/22/2010	312	379	24,414	1.12%	72.19%
<b>10/23/2010</b>	<b>569</b>	<b>691</b>	<b>25,104</b>	<b>2.04%</b>	<b>74.23%</b>
<b>10/24/2010</b>	<b>392</b>	<b>476</b>	<b>25,580</b>	<b>1.41%</b>	<b>75.64%</b>
10/25/2010	197	239	25,819	0.71%	76.35%
10/26/2010	104	126	25,946	0.37%	76.72%
10/27/2010	125	152	26,097	0.45%	77.17%
10/28/2010	272	330	26,428	0.98%	78.15%
10/29/2010	268	325	26,753	0.96%	79.11%
<b>10/30/2010</b>	<b>370</b>	<b>449</b>	<b>27,202</b>	<b>1.33%</b>	<b>80.44%</b>
<b>10/31/2010</b>	<b>311</b>	<b>378</b>	<b>27,580</b>	<b>1.12%</b>	<b>81.55%</b>
11/01/2010	117	142	27,722	0.42%	81.97%
11/02/2010	85	103	27,825	0.31%	82.28%
11/03/2010	97	118	27,943	0.35%	82.63%
11/04/2010	136	165	28,108	0.49%	83.11%
11/05/2010	170	206	28,314	0.61%	83.73%
<b>11/06/2010</b>	<b>259</b>	<b>314</b>	<b>28,629</b>	<b>0.93%</b>	<b>84.65%</b>
<b>11/07/2010</b>	<b>249</b>	<b>302</b>	<b>28,931</b>	<b>0.89%</b>	<b>85.55%</b>
11/08/2010	67	81	29,012	0.24%	85.79%
11/09/2010	100	121	29,134	0.36%	86.15%
11/10/2010	106	129	29,262	0.38%	86.53%
11/11/2010	112	136	29,398	0.40%	86.93%
11/12/2010	113	137	29,535	0.41%	87.34%
<b>11/13/2010</b>	<b>230</b>	<b>279</b>	<b>29,815</b>	<b>0.83%</b>	<b>88.16%</b>
<b>11/14/2010</b>	<b>246</b>	<b>299</b>	<b>30,113</b>	<b>0.88%</b>	<b>89.05%</b>
11/15/2010	78	95	30,208	0.28%	89.33%
11/16/2010	106	129	30,337	0.38%	89.71%
11/17/2010	78	95	30,431	0.28%	89.99%
11/18/2010	97	118	30,549	0.35%	90.33%
11/19/2010	108	131	30,680	0.39%	90.72%
<b>11/20/2010</b>	<b>47</b>	<b>57</b>	<b>30,737</b>	<b>0.17%</b>	<b>90.89%</b>
<b>11/21/2010</b>	<b>67</b>	<b>81</b>	<b>30,819</b>	<b>0.24%</b>	<b>91.13%</b>
11/22/2010	54	66	30,884	0.19%	91.32%

Date of Kill	Reported Kill	Expanded Kill	Cumulative Harvest	Percent	Cumulative Percent
11/23/2010	67	81	30,965	0.24%	91.57%
11/24/2010	87	106	31,071	0.31%	91.88%
11/25/2010	122	148	31,219	0.44%	92.32%
11/26/2010	108	131	31,350	0.39%	92.70%
<b>11/27/2010</b>	<b>102</b>	<b>124</b>	<b>31,474</b>	<b>0.37%</b>	<b>93.07%</b>
<b>11/28/2010</b>	<b>118</b>	<b>143</b>	<b>31,617</b>	<b>0.42%</b>	<b>93.49%</b>
11/29/2010	81	98	31,716	0.29%	93.78%
11/30/2010	91	110	31,826	0.33%	94.11%
12/01/2010	128	155	31,982	0.46%	94.57%
12/02/2010	114	138	32,120	0.41%	94.98%
12/03/2010	92	112	32,232	0.33%	95.31%
<b>12/04/2010</b>	<b>355</b>	<b>431</b>	<b>32,663</b>	<b>1.27%</b>	<b>96.58%</b>
<b>12/05/2010</b>	<b>225</b>	<b>273</b>	<b>32,936</b>	<b>0.81%</b>	<b>97.39%</b>
12/06/2010	49	59	32,995	0.18%	97.57%
12/07/2010	39	47	33,043	0.14%	97.71%
12/08/2010	55	67	33,109	0.20%	97.90%
12/09/2010	75	91	33,200	0.27%	98.17%
12/10/2010	105	127	33,328	0.38%	98.55%
<b>12/11/2010</b>	<b>167</b>	<b>203</b>	<b>33,531</b>	<b>0.60%</b>	<b>99.15%</b>
<b>12/12/2010</b>	<b>27</b>	<b>33</b>	<b>33,563</b>	<b>0.10%</b>	<b>99.25%</b>
12/13/2010	18	22	33,585	0.06%	99.31%
12/14/2010	37	45	33,630	0.13%	99.44%
12/15/2010	51	62	33,692	0.18%	99.63%
12/16/2010	83	101	33,793	0.30%	99.93%
<b>12/18/2010</b>	<b>2</b>	<b>2</b>	<b>33,795</b>	<b>0.01%</b>	<b>99.93%</b>
<b>12/19/2010</b>	<b>2</b>	<b>2</b>	<b>33,798</b>	<b>0.01%</b>	<b>99.94%</b>
12/21/2010	1	1	33,799	0.00%	99.94%
12/22/2010	2	2	33,801	0.01%	99.95%
12/23/2010	1	1	33,803	0.00%	99.95%
12/24/2010	2	2	33,805	0.01%	99.96%
<b>12/25/2010</b>	<b>2</b>	<b>2</b>	<b>33,807</b>	<b>0.01%</b>	<b>99.97%</b>
<b>12/26/2010</b>	<b>6</b>	<b>7</b>	<b>33,815</b>	<b>0.02%</b>	<b>99.99%</b>
12/27/2010	2	2	33,817	0.01%	100.00%
12/28/2010	1	1	33,818	0.00%	100.00%

**Table 12.** Weekday of reported kill in percent. Data from mandatory reporting in the Exterior zone and questionnaires in the other zones.

Zone/ Period	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Collins 1	14.3%	28.6%	14.3%	23.8%	4.8%	4.8%	9.5%
Collins 2	8.11%	14.9%	8.1%	13.5%	8.1%	20.3%	21.6%
Collins 3	14.3%	28.6%	0.0%	28.6%	0.0%	0.0%	28.6%
<b>Collins Total</b>	<b>9.8%</b>	<b>18.6%</b>	<b>12.8%</b>	<b>16.7%</b>	<b>6.7%</b>	<b>15.7%</b>	<b>19.6%</b>
Horicon 1	18.5%	8.6%	7.9%	8.1%	9.4%	16.1%	31.4%
Horicon 2	14.3%	8.5%	7.4%	11.4%	13.1%	16.2%	29.1%
<b>Horicon Total</b>	<b>17.6%</b>	<b>8.6%</b>	<b>7.8%</b>	<b>8.7%</b>	<b>10.2%</b>	<b>16.1%</b>	<b>31.0%</b>
Exterior	27.1%	7.6%	7.8%	9.0%	9.6%	10.4%	28.5%
<b>All Zones</b>	<b>26.0%</b>	<b>7.8%</b>	<b>7.9%</b>	<b>9.0%</b>	<b>9.6%</b>	<b>11.0%</b>	<b>28.7%</b>

**Table 13.** Percent success by active permit for the Horicon and Collins zone. Harvest figures were derived from questionnaire data.

Zone/Period	1 <sup>st</sup> Permit	2 <sup>nd</sup> Permit	3 <sup>rd</sup> Permit	4 <sup>th</sup> Permit	5 <sup>th</sup> Permit	6 <sup>th</sup> Permit
Collins 1	81.8%	54.6%	36.4%	18.2%	0.0%	0.0%
Collins 2	49.5%	20.9%	11.0%	5.5%	3.3%	0.0%
Collins 3	27.3%	4.6%	0.0%	0.0%	0.0%	0.0%
Horicon 1	45.9%	30.4%	18.2%	12.4%	6.6%	4.5%
Horicon 2	34.3%	22.4%	13.5%	9.7%	5.8%	4.1%

**Table 14.** Number of birds harvested per permit holder and active permit holder by zone. Hunter numbers derived from applications, questionnaires and 1-800 registration.

Zone	Birds/Permit Holder	Birds/Active Permit Holder
Collins	0.46	0.96
Horicon	0.70	1.11
Exterior	0.48	N/A

**Table 15.** *Exterior Zone season bag derived from mandatory reporting data.*

Bag	Number of Hunters	Percent
0	62,760	88.39%
1	2606	3.67%
2	2437	3.43%
3	801	1.13%
4	843	1.19%
5	322	0.45%
6	331	0.47%
7	161	0.23%
8	168	0.24%
9	105	0.15%
10	96	0.14%
11	68	0.10%
12	42	0.06%
13	39	0.05%
14	32	0.05%
15	27	0.04%
16	23	0.03%
17	19	0.03%
18	17	0.02%
19	20	0.03%
20	12	0.02%
21	7	0.01%
22	9	0.01%
23	7	0.01%
24	8	0.01%
25	5	0.01%
26	7	0.01%
27	2	0.00%
28	5	0.01%
31	1	0.00%
32	1	0.00%
33	2	0.00%
34	2	0.00%
35	3	0.00%
36	2	0.00%
38	2	0.00%
42	1	0.00%
43	1	0.00%
44	2	0.00%
45	1	0.00%
50	2	0.00%
55	2	0.00%
56	1	0.00%
66	1	0.00%
68	1	0.00%
134	1	0.00%

**Table 16.** *Percent of time spent hunting private land by zone.*

Zone	No Answer	< 25%	25-49%	50-75%	> 75%
Collins	52.1%	30.7%	2.9%	0.8%	13.5%
Horicon	38.6%	11.1%	1.3%	2.2%	46.9%

**Table 17.** *If you hunted in Fond du Lac, Green Lake, or Marquette County, did you hunt north or south of highway 23?*

	Frequency	Percent
North	275	17.6%
South	1,291	82.4%

**Table 18.** *Number of active hunters, percent paying blind access fee, mean days hunted, mean payment per trip, and total access fees paid by zone.*

Zone	Active Hunters	Percent Paying	Mean Days	Mean Payment	Total Paid
Collins	242	16.2%	5.4	\$8.73	\$1,848.15
Horicon	7,564	28.6%	4.6	\$12.51	\$124,489.49

**Table 19.** Number applicants, active hunters, and birds harvested during the September early Canada goose season.

Year	# of Applicants	# of Active Hunters	Harvest
1990	19,561	6,408	842
1991	4,772	1,983	712
1992	5,383	2,024	772
1993	2,982	1,636	679
1994	20,724	7,114	1,668
1995	13,343	7,923	4,928
1996	21,378	8,979	10,506
1997	28,761		7,435
1998	29,580		7,627
1999	73,799		6,032
2000	69,716		11,192
2001	74,268		15,952
2002	75,565		11,687
2003	76,728		8,650
2004	76,294		14,007
2005	74,437		13,410
2006	68,152		20,034
2007	66,207		21,760
2008	63,904		24,276
2009	60,567		15,342
2010	55,927		19,900

**Table 20.** Early September Canada goose harvest by date (bold numbers indicate weekends).

Date of Kill	Reported Kill	Expanded Kill	Cumulative Harvest	Percent	Cumulative Percent
09/01/2010	2,830	3,365	3,365	16.91%	16.91%
09/02/2010	836	994	4,359	4.99%	21.90%
09/03/2010	1,020	1,213	5,572	6.09%	28.00%
<b>09/04/2010</b>	<b>2,211</b>	<b>2,629</b>	<b>8,201</b>	<b>13.21%</b>	<b>41.21%</b>
<b>09/05/2010</b>	<b>1,669</b>	<b>1,984</b>	<b>10,185</b>	<b>9.97%</b>	<b>51.18%</b>
09/06/2010	1,291	1,535	11,720	7.71%	58.89%
09/07/2010	432	514	12,234	2.58%	61.48%
09/08/2010	690	820	13,054	4.12%	65.60%
09/09/2010	515	612	13,666	3.08%	68.68%
09/10/2010	642	763	14,430	3.84%	72.51%
<b>09/11/2010</b>	<b>1,079</b>	<b>1,283</b>	<b>15,713</b>	<b>6.45%</b>	<b>78.96%</b>
<b>09/12/2010</b>	<b>1,330</b>	<b>1,581</b>	<b>17,294</b>	<b>7.95%</b>	<b>86.90%</b>
09/13/2010	516	614	17,908	3.08%	89.99%
09/14/2010	647	769	18,677	3.87%	93.85%
09/15/2010	1,029	1,223	19,900	6.15%	100.00%

**Table 21. Early September Canada goose harvest by county.**

County	Reported Kill	Expanded Kill	Percent
Adams	76	90	0.45%
Ashland	38	45	0.23%
Barron	572	680	3.42%
Bayfield	109	130	0.65%
Brown	738	877	4.41%
Buffalo	163	194	0.97%
Burnett	202	240	1.21%
Calumet	281	334	1.68%
Chippewa	332	395	1.98%
Clark	169	201	1.01%
Columbia	192	228	1.15%
Crawford	151	180	0.90%
Dane	439	522	2.62%
Dodge	500	595	2.99%
Door	671	798	4.01%
Douglas	172	205	1.03%
Dunn	75	89	0.45%
Eau Claire	100	119	0.60%
Florence	13	15	0.08%
Fond Du Lac	188	224	1.12%
Forest	17	20	0.10%
Grant	104	124	0.62%
Green	74	88	0.44%
Green Lake	84	100	0.50%
Iowa	103	122	0.62%
Iron	22	26	0.13%
Jackson	35	42	0.21%
Jefferson	470	559	2.81%
Juneau	46	55	0.27%
Kenosha	326	388	1.95%
Kewaunee	596	709	3.56%
La Crosse	356	423	2.13%
Lafayette	20	24	0.12%
Langlade	52	62	0.31%
Lincoln	124	147	0.74%
Manitowoc	939	1,116	5.61%
Marathon	458	545	2.74%
Marinette	170	202	1.02%
Marquette	35	42	0.21%
Menominee	1	1	0.01%
Milwaukee	1	1	0.01%
Monroe	114	136	0.68%
Oconto	324	385	1.94%
Oneida	96	114	0.57%
Outagamie	341	405	2.04%
Ozaukee	241	287	1.44%

County	Reported Kill	Expanded Kill	Percent
Pepin	6	7	0.04%
Pierce	58	69	0.35%
Polk	572	680	3.42%
Portage	216	257	1.29%
Price	240	285	1.43%
Racine	379	451	2.26%
Richland	59	70	0.35%
Rock	312	371	1.86%
Rusk	181	215	1.08%
Sauk	109	130	0.65%
Sawyer	149	177	0.89%
Shawano	136	162	0.81%
Sheboygan	499	593	2.98%
St. Croix	337	401	2.01%
Taylor	225	268	1.34%
Trempealeau	199	237	1.19%
Vernon	141	168	0.84%
Vilas	31	37	0.19%
Walworth	403	479	2.41%
Washburn	222	264	1.33%
Washington	271	322	1.62%
Waukesha	510	606	3.05%
Waupaca	293	348	1.75%
Waushara	59	70	0.35%
Winnebago	500	595	2.99%
Wood	300	357	1.79%

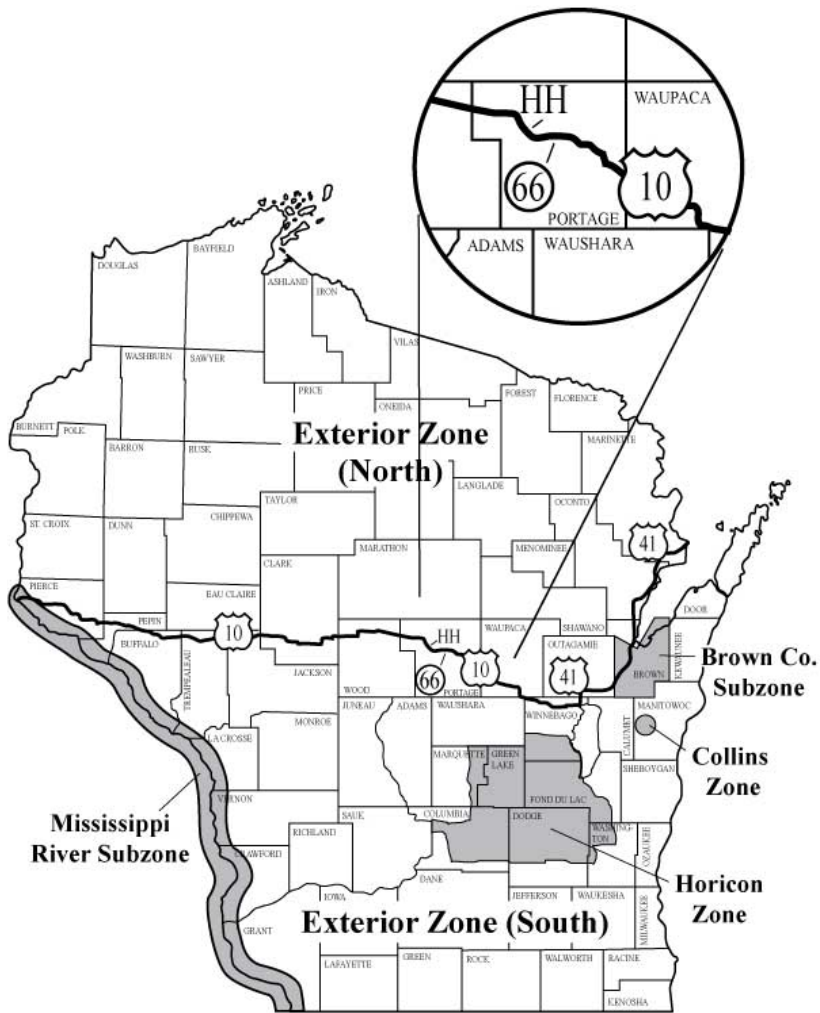
**Table 22.** *Early September season bag derived from mandatory reporting data.*

Bag	Number of Hunters	Percent
0	51,650	92.35%
1	1,131	2.02%
2	849	1.52%
3	566	1.01%
4	410	0.73%
5	468	0.84%
6	180	0.32%
7	145	0.26%
8	119	0.21%
9	91	0.16%
10	103	0.18%
11	36	0.06%
12	34	0.06%
13	21	0.04%
14	24	0.04%
15	28	0.05%
16	17	0.03%
17	16	0.03%
18	6	0.01%
19	2	0.00%
20	2	0.00%
21	1	0.00%
22	8	0.01%
23	4	0.01%
24	6	0.01%
25	3	0.01%
26	2	0.00%
28	1	0.00%
31	1	0.00%
36	1	0.00%
41	1	0.00%
75	1	0.00%

**Table 23.** *Percent of successful bags containing 1 or 2 geese.*

Zone	Period	Percent of 1 Kill Bags	Percent of 2 Kill Bags
Collins	1	76.5%	23.5%
	2	84.5%	15.5%
	3	100.0%	0.0%
	<b>All Periods</b>	<b>84.2%</b>	<b>15.8%</b>
Horicon	1	59.8%	40.2%
	2	55.2%	44.8%
	<b>All Periods</b>	<b>58.8%</b>	<b>41.2%</b>

Figure 1. Canada goose management zones and subzones





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