

INTERIM SUMMARY REPORT

Year 2 - 2013 Deer Research Program – 11 December 2013

Village of Cayuga Heights, New York

by

White Buffalo, Inc.

INTRODUCTION

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, damage to garden and landscape plantings, as well as other ecological damage, including lack of regeneration of native trees and plants and habitat loss. The December 2012 sterilization effort was the first year in which a Village deer research program has been implemented since the sterilization of just over 20 does between 2002 and 2004 and a failed immuno-contraceptive program in 2005. In the first year of the experimental sterilization project 137 females were sterilized. Camera surveys, conducted by Paul Curtis from Cornell University, were used to estimate deer abundance at the conclusion of capture efforts in Year 1, resulting in a projected density of ~125 deer/mile². They also verified ~6 females were not captured during December 2012.

METHODS

Deer sterilization activities were conducted from 2 - 6 December 2013. We worked every day and night during the capture and sterilization period to sterilize 12 females (see Table 1). We followed the operations protocol outlined in the proposal, contract, and NYSDEC License to Collect and Possess (LCP) deer. All deer were captured using remote immobilization equipment, either at baited locations near dusk or at night from a vehicle with collaboration from the VCH Police Department staff. Remotely-immobilized deer were administered 250 mg Telazol (tiletamine HCl + zolazepam HCl) and 175 mg xylazine HCl. Masks were placed over the eyes, and ophthalmic ointment was applied to prevent ocular desiccation. After deer were sufficiently anesthetized, they were retrieved from the field and transported to a temporary surgical facility.

All surgically sterilized females were medicated with flunixin meglumine at a dosage of 1-3 mg/kg IM, and a long-acting antibiotic (ceftiofur - Excede) at 3-6 mg/kg also IM. To maintain anesthesia, supplemental doses of ketamine HCL were given intravenously at dosages up to 5 mg/kg as needed. Pre-pubic, ventral midline laparotomy exposed the uterine horns and ovaries. All deer had bilateral ovariectomies using a combination of clamping, electro-cautery, and excision for removal and coagulation to prevent hemorrhage. Routine three-layer closure of the abdomen was performed to complete the procedure. All animals were returned to the area where they were captured, given a reversal agent of tolazoline HCl at 2 mg/kg intravenously, and monitored during recovery. All does were observed upon release until ambulatory.

During capturing efforts we recorded observations of all tagged females to assess the number of females that remain in the Village. We were aware of 17 female deer mortalities since December 2012 and the start of observations on 2 December 2013.

RESULTS

The deer capture data are contained in Appendix A "Village of Cayuga Heights Capture History 1 December 2012 - 6 December 2013". We expended ~149 person-hours for the preparation and capture efforts, and ~24 person-hours for surgical sterilization procedures (12 deer sterilized).

We captured 13 deer with remote-injection tranquilizer darts; one was a male fawn. We darted two female deer at baited locations near dusk and the remaining 11 deer at night from a vehicle. All females were delivered to a temporary veterinary sterilization site. No mortalities were recorded prior to, or after, surgical procedures.

We observed 83 females that were sterilized in December 2012 (see Appendix A).

Table 1. Number of female deer sterilized by day during the 5 days of field operations.

DATE	# Captured
12/2/12	5
12/3/12	2
12/4/12	3
12/5/12	0
12/6/12	2

DISCUSSION

As in Year 1, we used a systematic approach for capturing all remaining female deer in the VCH. We were aware of only one possible adult female that we were not able to locate/capture. She was observed on a camera in the very southwestern corner of the Village. Some females that we captured near the Village boundary were later observed well outside of the municipal boundary. Therefore, the female seen on camera that was not directly observed during night spotlighting or trapping efforts may not reside in the Village all the time, making it difficult to locate her. In addition, she was associated with radio-collared female #C112 last December, yet #C112 was always alone when we observed her each day.

We have documented 17 mortalities of tagged females since last December. There are likely others that have died or dispersed that have not been documented yet. We sterilized 11 new females (#C137-C147) and had to recapture #C14 as she had a failed surgery last year. Upon conducting the procedure it was determined that one of her ovaries remained, and therefore, it was extracted.

There appears to be some transient/exploratory movements where Cornell tagged deer come into the Village for short periods then return to their normal home ranges. We noted this both on camera and through direct observations. This happens in reverse where deer captured in the Village make forays outside the Village (e.g., #C119 was killed by a vehicle ~3 miles SE of the Village, #105-108 were observed ~3 miles outside the Village and have since returned, etc.). This likely will occur occasionally, with unmarked females entering the Village as well. Some of these females will remain and become resident deer, and others will return to their place of origin.

We can only account for 3 females (#137, 139, 140 - #140 is #139's fawn) that appeared to have immigrated into, and established home ranges, in the core area of the Village since December 2012. The other females captured were ones that we missed last year, or were on the very edge of the Village boundary, indicating that their home ranges were primarily in the Village of Lansing and/or Town of Ithaca, and partially overlapped with the Village. We anticipate $\geq 10\%$ population reduction, pending Cornell's camera survey data.

As was the case last year, there will be some females that immigrate into VCH during the next year that should be captured and sterilized during fall 2014. The ultimate question is whether the Village will become more appealing to deer as the densities decline and transient females have a greater propensity to stay permanently (i.e., increased immigration).

ACKNOWLEDGEMENTS

We would like to thank the following individuals and organizations for assistance provided prior to and during the sterilization project; Mayor Kate Supron for her effort to organize and administer the research project, Chief James Steinmetz and his staff from the Village of Cayuga Heights Police Department, without whom this project would not have been feasible, and Jeff Frisbie and his staff from the Department of Public Works. We also are grateful for the veterinary support from Kyla Ortved, DVM. In addition, Paul Curtis, Coordinator of the Wildlife Damage Management Program at Cornell University, and Mike Ashdown, Wildlife Technician, were instrumental in the organizational and implementation phases. We thank NY State Department of Environmental Conservation for their continued permitting and support. Finally, we thank all the homeowners that allowed us to capture deer on their properties.

Appendix A - Village of Cayuga Heights - Capture History 1 December 2012 – 6 December 2013. Yellow highlighted tag numbers were observed from 2-6 December

Tag#	Age 2013	Radio Freq.	Treat 12-13	Capture Date	Capture Method	Capture Location	Comments
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2013.

C01	A		OV	12/01/12	DN	Hanshaw	
C02	F		OV	12/01/12	DN	Hanshaw	
C03	3.5		OV	12/01/12	Dart	Spruce	
C04	A		OV	12/02/12	DN	Highgate	w/C08 and H18
C05	A		OV	12/02/12	DN	Highgate	
C06	F		OV	12/02/12	DN	Highgate	
C07	F		OV	12/02/12	DN	Highgate	
C08	5.5		OV	12/02/12	DN	Highgate	w/C04 and H18
C09	3.5		OV	12/02/12	DN	Highgate	
C10	F		OV	12/02/12	DN	Highgate	
C11	4.5		OV	12/02/12	DN	Highgate	
C12	F		OV	12/02/12	DN	Highgate	
C13	F		OV	12/02/12	DN	Highgate	Hunter 1/30/13
C14	5.5		OV	12/02/12	DN	Highgate	w/MF; 2 nd surgery 12/2/2013; one ovary
C15	A	151.523	OV	12/02/12	DN	Lexington	C123, DISP 5/30/13
C16	4.5		OV	12/02/12	Dart	Winthrop	
C17	3.5		OV	12/02/12	Dart	Winthrop	w/C19
C18	F		OV	12/02/12	Dart	Winthrop	
C19	1.5		OV	12/02/12	Dart	Winthrop	w/C17
C20	6.5		OV	12/03/12	Dart	Texas	
C21	10+		OV	12/03/12	Dart	Winthrop	w/H06 DVC 4/25/13
C22	2.5		OV	12/03/12	Dart	Texas	
C23	A		OV	12/03/12	DN	The Parkway	w/C24, DVC 7/29/13
C24	2.5		OV	12/03/12	DN	The Parkway	w/C23, 25, 103
C25	0.5		OV	12/03/12	DN	The Parkway	w/C23, 24, 103
C26	A		OV	12/03/12	DN	Highgate	w/C72
C27	6.5		OV	12/03/12	Dart	Texas	w/C53
C28	3.5	151.503	OV	12/03/12	Dart	Upland/Highland	w/C118 2bb C114
C29	3.5		OV	12/04/12	Dart	Parkway/Comstock	w/C30-C33 and bb
C30	3.5		OV	12/04/12	Dart	Parkway/Comstock	w/C29, C31-C33, bb
C31	1.5		OV	12/04/12	Dart	Parkway/Comstock	w/C29, 30, 32, 33 bb
C32	F		OV	12/04/12	Dart	Parkway/Comstock	w/C29-C31, C33, bb
C33	F		OV	12/04/12	Dart	Parkway/Comstock	w/C29-C32 and bb
C34	A		OV	12/04/12	DN	Highland	w/H10
C35	F		OV	12/04/12	DN	Highland	w/H10
C36	A		OV	12/04/12	DN	Highland	
C37	A		OV	12/04/12	DN	Highland	w/bb
C38	2.5		OV	12/04/12	DN	Highgate	
C39	1.5		OV	12/04/12	DN	Highgate	
C40	F		OV	12/04/12	DN	Highgate	
C41	2.5		OV	12/04/12	DN	Highgate	
C42	6.5		OV	12/04/12	DN	Highgate	
C43	4.5		OV	12/05/12	DN	Hanshaw	
C44	6.5		OV	12/05/12	DN	Hanshaw	w/H16

C45	4.5	151.643	OV	12/05/12	DN	The Parkway	w/C46, C47 H12 H01
C46	3.5		OV	12/05/12	DN	The Parkway	w/C45, C46 H12 H01
C47	F		OV	12/05/12	DN	The Parkway	w/C45, C47, H12
C48	2.5		OV	12/05/12	Dart	Texas	
C49	1.5		OV	12/05/12	Dart	Forrest	
C50	2.5	151.302	OV	12/06/12	Dart	Highland/Highgate	w/C54 and C128
C51	1.5	151.623	OV	12/06/12	Dart	Highland	w/C88 and C87
C52	4.5		OV	12/06/12	Dart	Highland	
C53	2.5		OV	12/06/12	Dart	Texas	w/C27
C54	6.5		OV	12/06/12	Dart	Highgate	3 legs w/C50 C128
C55	3.5	151.323	OV	12/06/12	Dart	Lexington	w/92 94 95 122 H26
C56	4.5		OV	12/06/12	DN	Triphammer	w/bb
C57	8.5		OV	12/06/12	Dart	Texas	w/1 bb + 1 doe fawn
C58	5.5	151.422	OV	12/07/12	Dart	Berkshire/Highgate	w/H19 DVC 2/4/13
C59	4.5		OV	12/07/12	Dart	Upland/Tripham	w/C83 and C109
C60	1.5	151.403	OV	12/07/12	Dart	Upland/Tripham	w/C84
C61	3.5		OV	12/07/12	Dart	Upland/Tripham	w/C62, C127
C62	8.5	151.603	OV	12/07/12	Dart	Upland/Tripham	w/C61, DVC 7/26/13
C63	1.5		OV	12/07/12	DN	Highland	w/C64 and H20
C64	3.5		OV	12/07/12	DN	Highland	w/C63 and H20
C65	6.5	151.363	OV	12/07/12	DN	Triphammer	w/C66, C98 and H14
C66	6.5		OV	12/07/12	DN	Triphammer	w/C65, C98 and H14
C67	3.5		OV	12/07/12	Dart	Highland	w/H??
C68	5.5		OV	12/07/12	Dart	Parkway/Highland	w/H15 and C78
C69	F		OV	12/07/12	Dart	Comstock	w/C70 and bb
C70	6.5		OV	12/07/12	Dart	Comstock	w/C69 and bb
C71	3.5		OV	12/07/12	Dart	Lenox	w/unmk bb
C72	F		OV	12/08/12	Dart	Highland	w/C26
C73	3.5		OV	12/08/12	DN	Cayuga Heights	w/C74 H24 C111, bb
C74	4.5	151.443	OV	12/08/12	DN	Cayuga Heights	w/C73, H24 C111 bb
C75	5.5		OV	12/08/12	Dart	Comstock	Solo
C76	2.5		OV	12/08/12	Dart	Cayuga Heights	w/bb
C77	4.5		OV	12/08/12	Dart	Devon and Sunset	w/C79
C78	F		OV	12/08/12	Dart	Comstock/Parkway	w/C68 and H15
C79	3.5	151.382	OV	12/09/12	Dart	Sunset	w/C96 and C77
C80	F		OV	12/09/12	Dart	Texas	w/C81 DISP 5/28/13
C81	8.5		OV	12/09/12	Dart	Texas	w/C80 and H21
C82	3.5		OV	12/09/12	Dart	Upland/Tripham	w/C60, DVC 2/26/13
C83	F		OV	12/09/12	Dart	Upland/Tripham	w/C59, C109
C84	2.5		OV	12/09/12	Dart	Upland/Tripham	w/C60 and C62
C85	F		OV	12/09/12	Dart	Winthrop	w/C20 and bb
C86	F		OV	12/09/12	DN	Highland	w/H23, H30, H31
C87	A		OV	12/09/12	DN	Highland	w/C88
C88	F		OV	12/09/12	DN	Highland	w/C87and C51
C89	A		OV	12/09/12	DN	Highland	w/C90 and C91

C90	A		OV	12/09/12	DN	Highland	w/C89 and C91
C91	2.5		OV	12/09/12	DN	Highland	w/C89 and C90
C92	1.5		OV	12/11/12	Dart	Winthrop	w/C55, C94, C95 122
C93	1.5	151.584	OV	12/11/12	Dart	Lexington	Mort 10/22/13 Hunter
C94	1.5		OV	12/11/12	Dart	Winthrop	Mort 4/16/13
C95	1.5		OV	12/11/12	Dart	Winthrop	w/C55, Mort 3/24/13
C96	1.5		OV	12/11/12	Dart	Cayuga Heights	w/C79
C97	1.5		OV	12/11/12	Dart	Comstock	
C98	F		OV	12/11/12	Dart	Sheldon	w/C65, C66 and H14
C99	2.5		OV	12/11/12	Dart	Parkway Place	w/C100
C100	F		OV	12/11/12	Dart	Parkway Place	w/C99
C103	3.5		OV	12/12/12	Dart	The Parkway	w/C23
C105	1.5		OV	12/12/12	DN	Triphammer	w/C106-108
C106	F		OV	12/12/12	DN	Triphammer	w/105,107, 108, 126
C107	F		OV	12/12/12	DN	Triphammer	w/105,106, 108, 124
C108	2.5	151.464	OV	12/12/12	DN	Triphammer	w/C105 ó 107
C109	3.5		OV	12/12/12	Dart	Sheldon	w/C59 DVC 11/21/13
C111	F		OV	12/12/12	Dart	Cayuga Heights	w/C73, C74, H24, bb
C112	5.5	151.483	OV	12/12/12	Dart	Cayuga Heights	w/H27, unmk YF, bb
C113	F		OV	12/13/12	Dart	Wychoff/Cay Hght	w/C115, 116, 117 bb
C115	3.5		OV	12/13/12	Dart	Wychoff/Cay Hght	w/C113, DVC 8/19/13
C116	5.5		OV	12/13/12	Dart	Wychoff/Cay Hght	Mortality 12/15/2012
C117	F		OV	12/13/12	Dart	Wychoff/Cay Hght	w/C113, 115, 116 bb
C118	F		OV	12/13/12	Dart	Cay Circle/Upland	w/C28 and 2bb
C119	1.5		OV	12/13/12	Dart	Triphammer	3/20/13 Hunter
C120	3.5		OV	12/13/12	Dart	Pleasant Grove	w/C121
C121	F		OV	12/13/12	Dart	Pleasant Grove	w/C120
C122	F		OV	12/13/12	Dart	Lexington	w/C55, 92 94 95 H26
C123	2.5		OV	12/13/12	Dart	Lexington	w/C15, H06, H07
C124	2.5		OV	12/14/12	Dart	Sheldon	w/C107 DVC 3/26/13
C125	3.5		OV	12/14/12	Dart	Sheldon	w/3 fawns
C126	2.5		OV	12/14/12	Dart	Sheldon	w/C106
C127	F		OV	12/14/12	Dart	East Upland	w/C62 and C61
C128	4.5		OV	12/14/12	Dart	North Triphammer	w/C50 and C54
C129	3.5		OV	12/14/12	Dart	Triphammer	w/Cornell 310
C130	F		OV	12/14/12	Dart	Pleasant Grove	
C131	2.5		OV	12/14/12	Dart	Pleasant Grove	w/fawn
C132	2.5		OV	12/14/12	Dart	Pleasant Grove	w/Cornell 316
C133	4.5		OV	12/14/12	Dart	Lexington	w/AD and DF
C134	4.5		OV	12/15/12	Dart	Triphammer	
C135	4.5		OV	12/15/12	Dart	Triphammer	w/fawn
C136	F		OV	12/15/12	Dart	Triphammer	
C137	3.5		OV	12/2/2013	Dart	Klinewood	w/MF
C138	6.5		OV	12/3/2013	Dart	Triphammer	
C139	A	151.584	OV	12/3/2013	Dart	Triphammer	w/140

C140	0.5		OV	12/3/2013	Dart	Triphammer	w/139
C141	4.5	151.603	OV	12/4/2013	Dart	Burleigh	w/adult doe and 2F
C142	3.5		OV	12/4/2013	Dart	N. Sunset	
C143	3.5	151.422	OV	12/4/2013	Dart	Kline/Wycoff	2 fawns - 1FF 1?
C144	3.5		OV	12/4/2013	Dart	Burleigh	2 fawns ó 1MF 1?
C145	4.5		OV	12/5/2013	Dart	Lexington	w/FF
C146	4.5		OV	12/6/2013	Dart	Pleasant Grove	w/FF
C147	4.5		OV	12/6/2013	Dart	Texas	w/C57
59	A		--	12/03/12	DN	The Parkway	Corn OV 2/27/13 Mort
103	A		--	12/03/12	DN	The Parkway	Cornell OV
C110	A		OV	12/10/12	Dart	Comstock	Failed Tub Lig w/118
C114	8+		OV	12/12/12	DN	Highland	Failed Tubal w/C28
127	10+		OV	12/04/12	Dart	Texas	Cornell SpayVac
128	8.5		OV	12/05/12	Dart	Winthrop	Cornell SpayVac
131	8+		OV	12/12/12	Dart	Iroquois/Parkway	Cornell SpayVac
133	7.5		OV	12/03/12	Dart	Winthrop	Cornell SpayVac
H01	F		Male	12/03/12	DN	The Parkway	w/C45, C46, C47
H02	2.5		Male	12/04/12	DN	Highgate	
H03	F		Male	12/04/12	DN	Highgate	
H04	F		Male	12/04/12	DN	Highgate	
H05	F		Male	12/05/12	DN	Hanshaw	
H06	F		Male	12/02/12	DN	Lexington	
H07	F		Male	12/02/12	DN	Lexington	
H08	2.5		Male	12/02/12	DN	Lexington	
H09	F		Male	12/04/12	DN	Highland	
H10	F		Male	12/04/12	DN	Highland	w/C34 and C35
H11	-		-	-	-	Tag Discarded	Tag Discarded
H12	F		Male	12/05/12	DN	The Parkway	
H13	F		Male	12/05/12	DN	Highland	
H14	F		Male	12/07/12	DN	Triphammer	w/C65 and C66
H15	F		Male	12/07/12	Dart	Parkway/Highgate	w/C68 and C78
H16	F		Male	12/05/12	DN	Hanshaw	w/C44
H17	F		Male	12/05/12	DN	Hanshaw	
H18	F		Male	12/07/12	Dart	Highgate	w/C04 and C08
H19	F		Male	12/07/12	Dart	Berkshire/Highgate	w/C58
H20	F		Male	12/07/12	DN	Highland	w/C63 and C64
H21	F		Male	12/09/12	Dart	Texas	w/C80 and C81 DISP
H22	F		Male	12/09/12	Dart	Warrick	w/133
H23	F		Male	12/09/12	DN	Highland	w/C86
H24	F		Male	12/08/12	DN	Cayuga Heights	w/C73 and C74
H25	F		Male	12/09/12	DN	Highland	w/C89, C90, C91
H26	F		Male	12/13/12	Dart	Lexington	w/C55, 92 94 95 122
H27	F		Male	12/15/12	Dart	Overlook	w/C112 and bb

H28	F		Male	12/15/12	Dart	Triphammer	Solo
H29	-		-	-	-	-	Not Used
H30	F		Male	12/09/12	DN	506 Highland	w/C86
H31	F		Male	12/09/12	DN	506 Highland	w/C86
H32	F		Male	12/3/13	Dart	Triphammer	