



COMMONWEALTH of VIRGINIA

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Secretary of Natural Resources

Department of Game and Inland Fisheries

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Mr. Gene Rella
10 Whippoorwill Lane
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Subject: Lake Monticello Deer Survey

Deer Mr. Rella:

On January 10, 2007 the Virginia Department of Game and Inland Fisheries and members of the Wildlife Subcommittee discussed Lake Monticello's desire for a survey of the white-tailed deer population as a follow up to the one conducted by The Virginia Wildlife Services program in November and December of 2005. The following is a summary and discussion of the results that we developed from our survey conduction in September and October 2007.

The Virginia Department of Game and Inland Fisheries (DGIF) conducted a three night survey for white-tailed deer on September 13, 25, and October 11, 2007. The goals of the survey were:

- 1) develop a survey method that is relatively short (approximately two hours) and easily repeatable so that Lake Monticello staff or volunteers can conduct the survey in the future if necessary
- 2) develop an understanding of the density and concentrations of deer at Lake Monticello
- 3) assess the overall health of the population in general terms by looking at doe to fawn ratios.

We surveyed along a 14.5 mile continuous route which was chosen to avoid dead end roads and backtracking, provide a representative sample of different habitat types, and avoid highly traveled roads like Jefferson Blvd (figure 1). The route was developed in coordination with the Wildlife Subcommittee and the Monticello Police Department to determine both a safe and representative survey route. Survey route time was approximately 2.5 hours.

The survey started at 8:00 PM (20:00 hrs) each night (approximately 30 -60 minutes past sunset) and proceeded at approximately 8 miles per hour until the survey route was completed. Portions of the survey route that fell on Jefferson Blvd. were sampled at a more rapid rate of speed for safety. A combination of a spotlight and a thermal imaging unit which uses infrared technology to differentiate between body heat and ambient

temperatures were used to detect deer along the survey route. We recorded location (GPS coordinate), perpendicular distance from the survey route, number, sex, and age of deer at each observation site.

Results and Discussion:

We observed on average 22 deer per survey night (32, 21, and 13, respectively). We did not calculate a density or a population estimate from this data because we do not believe that standard spotlight survey methodology provides an accurate estimate in this type of environment. Spotlight surveys assume that deer are distributed randomly and evenly on the property. We found that deer on Lake Monticello were clustered in relatively small family groups. The location and density of deer during our survey efforts indicate that the vast majority of deer are concentrated in the southern portion of the development along the golf course and lake (figures 2 and 3). We recommend that you use the average number of deer that we observed in 2007 (22) as an index to compare with subsequent surveys conducted at the same time of year, along the same route, and with similar methods.

Our data can not be accurately compared with the 2005 survey because different survey methods were used. Our goals were to develop a survey method that was simple, repeatable, relatively short (app. 2 hrs), and representative of the entire area. We surveyed a representative cross section of the development. The survey lasted 2.5 hour and covered 14.5 miles while the 2005 survey was much more comprehensive and covered 26.3 miles and lasted 8 hours. The 2005 survey was conducted to provide a proportional representation of all habitats, include all of the different sections of the development, and identify areas of high density. Both surveys however, give you an index number that when compared to future survey results (surveys must be conducted with the same methods) will provide an overall indicator of change in the deer population. This may be particularly useful if the community decides to implement a deer management program; the index will allow you to evaluate the success of the program.

Overall, the deer population looks healthy. There was little sign of impacts to native vegetation from over browsing by deer with the exception of a few areas around the golf course. However, it was difficult to differentiate impacts to native vegetation as a result of human activities (mowers and herbicides) or deer browsing. From a reproductive standpoint, approximately 40% of the antler-less deer that were observed were identified as young of the year. This indicates that the population may be stable but is likely growing. In general, 30-35% recruitment in a population is considered to be stable and anything above 40% is growth.

Conclusion:

White-tailed deer within the community of Lake Monticello do not appear to be distributed evenly in the development they were more prevalent on the south side of the lake especially around the golf course. Even in the areas of higher concentrations, deer were found in relatively small family groups. The average home range size for a female white-tailed deer is approximately 500 acres depending on the availability of food, water, and cover. Some of the deer at Lake Monticello may never leave the development, but many come and go depending on the season and the availability of food. Therefore, it is possible that you will see an apparent increase or decrease in the number of deer throughout any given year. In addition, deer on average consume about 5% of their body

weight in food every day. A small family group of deer consisting of a doe, two yearling and two fawns can consume approximately 15-20 pounds of food per day. In an agricultural area with crops and other available browse this is not a big deal; however, in a development like Monticello they can have a significant impact.

Please let me know if you have any questions about the deer population survey or if you would like to discuss options to manage your deer population.

Sincerely,

A handwritten signature in cursive script, appearing to read "Brian D. Moyer", with a long horizontal flourish extending to the right.

Brian D. Moyer
District Wildlife Biologist

Figure 1: Topographic map and aerial photo showing the survey route used to conduct the white-tailed deer census.

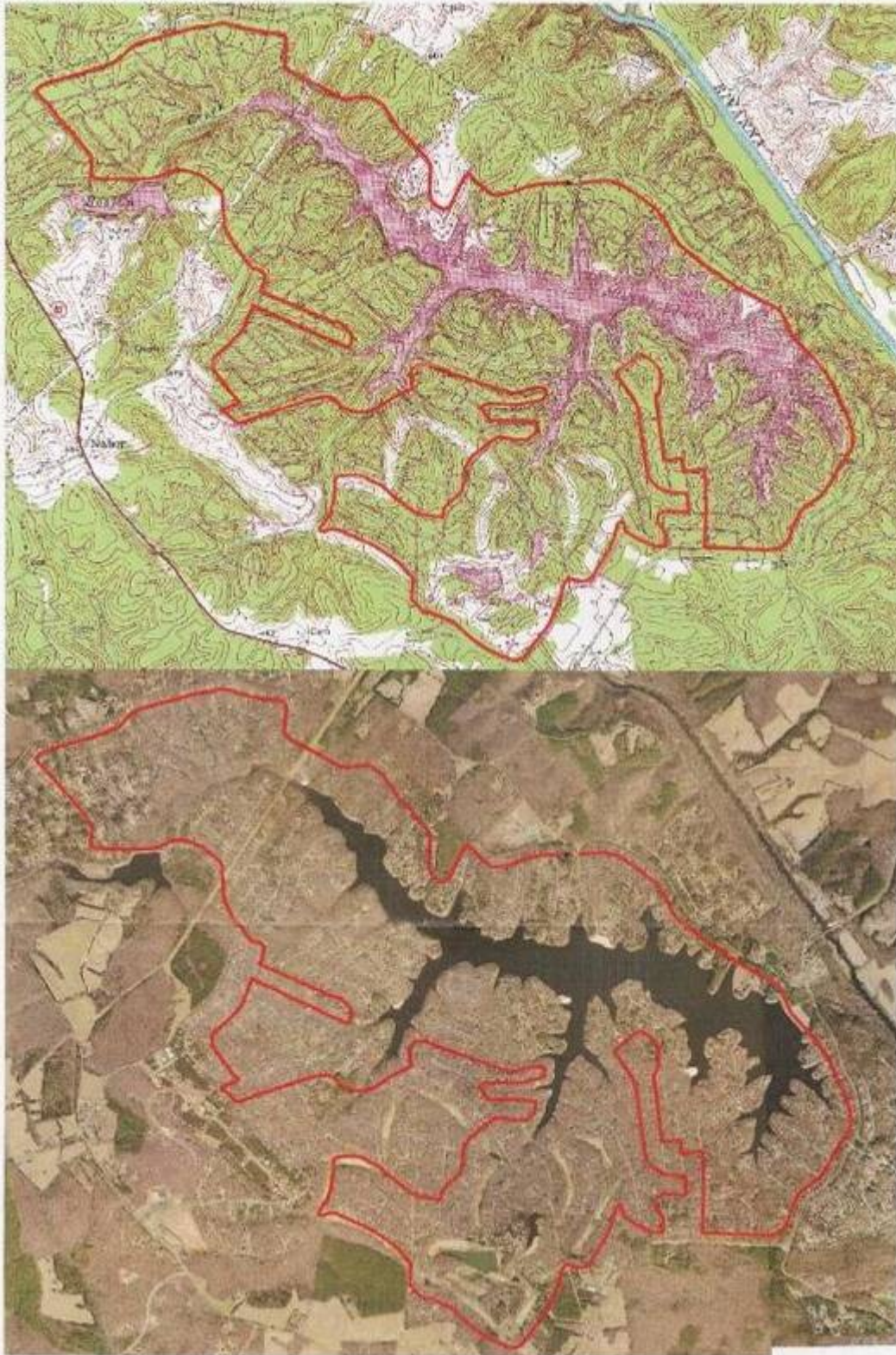


Figure 2: Aerial photograph showing the density of deer in areas of Lake Monticello during each of the three survey nights.

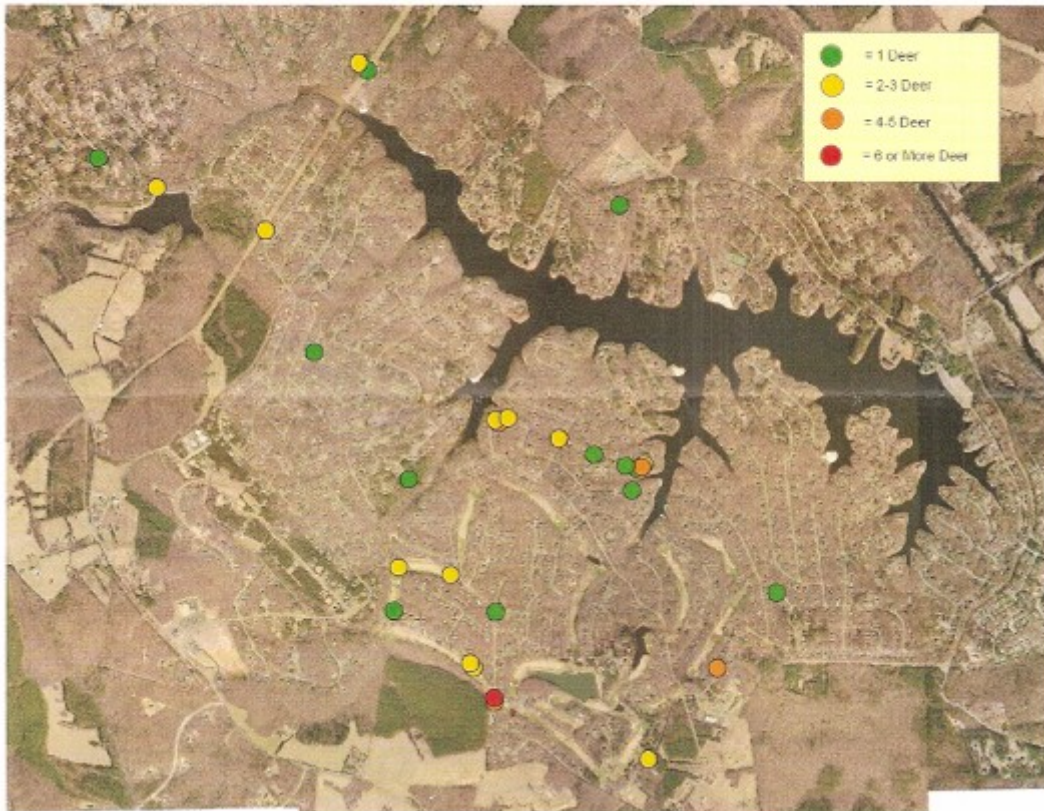


Figure 3: Aerial photograph showing the locations where deer were observed during each of the three survey nights.

