**ATTACHMENT A**

A RESOLUTION AUTHORIZING THE PREPARATION AND DISTRIBUTION OF INFORMATION RELATED TO DEER MANAGEMENT METHODS
Resolution No. 29/2010-2011

WHEREAS, urban deer populations have increased in the Town of Carrboro; and

WHEREAS, deer have damaged landscaping and gardens within the Town limits; and

WHEREAS, it may be possible to prevent some property damage by utilizing deer management methods; and

WHEREAS, the Board of Aldermen has directed staff to prepare a report on options for dealing with the deer overpopulation;

NOW, THEREFORE, BE IT RESOLVED by the Carrboro Board of Aldermen that the Board of Aldermen:

1. Receives the report;
2. _____
3. _____

This is the 12th day of October in the year 2010.

# MEMORANDUM

TO: Roger L. Stancil, Town Manager

FROM: Ray (Butch) Kisiah, Parks and Recreation Director
Lance Norris, Public Works Director
Bill Webster, Assistant Parks and Recreation Director
Brian Curran, Police Chief

SUBJECT: Response to Petition for an Urban Deer Hunt in the Mt. Bolus Neighborhood

DATE: January 11, 2010

## PURPOSE

This memorandum provides information on growing urban deer populations. We have included information on deer control techniques used or attempted in other locations throughout the country. We recommend that the Town approach the issue from the perspective of deer management by providing homeowners with information to assist in minimizing damage from over-browsing. The attached Resolution would authorize the Manager to distribute information to the public related to deer management for gardens and landscaping.

## BACKGROUND

On March 8, 2009, a petition was received concerning the issue of deer overpopulation in Chapel Hill.

On October 12, 2009 the Council received a petition from the Mt. Bolus neighborhood asking for a controlled hunt to reduce the number of deer.

On October 12, 2009 the Police Department proposed to monitor vehicle deer accident data, design a public awareness campaign for motorists and recommend tips on how residents can keep deer out of their yards. The Council directed the Manager to return with additional information on possible options for controlling and managing deer populations.

On November 23, 2009 the Chapel Hill Sustainability Committee submitted a petition requesting that the Council consider taking steps necessary to institute an urban archery program within the Town.

## DISCUSSION

Deer overpopulation is a growing problem in many areas of the United States and other countries. Whitetail deer are a very resilient and adaptive species that can easily adjust to an urban environment. Historically, deer populations were controlled by large predators in conjunction with cyclic food shortages, cold winters and disease. Today rural deer populations are somewhat controlled by managed hunting. Standard hunting seasons do little to control urban

deer populations since most hunting is forbidden in urban areas and deer tend to have small ranges.

In urban areas deer frequently feed on gardens and landscape plants. Deer are also involved in a number of automobile accidents each year. A number of communities and researchers have studied this problem and have identified possible solutions, all of which appear to have limited success. We have communicated with N.C. Wildlife Commission staff and have looked at a number of studies and reports from various parts of the country. While our research into the issue is not definitive, we have found that deer populations can be handled in two general ways: management and population control.

**Deer Management**

Deer management methods would not result in a reduction in the number of animals inside the Town limits. However, they would assist homeowners and motorists by providing information related to living with an overpopulation of deer. We could direct residents to the NC Cooperative Extension Service, which should be able to provide technical assistance on this issue. We could also prepare a packet of information to assist gardeners and homeowners to manage the impact on individual properties.

*Plant Selection*: Some success may be possible by planting landscape materials that deer do not like to eat. However, our research indicates that even unpalatable plant materials are likely to be eaten in the spring season or in times of low food supplies. We could provide lists of plant materials that may stand a better chance of survival. For illustrative purposes we have attached a list of common landscape plant materials that are both high and low risk for deer.

*Landscape and Garden Fencing*: Based on our research, fencing seems to be the best method for protecting landscaping, gardens and low fruit trees from deer. Fences must be at least 8 feet tall in order to effectively deter deer. We could provide plans and suggestions for erecting such deer fencing.

*Repellants*: Commercial repellants can be used to some effect. Repellants, which have smells or tastes that deer do not like, are spread over landscape materials in the hope that deer will avoid them. While somewhat effective the main issues are:

- Repellents do nothing to reduce populations of deer.
- Products may have to be changed over time.
- Repeated use becomes expensive.
- In times of low food supply deer will eat treated landscaping.

We could provide information related to use of repellents in any packet of information provided to the public and include such information on our web site.

**Population Control**

The goal of population control would be to reduce the number of animals inside the Town limits through some method such as hunting, euthanasia, removal or fertility control. Population control appears to work best in isolated areas such as on islands or in areas that are separated from rural areas by large urban environments. Population control does not work as well in areas with a ready source of replacement animals. Population control methods in an environment such as Chapel Hill would likely require an ongoing commitment, perhaps annually, to be effective because any reduced population would be replaced by new animals that could easily move in from the surrounding rural areas. We have found references to the following methods for controlling deer populations.

*Urban Hunting Season*: It appears that urban hunts are the most effective and least costly method of population control in areas where such a hunt could be conducted safely. The N.C. Wildlife Resources Commission recommends the use of urban hunts to maintain deer populations at acceptable levels. An urban archery season has been an option in North Carolina for at least 2 years. The N.C. Wildlife Resources Commission manages the program for use by municipalities. It is now too late to participate in the 2010 season, which runs from January 9 to February 13, as the application deadline was April 1, 2009. If the N.C. Wildlife Commission continues the program we could apply for the 2011 season.

An urban hunt would technically be possible in several parts of the Town. However, because of population density, the number of areas in which a hunt could be safely conducted is severely limited. We suggest that the Council consider several issues before deciding to hold an urban hunt in the Town. These issues include:

- The hunt would have to be carefully managed to ensure safety of nearby residents and users of the properties.
- The boundaries of the hunt would have to be clearly defined, signed and patrolled to prevent use during the hunt period.
- The Town is fairly densely developed and populated compared to most cities that use urban hunts in North Carolina. For safety reasons any such hunt would have to be limited to larger tracts of land inside the Town. Since most of these larger tracts are publicly owned parks, greenways and open space areas, the management program would have to contain a plan and process to keep users off those tracts during the hunt. We would have to close tracts of land and limit access to them. We know from experience that attempting to keep recreational users off of trails and out of parks during times of maintenance and repair can be very problematic.
- It is not unusual for deer shot by arrows to run a significant distance before dying. It is likely that some wounded deer would manage to leave the managed hunt areas. Part of the management plan would have to include a plan for gaining permission to track and kill wounded animals on private properties.
- To be effective the hunts would have to be large enough to kill a significant number of animals in a select area.

- To be effective the hunt would have to be repeated on a regular basis because the harvested deer could be replaced by new born fawns. In addition, animals from outside the hunt area could migrate into the post-hunt area to take advantage of the decreased competition for food.

In response to the October 12 and November 23, 2009 petitions, we looked specifically at the potential of a controlled hunt in the Mt. Bolus neighborhood. We believe that there are only three areas in the neighborhood with large enough undeveloped tracts to safely conduct a bow hunt. Two of those areas are privately owned. The third area, which is owned by the Town, is located along Bolin Creek and contains a portion of the Bolin Creek Trail. A limited hunt might be successful if the private landowners would agree to allow their properties to be used. Without cooperation from these landowners only a very limited hunt would be possible on Town property. Such limitations would likely have little effect on the deer population. Additionally, it should be noted that the Bolin Creek Trail would have to be closed during any such hunt on the Town parcel.

Another option would be to follow the recommendations of the Sustainability Committee, which recommend that the Town apply to the NC Wildlife Resources Commission for an Urban Archery Hunt, study the Pittsboro Urban Archery Program to determine its applicability to some neighborhoods in Chapel Hill, and hold a public forum about the growing deer population within the town. See the attached Sustainability Committee recommendations.

*Capture and Relocation*: With this method deer would be captured and moved to some another area. Issues associated with this method include:

- The N.C. Wildlife Commission currently does not approve of this method.
- Capture methods may be complicated. Methods noted in various documents include box/wire traps, capture pens, rocket propelled capture nets, drop nets, and anesthesia darts.
- The cost would be high. The City of Springfield, Missouri studied this option in 2007 and estimated the cost to be $300-400 per deer. Some methods such as box or wire traps have reported costs approaching $1,000 per animal.
- Research indicates that many animals die from stress from the capture and transportation process.

*Capture and Euthanasia*: With this method deer would be captured and then euthanized. This would result in removal of deer without the danger of hunting or the fear of wounded animals moving onto private properties. Properties would not have to be closed to the public. Depending on the method of euthanasia the meat would likely be useable. Issues related to this method include:

- As with the Capture and Release method discussed above, this method would likely have a high cost per animal removed.
- To be effective a relatively large number of animals would have to be captured and killed in a select area.

- The method would have to be repeated on a regular basis, perhaps annually, because the harvested deer would be replaced by new deer moving in from other areas.
- This method would require a detailed proposal presented to the N.C. Wildlife Resource Commission. Based on discussions with the Commission's staff, this would be a highly uncommon request.

*Sterilization*: Currently deer contraceptive or sterilization measures are strictly in the experimental stages and have not been approved for use in North Carolina. According to N.C. Wildlife Commission staff any fertility control initiatives must first be approved at the federal level before they can be approved by the N.C. Wildlife Commission. In general, the research we have seen indicates that all potential methods of sterilization have the same common problems:

- All methods are expensive and potentially cost prohibitive.
- Results are unreliable, especially in non-isolated populations such as is found in Chapel Hill.
- Sterilization would have to be repeated on a regular basis, perhaps annually, to be effective in a non-isolated environment such as Chapel Hill. Eventually unsterilized animals would move into the former range of deer that were sterilized, requiring a continuing program.
- Any effective method must be aimed solely at females since males are polygamous. A small number of fertile males could impregnate a very large number of fertile females.
- A positive effect on vegetation would take at least several years since sterilized deer would continue to eat once released. Deer typically live for 3 to 4 years, with some individuals living much longer.
- To have a practical effect the number of sterilized animals would have to be large.

Four methods of fertility control have been tested and may be applicable to urban deer:

1. Surgical sterilization is the only method that would be permanent, but it appears to impractical for a number of reasons including:
    - Each animal would have to be captured, undergo surgery, undergo a recovery period, and then be released. As noted above, surgery would have to focus solely on females to have any real effect. Female sterilization is a more involved and expensive operation than male sterilization.
    - There is some indication that a significant number of animals may die from stress.
2. Synthetic steroid hormones have been used experimentally. It appears to be impractical because it would require daily oral exposure. Deer would have to be prominently tagged to prevent human consumption.
3. Immunocontraception involves the use of a vaccine to stimulate antibodies to proteins required for reproduction. This works only if the drugs are administered in the spring and

summer prior to breeding season. Numerous issues have been identified with this method including the difficulty of getting deer to eat the drugs and drug induced extension of the active breeding and birthing cycle.

4. Contragestation is accomplished by introducing a drug into the food supply in the winter when animals are more likely to eat unfamiliar food. The drugs result in an abortion of the fetus. This approach might eventually be the easiest to administer. Some aborted fetuses noted in the studies were very late term, which might result in citizen complaints when late term fetuses are found in wooded areas.

According to a February 25, 2008 article in the Greensboro News-Record, officials on Bald Head Island are working with university researchers to see if they can use contraceptives to limit the deer population. The research will cost the village more than $60,000 over two years. Sterilization may work on Bald Head Island because it is a closed population with very little opportunity for unsterilized animals to migrate into the study area. Sterilization appears to be an ineffective option for urban areas similar to Chapel Hill because unsterilized deer from surrounding areas will simply replace sterilized animals as the opportunity arises.

If the Town were to consider a sterilization program we would likely have to hire a consultant to develop a proposal for federal approval and subsequent approval by the N.C. Wildlife Commission. We believe the costs associated with development and management of the program would be significant while the chances of success appear to be low.

## FISCAL NOTE

There would be minimal fiscal impacts if the Council decides to approach this issue from the standpoint of developing an educational campaign. However, we anticipate significant costs if a population control method is selected.

## RECOMMENDATIONS

Chapel Hill Sustainability Committee Recommendations: On November 23, 2009 the Committee submitted a petition requesting that the Council consider taking steps necessary to institute an urban archery program within the Town. Specifically, the petition requested that:

- The Town seek permission from the NC Wildlife Resources Commission to organize an Urban Archery Program to safely cull the deer population within Chapel Hill. The Committee wants this early authorization so that in the event that the Town decides to go forward with such a program; there will not be undue delay in implementing it.

- The Town staff study the Pittsboro Urban Archery Program to determine its applicability to some neighborhoods in Chapel Hill where the deer population has significantly grown in recent years, and identify those areas where an urban archery program would be appropriate and most effective.

- The Council hold a public forum about the growing deer population within the town which reviews that public health and other hazards of this problem and presents various options for dealing with this problem. Invite someone from the NC Wildlife Resources Commission, at least one person from another community that has been running an operation to cull deer populations, and a representative from the NC Bowhunters Association to participate as forum presenters.

- The Town staff develop an Urban Archery program that meets Chapel Hill conditions, invite public comment, amend it as appropriate, and forward it to the Council for action.

Staff Recommendation: Based on the limited portions of Town on which an urban hunt could be safely conducted, combined with the issues outlined above, we do not believe that an urban hunt is a viable option for the Town. We recommend that the Council adopt the attached Resolution, which authorizes the Manager to develop an information packet for residents interested in protecting their landscaping and gardens from deer.

**ATTACHMENTS**

1. March 8, 2009 Petition (p. 9).
2. October 12, 2009 Petition (p. 10).
3. November 23, 2009 Chapel Hill Sustainability Committee Petition (p. 33).
4. List of Plants More Likely to Survive Deer Overpopulation (p. 35).
5. Map of Mt. Bolus Neighborhood Showing Potential Hunt Sites (p. 43).