# Final Deer Management Report

**Village of Cayuga Heights, New York**

**Submitted by**

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## INTRODUCTION

Village of Cayuga Heights officials had voiced concerns over deer-vehicle collisions, risks of Lyme disease, and impacts to landscape vegetation because of a locally abundant deer population. The potential for the furtherance of these conflicts prompted Trustees to address the abundance of deer through research conducted by Cornell University in the early- to mid-2000s. After experiencing no relief, there was further discussion regarding management options. Thorough analysis and consultations revealed that there were no legal lethal methods available. Therefore, they decided to pursue a surgical sterilization research project that was conducted during in 2012-13 resulting in all females in the Village being captured and sterilized.

During Fall of 2014 the NYS Legislature passed a law that reduced the discharge setback from occupied structures from 500ft to 250ft for crossbows, and 150ft for archery equipment. This opened up legal access to private property for lethal management actions. After considerable discussion, the Trustees, in consultation with the Chief of Police, decided to pursue a highly structure depredation cull using archery equipment. This involved using strategic use of bait to control deer movements and the most advanced crossbows to ensure humane treatment of animals. The purpose of this report is to summarize the second year of the lethal phase of the deer management program that was intended complement the sterilization research.

## SITE DESCRIPTION

The Village of Cayuga Heights (VCH) contains a matrix of suburban and commercial development, parks, and other open-spaces. The absence of any deer management, combined with fertile soils and good-quality habitat, allowed the local deer population to increase to a level incompatible with some land-use and human activities prior to our involvement. Although deer physical condition is not an issue, there is ongoing concern regarding numerous deer/vehicle collisions, Lyme disease risks, and damage to garden and landscape plantings. Camera surveys conducted by Cornell University documented a ~30% population decline one year after the surgical sterilization research project was initiated. After the conclusion of last year's culling efforts the population was 55% lower than the initial population size (i.e., ~100 deer). The purpose of the second year of the management project was to further accelerate the rate of decline of the local deer population.

## METHODS

A total of eight sites were prepared and set up after legal access validation was established by Village officials. Sites were baited prior to our arrival by Village Department of Public Works personnel. Highly structured baiting was critical in establishing a predictable daily feeding pattern by proximate deer.

Crossbows were selected given the densely populated suburban environment and the requirement for no wounded deer or deer traveling long distances after being shot. Also, a high level of discretion was needed to avoid any conflicts with Village residents, as well as ensuring a safe working environment. We used a Bowtech SZ 380 and a Scorpyd Orion with high-end, gradated optics. Both crossbows are the most modern relative to speed and precision to ensure a humane outcome. Red tactical lights were mounted on each of the crossbows and utilized after sunset.

The use of elevated tree-stands was the preferred method for shooter positioning, both from a scent control and concealment standpoint, as well as to ensure a safe shot angle into the ground. However, in certain locations where tree-stands would either expose shooters to public

view, or suitable trees were not available within the permissible work area, ground blinds were utilized. Ground blinds were carefully positioned to take advantage of natural backdrops in terrain to ensure safe arrow flight beyond select deer. Bait was placed within 20 yards of shooter positions, ensuring only high percentage shot opportunities.

Timely notifications were made to landowners and nearby residents (at their request). Shooters arrived 1-2 hours before dark, and remain 2-3 hours after dark, depending on deer activity. We only took high percentage shots, which eliminated wounding loss, and minimized recovery distance of deer carcasses. Deer were prioritized as follows: untagged females, untagged males, tagged females, tagged males.

## RESULT AND DISCUSSION

We followed all recommendations presented to Village officials regarding program design and implementation. Culling efforts were conducted from 4 – 25 March 2016 with 1-3 shooters operating each evening, totaling 24 man-days of active culling (Appendix A). Twenty-four deer where harvested (Table 1). All deer shot were recovered (i.e., no wounded/lost deer). This continues to be unprecedented performance with archery equipment, and can be attributed to training, good judgment, and proper equipment selection (i.e., 72 harvested over 2 years without a lost or wounded deer).

The average annual temperatures were significantly exceeded (10-20 degrees) throughout most of the removal period. This diminished interest in bait by deer, and there was a substantial increase in human activity that often compromised removal efforts. This impact was evident with the rapid diminishing returns after the fourth day of culling and the 3-fold reduction in efficiency from last year. To balance the reduced harvest, nearly 90% of the harvest was female and six were pregnant (5 adult females with twins and one female fawn – 11 new fawns added this May/June). If culling efforts were not continued this year the population would have increased through immigration and fawning this spring (i.e., relative to on-going natural mortality). In contrast, we have accomplished an additional 30% reduction from last spring that will persist because there are no more untagged (not sterilized) females in the Village.

**Table 1.** Sex and age class of deer harvested in the Village of Cayuga Heights, New York from 4 - 25 March 2016.

| AGE | # MALE (%) | # FEMALE (%) | # COMBINED |
|---|---|---|---|
| Yearling/Adult | 2 (9%) | 18 (74%) | 20 (83%) |
| Fawns | 1 (4%) | 3 (13%) | 4 (17%) |
| Total | 3 (13%) | 21 (87%) | 24 (100%) |

**Table 2.** Summary of deer captured on the eastern boundary of the Village and then harvested during the archery culling in the central and western sections of the Village.

There was a late winter/early spring migration of deer to the warmer western side of the

| Tag# | Age at Capt | Capture Date | Capture Location | Culling location | Date harvested |
|---|---|---|---|---|---|
| C16 | 4.5 | 12/02/12 | Winthrop | Upland | 3/6/2015 |
| C19 | 1.5 | 12/02/12 | Winthrop | Upland | 3/6/2015 |
| C22 | 2.5 | 12/03/12 | Texas | Highgate | 3/18/2016 |
| C27 | 6.5 | 12/03/12 | Texas | Cayuga Heights Rd | 3/8/2015 |
| C43 | 4.5 | 12/05/12 | Hanshaw | Highland | 3/8/2015 |
| C48 | 2.5 | 12/05/12 | Texas | Upland | 3/6/2015 |
| C55 | 3.5 | 12/06/12 | Lexington | Highland | 3/12/2015 |
| C57 | 8.5 | 12/06/12 | Texas | Highland | 3/8/2015 |
| C80 | 0.5 | 12/09/12 | Texas | Highland | 3/12/2015 |
| C81 | 8.5 | 12/09/12 | Texas | Highland | 3/8/2015 |
| C133 | 4.5 | 12/14/12 | Lexington | Cayuga Heights Rd | 3/7/2015 |
| C141 | 4.5 | 12/4/2013 | Burleigh | Cayuga Heights Rd | 3/13/2015 |

Village, similar to last year. All but one of these untagged deer (an adult female) were removed during the culling efforts. This untagged adult female was likely capture and sterilized on 27 March 2016 near Sunset Park. There also was a group of 5 untagged deer proximate to Hanshaw Road on the east side of the Village. Only one (an adult female) of these was lethally removed. The other two adult females were captured and sterilized on 26 March 2016. The remaining two untagged deer in the group were male fawns.

Table 2 summarizes the impact the archery culling efforts had on deer captured and sterilized in the eastern edge of the Village. Many of the deer in this more densely developed area were culled in the central and western areas of the community where we can legally use archery equipment. Other tagged females from the area were harvest on Hanshaw Road more proximate to their place of capture (near the intersection of Pleasant Grove Road). The significance of these observations is that several deer from the eastern side of the community were shifting their movements to the west in the winter, making them vulnerable to lethal management. It also is likely that many of the untagged females from over the municipal line in Ithaca also were venturing into the same areas in the western side of the Village. Hence the significant number of untagged female deer culled over the past two years. This is anecdotally supported by the complete absence of deer in the eastern areas of the Village and areas within 1/4 - 3/8 mile of the Village in Ithaca. We spent considerable time searching for deer in Ithaca during the sterilization phase to assess the relative abundance as compared to past years. Untagged deer use to be abundant in the adjoining neighborhoods of Ithaca, they were virtually absent.

Program costs stayed within projections and there were no conflicts during the entire program. It is important that the Village continue the program to continue to address deer that immigrate and to further the population reduction. As long as the points of access permit the attraction of any untagged deer that immigrate there will be limited need for future sterilization efforts. It is likely that with this year's effort the local population will be ~70; reduced approximately 70% from a high of ~225 three years ago.

**ACKNOWLEDGEMENTS**

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| Appendix A: Tagged Deer Harvest Data | | | |
|---|---|---|---|
| | | | |
| Marked Deer Harvest Data | | | |
| **DATE** | **EAR TAG #** | **SITE** | **SEX** |
| 3/4/2016 | C59 | Upland Road | F |
| 3/5/2016 | C89 | Cayuga Heights Road | F |
| 3/5/2016 | C112 | Cayuga Heights Road | F |
| 3/6/2016 | C26 | Highland Road | F |
| 3/6/2016 | C52 | Highland Road | F |
| 3/6/2016 | C70 | Highland Road | F |
| 3/6/2016 | C87 | Highland Road | F |
| 3/7/2016 | C68 | Highgate | F |
| 3/8/2016 | C20 | Hanshaw Road | F |
| 3/18/2016 | C22 | Highgate | F |
| 3/19/2016 | C69 | Highland Road | F |
| 3/20/2016 | 127 Yellow | Hanshaw Road | F |
| 3/25/2016 | C91 | Highland Road | F |
| | | | 13 Tagged Females |
| | | | |
| Unmarked Deer Harvest Data | | | |
| **DATE** | **SITE** | **Age** | **SEX** |
| 3/5/2016 | Cayuga Heights Rd | Adult | F |
| 3/5/2016 | Remington Road | Yearling | M |
| 3/5/2016 | Remington Road | Yearling | M |
| 3/6/2016 | Highland Road | Adult | F |
| 3/7/2016 | Remington Road | Adult | F |
| 3/7/2016 | Remington Road | Fawn | F |
| 3/7/2016 | Remington Road | Fawn | M |
| 3/7/2016 | Remington Road | Adult | F |
| 3/9/2016 | Highland Road | Fawn | F |
| 3/10/2016 | Hanshaw Road | Adult | F |
| 3/19/2016 | Highland Road | Fawn | F |
| | | | 11 Unmarked Deer |
| | | | 8 Females (5 Adults) |
| | | | 3 Males (2 Adults) |