Canada Geese in the Urban Environment: Status and Trends for the Omaha Metro Area

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Our Goal: Develop an Inventory and Monitoring Program for Geese in the Omaha Metro area

Early European settlers to Nebraska eliminated the native populations of breeding Canada Geese. Widespread reintroduction efforts started in the 1960’s have succeeded in establishing breeding populations of geese across most of Nebraska. While Omaha does not yet have the widespread problems with Canada Goose populations found in many American cities, conflicts have grown steadily in recent years. Currently, wildlife managers only become aware of urban goose populations after the number of geese has risen to the point where conflicts occur and people start to complain.

In 2007 we set out to develop a monitoring program to determine the scope of the goose population in Douglas and Sarpy Counties in Nebraska that would enable wildlife agencies to anticipate future areas of conflict and to increase their ability to find solutions.

What We Did

Our approach focuses on open water as the primary habitat for breeding Canada Geese. We used orthorectified aerial photos to identify open water in Douglas and Sarpy Counties of Nebraska using ArcGIS 9.2. Water bodies were from photos taken in 1993, 1999, 2001, 2003, 2006, and 2007 to provide information on the change in goose habitat as the Omaha metro area has grown over time.

For field monitoring we selected a subset of water bodies to survey for breeding geese. Site selection was done by first determining the distribution of sizes of known water features. 100 points were then generated using stratified random selection limited to the study area. Each site was evaluated on a series of criteria determined by the areas of concern: presence of water, goose presence, nest presence, landscape viability and fecal presence. Data were recorded on hand-held field units and then compiled on the existing ArcGIS map in the lab.

What we found

A steady increase in the number of water bodies, area of open water, and perimeter of shoreline in Douglas and Sarpy Counties occurred between 1993 and 2001 (figures above), followed by a slight drop in 2003. This drop corresponds to a low rainfall associated with drought conditions (rainfall figure above). During 2008 we made multiple visits to survey geese at 71 distinct water bodies. Canada Goose breeding activity was detected at 24 of these sites. The size of water bodies with goose present (mean area 17.1 ha, SE = 7.74) was significantly larger than water bodies with no geese (mean area 2.3 ha, SE = 0.6: f = 2.67, P < 0.01).

Reported conflicts between humans and Canada Geese (red stars) are restricted to a few sites in the Omaha metro area. However, our field surveys in 2007 and 2008 found breeding geese to be much more widespread (yellow circles) indicating that the potential for increased conflict in the future.

Conclusions

Analysis of historical aerial photos documents the increase in habitat for Canada Geese as rural areas have given way to suburban development. This highlights the potential for future growth in the population of resident Canada Geese in the Omaha metro area. Our field surveys show that breeding Canada Geese are already widespread in the Omaha metro area, though reported conflicts between people and geese remain localized. The surveys indicate areas where action might be taken to limit population growth of geese before conflicts occur and form a baseline for monitoring future population growth.

Future Directions

Our future work will focus on continuing to monitor the change in the resident Canada Goose population and to evaluate the effectiveness of management techniques for limiting the growth in goose numbers. These include evaluating how landscaping might be used to discourage goose reproduction and the feasibility of translocating goose to areas where conflicts with humans might be minimized.

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Throughout the study area, Canada Geese have become effective colonizers of urban landscapes and their numbers are rapidly increasing in parks, golf courses, and subdivisions across the United States. As numbers of geese increase in suburban and urban locales there is growing concern about the impacts Canada geese have on managed environments. Conflicts between people and geese occur over destruction of existing landscapes, aggressive behaviors towards people and pets, and fecal contamination of both lawns and water.

As rural land is developed for suburbs, the amount of open water attractive to breeding geese increases. The maps below show a section of Douglas County with water bodies indicated in blue. The map on the left shows the status of water in 1993, while the map on the right shows water in 2007.