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OF THE UNITED STATES**

August 12, 2015

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Sumedh Bahl, P.E.  
Community Services Area Administrator  
City of Ann Arbor, Michigan  
301 E. Huron St.  
Ann Arbor, Michigan 48107

**Re: Site Assessment – White-Tailed Deer Fertility Control Project**

Dear Mr. Bahl:

The Humane Society of the United States (The HSUS) is the nation's largest animal protection organization and seeks to create a humane and sustainable world for all animals. The HSUS's Wildlife Department is responsible for identifying, developing and implementing research and service projects that promote humane, innovative and sustainable wildlife management policies, practices and procedures. One of our department's major priorities is advancing the use of effective, humane fertility control methods for managing wildlife populations in a variety of different settings and landscapes.

I am writing today to thank you, Mayor Taylor, Mayor Pro Tem Briere and City Council for the opportunity to participate in the deer work session held on July 13 and to provide the residents of Ann Arbor with information about the emerging field of white-tailed deer fertility control. No wildlife issue is more controversial or intensely debated today than white-tail deer management and Ann Arbor is no exception to many other communities in the U.S. where controversies over deer management arise and need to be addressed in a meaningful way. We enjoyed the question and answer session following the presentation and hope everyone who attended came away with a better understanding of the various alternatives available for managing deer in communities today. For your convenience, I have attached a factsheet that summarizes some of the information presented on deer fertility control at the July 13 meeting (see attachment).

As requested, I am also writing to provide you with information on the potential feasibility of conducting a deer fertility control project in the Ann Arbor area. The following is a written assessment based on observations made during my recent site visit to Ann Arbor July 13-15 and information included in the report titled "Recommendations for Deer Management in Ann Arbor" dated May 7, 2015.

## **Project Site Description**

The city of Ann Arbor is in Washtenaw County, Michigan located approximately 35 miles west of Detroit with an estimated population of 113,000 and a total area of 28.7 square miles. The city is situated on the Huron River and its landscape consists of hills and valleys, residential communities, commercial business districts – both downtown and in the surrounding areas – but arguably, the city’s focal landmark is the University of Michigan. The city also has approximately 150 municipal parks ranging from small neighborhood parks to large recreational areas. Several large city parks and a university park border sections of the Huron River. Fuller Recreation Area, near the University Hospital complex, contains sports fields, pedestrian and bike paths, and swimming pools.

According to the report “Recommendations for Deer Management”, two helicopter flyover counts conducted in February and March 2015 showed that deer populations may be significantly higher in Wards 1 and 2 (i.e. 80%) than in Wards 3, 4 and 5 (i.e. 20%). Also, over the last four years, the majority of the reported vehicle/deer collisions in Ann Arbor occurred in Wards 1 and 2, and over the last three years, a significant majority of residents reported an increase in deer and landscape damage attributed to deer in these communities.

Based on this information, we focused the site evaluation on Wards 1 and 2 and toured neighborhoods and parks the morning and evening of July 14 and the morning of July 15. During our tours, we observed a total of approximately 20 deer in areas that were more or less consistent with those where deer were counted during the flyover surveys this past winter, including, but not limited to: Ann Arbor Hills, Arbor Hills Nature Area, Barton Nature Area, Bird Hills Nature Area, Black Pond Woods Nature Area, Cedar Bend Nature Area, Dhu Varren Woods Nature Area, Fuller Park, Kuebler Langford Nature Area, Leslie Science Center, Oak Woods Nature Area, Skyline High School, Stapp Nature Area, Sugarbush Park, and White Oak Park. Not surprisingly, neighborhood size and density, lot sizes and the amount of roads varied considerably from one neighborhood to another.

To the best of our knowledge, the city of Ann Arbor has not engaged in any lethal or non-lethal deer management activities over the past 10 years. However, according to the report, the city is considering conducting a series of annual culls on city property starting in the winter of 2016. Also, according the Michigan Department of Natural Resources (MDNR), recreational and controlled deer hunt may occur in areas adjacent to Wards 1 and 2.

## **Deer Approachability and Accessibility**

The HSUS is currently working to identify projects sites where we can work in partnership with municipalities to test two different fertility control options for managing deer populations: immunocontraception using the vaccine porcine zona pellucida (PZP) and surgical sterilization

via ovariectomies. Both options require field researchers to access deer at close range in order to anesthetize the animals with chemical immobilization drugs to mark them with ear-tags (for individual identification) and to conduct surgical sterilization procedures or administer immunocontraception vaccines. Capturing deer can be completed using many methods (traps, nets, etc.), but the most humane method is via chemical immobilization (CI) drugs delivered with darts. Such captures are typically conducted during February-March due to restrictions on drug use and factors pertaining to the health and welfare of the deer.

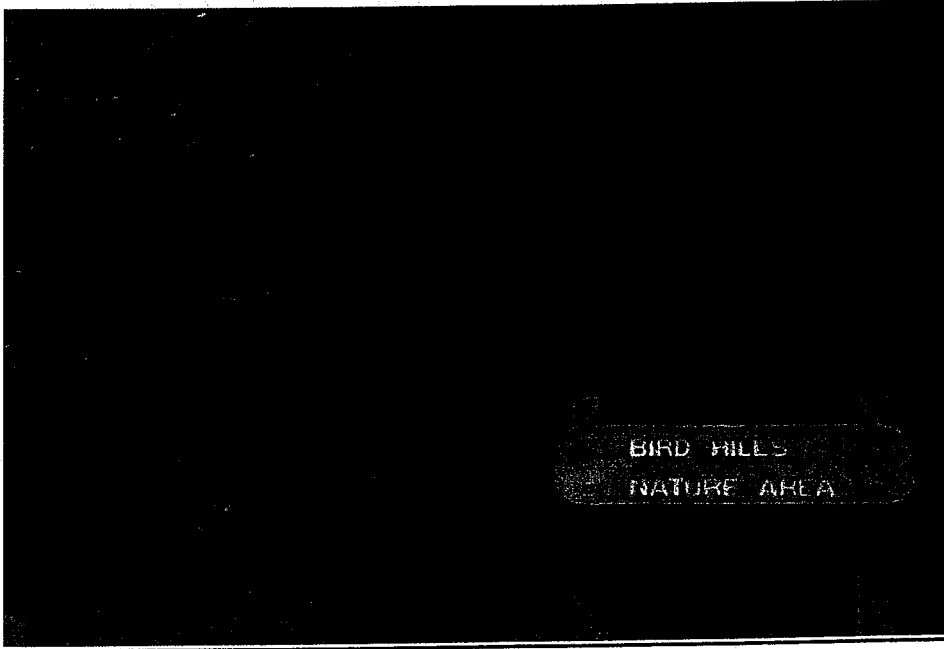
For these reasons, the two most important factors that determine whether or not a deer fertility control project can be conducted in a safe, humane manner in a given community are deer approachability and accessibility. If our trained wildlife field researchers are unable to approach (within 10-40 yards) a high proportion of the existing doe population, then we would be unable to treat enough animals (i.e. 65-85% of the existing female population) to have an impact on the population growth rate and/or the existing population over time.

During our observations on July 14-15, we were able to walk within 10-40 yards of the 20 deer we observed during the site evaluation, and since the residents we have communicated with in the past confirmed that these findings were consistent with their own observations, we believe that deer living in the residential neighborhoods and parks of Wards 1 and 2 are approachable and accessible enough to dart with either chemical immobilization drugs and/or immunocontraception vaccines.

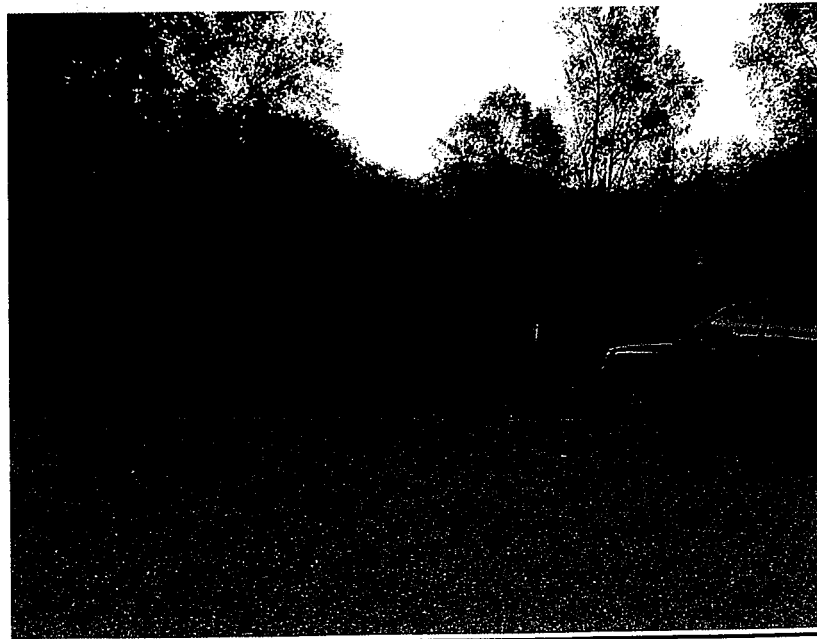
Also, while touring the area on July 14-15, we identified several areas of Wards 1 and 2 where captures could be conducted in an efficient and safe manner – either for the purposes of administering immunocontraception vaccines and/or anesthetizing deer in order to conduct surgical sterilization procedures. All these areas appear to be widely accessible, but in an effort to increase capture and treatment efficiency, we may recommend the establishment of baiting stations in these areas. The following are just a sample of potential bait station sites that could be established for purposes of darting deer conduct a deer fertility control project in Wards 1 and 2 (See Figures 1 and 2):

- Bird Hills Nature Area and/or adjacent neighborhoods/properties
- Black Pond Woods Nature Area and/or adjacent neighborhoods/properties
- White Oak Park and/or adjacent neighborhoods/properties
- Kuebler Langford Nature Area and/or adjacent neighborhoods/properties
- Skyline High School and/or adjacent neighborhoods/properties

**Figure 1. Trail entrance for Bird Hills Nature Area**



**Figure 2. Trail entrance for Kuebler Langford Nature Area**



### Next Steps

As stated during our recent presentation, once The HSUS has determined whether or not it would be logistically feasible to conduct a deer fertility control project in a given community, then it is up to the community who requested the site evaluation to determine if they wish to proceed with working with The HSUS to prepare and submit a formal deer fertility control project proposal to the state wildlife agency for consideration.

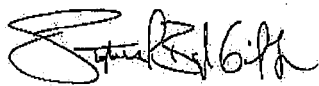
If, after reviewing this written assessment, the city of Ann Arbor is interested in proceeding with preparing a deer fertility control project proposal in partnership with The HSUS, we would recommend scheduling a meeting with Kristin Bissell, the MDNR wildlife biologist who is in charge of the southeastern lower peninsula region of Michigan, and Dr. Brent Rudolph, an MDNR Wildlife Research Specialist, to request guidance from the agency on the appropriate process for submitting a proposal. After meeting with MDNR, The HSUS would then work with the city of Ann Arbor to prepare and submit the proposal to MDNR for consideration.

### Conclusion

The HSUS is currently working with several federal and state agencies, as well communities and municipalities, to develop and implement wildlife fertility control projects and would appreciate the opportunity to work with Ann Arbor to conduct an effective, humane deer fertility control project. I can be reached by telephone at 301-258-3147, or email [sboyles@humanesociety.org](mailto:sboyles@humanesociety.org) if you have questions about this assessment or require additional information.

Thank you for your time and consideration. We look forward to hearing from you soon.

Respectfully,



Stephanie L. Boyles Griffin, Senior Director  
Innovative Wildlife Management & Services  
The Humane Society of the United States

cc: The Honorable Christopher Taylor, Mayor of Ann Arbor  
The Honorable Sabra Briere, Mayor Pro Tem of Ann Arbor  
Robert McGee, Ann Arbor Residents for Non-Lethal Deer Management

## ATTACHMENT

### FACTSHEET: DEER FERTILITY CONTROL

#### **Background**

The Humane Society of the United States (The HSUS) is committed to animal protection and we believe in the need to create lasting, humane, and environmentally responsible solutions to conflicts with wild animals. We seek to work in a positive manner with government agencies, communities and municipalities to provide guidance and assistance with respect to decisions concerning wildlife and urge that a full and open dialogue take place when controversial issues involving the killing of wild animals arise.

When browsing on landscaping and other damage attributed to deer in communities is deemed unacceptable, the use of repellents and fencing, as well as selecting landscape plants that are less preferred by deer, can significantly limit damage in areas with higher deer densities. In order to complement site specific deer mitigation efforts, some communities develop and implement deer population management programs to reduce deer populations using lethal methods including, but not limited to, organizing recreational hunts and hiring contractors to conduct sharpshooting programs.

While we understand and appreciate concerns associated with some of the negative impacts caused by white-tailed deer, The HSUS does not believe that lethal control is either a socially acceptable practice nor, in the long-term, the most ecologically sound approach to resolving conflicts with deer. In addition to being extremely controversial and creating strife in otherwise harmonious communities, deer culling programs generate an endless succession of removal and replacement in which animals die unnecessarily while the root causes of problems go unaddressed. As long as attractive habitat remains accessible and no effort is made to suppress the deer population growth rate, the remaining deer will continue to breed resulting in a perpetual kill cycle.

For these reasons, lethal methods should only be used as a last resort when other deer conflict resolution methods, such as site-specific mitigation (i.e. exclusion, repellents, etc.) and population growth suppression methods, such as immunocontraception and surgical sterilization, have been explored and exhausted. In areas where lethal methods may not be logistically feasible and/or culturally desirable, communities often seek humane, non-lethal and socially acceptable methods for reducing deer populations over time. By using fertility control to treat a significant proportion of the female deer population, a community may be able to reduce the deer population while also reducing deer browsing levels on landscaping and ecologically sensitive areas.

#### **Immunocontraception**

Field studies show that management of deer populations with the immunocontraception vaccine porcine zona pellucida (PZP) can be effective (Naugle et al. 2002, Rutberg and Naugle 2008, Rutberg et. Al. 2013). For example, in the early 1990s, native white-tailed deer were found in abundance on Fire Island and a hunt to control population size was stopped due to public outcry

and a lawsuit (Rutberg and Naugle 2008). To address concerns related to deer impacts on Fire Island, an immunocontraception study was initiated in 1993. Deer were not marked or tagged and all vaccines were delivered remotely using darts (Rutberg and Naugle 2008). The darts contained a dye to mark the deer to help avoid retreatment. In the most closely monitored portion of the island, the deer population decreased 10–11% per year during the program. These population studies were conducted by an independent entity, the Biological Resources Division of the U. S. Geological Survey within the U.S. Department of the Interior. Similar population declines were obtained in smaller areas where white-tailed deer were treated with PZP (Rutberg et al. 2004).

The rapidity of population decreases depends on vaccine effectiveness, proportion of females treated, mortality rates, reproduction rates in untreated animals, immigration, and emigration. Rates of free-ranging deer increase or decline during PZP vaccination programs are directly related to the proportion of deer that are treated each year (Rutberg et al. 2004). For most ungulates, populations decline when more than 60% of females are treated with a contraceptive (Garrott 1995, Rutberg et al. 2004).

The PZP vaccines used at these sites require annual boosters to be effective, but significant progress has been made since 2002 on a multi-year single shot PZP vaccine. Furthermore, new information about the efficacy of contraceptive approaches on deer populations is available (Patton et al. 2007, Rutberg and Naugle 2008). The effects of the vaccine are reversible after three years of treatment, and no adverse health effects have been apparent among treated deer or among fawns they carried at the time of treatment.

### **Surgical Sterilization**

Several ongoing research projects have also demonstrated that sterilization is a feasible and potentially efficient way to manage white-tailed deer populations. For example, from 2002-2005, the city of Highland Park, Illinois, conducted a trap – sterilize – release program on the city's deer (Matthews 2005). In that study, does were sterilized through tubal ligation so they were not susceptible to the behavioral alterations typical of methodologies that halt hormone production. This methodology is both safe and humane and resulted in very low mortality rates due to surgery. Computer models of surgical sterilization from this and other research revealed that areas can maintain their deer populations at target densities by sterilizing 32% of the does per year (Porter 2004).

In addition, over the past few years, several deer surgical sterilization projects have been conducted using a technique known as an ovariectomy which removes the ovaries. An ovariectomy is similar to, but less invasive than, typical spay surgeries used to sterilize domestic dogs and cats. Female deer are captured via tranquilizers administered by dart projectors and transported to a surgical bay. Preparation and surgery take approximately 20 minutes, the animal is transported back to the capture area, a reversal agent is administered and the animal is observed from a distance. Surgical sterilization is 100 % effective and mortality rates associated with the procedures are less than 1%. Once a female deer is surgically sterilized via ovariectomy, she can never fawn again. Researchers have also been able to capture and treat high proportions (>90%) of existing female deer populations at study areas in New York, California and Maryland

which is critical to achieving immediate population stabilization and gradual population reductions over time (DeNicola pers. comm.).

The population effects of surgical sterilization on deer are site-specific, but typically, population stabilization is rapid and population reduction is gradual (10-30% per year). In Cayuga Heights, NY, researchers sterilized 95% of the female deer population (i.e., 149 does) in two years and observed a 40% decline in the population after year one (DeNicola pers. comm.). In San Jose, CA, over 90% of the female deer (i.e., 115 does) were sterilized in two years and researchers observed a 40% decline in the population after two years (DeNicola pers. comm.).

### **Fertility Control versus Lethal Control**

It should also be noted that while PZP, surgical sterilization and other reproductive control agents and procedures have been shown to effectively reduce deer fertility and thus, population levels, lethal control may sometimes have the opposite effect. It has been shown that the reproductive rate of white-tailed deer is greatly reduced at high population densities while deer in areas subjected to periodic lethal removal have enhanced fertility rates resulting in increased population growth to compensate for harvested animals. Further research also indicates that lethal removal of both sexes does nothing to stop fluctuations in deer populations due to forage competition and natural mortality as a result of severe winter weather.

Fertility control can be superior to lethal control in that it leaves animals in a population as “placeholders” that are reproductively “dead ends” yet continue to occupy consistent home ranges and exhibit natural herding behaviors. The presence of these adult “placeholders” ensures continuity in the social framework of the herd while limiting the number of young and more mobile animals that might disperse to adjoining properties.

Finally, the use of fertility control to treat a significant proportion of the female deer population may also reduce the level of browsing activity and negative impacts on native vegetation otherwise associated with fertile female deer populations due to the decreased caloric needs of does who no longer need to support growing fetuses and nursing fawns every year.