

Memorandum

**Joint City of Bloomington-Monroe County Deer Task Force
Thursday, 21 October 2010, 5:30 PM
McCloskey Room (#135)
City Hall, 401 N. Morton St.**

Present:

Task Force Members: Keith Clay, Stefano Fiorini, Bob Foyut, Judy Granbois, Josh Griffin, Sarah Hayes, Iris Kiesling, Laurie Ringquist, Dave Rollo, and Susannah Smith

Staff: Elliot Englert (Intern), Stacy Jane Rhoads (City Council Office) and Dan Sherman (City Council Office)

I. Welcome & Introductions

Rollo welcomed all to the second meeting of the Joint City of Bloomington-Monroe County Deer Task Force. He relayed that this meeting will be devoted to discussing some of the more common approaches to urban deer management. Indiana Department of Natural Resources staff will present the approaches. In attendance from the INDR are Chad Stewart, the State's only Deer Research Biologist and Josh Griffin, District Wildlife Biologist.

II. Presentation of the Common Approaches to Urban Deer Management

Griffin and Stewart reviewed some of the most common approaches to management as follows. Griffin noted that while IDNR is charged with managing wildlife on behalf of the people of Indiana, IDNR does not tell communities what to do. The IDNR will work with this group to come up with a menu of approaches that fit the community. IDNR does not provide funding to implement management strategies.

A. Trap and Translocate

A number of communities throughout the country have employed a "trap and relocate" approach to urban deer. This method involves trapping deer in problem areas and moving them somewhere else. Griffin stated that this method is not approved by the IDNR for free-ranging wildlife for the following reasons:

- **High Mortality**

Translocated deer tend to have high mortality rates resulting from capture-related injuries, unfamiliarity with the release site and encounters with new mortality agents. Approximately $\frac{1}{4}$ of the translocated deer die within the first two months of

trapping/translocation, and more than 85% of deer may not survive longer than one year. About four percent die in transport.

Many deer suffer from a type of trapping stress called capture myopathy. Capture myopathy is a degenerative disease of skeletal muscle associated with the increased muscular exertion and over stimulation of the nervous system as a result of the capture, restraint, and transportation of animals. Illness and death may result due to disruption of normal circulation, muscle tissue damage, and electrolyte imbalance. Affected animals may show muscle tremors or muscle rigidity, weakness, hyperthermia, respiratory difficulty, collapse, and acute death. Animals that do not die acutely may succumb later due to inadequate oxygen supply to the kidneys and from toxic muscle breakdown products.

- Stewart said that sometimes a ketamine mix is used to anesthetize deer. This can help with some of the capture myopathy. However, over time, the use of anesthetics does not seem to make a difference in the overall mortality rate of translocated deer.

- Foyut offered that he has read that remote chemical capture can cause capture myopathy in a many cases.

- **Low Availability of Release Sites**

Translocation efforts are further complicated by lack of suitable release site. Most habitats within the species' native range are already saturated with deer and cannot withstand supplemental stockings without risking damage to the habitats. Furthermore, many translocated deer tend to drift back into urban situations at their new locations.

- **Disease Transmission**

This technique poses the risk of spreading diseases such as Chronic Wasting Disease and Tuberculosis from one deer population to another.

Cost: \$400/deer; maintenance required.

This method might be approved by the IDNR in rare circumstances where a strict list of criteria are met, including, but not limited to relocation into a deer-proof enclosure to prevent escape into the wild and permanent sterilization of all deer. Such provisions are not included in the above cost cite.

B. Contraception

The use of contraceptives as a means to manage the white-tail population has been intensely studied for decades. Two primary forms of contraception have been utilized to stem the growth of deer herds: PZP and GnRH.

The most common method of inducing infertility in deer is by immunocontraception (vaccine extracted from the ovaries of pigs, called *procine zona pellucida* [PZP]), in which the deer is immunized against a protein or hormone needed for reproduction. Some forms require a “booster.” Unlike PZP, GnRH prevents eggs from being released from the ovaries, thereby eliminating multiple estrus cycles. Some studies suggest that a single-shot GnRH vaccine can last for up to four years.

This method is not endorsed by IDNR because consumption of venison dosed with contraceptive agents has not been approved for human consumption. Contraceptives also pose the risk of bioaccumulation in the food chain. In 2006, the regulatory authority for contraceptives for wildlife and feral animals was moved from the U.S. Food and Drug Administration to the U.S. Environmental Protection Agency.

A number of factors shape the efficacy of this technique:

1. Deer Population Must Be “Closed.” Treated deer populations must be isolated, or closed, from adjacent populations. Deer immigration from adjoining properties would negate any fertility control efforts within the treated area, as new immigrants would not have been exposed to the fertility agents.

Additionally, chemicals used to control white-tailed deer fertility are experimental and are not FDA-approved for human consumption. A treated deer in an “open” population could leave the property, where it could be subject to human harvest and consumption. Furthermore, a deer migrating out could also be eaten by a non-human, e.g., a coyote. Once in the foodchain, the contraceptive chemical could bioaccumulate.

2. A High Percentage of Does Must Be Treated. Because annual mortality rates for suburban deer populations are often very low, a large proportion of the females (70-90 %) must be treated to curb or reduce population growth.

3. Population Must Be At Target Level. Since mortality rates for suburban deer populations are usually low, eliminating reproduction within the deer herd will not reduce total deer numbers for several years after initiating the antifertility program.

4. Addresses Population Growth. Does not address immediate damage concerns.

Cost \$600 -\$800 / doe ; maintenance required.

- Stewart has first-hand experience in studying PZP in a federal enclosure. The take-home message of his study was that while contraception works on an individual level, it did not reduce the size of the herd. Other studies have pointed to an actual reduction in herd size.

- Granbois asked how long does live in the wild. Griffin and Stewart responded that does usually live about four years in the wild and can live up to 12 years in captivity. Stewart offered that there is no menopause in deer. Most newer forms of contraception have eliminated the need for boosters and are pretty effective (80-90%).

- Stewart explained that contraceptives tend to work better in areas where deer have limited home range, such as in the northeast and a range in which the doe's territory overlaps with the fawn's. Social groups are composed of related females which form overlapping ranges and associate throughout the year. Home range of deer tend to follow a "rose petal" pattern wherein matriarchal does are located near the center and younger individuals establish home ranges that overlap radiating outward. If females remain in social groups, then population reduction, via the removal of the entire social group, may be possible. However, the fragmented woods and agricultural fields in Bloomington and Monroe County increase the range of deer and decrease the overlap.

- In the interest of estimating the total cost, Clay asked how many deer need to be dosed. Griffin responded that in coming up with cost estimates, he and Stewart used 10 deer/sq. miles as a rough estimate – this is not a representation of actual population estimates. It would be up to the community to figure out by what percent they want the density reduced and go from there.

- Griffin pointed out a new GnRH single-shot form of deer contraception called GonaCon™. Preliminary studies indicate that GonaCon™ does not pose the bioaccumulative risk as other contraceptive agents and is suggested by the USDA to be suitable for managing urban white-tailed deer. GonaCon™ is not yet commercially available. More on is available on GonaCon™ via the USDA:

http://www.aphis.usda.gov/wildlife_damage/nwrc/research/reproductive_control/gonacon.shtml

C. Sterilization

Like contraception, sterilization controls the reproductive capability of individual animals, but does not remove the human:deer conflict. The two primary forms of sterilization are tubal ligation and removal of the ovaries. Griffin pointed out that this tends to be stressful to deer. Higher mortality rates have been observed in sterilized deer.

Cost \$800 -\$1,000 / doe; maintenance required.

D. Sharpshooting

This is perhaps one of the most controversial management approaches. Griffin relayed that the goal of sharpshooting is to remove a large number of deer quickly and effectively. Sharpshooting is conducted by professionals with permission from property owners.

Shooting is usually performed from an elevated position to ensure the shot is aimed at the ground and not towards buildings or in the air. Usually, a backstop is installed around the sharpshooting area to prevent a bullet from ricocheting into unintended areas. High powered rifles fitted with sound suppression devices are used. Shooters typically work at night with artificial light. Deer are shot in the head or neck to ensure a quick death. Oftentimes, once deer have been removed, the meat is donated to local food pantries.

Cost: 200-\$350/deer; maintenance required.

- Griffin stated that the IDNR does not provide sharpshooting services. Private companies and the USDA Animal and Plant Health Inspection Service (APHIS) provide sharpshooting service within a community. Sharpshooting has been successful in solving the problems for many communities, such as Iowa City.

- Stewart pointed out that a special control permit would have to be issued by the IDNR. Before a permit would be issued, the IDNR would have to determine that this method is a preferred method. The IDNR would want to vet the sharpshooting service to make sure all requirements are being met. Bows could be used, but rifles are more effective. Sharpshooting with rifles has the ability to remove a large number of deer quickly and safely.

- Rollo asked if sharpshooting is safer than hunting. Stewart responded that both are safe. He pointed out that many sharpshooting companies are very vigilant in conducting their work in a safe manner as they have a reputation to uphold. One safety misstep could ruin a company.

- Rollo asked how Iowa City decided to use the sharpshooting method. Rhoads said she would call them to find out.

- Rhoads pointed out that this approach is currently precluded by the City's prohibition against discharging firearms within the City limits.

E. Trap and Euthanize

Deer are lured into a trap or net via bait and quickly euthanized. If euthanized via gunshot, meat is suitable for human consumption. If euthanized via chemical, meat not suitable for consumption. Deer are severely stressed in the trapping phase.

The use of captive bolt or accurately-delivered gunshot has been determined to be humane euthanasia by the American Veterinary Medical Association and are approved methods for use on deer under the IDNR, Division of Fish and Wildlife's "Euthanasia for Captive Nuisance Wild Animals" policy.

Costs: \$300 per deer; requires maintenance.

Like sharpshooting, this approach is currently precluded by Bloomington Municipal Code § 14.20 prohibiting the discharge of firearms within the City limits with the exception for police and self-defense.

Granbois asked if captive bolt use is precluded by the City's discharge of firearms. Rhoads said she would have to look more closely at the definition of firearm.

F. Regulated Hunting

Hunting results in the immediate removal of animals from the population and is the principal management tool used by wildlife agencies to manage free-ranging deer. Like sharpshooting, this method of control can be controversial.

In Indiana, the IDNR allows "urban deer zones" (312 IAC 9). Such zones are created in response to community request in the interest of reducing the deer population in more densely populated areas. Urban deer zones allow only bow hunting. There is sufficient confusion surrounding what an urban deer zone is and what it is not. The simplest way to describe an urban deer zone is as an extension of the hunting season and the season's bag limits. An urban deer zone does not open up spaces for hunting where otherwise prohibited by local code.

- Griffin stated that hunters have to have permission to access property to hunt during regulated deer seasons with the creation of an urban deer zone. There are no costs to the community. Costs are to the hunters. The IDNR recognizes that this method can be difficult to apply in areas of high population density. Hunting requires access to property and landowners would have to agree to allow hunting on their property. With small parceled lots in a city this becomes a serious drawback, so hunting may only work in certain areas where acreage is sufficient.

- Stewart added that another problem posed by hunting in dense settlement areas with small lots is that sometimes an inaccurate shot might mean that a deer travels a bit before it expires. It may cross property lines before it expires. This may create conflicts among and between neighbors who do not agree on hunting as an acceptable management technique. Griffin stated that it is illegal for a person to “take” a deer without a permit. Touching the dead deer constitutes a “taking.” Therefore, if a deer is shot on Property A but travels to Property B before expiring and the owner of Property B does not have a hunting license, Property B owner would be in illegal possession of the deer of the owner tries to move the deer.

To date, no accidents have been reported in Indiana’s urban deer zones.

- Foyut asked Smith to speak to archer accuracy. Smith replied that with a good shot a deer will come to rest within 15 to 20 yards of where it was shot. The range with archery is about 20 yards if the hunter has a good view of the animal. Skill levels of hunters can be screened and hunting classes, hunting experience, minimum draw weights, and types of broad heads can all contribute to hunter accuracy.

- Rhoads added that many communities which allow hunting within corporate boundaries have laws governing hunting within city limits, such as the requirement of minimum acreage, hunter education certificate, etc.

- Foyut asked if the City can create its own hunting rules if management of wildlife is the jurisdiction of the IDNR. Griffin responded that under home rule, localities can make rules that are more restrictive than State guidelines, but they cannot be more permissive than State law.

- Fiorni asked if the number of licenses sold is restricted. Stewart replied that in Monroe County, 7-8 deer are allowed to be taken per hunter. Urban deer zones allow hunters to take an additional 4 deer if they purchase the necessary permits.

For management purposes, IDNR looks at the number of harvested deer at the end of the season, their sexes, and the number of licenses sold. This data is compared to previous years to determine how the population of deer is changing. Adjustments are then made to the following year’s license to determine the number of deer to that can be killed by a license. The licenses change year by year.

- Rollo asked if there are incentives for taking does since they contribute to the increase in population more than bucks do. Stewart said that a statewide, one buck (antlered deer) rule per hunter addresses this concern. Also, antlerless deer may be either does or young bucks. Bucks included in the antlerless harvest are a small composition of the total. Stewart added that the IDNR is exploring changes to the urban deer zones to incentivize antlerless harvest. One proposal is first to take an antlerless deer in urban deer zones.

- Rhoads relayed that property owners are generally protected from liability under provisions of Indiana's recreational user statute (IC 14-22-10). Provided property owners allow the hunter to hunt without charge and advise the hunter of any known hazards on the property, property owners are generally protected from liability for injuries that may result from the hunter's negligence.

- Rollo stated that it would be good to explore the liability one would be accountable for in killing a deer and having it travel onto someone else's property.

Cost: \$24/license; maintenance required.

G. Fencing

This method prevents the ingress of additional deer and aids with local population control measures. Most effective fence designs include mesh or high-tensile wire at least 8'. Many fence designs are available to meet specific needs. Fences in excess of 8' and electric and barbed wire fences prohibited in the City. Fencing protects a property owner's plants, but moves the problem to an adjacent property.

- Griffin stated that one of the most effective fencing tools is the electrified peanut butter fence because deer will learn not to cross after being enticed by the peanut butter, but then shocked. Snow and woven wire fencing are recommended.

- Stewart said that most usually an 8' fence is sufficient. Research indicates that only a very small percentage of deer will jump into an 8' fence. It is not a guarantee that an 8 foot fence will always keep a deer out, but in most cases it is sufficient.

- Stewart mentioned that a depth-oriented fences also work because deer do not have very good depth perception. Fencing at a 45° angle works well as does two fences a couple of feet apart. In other words, fencing does not necessarily have to be tall to be effective.

H. Feeding Bans

Supplemental feeding may encourage higher deer reproductive rates, encourage denser concentrations in certain areas and habituate deer to the presence of humans. Some communities have banned the feeding of deer. If deer relied only on supplemental feeding, this would be effective. However, deer commonly browse on plants not intended as "deer food." Therefore, banning intentional feeding is of limited efficacy.

I. Deterrents

Dogs

In some situations, dogs contained by a leash or an invisible fencing system have been used to successfully deter deer from small acreages. It is important to remember that only the area within the dog's reach will be protected, however, as deer quickly learn the dog's boundaries.

Like other deterrents, this just moves the deer somewhere else, possibly a neighbor's yard,

- Griffin said that it might be interesting to think about providing rebates for invisible fences or encouraging residents to adopt from the animal shelter.

- Ringquist said that the City encourages adoption of dogs as companion animals. Deterring deer may be an added benefit for people adopting a dog, but it should not be the primary driver. The City does not want dogs adopted out as just tools for deer deterrence.

- Clay asked about eliminating the leash law. Ringquist and Hayes responded that that is not a good idea. Eliminating the leash law raises a host of negative implications such as bites, vehicle accidents, injuries, and such. Humaneness for the dogs is important too.

Scare devices

This is a short-term solution. Methods for frightening or hazing deer may be effective and economical in some situations, especially at the first sign of a problem. However, once deer establish a pattern of movement, it is difficult to get them to change. Lights and noisemakers can be effective. Playing a radio that goes on and off during the night will work for a short time, as will attaching a sprinkler system or lights to motion detectors. The problem with all scare devices is that deer eventually acclimate to them, even when the devices are moved occasionally. Varying the scare devices every week may extend the protection for a longer period.

J. Repellants

Generally chemical repellants are relatively effective at low deer densities, but become less effective as deer densities increase.

- Repellents do not eliminate browsing, they only reduce it.
- Rainfall will wash off many repellents, so they will need to be reapplied. Some repellents will weather better than others.
- Repellents reduce antler rubbing only to the extent that they help keep deer out of an area.

The availability of other, more palatable deer food dictates the effectiveness of repellents. When food is scarce, deer may ignore both taste and odor repellents

III. OTHER QUESTIONS/COMMENTS

- Kiesling asked which method(s) are best to both reduce the deer population and use the meat for donation. Regulated hunting, sharpshooting and trap and euthanize (via gunshot or captive bolt) would allow the meat to be donated. With regulated hunting, once killed, the deer becomes the property of the hunter. The INDR's *Farmers and Hunters Feeding the Hungry* program incentivizes hunters to donate meat. The biggest cost involved in such donation is the cost of processing. Smith added that the cost of processing is about \$75-\$100, depending on how it is processed.
- Clay pointed out that the group needs to keep in mind that not everybody thinks the presence of deer is a problem. Not everybody will agree with population reduction. The group needs to guard against assuming a "problem" exists for all residents. Griffin agreed, adding that some residents highly value the presence of deer. There are likely some Bloomington residents who have never even seen a deer in their yard.
- Clay relayed that he attended a meeting on Lyme Disease at a national meeting sponsored by the National Academy of Sciences in Washington, D.C. One talk supported the idea that tick populations can essentially be eliminated; however, to eliminate the tick population, 100% of deer have to be removed from that area. Eliminating less than 100% of the deer has little or no effect on tick populations because there are more ticks per deer. Therefore, the argument about controlling deer to control Lyme Disease is not really rational because deer will not be eliminated in their entirety. (According to IDNR, nor should deer be eliminated entirely.)
- Clay inquired about the Task Force's end product. Kiesling responded that the product will be a set of recommendations to be given to INDR, the City Council and the County Commissioners.
- Rhoads added that before deciding on the menu of options, it is important to get a better understanding of where people perceive there to be a problem. The petition signed by 500+ people gives us some hint, but the petition just calls for the creation of this Task Force, it does not provide detailed information. In the interest of better measuring social carrying capacity, it would be useful to put together a simple survey to measure perception. Clay said he is concerned there is no way to get community consensus on this issue.

Rhoads added that the more context/geographically-sensitive the Task Force's recommendations are, the better the group can respond to the varying perspectives,

priorities, etc. of different areas of the community. It seems that a responsive set of recommendations must necessarily be those steeped in location.

- Fiorini added that consensus can be built through an exchange of knowledge, and better understanding level of the problems and number of different solutions.
- Griffin reiterated that the IDNR wants this to be the *community's decision*. IDNR is here for technical support. Some strategies, such a use of deterrents and repellants, the IDNR does not be involved in. However, the actual management of deer, be it through relocation, birth control or lethal measures requires IDNR approval. However, the first step is figuring out what works best for this community.

IV. PUBLIC COMMENT

- Dave Parkhurst is a plant ecologist who lives ½ miles east of Deer Park. He pointed the group to a 2002 *New York Times* article which pointed out that there were .5 million white-tailed deer in the eastern and central US in 1900 and 20 million in 2002. A combination of predator destruction and an effort to protect and grow the deer population likely led to such a population explosion.

Parkhurst said that he is most concerned with deer damage to vegetable gardens. While we encourage residents to plant a row for the hungry and donate produce, such donation is increasingly difficult due to deer browsing. He has donated over 300 pounds of food from his garden this year alone. However, three weeks ago, a deer jumped into his 8' fence and ate much of what he intended to donate. He serves on the Bloomington Commission for Sustainability and works on community garden projects. He doesn't want his gardeners to get discouraged by fighting with deer eating the garden. He makes two requests: 1) fences should be permitted to exceed 8'; 2) sharpshooting should be allowed.

- Mark Day is the co-chair of Citizens for Responsible Deer Management. He said many community members have noticed a marked increase in deer in the last several years. He said that the issue should be studied systematically – where are the problem areas located? The issue should also be examined through a public health lens -- disease, car accidents, etc. This is a big issue. It is important to get the facts straight. It is important to know where deer are thought to be most problematic. It is important to have consensus and a lot of public input.

V. CLOSING THOUGHTS

- Smith commented that some people should be aware that members of the public do not necessarily have to wait for the Task Force to issue recommendations to engage in some of the prevention and mitigation techniques discussed.

- Rollo stated that the minutes from the first meeting were distributed at this meeting and are scheduled for approval at the next. As the minutes are approved, they will be posted to the Task Force's website: www.bloomington.in.gov/deertaskforce.

VI. NEXT MEETING -- Wednesday, 10 November 2010, 5:30pm, McCloskey Room. -

- Stewart will not be able to attend. Griffin will participate via conference call.

- Most of the meeting will be addressing follow-up questions for IDNR. Task Force members should submit their questions for follow up to Rhoads.

- In response to Kiesling's request, Rhoads relayed that she has collected a few examples of community deer surveys. She will bring some comparator questions to the next meeting.

VII. ADJOURN

The meeting adjourned at 6:55pm.