2016
WISCONSIN CANADA GOOSE HARVEST REPORT

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Season/ Zone	2016 Estimated Canada Goose Harvest
Early	16,880
Horicon	3,021
Exterior	31,820
TOTAL	**54,494**

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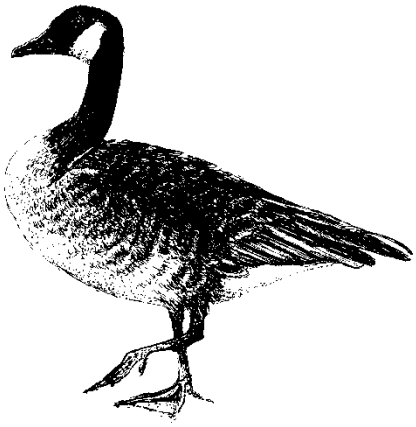

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INTRODUCTION

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 two populations. One population once referred to as the Mississippi Valley Population (MVP), but hereafter will be referred to as Ontario nesting Canada geese, 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 Ontario nesting Canada geese wintered in Kentucky and Tennessee, and sometimes as far south as Mississippi (Brook 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, hereafter referred to as Temperate Breeding Population of Canada geese (TBP). Based on banding data, a small percentage of Wisconsin's goose harvest (~2%) 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 Ontario nesting Canada geese were the primary population of Canada geese in Wisconsin while the TBP geese were considered nearly extinct in the Flyway. During this period, the Horicon National Wildlife Refuge (NWR) in WI began managing specifically to support migrating Ontario nesting Canada geese 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' Ontario nesting 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 Ontario nesting Canada 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 winter population of those Ontario nesting Canada geese stopped at 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 Ontario nesting Canada geese specifically 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). Work is currently underway to create a combined Canada goose management plan for all populations in the Flyway.

Meanwhile, a few small remnants of the TBP geese were discovered in southern WI and elsewhere in the Flyway during the 1950s and 1960s. 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 TBP geese are the most abundant subspecies in the Flyway (Leafloor et al. 2003). The increase in the TBP of Canada geese began in urban and rural areas of southeast WI and this remains an area of high resident goose densities. Temperate breeding Canada geese have adapted well to the urban, suburban and agricultural landscapes in Wisconsin and an increasing population was documented from 1986 when WI goose surveys began until about 2011 along with an expanding distribution across the state. With this increasing population and distribution came both problems with agricultural damage and urban nuisance geese as well as increased hunting and viewing opportunities. Most recent harvest derivations indicate that the TBP geese are approximately 40% of the WI regular season Canada goose harvest and nearly all of the early September season harvest. The Wisconsin breeding population of temperate breeders steadily increased during the 1980s and 1990s but stabilized from 2005-2008 and has shown a decreasing trend since 2011.

The MVP Canada goose Management Plan provides the basis for evaluation and management of the Ontario nesting Canada goose population and harvest. The annual harvest quota was being 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 Ontario nesting Canada goose 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 the Ontario nesting Canada geese, TBP geese or other populations. While quotas and derivations have varied, it is clear that Wisconsin and Illinois have been most dependent on the Ontario nesting geese to support Canada goose harvest among states in the Flyway. The total harvest quota for the state of Wisconsin was determined by applying derivations to the Ontario nesting Canada goose harvest limit. During this period, we were challenged with conflicting trends with and the TBP goose population was increasing while the Ontario nesting Canada geese and overall state goose harvest was declining. This was the system that guided the Canada goose season framework for Wisconsin up until 2006.

Changing Canada Goose Harvest Management in the Mississippi Flyway

Historically, there was an emphasis on maintaining a high abundance of Ontario nesting Canada geese via population objectives and harvest restraint. The simultaneous growth of the TBP goose population provided more harvest opportunities, but has also expanded management challenges (e.g., human-goose conflict). There was some concern that the annual regular hunting season changes intended to reduce harvest on the Ontario nesting Canada geese in low population years also reduced harvest on TBP geese, allowing greater growth of that population. In addition, in the Mississippi Flyway (14 states) nearly 70% of the total Canada goose harvest now consists of the TBP geese. Therefore, one theory was that the TBP geese can "buffer" the Ontario nesting Canada geese and other interior Canada goose populations from harvest impacts in most locations. In order to test this theory, in 2007 the states that harvest the Ontario nesting geese in the Flyway set stable seasons for five years. By creating a stable hunting season framework and monitoring outcomes, the ability of the TBP geese to "buffer" the harvest of migrants was tested. On a Flyway-wide level, the effects of this new strategy were predicted to increase overall harvest and harvest rate of the TBP geese and thus slow or stabilize their population growth. Predicted effects on migrant goose populations included either an insignificant increase in harvest rate or an initial larger increase in harvest rate followed by declining abundance and declining harvest rate.

This 5 year trial of a stable hunting season was agreed to among the states that harvest Ontario nesting Canada geese in 2007, to determine if we could simplify hunting regulation changes, increase hunting opportunity and increase harvest on TBP Canada geese without negatively impacting the Ontario nesting population. In Wisconsin, we agreed to a 15 day – 5 bird daily bag limit early September Canada goose season, an 85 day – 2 bird daily bag Exterior Canada goose season and a 92 day Horicon season with a 6 bird season limit and a 2 bird daily limit.

Wisconsin's Canada goose harvest system provided excellent tools to monitor harvest as part of the evaluation of this strategy because of the 1-800 mandatory harvest reporting system. During the 5-year trial from 2007-2011 Exterior Zone harvest figures ranged from 31,570-43,958 while under the previous variable season structures of 2003-2006, the harvest ranged from 26,902 – 46,699 (Figure 5). It did not appear that the regulations had a significant impact on total harvest. Changes in annual goose production and fall

weather are likely driving much of the total harvest variation observed over these years. With harsh, early winters, Wisconsin's goose hunting season may effectively end, but this actually has a greater impact on the Ontario nesting birds as they are driven south to Illinois where they continue to be hunted. Based on the heavy hunting pressure in Wisconsin early in the season (Figure 6, Figure 7) and low pressure later in the season, adding additional hunting days late in the season has had little impact on total harvest. However, it seems clear that the greatest harvest impact to the Ontario nesting Canada goose population occurs in late September to mid-October.

At the February 2012, Mississippi Flyway Council technical meeting, waterfowl biologists from across the Flyway reviewed population status, harvest data and hunter/harvest surveys with the objective of charting the next step in Canada goose hunting regulations based on the prior 5 year stable regulations. Wisconsin's detailed harvest data as reported in this document was important in the evaluation process. Across the Mississippi Flyway, TBP of Canada geese were harvested at a rate of 16% while in Wisconsin we harvested at a rate of 21%. At the same time, the Wisconsin and the Mississippi Flyway breeding populations of TBP of Canada geese had shown an increasing population trend. The steady increase observed from 1993-2000 was at a rate of 7.2% annual growth. However, this rate of increase began to slow and the average increase from 2001-2014 was only 1.2%. This reduction in population growth of the TBP reduced any offset to the Ontario nesting Canada goose harvest. Nonbreeding TBP (1-2 year olds and failed breeders) often migrate north to Ontario for the summer molt in what is called a molt migration. These geese return to Wisconsin and Michigan in September just prior to or with the Ontario nesting birds. Early opening (prior to September 24) regular seasons help to target harvest of these birds and Wisconsin was recognized by the other states as having an effective season structure to provide additional harvest on these migrating TBP geese. With regard to TBP geese it was believed that early opening dates (mid-September), additional hunting days and higher bag limits were all options to increase regular season harvest on TBP geese across the states. The use of these options would vary by state depending on the goals for the other populations of Canada geese harvested in that state.

In contrast to the data related to TBP Canada geese which suggested opportunities for liberalizing hunting season parameters, the Ontario nesting Canada goose data required a cautious approach. Several years of low to moderate production, high adult harvest in 2009 and a steadily declining breeding population trend for the Ontario nesting geese all contributed to a decision to avoid changes that might result in increased harvest. Wisconsin is most dependent upon the Ontario nesting geese (about 60% of regular season harvest) to support our Canada goose hunting opportunities with Illinois also heavily dependent and Michigan somewhat dependent upon them as well. While breeding ground conditions are likely the primary force driving population change, significant harvest during low population cycles could drive the Ontario nesting geese lower, slow population recovery and reduce hunting opportunity in Wisconsin. It appears that this has been our experience the last several years as the Ontario nesting Canada goose population continues to decline. In Wisconsin, most regular season Canada goose

hunting pressure and harvest occurs in late September and October (Figure 6). In the Exterior Zone, 80% of the season harvest occurs in the first half of the season prior to November 1. If we decide there is a need to reduce harvest on the Ontario nesting geese then reducing bag limits or hunting days during the late September to mid-October period would have the most benefit.

With the background of mixed results toward TBP and Ontario nesting Canada geese goals, the MFC agreed to a small step toward greater liberalization of Canada goose hunting regulations. The states that share the Ontario nesting geese could increase their regular season Canada goose hunting season length from 85 to 92 days with a 2 bird bag limit or shorten the season to 78 days with a 3 bird daily bag limit. The northern states with high Ontario nesting Canada goose harvest (Wisconsin, Michigan and Illinois) agreed to increase the hunting season length and maintain a 2 bird daily bag limit while the southern states that harvest Ontario nesting geese increased the daily bag limit with a shorter season, recognizing that a greater proportion of their harvest is TBP geese. While this change provided an extra week of harvest opportunity for Wisconsin in 2013-2016, it had a relatively small impact on overall harvest since few hunters hunt geese in December. Less than 1-2% of total harvest occurred during these additional 7 days during 2013-16 (Appendix Table 5).

Since 2012, there has been a growing interest among some states to simplify the Canada goose regulatory frameworks at the Flyway level, reduce Ontario goose monitoring costs and further liberalize regulations. States (Wisconsin, Illinois) more dependent upon Canada goose nesting in northern Ontario expressed concern over this approach. The management of Canada and cackling geese in the Mississippi Flyway is complicated by the need to balance potentially conflicting objectives for arctic, subarctic and temperate-breeding populations. These include maintaining breeding distributions, sustainable populations, ecosystem functions, and multiple benefits and costs within social and economic tolerances. As a result, three flyway committees that managed 3 different subarctic populations were merged into one committee and a new merged monitoring strategy was approved for 2016 which should reduce costs. The Mississippi Flyway Canada goose committee recommended hunting season frameworks that provide flexibility for state and provincial agencies to select regulations to meet local objectives recognizing that dependence on different populations may require different regulations. For 2016, this resulted in a simpler and broader Canada goose regulation framework that allowed state regulations to vary based on the status of the Canada geese that support each state's harvest.

A disproportionate number of Horicon Zone harvested geese are from the Ontario nesting Canada goose population, so there has been a need for special harvest management in this zone. In addition, the Horicon Zone provides a unique hunting opportunity with reduced hunter pressure which has been maintained to control harvest. However, the county level harvest data over the last decade also indicated that parts of the Horicon Zone were being underutilized. As a result, in 2012 we began to evaluate the possibility of reducing the size of the zone to better represent the core around Horicon Marsh. Following analysis of

harvest call-in data and public input, the zone was reduced in size beginning in 2014. This reduced area was the most concentrated area of harvest representing 82% of total zone harvest so it was believed that harvest controls will still be sufficient to protect against over harvest of Ontario nesting Canada geese in this zone. Along with this boundary change, harvest recording regulations for the Horicon Zone were simplified and standardized with the Exterior Zone Canada goose harvest. The Horicon Zone goose hunters began to register their harvest via the goose 1-800 call system used by Exterior Zone and Early season hunters for many years.

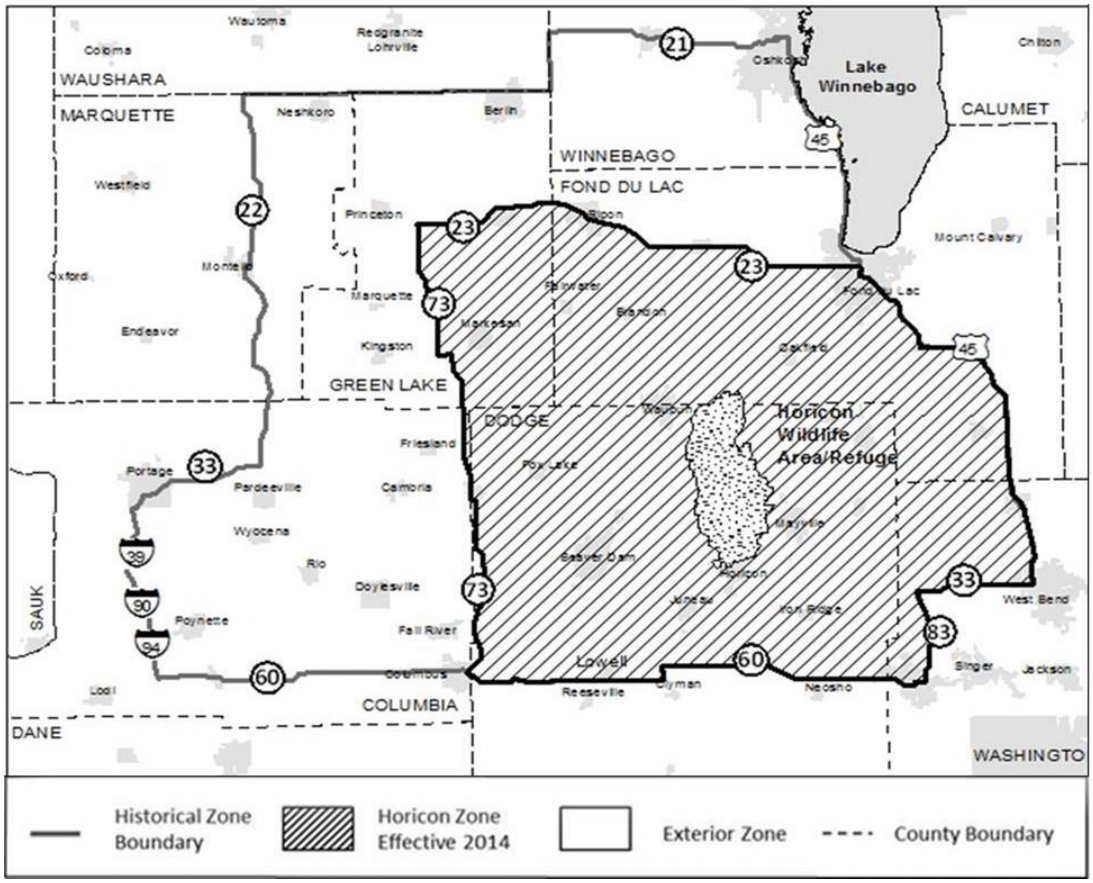

Figure 1. 2014 Horicon Goose Zone Boundary Change

Harvest quantity, distribution and hunter participation are all important pieces of information for the evaluation of these management decisions. This report is a summary of the 2016 management of harvest. Data gathered for this report are based on information from the GameReg harvest registration system. This series of reports has been and continues to be instrumental in making decisions for the management of Canada geese in Wisconsin.

BREEDING POPULATIONS

With the shift in Canada goose management at a Flyway level, we also transitioned away from the traditional breeding Canada goose survey, which surveys for the geese that nest in northern Ontario to a design that provides indices of goose populations. The new survey design monitors areas of high Canada goose density on the breeding grounds and is used to detect changes in populations rather than provide a specific estimate. This means that the index we obtain from the survey from 2016 and into the future will not be comparable to the breeding goose estimates prior to 2015. It will take several years before we have enough data using the new survey technique to begin to identify population trends. The 2015 survey, indicated below average numbers compared to recent years and remain below the long term average. The adult breeding population was estimated at 226,544, which is 30% below the 2014 estimate of 322,506 and ~35% below the 1989-2014 average of 350,982 breeding birds (Brook and Hughes, June 2015). The minimum breeding population threshold as established by the management plan for those geese that nest in Ontario is 255,000 (Brook and Luukkonen, 2010). In Wisconsin, the 2016 breeding population estimate for TBP geese increased for the first time in the past 5 years and was at 129,562 and was above the previous year's estimate of 119,212 (Van Horn et al. 2016).

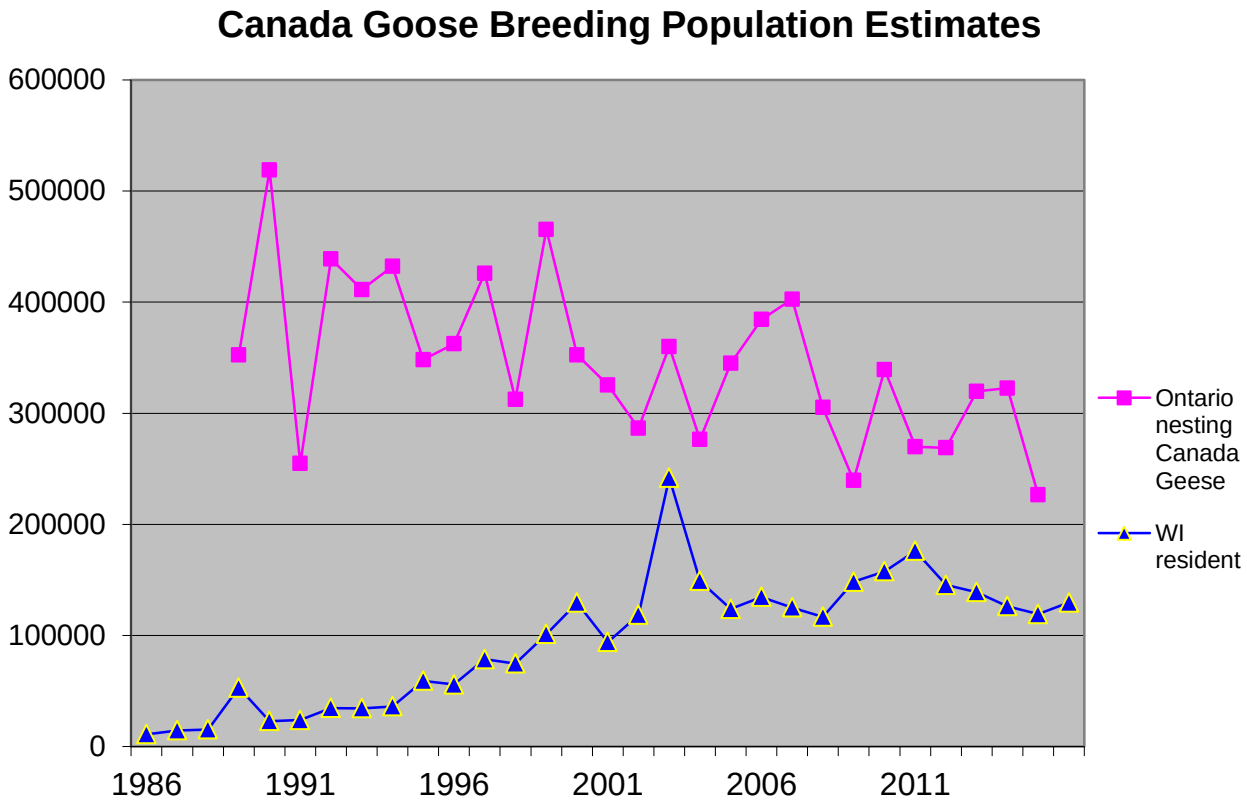

Figure 2.

METHODS

The Wisconsin Department of Natural Resources collects Canada goose harvest data for all zones using call-in reporting. In 2014 the Horicon Zone reporting requirements were changed to make reporting consistent statewide but the Horicon hunter survey was maintained for 2014 and 2015 to provide comparable overlapping data between the 2 systems. In 2016, the Department merged telephone and internet registration for Canada geese with turkeys, deer and other game species into one consistent system; Go Wild. Harvest registration for Canada geese and other game species can be done by telephone 1-844-426-3734 (844 GAME-REG) or internet at *gamereg.wi.gov.*

Go Wild Registering System

During the 2016 statewide Early September season, Exterior Zone and Horicon Zone in the regular season, all Canada goose hunters were required to report their harvest using either 1-844-GAME-REG or online via gamereg.wi.gov within 48 hours. With this system, hunters report the following information: Canada goose tag 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 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 requirement. Results of these field checks provide a compliance rate that is used to adjust the reported harvest to estimate total Canada goose harvest. The level of harvest detail available through this system is not available through any other state or federal database.

Horicon Mail Survey

Canada goose hunters in the Horicon Zone were mailed a hunter questionnaire in 2014 and 2015 to obtain harvest information as they have in past years to provide transition data to new collection methods. Continuation of the Horicon mail survey in 2014 and 2015 provided overlapping data with the 1-800 harvest registration so we could compare the 2 methods of estimating harvest during the transition from one system to another.

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 directs harvest pressure onto our TBP Canada geese formerly known as resident giants. In 2016, the season was open from September 1-15 with a 5 bird daily bag limit, which was unchanged from previous years.

The number of applicants for the early season Canada goose permit was 57,412 which was a slight increase from 2015 (Appendix Table 10). Prior to 2003, the number of early permit holders had been steadily increasing. However, in 2004 the Conservation Patron license increased from $110 to $140 and then to $165 in 2005 and the number of patron licenses began declining. We believe this also triggered a several year decline in Canada goose permit holders from 2004-2011 since all conservation patron license holders were provided an early goose permit. We have no data to assess the percent of the total applicants that actively hunt during this period although the federal HIP data suggests relatively stable overall (early and regular season) active Canada goose hunter numbers in Wisconsin the last several years. Conservation patron license customers are offered an early 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 2016 show that 3,378 hunters were successful in harvesting one or more geese during the early season, which was up from 3,363 in 2015.

At an estimated 16,880 geese, the 2016 early September Canada goose harvest was slightly up from last year. A very warm and wet early September, is likely the reason for a slightly lower goose harvest in 2016 than we have seen in prior years. All of the counties with the highest early season harvest were similar to 2015 and previous years.

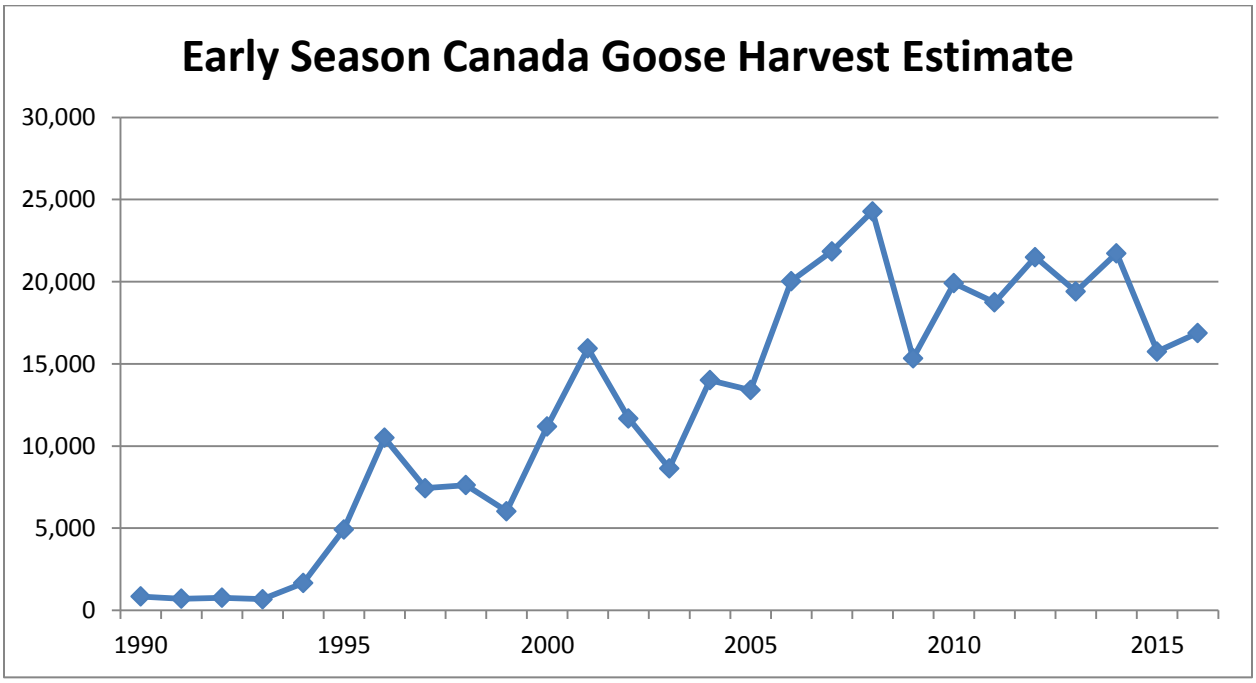

Figure 3.

Table 1.

Top 10 counties - Early Season Harvest - 2016			
County	Rank	Estimated Kill	Percent of Early Total
Polk	1	921	5.5%
Marathon	2	713	4.2%
Manitowoc	3	562	3.3%
Winnebago	4	514	3.1%
Barron	5	502	3.0%
St. Croix	6	491	2.9%
Brown	7	476	2.8%
Dodge	8	437	2.8%
Waukesha	9	437	2.6%
Chippewa	10	434	2.6%

Regular Season Hunter Participation and Characteristics

In 2016, 81,360 individuals received a Wisconsin Canada goose regular season hunting permit (Exterior or Horicon). This was a decrease of 1,681 or -2.0% from 2015 and marks the second year in a row that permit numbers decreased. We simplified the purchase process for the Horicon Zone permits in 2014 so that they could be purchased in the same manner as Exterior permits with no application deadline.

Exterior Zone

Exterior Zone permits totaled 74,620 in 2016 (Figure 4). This represents 92% of the total regular season permits, which is slightly higher than recent years and likely a result of the reduced size of the Horicon Zone. However, we have no associated state estimate of how many hunters were actively hunting geese. Estimates of the number of active Wisconsin goose hunters derived from US Fish and Wildlife Service Harvest Information Program (HIP) estimates for 2016 will not be available until July, 2017; however, federal estimates suggest the number of active Wisconsin Canada goose hunters the last several years have been stable near 40,000-45,000. Previous comparisons of state and federal hunter estimates suggest that about 50% of the Exterior Zone permit holders are active goose hunters, which would indicate about 37,250 hunters in the Exterior Zone pursued geese.

The number of Exterior goose permits issued, by county of residence, was similar when compared to recent years (Appendix Table 1). In descending order, the counties with the highest number of permits issued were Waukesha, Dane, Outagamie, Winnebago and Brown. These counties also have some of the highest human populations in the state.

Horicon Zone

The Horicon Zone was a large area that included all of Green Lake and parts of Dodge, Fond du Lac, Marquette, Washington and Columbia counties. However, in 2014 the zone was reduced to focus the special Horicon Zone harvest management on a small area that supported over 80% of the hunting in the original area. All of Marquette and Winnebago, nearly all of Columbia, 2/3 of Green Lake and a portion of Fond du Lac counties were changed from Horicon to Exterior Zone. Horicon Zone permit holders received a permit that allows a total season harvest of 12 Canada geese as of 2014 which is up from 6 in 2013 and prior years. We anticipated a drop in permit holders which allowed an increase in harvest per permit holder. There has been a gradual decline in the number of Horicon permits over the last 20 years and in 2016 a similar trend continued with 6,740 permits issued compared to 6,907 in 2015 (Figure 4). The percentage of total regular season hunters represented by the Horicon permits in 2016 was 8% which is lower than in recent years.

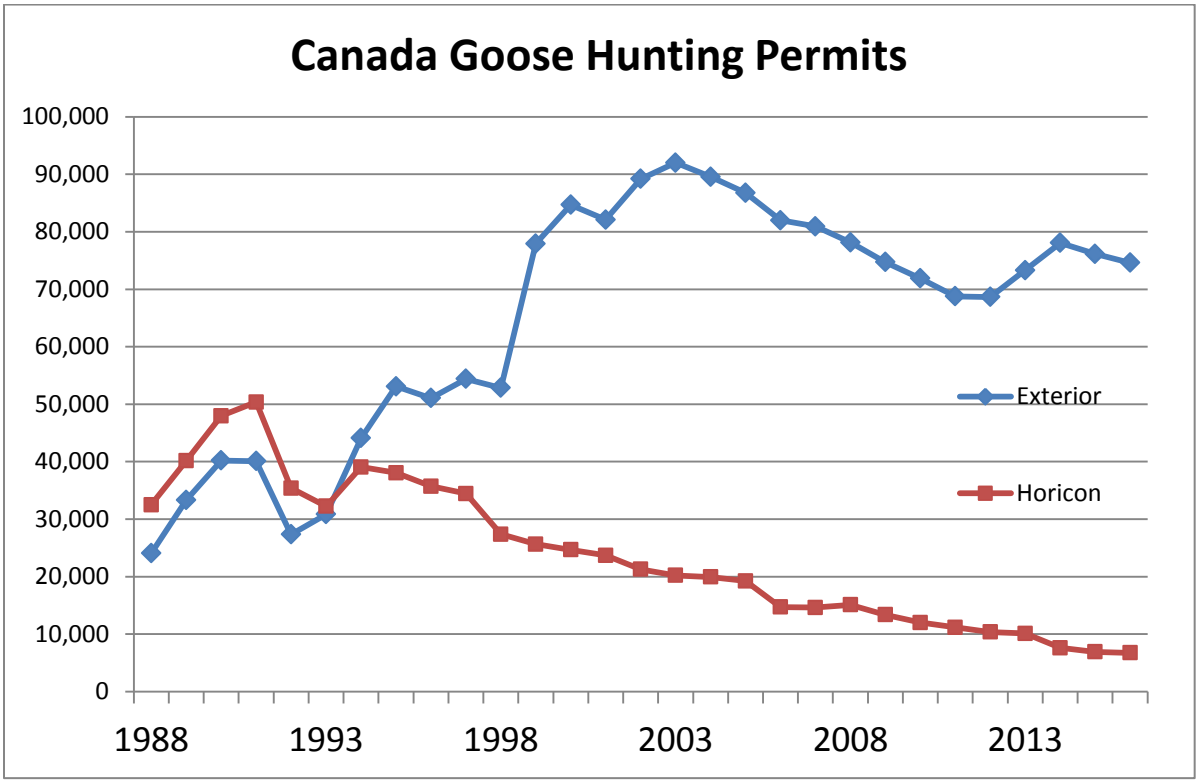

Figure 4.

The Horicon time periods served to distribute hunter harvest pressure across the fall season. Since 2008, there had been only 2 periods, roughly splitting the 92 days season in half, with no overlap. Starting in 2016 we combined the two periods into a single 92

day season, it was felt that due to the continued decrease of permits issued in the Horicon Zone, that there was no longer any need to distribute hunters throughout the season.

Regular Season Harvest

Statewide

The statewide regular season Canada goose harvest in 2016 was 34,841 which is 10% lower than 2015 (Appendix Table 2). The progression of agricultural crop harvest in Wisconsin has a significant impact on Canada goose harvest success. In 2016, agricultural crop harvest was delayed offering fewer areas to effectively harvest Canada geese in late September and early October.

Table 2.

Top 10 counties - Statewide Harvest for 2016
(all zones-regular season)

County	Rank	Estimated Kill	% of Statewide Total
Dodge	1	2,311	6.6%
Brown	2	1,993	5.7%
Dane	3	1,456	4.1%
Outagamie	4	1,322	3.8%
Waukesha	5	1,263	3.6%
Polk	6	1,196	3.4%
Fond du Lac	7	1,178	3.4%
Manitowoc	8	1,109	3.2%
Winnebago	9	1,002	2.9%
Marathon	10	924	2.7%

The county level harvest 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 harvest on the Ontario nesting Canada geese (Table 2). In addition, the east-northeast counties of Brown, Manitowoc, Outagamie and Winnebago represent a region of high Canada goose harvest. The counties with the highest harvest have all been in the top 10 in recent years and the top several have remained largely unchanged.

Exterior Zone

The Exterior Zone represents all areas of the state outside of the Horicon Zone. The opening of the Exterior Zone begins the day after the September 15 close of the early goose season. During early September most Canada geese in the state are the locally nesting geese. The Ontario nesting geese begin arriving in Wisconsin the third week of September but do not peak in

number until mid-October so starting the Exterior Zone season the day after the early season allows higher harvest on locally nesting geese in this season. In addition, hunter participation and harvest are highest in late September and early October.

The total Exterior Zone harvest in 2016 was 31,820 Canada geese which represents 91% of the statewide regular season harvest (Appendix Table 2). This proportion of the statewide total was similar to last year and up from recent years likely resulting from the reduced size of the Horicon Zone and reduced participation there (90% in 2014, 85% in 2013). The harvest was lower than in 2015 but remains within the range of harvest we have seen over the last several years. 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 Zone. 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.

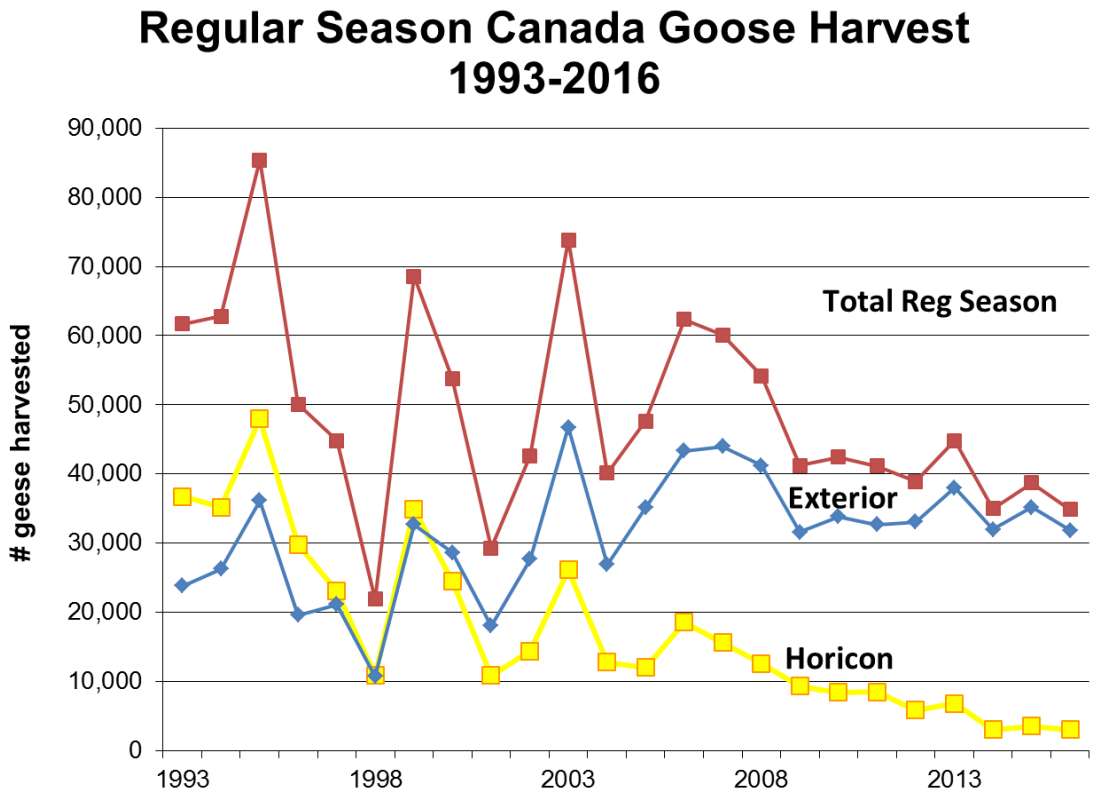

Figure 5.
Note: This figure is based on state estimates

Table 3.

Top 10 counties - Exterior Harvest - 2016

County	Rank	Estimated Kill	% of Exterior Total
Brown	1	1,993	6.3%
Dane	2	1,456	4.6%
Outagamie	3	1,322	4.2%
Waukesha	4	1,263	4.0%
Polk	5	1,196	3.8%
Manitowoc	6	1,109	3.5%
Winnebago	7	1,002	3.2%
Marathon	8	924	2.9%
Calumet	9	834	2.6%
Waupaca	10	820	2.6%

Harvest of Canada geese continues to be highest on weekends and most of the Exterior Zone harvest occurs in late September and October (Figure 6 & Appendix Table 5). With the regular opener again on a weekday we saw similar opening day harvest compared to 2015. Daily and weekly harvest levels drop off considerably during November and December when participation is low. In 2016, we experienced a wetter and warmer than normal season and hunting conditions were good throughout the month of December. Late season hunting opportunities were available up to the season close although there are relatively few active goose hunters in December. Throughout the season, reports from hunters indicated that geese were often utilizing areas where they were not accessible to hunters (within municipal areas closed to firearm discharge). Canada goose harvest is particularly low during the traditional 9 day gun deer hunting season at the end of November and 2016 was no exception. In 2016, 7,600 individuals (10.2%) harvested at least one goose out of 74,620 Exterior Zone permit holders (Appendix Table 9). 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 patron license holders can automatically obtain this permit. Of successful hunters, 26% harvested a single goose and 33% harvested 2 geese. These percentages are similar to 2011-2015.

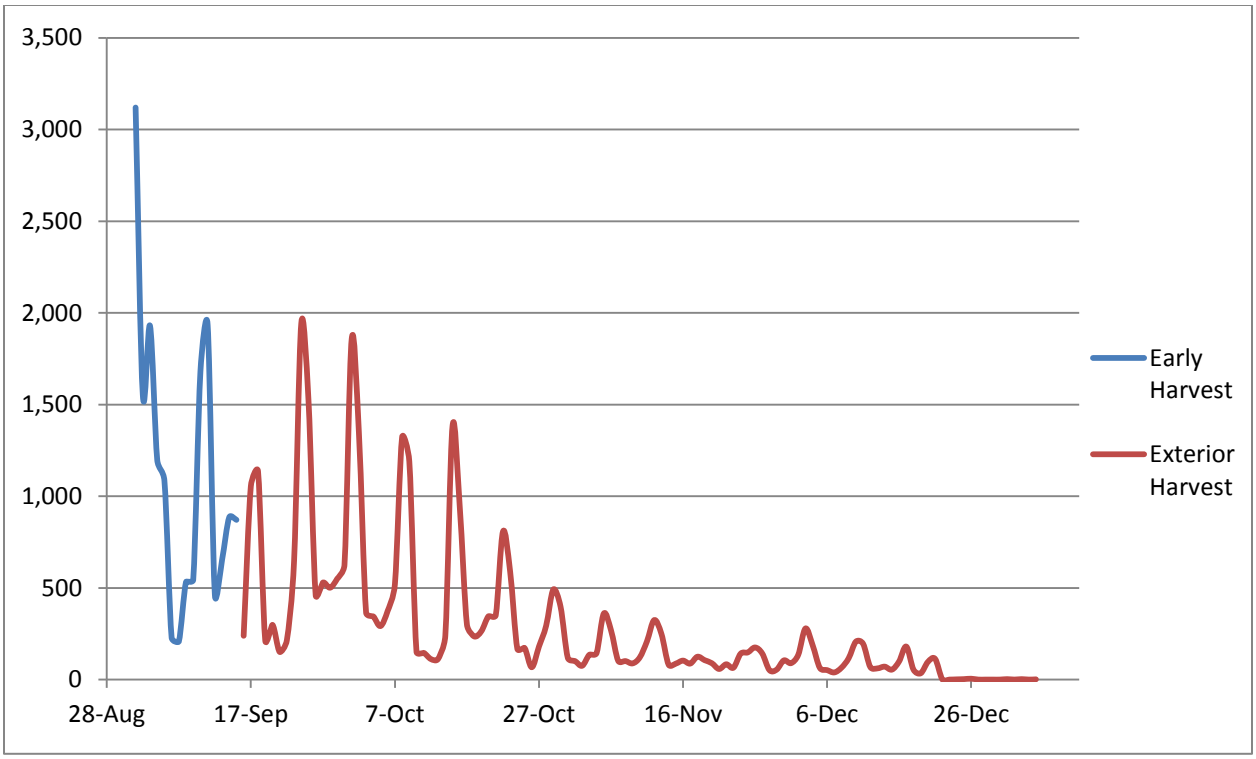

Figure 6.

Horicon Zone

The total Canada goose harvest for the Horicon Zone in 2016 was 3,021. This made up 9% of the statewide regular season harvest (Appendix Table 8). Harvest was down from 2015 (3,542) and was the lowest it has been in many years, likely reflecting the reduced size of the zone and fewer hunters. The overall number of Horicon Zone permit holders was down from 2015.

With the addition of the Horicon Zone to the telephone harvest reporting system (1-800-GOOSE and GameReg), better and more consistent data is available on daily harvest. Harvest of Canada geese in the Horicon Zone, similar to the Exterior, continues to be highest on weekends and most of the Horicon Zone harvest occurs in early and mid-October (Figure 7 & Appendix Table 6). In 2016, we experienced a wetter season which likely contributed to the decrease in harvest compared to 2015. Late season hunting opportunities were available up to the season close although there are relatively few active goose hunters in December.

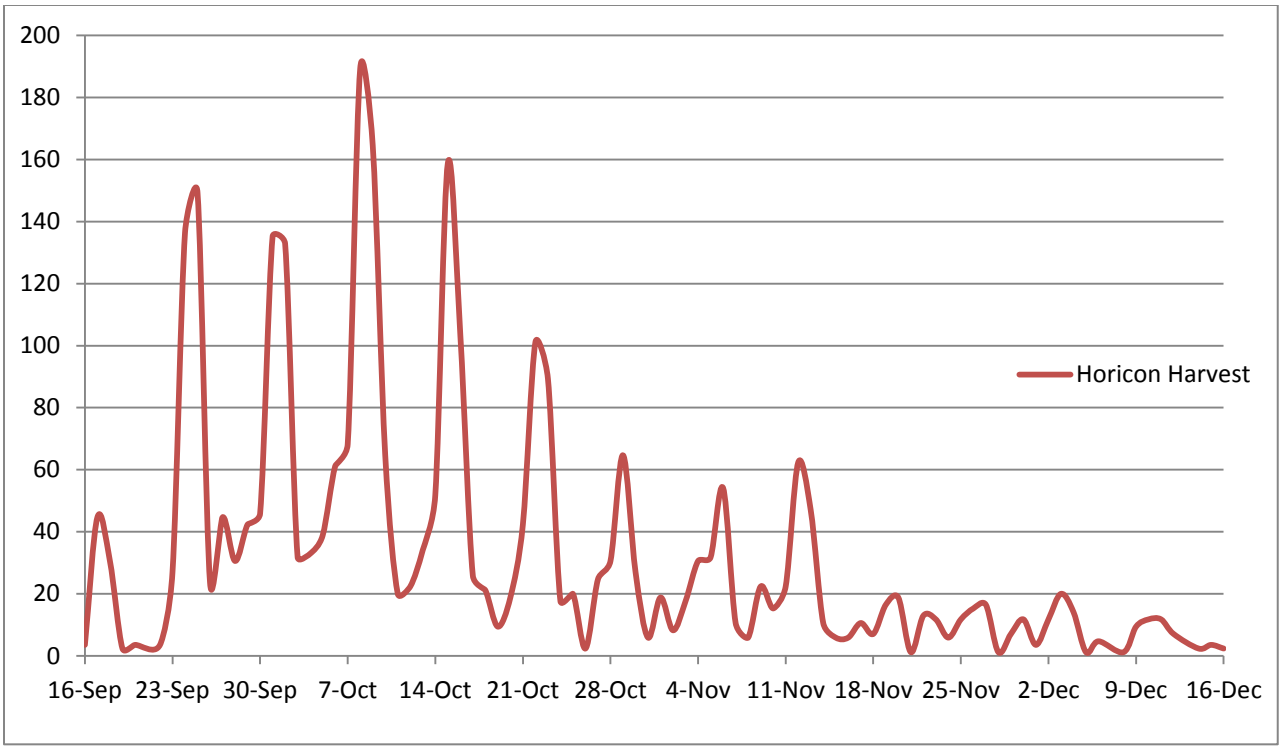

Figure 7

The areas directly adjacent to the Horicon Marsh National Wildlife Refuge and state Wildlife Management area (portions of Dodge and Fond du Lac Counties) continue to represent a high percentage of the Horicon Zone harvest, with 94% occurring in these two counties alone. In the past Winnebago and Columbia counties represented a significant portion of the zone's area but contributed relatively little to the harvest. For this reason we removed the area north of Hwy. 23 and west of Hwy 73 from the Horicon Zone and designated it as part of the Exterior Zone effective in 2014.

In the third year of the size reduction of the Horicon Zone, it appears that harvest levels in that area differ little from what was experienced across the state. The harvest success of Wisconsin Canada goose hunters varies from year to year based on weather, crop harvest timing, migration and goose populations.

MANAGEMENT IMPLICATIONS

Two primary populations of Canada geese are found in Wisconsin during the fall and winter; the Temperate Breeding Population of Canada geese which nest in Wisconsin and adjacent states and the northern Ontario nesting Canada geese formerly referred to as the Mississippi Valley Population (MVP). The management of the Ontario nesting Canada geese 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 (Brook and Luukkonen 2010). Similarly, the management of the giant Canada goose population (Temperate Breeding 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. Part of quality hunting opportunities is to simplify hunting regulations at the state and flyway level where possible.
- Work with flyway partners in cooperative monitoring of Ontario and locally nesting Canada goose populations, survival and harvest with the objective of maintaining a higher rate of harvest on locally nesting Canada geese than Ontario nesting 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, banding efforts and public input.

Ontario nesting Canada geese:

While TBP Canada geese provide about 40% of Wisconsin's regular Canada goose harvest and nearly all of the early season harvest, Wisconsin is still dependent upon the Ontario nesting Canada geese for about 60% of our annual regular season goose harvest. This is in contrast to most other Mississippi Flyway states where over 70% of their Canada goose harvest consists of TBP Canada geese. For example, Minnesota harvests over 90% resident geese and has a much larger population of these birds, which is why regulations may vary even among neighboring states. The Ontario nesting breeding population has been declining slowly over the last 20 years. While there are annual increases and decreases in the population estimate, the population trend is now clearly downward. The rate of adult harvest on the Ontario nesting Canada geese (not including crippling loss) was within or below the targeted range of 8-10% from 2003-2014. However, in years with a late winter and poor nesting conditions, the harvest rate on adult birds increased above this range because fewer young of the year were in the fall flight. Overall, it appears that annual production has not been able to support the harvest demand.

In the long-term interest of maintaining the Ontario nesting goose population as a sustainable resource, Wisconsin harvest management decisions need to continue to take steps to maintain a relatively low harvest rate on the Ontario nesting Canada geese in the state. 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 Ontario nesting geese. In addition, maintenance of a 2 bird or lower daily bag limit when Ontario nesting

geese are present in Wisconsin controls the rate of harvest on this population. Daily harvest records allow us to document this high early harvest and schedule season dates which reduce pressure on the geese that nest in Ontario while maintaining an abundant harvest opportunity. The mid-September opening of the Exterior Zone season has allowed Wisconsin to increase harvest but shift it away from the mid-October peak of Ontario nesting goose presence in the state. On the other hand the high harvest during a period when new Ontario nesting birds are just arriving in the state makes them more vulnerable to harvest. Based on the variability of breeding ground conditions and the relatively low and stable harvest rates, it appears that the Ontario nesting Canada goose population change is driven primarily by breeding conditions and not by harvest; however, because of periods of low recruitment there is still a need to remain cautious about Ontario nesting goose harvest management. If the downward trend continues, Wisconsin may need to reduce days or bag limits during the heavy harvest period of September 16- mid-October.

The area around the Horicon Marsh contained within the Horicon Zone remains a focal area of Ontario nesting goose migration through Wisconsin, so a shift in harvest pressure from this area to other parts 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 harvest while maintaining a quality hunting experience. Further, these reports have shown that few hunters (~5%) fill the maximum harvest tags during the entire season demonstrating that this regulation is not the limiting factor affecting harvest opportunity (Appendix Table 13). Despite the restrictions, about 10% of the statewide regular season Canada goose harvest in 2016 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 (Appendix Table 4). This proportion was lower than the nearly 20% level observed in the past.

Temperate Nesting Goose Population

From the early 1980's through about 2011, the Wisconsin nesting population of temperate nesting Canada geese grew and provided an additional hunting resource that is more widely distributed around the state than the Ontario nesting Canada geese. However, this increase also generated considerable conflict between abundant geese present year round and human outdoor activities. Many of the same management strategies designed to reduce harvest on Ontario nesters were also intended to provide hunters with an opportunity to harvest the increasing local Canada goose resource and help address human-goose conflicts. We have liberalized and simplified Canada goose harvest regulations over the last several years, eliminated subzone restrictions and now have the maximum number days (107) of Canada goose hunting allowed by international treaty. The last five year average harvest rate on TBP Canada geese in Wisconsin was over 21%, indicating that our current season structure has helped us reach our goal of increased harvest pressure on locally nesting Canada geese. The 15 days of September hunting in the early season now accounts for roughly 1/3 of the total statewide fall goose

harvest. The county level data shown in this report indicate that our early 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. However, since 2004 the Wisconsin breeding Canada goose population trend has appeared to level off.

Agricultural crop damage from Canada geese, particularly during the spring continues to be a concern for farmers in Wisconsin in areas where Canada geese concentrate. Consideration of agricultural damage issues remains important in our overall approach to managing Wisconsin's Canada goose populations. The department can 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 $1,000 and be enrolled in the wildlife damage abatement and claims program. In 2016, 78 spring Canada goose shooting permits were issued and 217 geese were killed.

Similarly, consideration of Canada goose problems in urban areas is another important aspect of management of goose management in Wisconsin. Initially, many of the Wisconsin breeding Canada geese were found 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 (nest and egg control, adult take) will continue to be implemented in some areas to mitigate nuisance goose problems. The nuisance goose control efforts of US Department of Agriculture - Wildlife Services staff resulted in the removal of 2,584 adult and juvenile Canada geese at 34 sites in 2016; with the majority of these removals occurring in urban centers where hunting does not sufficiently address these urban goose conflicts (Lovell, 2016). Beginning in 2010, in addition to the federal requirement, Wisconsin added its own mandatory reporting for nest and egg depredation permits to better monitor control efforts around the state. In 2016, 138 nest and egg depredation permits were issued.

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Appendix - Harvest and Participation Data

Table 1. *Number of goose permit applicants by zone and county of residence.* *(Continued on next page).*

	Horicon		Exterior	
County	**Frequency**	**Percent**	**Frequency**	**Percent**
Adams	3	0.04	177	0.23
Ashland	6	0.08	318	0.42
Barron	17	0.23	1,061	1.39
Bayfield	7	0.1	205	0.27
Brown	59	0.81	2,839	3.73
Buffalo	10	0.14	400	0.53
Burnett	14	0.19	417	0.55
Calumet	18	0.25	638	0.84
Chippewa	30	0.41	847	1.11
Clark	6	0.08	388	0.51
Columbia	200	2.74	1,650	2.17
Crawford	13	0.18	336	0.44
Dane	301	4.13	4,331	5.69
Dodge	1,243	17.05	462	0.61
Door	4	0.05	699	0.92
Douglas	21	0.29	553	0.73
Dunn	17	0.23	574	0.75
Eau Claire	49	0.67	1,037	1.36
Florence	1	0.01	57	0.07
Fond Du Lac	895	12.28	1,114	1.46
Forest	2	0.03	172	0.23
Grant	66	0.91	512	0.67
Green	18	0.25	579	0.76
Green Lake	127	1.74	607	0.8
Iowa	23	0.32	342	0.45
Iron	4	0.05	117	0.15
Jackson	11	0.15	219	0.29
Jefferson	91	1.25	1,885	2.48
Juneau	19	0.26	583	0.77
Kenosha	54	0.74	1,048	1.38
Kewaunee	8	0.11	624	0.82
La Crosse	93	1.28	1,749	2.3
Lafayette	20	0.27	196	0.26
Langlade	7	0.1	319	0.42
Lincoln	31	0.43	635	0.83
Manitowoc	26	0.36	1,657	2.18
Marathon	46	0.63	1,498	1.97
Marinette	12	0.16	832	1.09
Marquette	15	0.21	569	0.75

	Horicon		Exterior	
County	**Frequency**	**Percent**	**Frequency**	**Percent**
Menominee			5	0.01
Milwaukee	506	6.94	2,348	3.08
Monroe	20	0.27	529	0.69
Oconto	18	0.25	820	1.08
Oneida	27	0.37	947	1.24
Outagamie	111	1.52	3,288	4.32
Ozaukee	96	1.32	1,256	1.65
Pepin	3	0.04	147	0.19
Pierce	38	0.52	620	0.81
Polk	27	0.37	1,146	1.51
Portage	35	0.48	1,090	1.43
Price	7	0.1	375	0.49
Racine	87	1.19	2,179	2.86
Richland	12	0.16	163	0.21
Rock	79	1.08	1,781	2.34
Rusk	13	0.18	240	0.32
St. Croix	33	0.45	1,358	1.78
Sauk	53	0.73	1,082	1.42
Sawyer	9	0.12	372	0.49
Shawano	20	0.27	705	0.93
Sheboygan	70	0.96	1,897	2.49
Taylor	5	0.07	329	0.43
Trempealeau	28	0.38	615	0.81
Vernon	55	0.75	451	0.59
Vilas	14	0.19	477	0.63
Walworth	31	0.43	1,264	1.66
Washburn	6	0.08	499	0.66
Washington	532	7.3	1,699	2.23
Waukesha	613	8.41	4,417	5.8
Waupaca	26	0.36	1,164	1.53
Waushara	14	0.19	441	0.58
Winnebago	203	2.78	2,999	3.94
Wood	38	0.52	1,570	2.06
Unknown	398	5.46	2,503	3.29
Non. Resident	477	6.54	3,112	4.09

Table 2. *Harvest by zone and time period. Reported harvest in the Horicon and Exterior Zone is from mandatory reporting. The reported harvest for the Horicon and Exterior Zone was adjusted by a compliance rate of 85.0% for Horicon and 85.0% for the exterior to obtain the expanded harvest.*

Zone/Period	Reported Harvest	Expanded Harvest
Horicon	2,569	3,021
Exterior	27,058	31,820
Total	**29,627**	**34,841**

Table 3. *Exterior Zone goose harvest by county (continued on next page).*

County	Reported Kill	Expanded Kill	Percent
Adams	313	368	1.16%
Ashland	102	120	0.38%
Barron	676	795	2.50%
Bayfield	92	108	0.34%
Brown	1695	1,993	6.26%
Buffalo	286	336	1.06%
Burnett	257	302	0.95%
Calumet	709	834	2.62%
Chippewa	498	586	1.84%
Clark	342	402	1.26%
Columbia	450	529	1.66%
Crawford	104	122	0.38%
Dane	1238	1,456	4.58%
Dodge	176	207	0.65%
Door	488	574	1.80%
Douglas	62	73	0.23%
Dunn	197	232	0.73%
Eau Claire	131	154	0.48%
Florence	32	38	0.12%
Fond Du Lac	375	441	1.39%
Forest	51	60	0.19%
Grant	119	140	0.44%
Green	166	195	0.61%
Green Lake	178	209	0.66%
Iowa	66	78	0.24%
Iron	26	31	0.10%
Jackson	36	42	0.13%
Jefferson	570	670	2.11%
Juneau	241	283	0.89%
Kenosha	558	656	2.06%
Kewaunee	682	802	2.52%
La Crosse	168	198	0.62%
Lafayette	31	36	0.11%

Table 3. *Exterior Zone goose harvest by county (continued on next page).*

County	Reported Kill	Expanded Kill	Percent
Langlade	149	175	0.55%
Lincoln	231	272	0.85%
Manitowoc	943	1,109	3.49%
Marathon	786	924	2.90%
Marinette	373	439	1.38%
Marquette	317	373	1.17%
Menominee	1	1	0.00%
Milwaukee	23	27	0.09%
Monroe	105	123	0.39%
Oconto	441	519	1.63%
Oneida	119	140	0.44%
Outagamie	1124	1,322	4.15%
Ozaukee	314	369	1.16%
Pepin	18	21	0.07%
Pierce	109	128	0.40%
Polk	1017	1,196	3.76%
Portage	518	609	1.91%
Price	138	162	0.51%
Racine	626	736	2.31%
Richland	57	67	0.21%
Rock	564	663	2.08%
Rusk	302	355	1.12%
Sauk	169	199	0.62%
Sawyer	223	262	0.82%
Shawano	375	441	1.39%
Sheboygan	687	808	2.54%
St. Croix	614	722	2.27%
Taylor	367	432	1.36%
Trempealeau	155	182	0.57%
Vernon	3	4	0.01%
Vilas	117	138	0.43%
Walworth	33	39	0.12%
Washburn	554	652	2.05%
Washington	296	348	1.09%
Waukesha	535	629	1.98%
Waupaca	1074	1,263	3.97%
Waushara	697	820	2.58%
Winnebago	244	287	0.90%
Wood	852	1,002	3.15%
Total	**27,058**	**31,820**	

Table 4. *Horicon Zone goose harvest by county. The estimated harvest was derived from call-in data.*

County	Total Expanded Harvest	% of Harvest
Dodge	2,104	69.6%
Fond du lac	737	24.4%
Green Lake	62	2.1%
Washington	118	3.9%
Total	**3,021**	

Table 5. *Exterior Zone goose harvest by date. Bold numbers indicate weekends (continued on the next page).*

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
16-Sep-16	203	239	239	0.8%	0.8%
17-Sep-16	**897**	**1,055**	**1,294**	**3.3%**	**4.1%**
18-Sep-16	**965**	**1,135**	**2,428**	**3.6%**	**7.6%**
19-Sep-16	181	213	2,641	0.7%	8.3%
20-Sep-16	254	299	2,940	0.9%	9.2%
21-Sep-16	128	151	3,091	0.5%	9.7%
22-Sep-16	183	215	3,306	0.7%	10.4%
23-Sep-16	550	647	3,953	2.0%	12.4%
24-Sep-16	**1652**	**1,943**	**5,895**	**6.1%**	**18.5%**
25-Sep-16	**1296**	**1,524**	**7,419**	**4.8%**	**23.3%**
26-Sep-16	391	460	7,879	1.4%	24.8%
27-Sep-16	450	529	8,408	1.7%	26.4%
28-Sep-16	426	501	8,909	1.6%	28.0%
29-Sep-16	468	550	9,460	1.7%	29.7%
30-Sep-16	532	626	10,085	2.0%	31.7%
1-Oct-16	**1580**	**1,858**	**11,943**	**5.8%**	**37.5%**
2-Oct-16	**1145**	**1,347**	**13,290**	**4.2%**	**41.8%**
3-Oct-16	310	365	13,655	1.1%	42.9%
4-Oct-16	293	345	13,999	1.1%	44.0%
5-Oct-16	248	292	14,291	0.9%	44.9%
6-Oct-16	319	375	14,666	1.2%	46.1%
7-Oct-16	442	520	15,186	1.6%	47.7%
8-Oct-16	**1124**	**1,322**	**16,508**	**4.2%**	**51.9%**
9-Oct-16	**1012**	**1,190**	**17,698**	**3.7%**	**55.6%**
10-Oct-16	128	151	17,848	0.5%	56.1%
11-Oct-16	124	146	17,994	0.5%	56.5%
12-Oct-16	95	112	18,106	0.4%	56.9%
13-Oct-16	96	113	18,219	0.4%	57.3%
14-Oct-16	204	240	18,458	0.8%	58.0%
15-Oct-16	**1176**	**1,383**	**19,841**	**4.3%**	**62.4%**
16-Oct-16	**803**	**944**	**20,786**	**3.0%**	**65.3%**
17-Oct-16	255	300	21,086	0.9%	66.3%

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
18-Oct-16	200	235	21,321	0.7%	67.0%
19-Oct-16	224	263	21,584	0.8%	67.8%
20-Oct-16	294	346	21,930	1.1%	68.9%
21-Oct-16	298	350	22,280	1.1%	70.0%
22-Oct-16	**686**	**807**	**23,087**	**2.5%**	**72.6%**
23-Oct-16	**500**	**588**	**23,675**	**1.8%**	**74.4%**
24-Oct-16	142	167	23,842	0.5%	74.9%
25-Oct-16	147	173	24,015	0.5%	75.5%
26-Oct-16	57	67	24,082	0.2%	75.7%
27-Oct-16	153	180	24,262	0.6%	76.2%
28-Oct-16	250	294	24,556	0.9%	77.2%
29-Oct-16	**418**	**492**	**25,048**	**1.5%**	**78.7%**
30-Oct-16	**338**	**397**	**25,445**	**1.2%**	**80.0%**
31-Oct-16	101	119	25,564	0.4%	80.3%
1-Nov-16	86	101	25,665	0.3%	80.7%
2-Nov-16	64	75	25,740	0.2%	80.9%
3-Nov-16	115	135	25,876	0.4%	81.3%
4-Nov-16	123	145	26,020	0.5%	81.8%
5-Nov-16	**306**	**360**	**26,380**	**1.1%**	**82.9%**
6-Nov-16	**229**	**269**	**26,649**	**0.8%**	**83.8%**
7-Nov-16	87	102	26,752	0.3%	84.1%
8-Nov-16	86	101	26,853	0.3%	84.4%
9-Nov-16	75	88	26,941	0.3%	84.7%
10-Nov-16	103	121	27,062	0.4%	85.0%
11-Nov-16	178	209	27,271	0.7%	85.7%
12-Nov-16	**276**	**325**	**27,596**	**1.0%**	**86.7%**
13-Nov-16	**212**	**249**	**27,845**	**0.8%**	**87.5%**
14-Nov-16	69	81	27,926	0.3%	87.8%
15-Nov-16	74	87	28,013	0.3%	88.0%
16-Nov-16	88	103	28,117	0.3%	88.4%
17-Nov-16	74	87	28,204	0.3%	88.6%
18-Nov-16	106	125	28,329	0.4%	89.0%
19-Nov-16	**90**	**106**	**28,435**	**0.3%**	**89.4%**
20-Nov-16	**76**	**89**	**28,524**	**0.3%**	**89.6%**
21-Nov-16	49	58	28,582	0.2%	89.8%
22-Nov-16	71	83	28,665	0.3%	90.1%
23-Nov-16	55	65	28,730	0.2%	90.3%
24-Nov-16	120	141	28,871	0.4%	90.7%
25-Nov-16	126	148	29,019	0.5%	91.2%
26-Nov-16	**149**	**175**	**29,194**	**0.6%**	**91.7%**
27-Nov-16	**121**	**142**	**29,336**	**0.4%**	**92.2%**
28-Nov-16	44	52	29,388	0.2%	92.4%
29-Nov-16	46	54	29,442	0.2%	92.5%
30-Nov-16	89	105	29,547	0.3%	92.9%
1-Dec-16	76	89	29,636	0.3%	93.1%
2-Dec-16	115	135	29,772	0.4%	93.6%
3-Dec-16	**237**	**279**	**30,050**	**0.9%**	**94.4%**
4-Dec-16	**159**	**187**	**30,237**	**0.6%**	**95.0%**

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
5-Dec-16	54	64	30,301	0.2%	95.2%
6-Dec-16	44	52	30,353	0.2%	95.4%
7-Dec-16	33	39	30,391	0.1%	95.5%
8-Dec-16	55	65	30,456	0.2%	95.7%
9-Dec-16	99	116	30,572	0.4%	96.1%
10-Dec-16	**176**	**207**	**30,779**	**0.7%**	**96.7%**
11-Dec-16	**166**	**195**	**30,975**	**0.6%**	**97.3%**
12-Dec-16	58	68	31,043	0.2%	97.6%
13-Dec-16	52	61	31,104	0.2%	97.7%
14-Dec-16	60	71	31,175	0.2%	98.0%
15-Dec-16	46	54	31,229	0.2%	98.1%
16-Dec-16	84	99	31,327	0.3%	98.5%
17-Dec-16	**153**	**180**	**31,507**	**0.6%**	**99.0%**
18-Dec-16	**46**	**54**	**31,561**	**0.2%**	**99.2%**
19-Dec-16	29	34	31,596	0.1%	99.3%
20-Dec-16	82	96	31,692	0.3%	99.6%
21-Dec-16	96	113	31,805	0.4%	100.0%
22-Dec-16	1	1	31,806	0.0%	100.0%
24-Dec-16	**1**	**1**	**31,807**	**0.0%**	**100.0%**
25-Dec-16	**2**	**2**	**31,810**	**0.0%**	**100.0%**
26-Dec-16	4	5	31,814	0.0%	100.0%
31-Dec-16	**2**	**2**	**31,817**	**0.0%**	**100.0%**
2-Jan-17	2	2	31,819	0.0%	100.0%
4-Jan-17	1	1	31,820	0.0%	100.0%

Table 6. *Weekday of reported kill in percent. Data from mandatory reporting in the Exterior Zone and Horicon Zone*

Zone/ Period	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Horicon	28.5%	6.7%	6.5%	5.5%	8.0%	12.1%	32.7%
Exterior	26.0%	7.0%	7.5%	6.4%	7.9%	12.4%	32.9%
All Zones	**27.3%**	**6.9%**	**7.0%**	**6.0%**	**8.0%**	**12.3%**	**32.8%**

Table 7. *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
Horicon	0.45
Exterior	0.43

Table 8. *Percent of successful bags containing 1 or 2 geese.*

Zone	Percent of 1 Kill Bags	Percent of 2 Kill Bags
Horicon	42.9%	57.1%

Table 9. *Exterior Zone season bag derived from mandatory reporting data.*

Bag	# of Hunters	Percent
0	67,020	89.8%
1	2,009	2.7%
2	2,525	3.4%
3	684	0.9%
4	884	1.2%
5	293	0.4%
6	371	0.5%
7	148	0.2%
8	153	0.2%
9	79	0.1%
10	92	0.1%
11	43	0.1%
12	43	0.1%
13	33	0.0%
14	45	0.1%
15	24	0.0%
16	27	0.0%
17	13	0.0%
18	24	0.0%
19	10	0.0%
20	12	0.0%
21	11	0.0%
22	10	0.0%
23	6	0.0%
24	9	0.0%
25	4	0.0%
26	5	0.0%
27	8	0.0%
28	4	0.0%
29	4	0.0%
30	2	0.0%
31	1	0.0%
32	3	0.0%
33	2	0.0%
35	1	0.0%
36	1	0.0%
37	1	0.0%
39	2	0.0%

40	2	0.0%
42	1	0.0%
47	2	0.0%
49	1	0.0%
50	1	0.0%
52	1	0.0%
55	1	0.0%
61	1	0.0%
63	1	0.0%
66	1	0.0%
79	1	0.0%
82	1	0.0%

Table 10. *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
2011	52,906		18,746
2012	53,596		21,302
2013	55,657		19,407
2014	59,017		21,732
2015	57,009		15,749
2016	57,412		16,880

Table 11. *Early September Canada goose harvest by date (bold numbers indicate weekends).*

Date of Harvest	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
1-Sep-16	2622	3,120	3,120	18.5%	18.5%
2-Sep-16	1303	1,551	4,671	9.2%	27.7%
3-Sep-16	**1621**	**1,929**	**6,600**	**11.4%**	**39.1%**
4-Sep-16	**1007**	**1,198**	**7,798**	**7.1%**	**46.2%**
5-Sep-16	911	1,084	8,882	6.4%	52.6%
6-Sep-16	192	228	9,111	1.4%	54.0%
7-Sep-16	174	207	9,318	1.2%	55.2%
8-Sep-16	448	533	9,851	3.2%	58.4%
9-Sep-16	457	544	10,395	3.2%	61.6%
10-Sep-16	**1412**	**1,680**	**12,075**	**10.0%**	**71.5%**
11-Sep-16	**1625**	**1,934**	**14,009**	**11.5%**	**83.0%**
12-Sep-16	389	463	14,472	2.7%	85.7%
13-Sep-16	548	652	15,124	3.9%	89.6%
14-Sep-16	744	885	16,009	5.2%	94.8%
15-Sep-16	732	871	16,880	5.2%	100.0%
	14,185	16,880			

Table 12. *Early September Canada goose harvest by county, 2016.*

County	Reported Kill	Expanded Kill	Percent
Adams	100	119	0.70%
Ashland	163	194	1.15%
Barron	422	502	2.98%
Bayfield	76	90	0.54%
Brown	400	476	2.82%
Buffalo	232	276	1.64%
Burnett	154	183	1.09%
Calumet	222	264	1.57%
Chippewa	365	434	2.57%
Clark	265	315	1.87%
Columbia	239	284	1.68%
Crawford	58	69	0.41%
Dane	288	343	2.03%
Dodge	367	437	2.59%
Door	326	388	2.30%
Douglas	49	58	0.35%
Dunn	90	107	0.63%
Eau Claire	63	75	0.44%
Florence	13	15	0.09%

County	Reported Kill	Expanded Kill	Percent
Fond Du Lac	234	278	1.65%
Forest	37	44	0.26%
Grant	114	136	0.80%
Green	153	182	1.08%
Green Lake	72	86	0.51%
Iowa	60	71	0.42%
Iron	55	65	0.39%
Jackson	19	23	0.13%
Jefferson	313	372	2.21%
Juneau	50	60	0.35%
Kenosha	216	257	1.52%
Kewaunee	312	371	2.20%
La Crosse	170	202	1.20%
Lafayette	34	40	0.24%
Langlade	95	113	0.67%
Lincoln	127	151	0.90%
Manitowoc	472	562	3.33%
Marathon	599	713	4.22%
Marinette	93	111	0.66%
Marquette	96	114	0.68%
Milwaukee	5	6	0.04%
Monroe	102	121	0.72%
Oconto	226	269	1.59%
Oneida	137	163	0.97%
Outagamie	340	405	2.40%
Ozaukee	132	157	0.93%
Pepin	48	57	0.34%
Pierce	32	38	0.23%
Polk	774	921	5.46%
Portage	301	358	2.12%
Price	137	163	0.97%
Racine	298	355	2.10%
Richland	58	69	0.41%
Rock	189	225	1.33%
Rusk	152	181	1.07%
Sauk	104	124	0.73%
Sawyer	130	155	0.92%
Shawano	151	180	1.06%
Sheboygan	245	292	1.73%
St. Croix	413	491	2.91%

County	Reported Kill	Expanded Kill	Percent
Taylor	244	290	1.72%
Trempealeau	93	111	0.66%
Vernon	145	173	1.02%
Vilas	32	38	0.23%
Walworth	335	399	2.36%
Washburn	286	340	2.02%
Washington	316	376	2.23%
Waukesha	367	437	2.59%
Waupaca	341	406	2.40%
Waushara	115	137	0.81%
Winnebago	432	514	3.05%
Wood	292	347	2.06%

Table 13. *Early September season bag derived from mandatory reporting data, 2015.*

Bag	Number of Hunters	Percent
0	54,034	94.1%
1	780	1.4%
2	551	1.0%
3	459	0.8%
4	342	0.6%
5	473	0.8%
6	143	0.2%
7	134	0.2%
8	124	0.2%
9	66	0.1%
10	98	0.2%
11	39	0.1%
12	41	0.1%
13	28	0.0%
14	17	0.0%
15	24	0.0%
16	11	0.0%
17	13	0.0%
18	5	0.0%
19	5	0.0%
20	5	0.0%
21	4	0.0%

22	3	0.0%
23	3	0.0%
24	3	0.0%
25	3	0.0%
26	1	0.0%
29	1	0.0%
30	2	0.0%

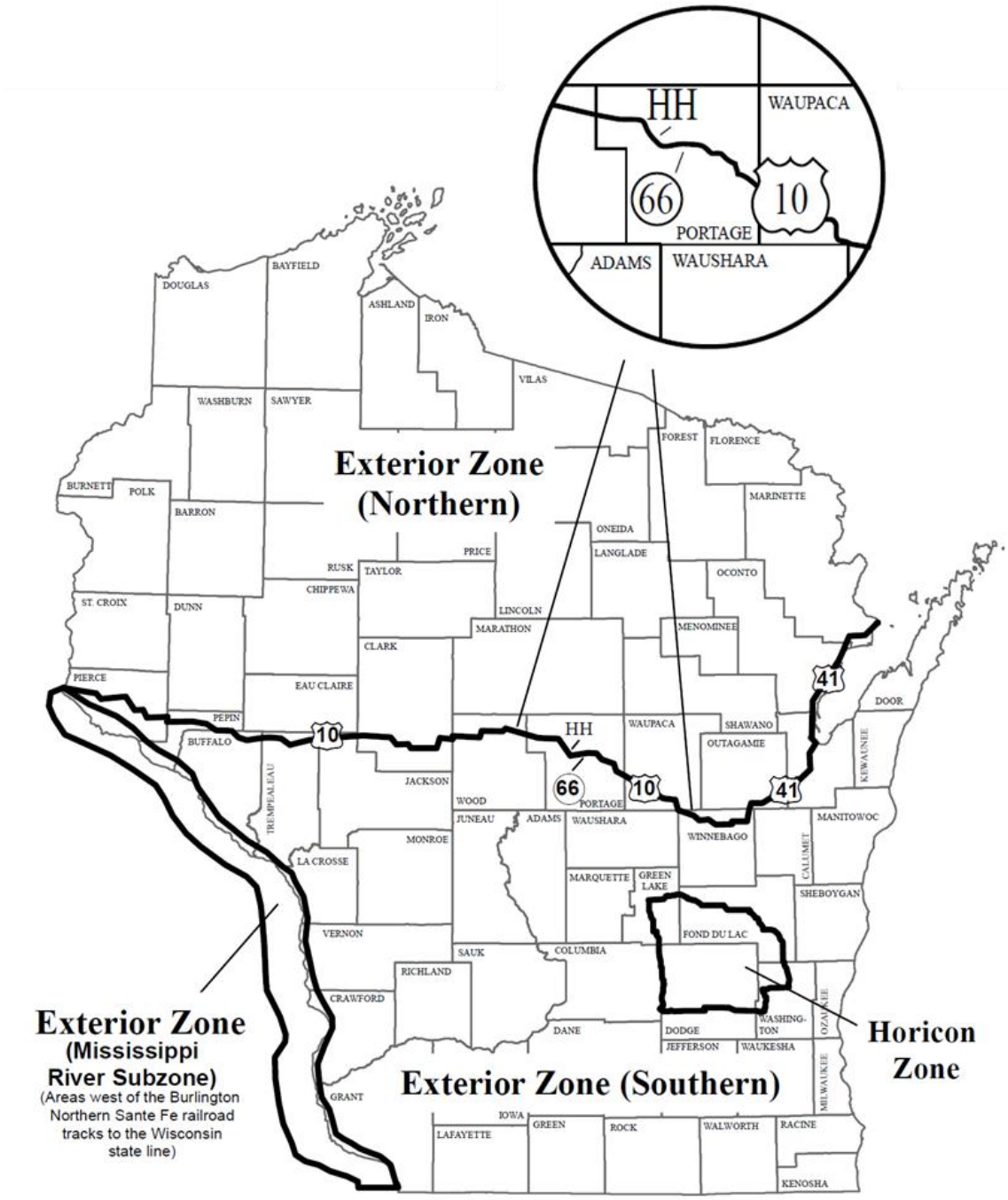

Figure 8. Canada goose management zones and subzones

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