



Distribution of Harvested Banded Canada Geese in Michigan from 2003-2012



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Abstract

- In Michigan, the population of residential Canada geese is rapidly growing. This project analyzes the harvested distribution of banded residential Canada geese in Michigan using hunting season dates from 2003 to 2013. Maps were created to show a better representation of the distribution of the birds across the state of Michigan. These maps confirmed that a majority of residential Canada geese were harvested in the southern third of the state for all the goose hunting seasons from 2003 to 2013.

Introduction

- Michigan has a very large and rapidly growing population of residential giant Canada geese. Since the 1970s, resident Canada goose populations have increased from about 9,000 geese to today's population of approximately 300,000 geese due to the success of wildlife management programs and the adaptability of the birds. In Michigan, about 80 percent of the Canada goose population live in the southern third of the state.
- To help combat this growing population of residential geese, Michigan has implemented hunting seasons. The effectiveness of the hunting seasons on the goose population are estimated by bird band recoveries. These bands are placed on the leg of the goose and they provide data on the distribution and movements of the geese, their relative numbers, annual production, lifespan, and causes of death. Throughout the year, the bands are reported to the United States Geological Survey (USGS) from hunters and residents who have harvested or have found these geese.
- Since the 1970s and 80s, special late and early goose seasons have been established, along with a regular season in 1998 in Michigan. In 2012, the goose season in Michigan was extended 17 more days for all seasons, in response to the growing population of geese and hunter surveys. This growing population has led to my objective, which is to determine if the distribution of reported harvested residential Canada geese changes year to year or if the majority of the reports come from the southern third of Michigan.

Methodology

- Downloaded data off of the USGS website into Excel and converted into ArcMap
- Created shapefiles for each year from 2003-2013 by manually going into the table and highlighting the specific dates and exporting the data
- Selected by Attributes the geese that were shot from the new shapefile from Step 2 and exported the data again
- Added 2 fields this new table: test_lat and test_long and set them equal to the E_LAT_DECI and E_LON_DECI respectively using the Field Calculator
- Concatenate Date and Time Fields within the Tracking Analyst Tool of the ArcToolBox
- Created a summary table of the output field from Step 5, using the Summarize tool and SUM of how the geese were obtained
- Joined the summary table with the table from Step 3
- Symbolized this data using graduated colors and created a map of the distribution of geese across Michigan, also added the Topography Base Map
- Repeat steps 3-8 for each hunting season to create 10 different maps

Results

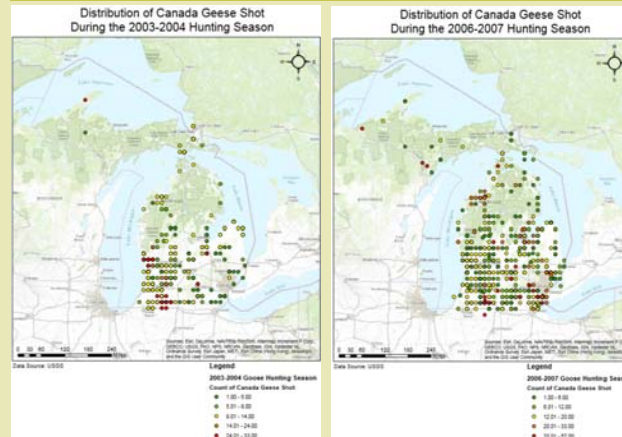


Figure 1

Figure 2

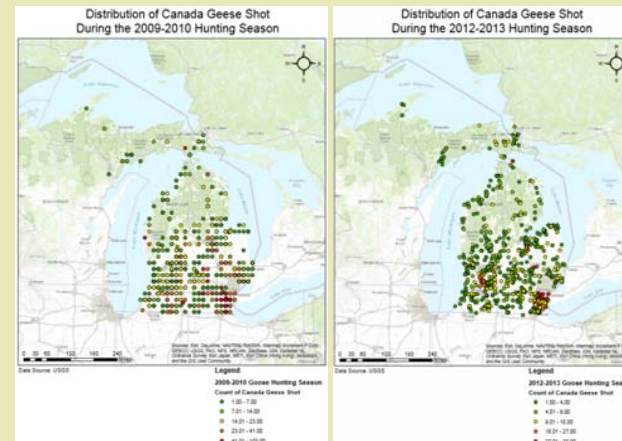


Figure 3

Figure 4

- In Figure 1, it shows that a majority of Canada geese were harvested in the southwestern part of the lower peninsula. Figure 2 shows a majority of the geese were harvested in the lower one-third of the lower peninsula. However, in Figure 3, it shows that most of the harvested geese were within the southeastern side of the lower peninsula. Figure 4 shows the exact same pattern as Figure 3 meaning that most of the geese harvested were in the southeastern part of the lower peninsula around Detroit. All four figures show that there are more geese shot in the southern third part of the lower peninsula rather than in the upper peninsula of Michigan.

Conclusion

- The results showed that a majority of the band recoveries were recovered from the lower peninsula, specifically from the southern third of Michigan's lower peninsula. This was expected because as mentioned previously, there is approximately 80 percent of the Canada goose population that is located within the southern third of Michigan's lower peninsula. There are still reports of geese shot in the upper part of the lower peninsula and in the upper peninsula, but not as many as in the southern third of the lower peninsula.
- In the future, a study should be done to see if season length impacts the number of band returns in Michigan. Another possible study is to see if as the seasons progresses, do the reports of Canada geese harvested fluctuate or stay the same.

Sources

- Schafer, A. Personal communication, September 9, 2013.

