The Effect of Native Vegetation Buffers on the Fall Population of Canada Geese Population in Vilas Park

Katie Adkins and Katie Klatt

Abstract:

This project was undertaken to study the effect of the native vegetation buffer on the fall population of geese in Vilas Park. A vegetation buffer is shrubs or herbaceous plants that block pathways of geese or obstruct their line of sight. We focused our research on zone 2 because this area is of much concern for people who use the park. We hypothesized that the percentage of all geese that are in zone 2 at Vilas Park would decrease after the planting of the native vegetation buffer. To complete this study we used data taken by previous students from Edgewood College. We found that, in fact, the percentage of geese in zone 2 has decreased after the planting of the native vegetation buffer in 2005. One possible potential for error includes inconsistent data taken from previous students.

Introduction:

The population of geese in the United States has increased greatly in the last ten years. As this population has grown so have conflicts between humans and geese. In Vilas Park, parents are worried about their children. Zone 2 is made up almost entirely of soccer fields in which children are constantly playing. Geese leave great amounts of feces and feathers in areas in which they spend time (Smith, et al, 1999). Parents are worried that their children will be exposed to the feces left in this area by the geese. In the fall and winter months, the largest number of geese occur in zone 2 (Lorman 2003). Geese in this zone are a big problem. Not only are these geese a problem for people in the area, but the feces also leads to contamination of the lakes in the area (Lorman 2003).

There are many ways in which people have thought of to combat this problem. Some of these options include: placing walking paths around bodies of water, placing fences or rock barriers around bodies of water, and also placing alternate areas of food sources for the geese away from the areas that people use (Smith, et al, 1999). Another way that people have thought of to combat this problem is to plant a native vegetation buffer. Native vegetation buffers, which are native plants planted around the small lagoon in Vilas Park, are meant to keep geese out of zone 2. Geese like to be able to see water from wherever they are. Vegetation buffers are meant to block the view of water for the geese, making them feel unsafe in zone 2. With this buffer in place, geese cannot see water from zone 2.

The purpose of this study is to find out if the native vegetation buffers have had an effect on the fall population of geese, especially the geese in zone 2. Our hypothesis is that the native vegetation buffers have decreased the number of geese in zone 2 for the fall population of geese. We also feel that the percentage of geese in zone 2 will decrease in 2005 with the partial vegetation buffer in place, as well as in 2006 when more of the vegetation buffer was planted.

This study was performed because there needs to be some way to keep the people in the park happy, as well as to keep the population of geese in the area under control. The native vegetation buffers may be a fairly simple solution. We want to know how

well these buffers are working, to see if they should possibly be extended into other zones as well.

Methods and Materials:

To start our project we took an initial count of the geese in Vilas Park in all of the zones, on September 27th. The park is broken into 9 zones (see Figure 1). The zone we are most concerned with is zone 2. On this first day, we walked through the park and counted the geese in each of the individual zones. We recorded our observations. Since 2001, people have been counting the number of geese in Vilas Park. All of these data have been compiled into an Excel program along with additional observations that people have made. The three years we focused on were 2004, 2005, and 2006.

For our study on the effect of the native vegetation buffer in Vilas Park, we have looked at various data provided to us from past students. These data are summarized in an Excel spreadsheet produced by Edgewood College students and faculty since 2001 (available on the Blackboard site) and the video camera footage (available at Edgewood College), all courtesy of Jim Lorman of Edgewood College. With the Excel program we have looked at the overall counts in the Park, which are broken down by zones. We used the video camera footage to verify the counts for zone 2. We also used this camera footage to determine when the native vegetation buffer was mowed in 2006. We focused on the percentage of geese in zone 2 before and after the barrier was planted, as well as before and after the mowing. We narrowed our dates to; for 2004, September 14, 21, 23, 28, 29, 30, October 6, 11, 12, 25, 26, and November 2, 3, 5, 7, 9, 11, 12, 17, 18, 21, 23, 28, 29, and 30, for 2005, September 1, 6, 8, 15, 20, and 27, October 11, and 25, and November 16, and for 2006 September 5, 15, 19, 22, 25, 27, and 29, October 6, 9, and 25, November 1, 3, 7, 16, and 30. We organized our data into an Excel sheet (see Appendix A for original data) including the dates the data were taken, the time of day the data was taken, the total number of geese in zone 2, and the total number of geese in Vilas Park. We then calculated the percentage of geese in zone 2.

Results:

Our results show a great decrease in the percentage of geese in zone 2 before and after the native vegetation buffer was planted (see Table 1, Figures 2 and 3). Before the buffer was planted there was an average of approximately 40% of the geese in Vilas Park were in zone 2. After the buffer was planted the average dropped to approximately 10%. Using the camera footage we found that in 2006, the vegetation buffer was mowed on October 25th.

Figure 1. Map of zones in Vilas Park where Counts were taken.

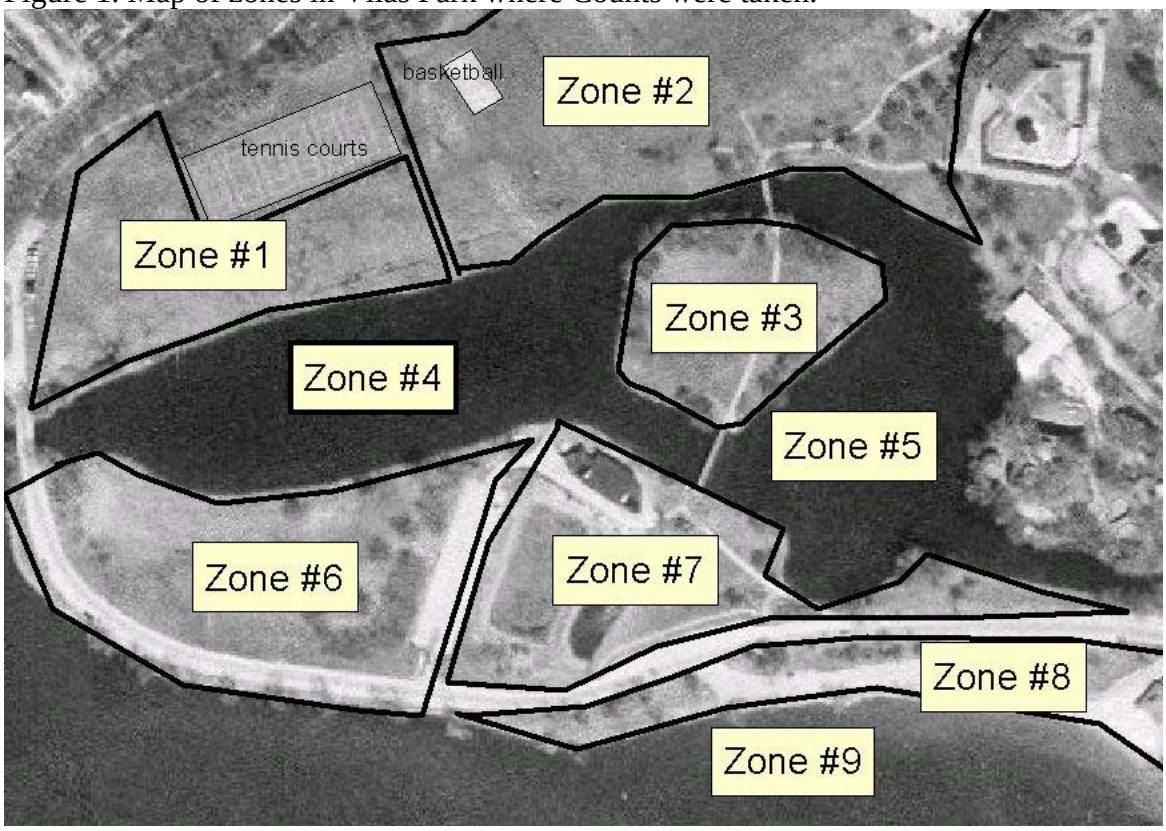


Figure 2. Percentage of Population of Geese in Zone 2 of Vilas Park, September, October, and November of 2004 through 2006.

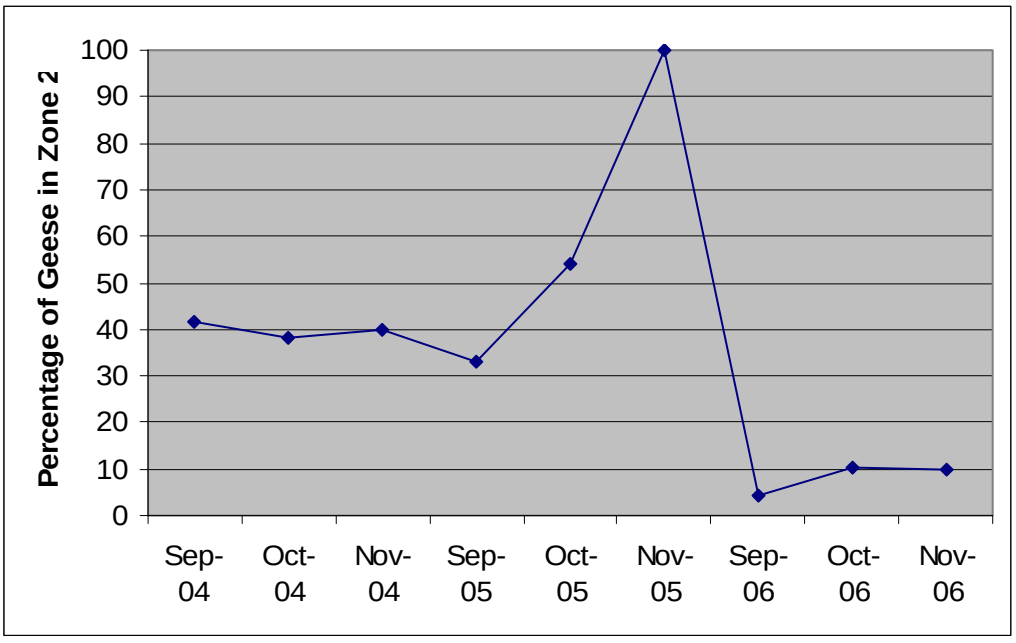
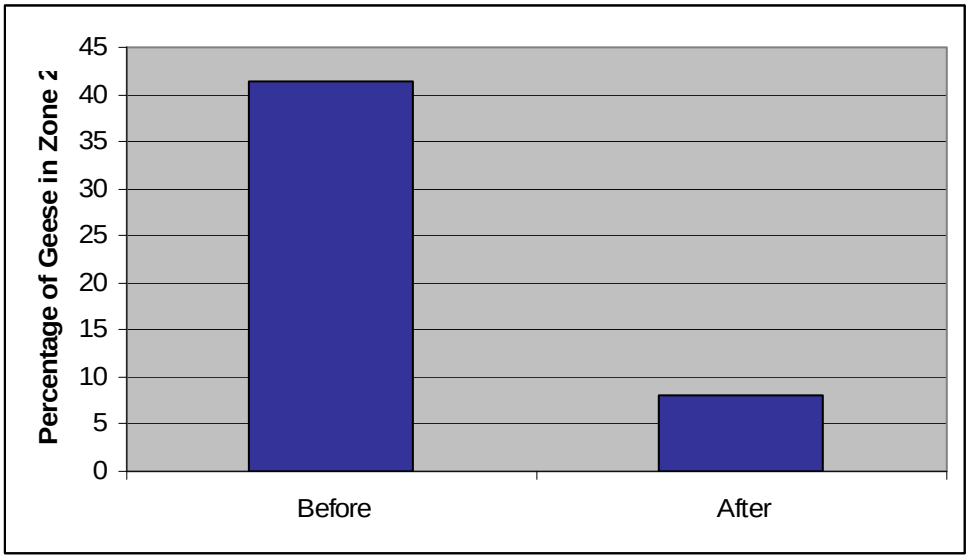


Table 1—Calculated Percentage of Fall Population of Geese in Zone 2 of Vilas Park

Date	Zone 2	Total	Percentage
Sep-04	437	1053	41.5
Oct-04	473	1238	38.2
Nov-04	1441	3593	40.1
Sep-05	353	1072	32.9
Oct-05	308	569	54.1
Nov-05	44	44	100
Sep-06	87	2144	4.1
Oct-06	143	1290	10.3
Nov-06	174	1770	9.8

Figure 3. Percentage of total geese in Vilas Park occurring in Zone 2 in the fall months (September through November) before (2004 – 2005) and after (2006) the planting of the native vegetation buffer. Data from November 2005, which included only one count, were omitted.



Discussion:

Our results support our hypothesis that the percentage of the fall population of geese in zone 2 would decrease after the planting of the native vegetation buffer. There was a slight decrease in percentage of geese in zone 2 after the buffer was mowed, which does not support our hypothesis. This could be caused by many factors. For some months there was not consistent data taken. There were only a few days in November of 2006 that counts were taken, and only on one of those days were there any geese in zone 2. The data for November 2005 is also a problem. There was only one count taken in November of 2005, and on that day all of the geese in the park were in zone 2. If there had been more counts taken we may have found that the geese were spread more throughout the park.

Another possible problem with this study is the data were collected at all different times of the day. There are times of the day when there are more geese in the park than

others, so if the data for one day was taken in the morning and for another day it was taken in the afternoon that could cause some variation in the data.

Overall, our results support our hypothesis. As you can see by the results, the native vegetation buffer has had a great impact on the percentage of geese in zone 2. The overall trend for the percentage of the goose population in zone 2 is going down.

Future studies on the effect of native vegetation buffers could include continuing the data into 2007 and future years. It would also be interesting to see what would happen if the vegetation buffer was extended into zone 1. Another possible future study would be to study the effects of mowing the native vegetation buffer on the percentage of geese in zone 2. There is not enough data yet to do a comprehensive study on this, but it would be interesting to see the results in the future.

References:

Lorman, Jim. Summary Report on Canada Geese in the Lake Wingra Watershed. http://natsci.edgewood.edu/wingra/wingra_canadiangeese.htm

Smith, A.E., S. R. Craven, and P. D. Curtis. 1999. Managing Canada Geese in Urban Environments. Jack Berryman Institute Publication 16, and Cornell University Cooperative Extension, Ithaca, N.Y.

Appendix A

Initial goose counts from Edgewood College

Date	Time	Zone 2	Total	Percentage
9/14/2004	7:45am	71	95	74.7
9/21/2004	9:00am	76	137	55.5
9/23/2004	1:45pm	0	182	0
9/28/2004	8:30am	89	137	65
9/29/2004	1:00pm	94	255	36.9
9/30/2004	10:15am	107	247	43.3
10/6/2004	10:00am	190	634	30
10/11/2004	1:00pm	94	379	24.8
10/12/2004	9:00am	51	52	98.1
10/25/2004	10:00am	111	128	86.7
10/26/2004	8:00am	27	45	60
11/2/2004	8:15am	75	77	97.4
11/3/2004	11:30am	55	149	36.9
11/5/2004	11:00am	425	1036	41
11/7/2004	3:30pm	124	343	36.2
11/9/2004	9:00am	182	230	79.1
11/11/2004	8:30am	227	256	88.7
11/12/2004	11:00am	49	274	17.9
11/17/2004	1:35pm	53	77	68.8
11/18/2004	8:30am	3	40	7.5
11/21/2004	2:45pm	156	455	34.3
11/23/2004	8:30am	41	84	48.8
11/28/2004	3:45pm	0	442	0
11/29/2004	1:00pm	51	51	100
11/30/2004	9:00am	0	79	0
9/1/2005	10:45am	92	114	80.7
9/8/2005	1:15pm	13	213	6.1
9/8/2005	11:20am	47	189	24.7
9/15/2005	1:30pm	66	159	41.5
9/20/2005	10:30am	23	146	14.7

9/27/2005	10:00am	112	251	44.6
10/11/2005	11:00am	48	129	37.2
10/25/2005	11:00am	260	440	59
11/16/2005	2:05pm	44	44	100
9/5/2006	10:00am	0	17	0
9/15/2006	12:00pm	5	208	2.4
9/19/2006	9:30am	41	191	21.5
9/22/2006	9:00am	41	113	36
9/25/2006	1:30pm	0	406	0
9/26/2006	10:30am	0	412	0
9/27/2006	8:30am	0	361	0
9/27/2006	9:30am	0	218	0
9/29/2006	8:10am	0	218	0
10/6/2006	9:30am	10	379	0.26
10/9/2006	12:00pm	133	317	42
10/25/2006		0	594	0
11/1/2006	1:15pm	0	654	0
11/3/2006	2:00pm	174	680	25.6
11/7/2006	2:00pm	0	370	0
11/16/2006	2:00pm	0	60	0
11/30/2006		0	6	0