Community Based Deer Management Manual for Municipalities

New Jersey Department of Environmental Protection Division of Fish and Wildlife
Community Based Deer Management Manual for Municipalities

Forward

This manual was written to provide county and municipal officials and residents with information to assist them in addressing their community’s concerns with deer. It contains answers to common questions regarding the abundance of deer in an area and the problems associated with overpopulation. The information in this document is intended to help officials and residents find a solution that is acceptable to all involved.

Two overall approaches to deer population control are presented. The first involves the use of traditional techniques for deer reduction; the second employs a program called the Community Based Deer Management Program (CBDMP).

The principal section of this manual is designed to provide readers with a brief overview of the problems, issues and possible solutions related to deer overabundance. Appendices have also been provided as a guide to obtaining more detailed information on specific deer control measures once a particular course of action is agreed upon.

What is the history of deer in New Jersey?

Deer or more specifically, white-tailed deer (*Odocoileus virginianus*) have been a part of the natural landscape of New Jersey and have been interacting with man since prehistoric times. Prior to European colonization, deer populations may have increased and decreased slightly depending on weather and food availability without becoming terribly abundant by today’s standards. The arrival of Europeans resulted in land clearing efforts for agricultural purposes – an extremely favorable situation for deer.

![Figure 1. Lawns create the “edge” habitat preferred by deer.](image)

Deer are known as “edge species” because their preferred habitat is openings in the forest such as those created through agricultural practices. Deer populations would have
prospered except for two factors. First, early struggling settlers had no intention of sharing their crops with hungry deer and second, deer were found to be a tasty source of meat. At this point in time, hunting was not regulated. There were no restrictions on how many deer one could take or at what time during the year. All of these influences worked together to keep deer populations at low levels. As early as the 1700s, game laws were established to limit the methods, means and number of deer that could be taken, as well as the time of year they could be hunted.

Changes to the natural landscape created by humans have continued to provide abundant and ideal deer habitat. Consequently, deer populations have increased. To help alleviate the situation, regulated hunting has been used to keep deer population numbers at levels desirable to humans.

At present, deer still find the land use patterns and habitat created by humans extremely suitable. Today, substantial deer populations are not only a by-product of agriculture, but the result of greenways and large building lot sizes common in the suburban and rural areas of the state.

In addition to ideal habitat, hunter populations have been declining for forty years. Despite fewer numbers of hunters afield, more liberal deer hunting regulations have enabled sportsmen to harvest more deer and keep deer populations under control in areas open to hunting.

Also during this same time period, suburban deer populations have been increasing. Land development and opposition to hunting have severely restricted hunter access to these increasing deer populations. As a result, deer in certain areas of the state have reached numbers deemed undesirable by human standards. The impacts of deer overabundance can be illustrated in unacceptable levels of deer/automobile collisions, destruction of residential flower and shrub plantings, damage to agricultural crops, and increased risks of contracting wildlife-transmitted illnesses such as Lyme disease.

*Why are many New Jersey communities experiencing deer problems?*

New Jersey still harbors a huge amount of deer habitat – much of it high quality. High quality deer habitat support healthy and productive deer populations. Another common characteristic of problem deer areas in New Jersey is a lack of deer population control measures most often accomplished through traditional sport hunting. This lack of “deer management” may be due to local government or landowner prohibitions against hunting or the discharge of weapons, or it may occur because sport hunting is no longer a feasible option on small isolated tracts of open space and areas of large-lot residential zoning. The presence of deer habitat and declining hunting pressure usually combine to cause an overabundance of deer.
What is the State of New Jersey doing about deer?

In order to address increasing deer populations and the problems associated with them, the New Jersey Department of Environmental Protection’s Division of Fish and Wildlife, (Division) together with the New Jersey Fish and Game Council (Council), have established long and liberal deer hunting seasons. This framework allows sport hunters in New Jersey to harvest approximately 60,000 deer annually.

The number of deer a sport hunter may harvest (bag limit) is liberal. Bows, muzzle loading rifles and shotguns are the types of weapons that may be used. The fall bow, permit bow, six-day firearm, permit shotgun, permit muzzleloader and winter bow season dates overlap and deer hunting is permitted from the beginning of September through mid-February. These six hunting seasons provide licensed sportsmen with more than 100 days of hunting and the opportunity to harvest an unlimited number of antlerless deer (females and fawns) in many areas of the state. Controlling the female segment of the population is critically necessary if population reductions are to be accomplished.

Communities are encouraged to use the existing deer hunting seasons to address deer overabundance problems. Ordinances that prohibit the discharge of firearms and bows should be modified to allow for the control of deer populations so that large private property owners, such as corporate centers and golf courses, may use hunters to control overly abundant deer populations. Concerned communities are encouraged to open public lands to deer hunting during the regular deer hunting seasons and encourage private homeowners to do the same. Sportsmen and women are willing and able to control deer populations to which they have access. Division biologists will work with local officials to design a suitable hunting format for their community. The Division also provides information concerning deer control methods and damage mitigation techniques to private landowners.
Is there really a problem?

Though this may seem like an odd question, it is a valid one. Individuals perceive problems differently. With the case of deer abundance, what is intolerable for one may be just right for another. It may be useful to define the level of the problem within the municipality and determine the geographic area it covers.

Helpful questions to consider include:

- Does the problem occur everywhere in the municipality or is it restricted geographically?
- How bad is it – what is the consensus?
- Have the number of deer collisions doubled over the last several years or has there been a gradual increase over a period of time?
- Is it impossible to plant shrubs and flowers without expecting them to be destroyed?

The answers to these questions will assist communities in selecting from a suite of possible solutions. A variety of tools are available and many do not require special permits. Use of repellant chemicals and fencing, planting deer resistant ornamentals, obtaining agricultural damage permits to shoot deer, and acquiring special devices to divert deer from roadways are potential tools to improve the relationship between deer and humans.

The Division is committed to helping communities utilize the deer control tools that are currently available.
**What is controlled hunting?**

Utilizing hunters within the current hunting regulations framework is often the most cost-effective way for a community to remedy its deer abundance problem. Landowners can tailor hunting under current regulations to meet their individual needs and can even make hunting on their land more restrictive than what normal hunting regulations allow. In response to residents’ wishes, weapon type can be restricted, such as requiring the use of only bows and arrows rather than all the weapon types legally available for hunting. If a landowner wants to permit hunting only on weekdays and not weekends, he or she may require that hunters on their property comply.

Landowners have quite a bit of flexibility when restricting existing hunting regulations, however, they may not make their hunting requirements more liberal than what current hunting laws allow. For instance, a landowner may not authorize the taking of more deer than are permitted under the Game Code. The flexibility of controlled hunting has proven to be an effective tool in several municipalities.

Bow hunting has proven to be a particularly suitable method of reducing deer numbers in suburban areas. Municipalities concerned with the noise of firearms or conflicts with other recreational users, may find bow hunting to be an attractive option. Bow hunters typically hunt from an elevated tree stand and shoot at a downward angle. In much of the state, the fall bow, permit bow and winter bow seasons run from the beginning of September through mid-February and bow hunters typically have an unlimited bag limit for antlerless deer. Bow hunters can effectively aid in the deer reduction effort on small properties and even in suburban backyards.

**Can increasing hunter access help?**

Publicly and privately owned natural areas that are closed to hunting will eventually become refuges for deer and cause over-abundance problems for the community. Frequently, such problems can be remedied by merely providing hunters with access to these lands. Publicly owned land containing wildlife habitat should be open to deer hunters before deer population problems escalate. Large pieces of private property where landowners do not allow deer hunting can create problems for neighbors.

Figure 4. Hunter access is a critical component of deer herd management.
A firearm hunter may not discharge, or carry a loaded firearm within 450 feet of a potentially occupied building without the permission of the building owner. Bow hunters may not discharge a bow or carry a bow with a nocked arrow within 150 feet of a building. Therefore, landowner permission is critical to a successful hunting program, especially on small properties where permission of adjacent landowners may also be necessary. Privately owned open spaces such as golf courses, nature preserves and corporate centers provide wildlife habitat and these landowners should be encouraged to allow hunters access if a hunting program is to be effective. Municipalities can work together with private landowners to open areas to hunting that are large enough to effectively control deer populations. Division representatives can assist a municipality in structuring and implementing a controlled hunting program that will not interfere with the primary use of the property.

What about discharge ordinances?

Some municipalities have ordinances that prohibit the discharge of firearms and/or bows and arrows. These ordinances eliminate hunting opportunity and may severely limit deer management options. These discharge ordinances should be reviewed and reconsidered. Several communities have amended their no-discharge ordinances to allow hunting when necessary to control deer populations.

Are there other options?

Several non-lethal options are available that do not require special permits. Use of deer repellant chemicals and fencing, planting deer resistant ornamentals, and acquiring devices to divert deer away from roadways are some methods used in the hopes of reducing the negative impacts of deer.

- **Roadside devices and deer whistles**

Roadside devices have been used in an effort to minimize deer/vehicle accidents. Several companies manufacture reflectors that can be placed along roads in areas where high numbers of deer/vehicle accidents have occurred. At night, the headlights of vehicles hit the reflectors, which flash light and/or emit noise into the surrounding area. These are intended to scare deer away from the road.

Noise-emitting wildlife crossing guards cost approximately $114 each. In addition to the initial installation fee, reflectors that are periodically knocked over by snowplows or other vehicles, must be repaired and erected again. The areas around the reflectors must be weed-whacked regularly, so that light from the reflectors can shine into the surrounding area.
Some automobile owners have attached “deer whistles” to their vehicles. The whistles may emit a noise when travelling at a certain speed. This noise reportedly scares deer away from the road.

The effectiveness of deer whistles and reflectors is not well substantiated.

- **Fencing**

Fencing can be used by homeowners and the agricultural community to prevent deer damage to crops, shrubs and flowers. Fine netting is available from garden shops for homeowners who want to cover their shrubs and gardens.
Solar-powered electric fencing may be used to protect shrubs or gardens. Fencing may be used to keep deer entirely off of a property. Cattle guards should be used in these situations to keep deer from walking up driveways into otherwise fully fenced properties.

Figure 7. Cattle guards must be used with electric fence to exclude deer from property.

- **Repellents**

Generally, two types of deer repellents are available to protect cultivated vegetation. There are contact repellants that use taste as a deterrent and area repellents that utilize smell.

Contact repellents are applied directly to plants. Deer that try to feast on a treated plant are soon repelled by the taste. These types of repellents should not be used on the edible parts of vegetable plants or fruit trees.

Area repellents are applied near the plants and deter by odor. Deer find the smell offensive and avoid the area. However, humans may also find the odor offensive. Area repellants are usually less effective than contact repellents.

The effectiveness of repellents depends on the number of deer in an area and the availability of more appetizing food. Repellents also must be re-applied after heavy rains to remain effective. Commercial repellents may be purchased at farm and garden stores or applied by a contractor. Home remedies such as hot pepper sauce, moth balls, human hair and scented soaps provide limited levels of protection.

**What if the above tools do not solve the problem?**

Deer populations exist in some urban and suburban areas of New Jersey where traditional hunting may not provide adequate deer population control. Because of this, the Division has specifically designed a program known as Community Based Deer Management (CBDM). The CBDM program was developed to offer alternative deer control measures
by providing communities with the ability to make decisions on reducing the deer population tailored to their locale. The CBDM program puts much of the decision making and all of the implementation of deer population reduction on the community level.

**How does a community get involved in the CBDM program?**

Whenever a municipality, county, county Board of Agriculture or airport determines that the deer population has caused significant damage to property or has caused a significant number of vehicle collisions in the area, they may apply to the Division for a CBDM permit. Interested parties should contact the Division at 609-259-6965 to set up a meeting with a CBDM biologist. Staff can assist in completing the CBDM permit application and serve as a valuable resource in the decision-making process. The Division biologist will help identify the problem and discuss possible solutions as well as the cost and effectiveness of each. Staff can also provide contacts for other communities, which have tried various deer control methods that may be able to offer valuable insight and advice.

**Who may apply?**

Only municipalities, counties, county boards of agriculture and airports may apply for a CBDM permit. Though homeowners and homeowner associations may not apply, those experiencing damage are encouraged to contact their municipal council.

**What type of information is needed to apply for a CBDM permit?**

The CBDM application requires specific information and must be filled out completely before a permit can be issued. Following is a step-by-step guide to filling out an application.

**Step One:** Designate a Special Deer Management Area where deer control efforts are needed. This Special Deer Management Area may include the entire municipality or just a portion. Two or more municipalities can submit a single application to designate an area that includes more than one municipality.

**Step Two:** Demonstrate that an overabundant deer population has caused significant damage to property (i.e., ornamental shrubs, etc.) or has caused a significant number of vehicle collisions. Applicants must describe the nature and extent of property damage or the number of deer/vehicle collisions occurring in the township each year.

Important: The description of damage/accidents must be measured numerically. For example, “70 percent of residents claim to have incurred $500 or more in damages caused by deer based on a survey conducted in 2008” or “a total of 231 deer/vehicle collisions occurred on township roads during 2010.”

**Step Three:** Adopt a township resolution endorsing the application for a CBDM permit.
Step Four: Complete a CBDM permit application and be sure to:

1. Delineate the boundaries of the special deer management area.
2. Explain why traditional deer control methods have not worked.
3. Describe the proposed special control method.
4. Identify who will carry out the proposed special control method and their qualifications.
5. Describe how residents in the control area will be notified of the proposed activity.
6. Notification should include written notice to adjacent landowners and a public notice in a local newspaper if the control method will occur on public property.
7. Describe safety measures that will be used to protect the public during the control activity.
8. Ensure that venison from the culled deer will be donated to the needy via the Hunters Helping the Hungry program.
9. Provide written permission to access private properties, if private lands will be accessed.
10. Provide any additional information required by the Division to properly review the plan.

Once successfully reviewed by the Division, the CBDM permit application is forwarded to the Council for consideration. If approved by the Council, the Division will issue a CBDM permit.

Appendix A of this document contains a sample application for a CBDM permit. Appendix B provides a blank application. Regulations concerning CBDM permits are included in Appendix C and D.

What other management tools have municipalities used to control deer?

Following is a list of various methods used by other municipalities to control their deer herds.

Trap and transfer

The existing habitat in New Jersey cannot support additional deer. Relocating deer to other areas of the state would only result in overpopulation in the release area, increased damage to property and increased deer – vehicle accidents, and ultimately, result in the demise of the released animals. Transferring and releasing deer in the wild potentially transfers disease to new areas. Therefore, trapping and releasing deer in the wild is not permitted.

Transferring captured animals to research facilities in the state is usually not a feasible option, as none are currently seeking additional deer.
The cost of trapping deer can be high. Wise and wary deer do not enter a trap readily. Municipalities using trapping as a deer control method in their communities have reported mixed success. Some trapping enclosures may cost up to $20,000 and private contractors charge additional capture and handling fees per deer.

Figure 8. Deer trap with sensors for automatic door closing

Regarding the transfer of deer to another state, most states currently ban the importation of wild deer due to concerns of Chronic Wasting Disease (CWD). CWD is fatal and highly contagious within the deer population. Therefore, the future use of trap and transfer as a management tool is doubtful.

**Trap and euthanize**

Deer may be trapped under a drop net, in a larger fence enclosure or in a box trap, and euthanized.

Figure 9. Drop net used to trap deer.
In areas where firearms cannot be used due to safety concerns, deer may be trapped and euthanized. Deer are typically euthanized on site with a captive bolt gun. A captive bolt gun is a mechanical device used in commercial meat slaughtering operations to dispatch the animals. Although controversial, this method of euthanasia was deemed conditionally acceptable for free-ranging wildlife by the American Veterinary Association Guidelines on Euthanasia. In those areas where firearms cannot be used within a 450’-safety zone of a building, deer can be trapped and euthanized with a bolt gun legally. Trapping and euthanizing deer is very time-consuming and expensive.

![Figure 10. Captive bolt gun](image.jpg)

To date, use of injectable euthanasia drugs has been limited, since such drugs render the meat unsuitable for human consumption. In all CBDM activities, every effort must be made to utilize the venison obtained.

Important: The Division and Council recommend that captured deer be euthanized onsite and as quickly as possible to minimize trauma.

**Sharp shooting**

Townships may request permission to use firearms not permitted under the normal hunting regulations when applying for a CBDM permit. Deer culling agents may use unplugged shotguns or high-powered rifles and silencers. However, if silencers are used, written approval from the county prosecutor must be obtained. These special firearms are most often used by contractors specializing in animal removal and hired by the municipality. The contractor may operate from elevated platforms called stands or from vehicles, and may use pre-baited sites to attract the deer. Since many of the methods used by hired contractors are not permitted under New Jersey’s standard hunting regulations, a CBDM permit is required. Private contractors that have conducted deer population reductions in New Jersey utilizing the sharp shooting technique have charged
between $200 to $400 per deer, which includes the cost of butchering. Several communities in New Jersey have successfully hired private contractors to shoot deer on properties that were deemed too small to allow for traditional hunting.

Figure 11. Agent using rifle to cull deer from a tree stand (Photo courtesy of White Buffalo Inc.)

Chemical fertility control

Chemical fertility control or contraception through the administration of a chemical may be used to inhibit reproduction in deer. This approach will keep deer populations from increasing, but the treated animals will live until they succumb to normal mortality factors. Most of the females in the control area would need to be treated in order to see a reduction in the population.

A combination of culling (to first reduce the population) and contraception (to maintain the population level) could be an option. However, even though a population has been reduced through euthanasia and fertility control, deer moving in from groups adjacent to the control area will eventually cause the population to increase.

Chemical fertility control for deer is available in several forms including abortion-inducing chemicals, ovulation and implantation inhibitors and anti-fertility vaccines (inoculations that prevent egg fertilization, also referred to as immuno-contraception). Unlike surgical sterilization that permanently sterilizes deer, chemical fertility control is temporary.

The use of fertility control chemicals and vaccines on free-ranging deer populations is restricted by the Environmental Protection Agency (EPA). GonaCon™ is an immunocontraceptive vaccine, which was registered by the U.S. Environmental Protection Agency in 2009. The NJ DEP Pesticide Control Program approved GonaCon™ for registration in New Jersey. However based on data collected from a research experiment conducted in Madison NJ, there was only a 67% efficacy rate with a single injection of GonaCon™. This finding was consistent with one-year efficacy rates at two other study locations.
Only those substances that have been approved by the EPA may be used when a Special Permit to Inhibit Reproduction has been obtained from the Division. The Special Permit to Inhibit Reproduction will identify the time, place and methodology to be utilized and any special conditions established by the Council. Each permit applicant must provide a written proposal describing the fertility control procedure, the credentials of the person(s) who will administer the contraceptive procedure, the purpose or intent of the procedure and an assessment of the environmental impacts. If the purpose of applying for a Special Permit to Inhibit Wildlife Reproduction is to control the deer herd, a CBDM permit is also required. The Division in cooperation with a university or other scientist will review each application and determine whether or not a permit is granted based on the overall justification and need for conducting such procedures, the qualification of the person(s) administering the procedure and the anticipated environmental impacts affecting both wildlife and humans and the probability of success in controlling free-ranging wildlife populations. Written permission to access all properties on which the deer may be tranquilized, recovered and vaccinated must be obtained prior to applying for a Special Permit to Inhibit Reproduction. See Appendix E for regulations concerning Special Permits to Inhibit Wildlife Reproduction. Regulations concerning CBDM permits are included in Appendix C and D.

**Controlled hunts**

In those cases where traditional deer hunting cannot be used, sportsmen and women may still be utilized to accomplish the population control program under the CBDM permit participating in what is called a controlled hunt. Such hunts frequently result in significant cost savings to the community.

With a CBDM permit, sportsmen and women may hunt at times not allowed under normal hunting regulations. Suburban communities in many states have successfully managed their deer populations by utilizing sport hunters with special controlled hunting restrictions. In many cases, volunteer hunters pass specific proficiency tests with their firearm or bow, are limited to hunting from trees, and hunt only at certain times of the day. These additional controls are designed to provide a safe hunting situation on small properties and satisfy a community’s concern regarding hunting in a suburban environment.

Under a CBDM permit, the Division may also extend an existing deer season, increase the bag limit or modify deer check requirements. One particular county park chose to utilize volunteer sportsmen to reduce its deer herd. The permit, allowed volunteer sportsmen and women to cull deer outside of the hunting season dates and bag limit restrictions. Nearly 30 licensed sportsmen were utilized in the reduction phase. The population goals were achieved in three years, two years earlier than anticipated. Currently, 12 licensed sportsmen are used to maintain the deer population at the desired lower level. Approximately $3,000 is spent annually on this deer control effort (about $65 per deer). The majority of the cost is the cost of processing the venison. Volunteer
hunters who participate in this program each receive 20 pounds of dressed venison. The remainder of the meat is donated to the Community Food Bank of New Jersey.

Figure 12. Deer check station at Watchung Reservation in Union County

Lethal vs. non-lethal control methods

One of the discussions likely to arise while considering deer control proposals is whether to use lethal or non-lethal methods. Oftentimes, this can be a rancorous debate.

Non-lethal approaches for controlling the number of deer can be divided into two categories: chemical fertility control, and trap and transfer. Non-lethal approaches for controlling the problems created by too many deer include the use of fencing, deer repellents, road reflectors and deer whistles as well as planting deer-resistant shrubs and flowers.

A review of the facts related to the use of non-lethal control methods follows:

- New Jersey does not have any habitat where deer can be re-located.
- Placing additional deer in areas already filled to capacity would likely result in increased deer-vehicle collisions and damage to existing habitat.
- The outbreak of Chronic Wasting Disease (CWD) has resulted in most states prohibiting the importation of live deer. CWD, related to Mad Cow Disease, is fatal to deer. In an attempt to protect their deer herds, most states have prohibited the importation of live deer and other cervids (species of the same scientific family as deer).
- To date, fertility control appears to have only limited applications and is extremely labor-intensive. Princeton Township’s attempt to control suburban deer numbers through immuno-contraception cost the Township $814/deer.
For these reasons, all programs for deer reduction involve euthanization (i.e., humane killing). A contentious issue for many municipalities, officials will most likely encounter residents who will vehemently oppose the killing of deer for any reason. On the other hand, there will also be individuals who will accept lethal reduction methods and agree to do what is necessary to solve the problem. Since the debate of lethal versus non-lethal control methods involves value judgments, the discussions are often heated. However, the key to remember is that in most instances only lethal solutions are practical, economical and ecologically sound.

**Disposition of deer removed**

Municipalities involved in CBDM programs are required to donate the venison from the deer culled to a Community Food Bank, and pay the cost of processing the meat. If volunteer hunters are utilized to reduce the deer population, they may take some or all of the deer harvested. Most hunters and their families enjoy eating venison and many have friends willing to take deer. If private contractors are used, they may handle transportation of the deer carcass to the butcher.

An average-sized deer provides approximately 45 pounds of healthy, low-fat venison. However, since the bag limit on deer is liberal throughout much of the state, some hunters find they have the opportunity to harvest more deer than their families can consume.

Fortunately, the Hunters Helping the Hungry program offers a solution. Hunters Helping the Hungry (HHH) is a non-profit corporation working with regional food banks that accept donated venison. Hunters participate by donating their deer through an approved butcher. Municipalities involved in CBDM programs must utilize HHH-participating butchers that have also received New Jersey Department of Health (DOH) approval to accept venison slated for donation to area food banks involved with the HHH program.
Use of a contractor

Often municipalities hire private contractors to carry out some or all of the work related to their CBDM plan. The scope of services furnished by the contractor is totally up to the community. Services can range from facilitating public discussion, preparing the application and developing the plan, to carrying out the population reduction efforts. Depending upon the availability and expertise of municipal employees to execute the necessary tasks related to conducting a CBDM reduction program, hiring a consultant may be a wise expenditure. Some municipalities have successfully used a combination of municipal employees to prepare the application and plan, and volunteer or paid agents to conduct reduction efforts.

Public input

Some townships survey residents to help identify the extent of the problem and gauge the opinions concerning management options. Frequently, committees are formed to discuss the management options available, costs and effectiveness. Committee recommendations are usually made to the township council or county freeholders, which must ultimately pass a resolution endorsing the application for a CBDM permit.

The municipality or county may conduct public meetings to inform residents of a deer population problem and seek input regarding management option preferences. The Division may assist the communities by providing information to the public at these meetings. Since there are often differing views regarding the status of local deer populations, the extent of the problem and how best to deal with it, municipalities and county governing bodies are strongly encouraged to ensure an open public decision-making process.

What happens once the permit application is submitted?

Once submitted, the application is reviewed by the Division of Fish and Wildlife. Then it is either approved, approved subject to modification, or rejected and returned to the applicant with reason(s) for disapproval. If an application is rejected, it may be modified and resubmitted.

If the Division approves a CBDM permit application, the paperwork is forwarded to the Fish and Game Council for review and action. The Council is the administrative body possessing statutory authority over taking game species such as deer. Appendix F offers a description of the Council.

By submitting a CBDM permit application, a municipality or county is requesting an exemption to the regular methods and means of taking deer. By law, the Council is the only body authorized to grant such an exemption through the approval of a CBDM permit. The Council may require that certain conditions be met to ensure public safety.
and may also request a municipality to improve access to hunters if traditional hunting practices can be safely conducted within the community. The Council may also require a municipality to modify restrictive township ordinances and open up suitable public land to local hunters. Once approved by Council, a CBDM permit is issued and the community may begin deer population control efforts as described in their application.

**Is there a time limit?**

Yes. Since the CBDM permit application must be reviewed by both the Division and Council, it must be submitted 120 days prior to the proposed date of implementation.

Certain deer control strategies are time-sensitive and best conducted at specific times of the year. For instance, deer may come to bait more easily during the winter months. It may also be more effective to use firearms during those months when there are no leaves on the trees.

Permits are issued on an annual basis and successful applicants must file an annual report detailing the results and costs of the program. Failure to file a yearly report is cause for denial of future CBDM permits.

A Division representative will visit the community to verify claims of deer damage and/or deer/vehicle collisions before the Fish and Game Council votes on the permit application. The Division representative will also visit the community during deer reduction activities to monitor compliance with the CBDM permit conditions.

**Which New Jersey municipalities have used CBDM?**

Approximately twelve communities in Essex, Hunterdon, Mercer, Morris, Somerset, and Union Counties have obtained CBDM permits to control deer populations.

**Litigation**

Contentious and controversial issues such as deer management will inevitably bring about lawsuits. In 2002, two animal rights groups argued that the law that allows the culling of deer was unconstitutional and cruel. The two cases were consolidated by the court and later dismissed. A three-judge appeals court panel upheld the constitutionality of the State’s Community-based Deer Management program and the law that enables it to be carried out.

**Final Thoughts**

This manual is intended to provide communities with useful information regarding deer and deer control efforts in New Jersey. Deer are an important part of our natural environment in the Garden State. However, human land use patterns and desires necessitate the management of deer populations to compatible levels if the two species are to successfully coexist. The Division of Fish and Wildlife is committed to promoting
a healthy relationship between the state’s wildlife and its citizens and to work with communities to help manage this valuable species.
Appendix A. Sample CBDM application and resolution.

Designation of Special Deer Management Area - SAMPLE

Name the municipality (municipalities), county, airport or county board of agriculture making application.

Anytown, NJ

State the purpose of the proposed deer management plan i.e. reduce deer – vehicle collisions, reduce damage to forest understory or reduce damage to ornamental landscape plants.

The purpose of our proposal is to reduce the percentage of homeowners experiencing deer damage to less than 50% and to reduce the annual number of deer – vehicle accidents to less than 100, in five years.

If the purpose is to reduce damage to ornamental landscape plants, enumerate the extent of damage to landscape plants in the proposed special deer management area. Be specific. Include an estimate of the number of residents experiencing damage to landscape plants and the monetary loss due to deer depredating on gardens. Include photographs of deer damage, if possible.

A survey of Anytown homeowners conducted in 2008 in which 25% of homeowners responded, indicated that 70% of homeowners experienced deer damage to shrubs or gardens. Sixty-five percent of those experiencing deer damage indicated that the damage was significant. Residents experiencing deer damage estimate the annual cost of replacing shrubs damaged by deer at $800. This accounts for $16 million in damages caused by deer annually.

If the purpose is to reduce damage to the forest understory, enumerate the damage to forest understory plants.

n/a

If the purpose is to reduce deer – vehicle accidents, state the number of vehicle collisions caused by deer in the proposed special deer management area and estimate of costs to motorists caused by deer – vehicle accidents.

Anytown Police Department had reports of 165 deer/vehicle accidents in 2008, costing our motorists an average of $2500/accident. This compares to a total of 20 deer – vehicle accidents in 1990.
If the stated purpose is to reduce deer – vehicle collisions, state the number of miles of road in the deer management area

*There are 114 miles of township, county and state roads in Anytown, NJ with 1.45 deer/vehicle accidents per mile of road per year.*

If the purpose is to reduce damage to agricultural crops, enumerate the number of farms experiencing damage from deer, and enumerate the extent of damage to crops.

*n/a*

Describe that portion of the Municipality (Municipalities), County or Airport proposed for designation as a special deer management area. Attach a map and indicate the size of the area.

*We would like to designate that portion of Anytown, east of Route 1, as a special deer management area. Since sport hunting does not occur in this portion of town due to housing density, we feel that culling deer by sharp shooting is the most appropriate tool available to control the deer population in this area.*
Community Based Deer Management Plan – SAMPLE

Describe the proposed alternative control methods to be used to reduce the number of deer in the special management area. Include detailed information including but not limited to the capture methodology, the type of traps and destination of deer to be removed, or the method of euthanasia; the culling methodology, shooting methodology such as baiting, shooting from elevated platforms or detailed information on other methods to be employed.

_We propose hiring XYZ Sharpshooting Company for the period December 1 through March 31. XYZ Sharpshooting Company will bait and shoot deer with shotguns during daylight hours only. XYZ Sharpshooting Company will shoot from elevated tree stands._

On what properties will the alternate control methodology be employed? Who is the property owner of each of these sites? What is the property size of each of the sites employed? Does traditional sport hunting occur on any of the sites? If the property size of a site exceeds 60 acres and traditional hunting does not occur on the site, state the reasons.

_XYZ Sharpshooting Company will shoot deer on the five town parks and one golf course outlined on the enclosed map. Anytown owns the five parks. Also attached is written permission to use the golf course property. Sport hunting does not occur on these sites. Park 1 is ten acres in size. Park 2 is 18 acres. Park 3 is 33 acres. Park 4 is an 80-acre open field comprised of smaller baseball and soccer fields unsuitable for sport hunting because of the large expanses of open lawn and high public use of the area. Park 5 is 42 acres in size. The golf course is 250 acres in size. The golf course owner will not allow sport hunting on the property during certain hours since it would negatively impact business._

On what dates or during what period will the alternate control methodology be employed?

_ANYTOWN, NJ proposes that XYZ Sharpshooting Company be permitted to cull deer on the five town parks and one golf course December 1, 2009 through March 31, 2010._

During what hours will the agent operate?

_We propose that XYZ Sharpshooting Company be permitted to cull deer ½ hour before sunrise to ½ hour after sunset. Note that golf course hours will be slightly altered. See attached information._

What type of weapon and ammunition will be used?

_XYZ Sharpshooting Company will use shotguns to cull deer with rifled slugs._

Will unplugged guns be used?
No.

Will the agent shoot from a motor vehicle?
No.

Will the agent shoot across closed roads?
No.

Will the agent carry a loaded firearm in the vehicle for culling purposes?
No.

Will the agent be required to wear hunter orange?
No.

Is there a number of deer culled or trapped and transferred that will not be exceeded?

Although Anytown realizes that more deer should be culled, the township budget can only afford to pay XYZ Sharpshooting Company $30,000 at the quoted rate of $300 per deer, for a total of 100 deer this year.

If using the trap and transfer method, where will the captured deer be taken?

No deer will be trapped and transferred from Anytown, NJ.

What is the quantitative estimate or density of the deer population in the special management area? How was this estimate obtained? What is the intended target population or density?

Anytown, NJ hired ABC InfraRed Company to conduct a deer census in the town. On March 15, 2007, ABC InfraRed Company flew a twin engine helicopter over the town at a height of 500 feet. On that evening, ABC InfraRed Company counted 1,600 deer in Anytown. ABC InfraRed Company provided the town with a video of the flight and a map of where the deer were counted. The final report from ABC InfraRed Company, including the map, is attached to this application. Anytown is 20 square miles in size, so there is a density of 80 deer per square mile. Anytown would like to reduce our deer population to 20 deer per square mile, or 400 deer.

How will you measure the success of the program?

Anytown will track the number of deer – vehicle accidents and will send a survey to residents in 5 years.
If the goal is to reduce deer – vehicle collisions, what level of deer – vehicle collisions is an acceptable level?

Less than 100 accidents per year will be considered an acceptable level.

If the goal is to reduce damage to landscape plants, how often will residents be re-surveyed, and what will be the acceptable level of damage?

Homeowners will be surveyed every 5 years. Reducing the percentage of homeowners experiencing deer damage to less than 50% will be considered a success.

If the goal is to reduce damage to the forest understory, how often will forest health be re-evaluated? What is the level of damage that will be considered acceptable?

n/a

If the goal is to minimize crop damage, what extent of crop damage is tolerable, and how will that level be measured?

n/a

Describe the extent to which traditional hunting is currently being used to control deer numbers in the special management area, or why traditional hunting is not applicable.

Traditional hunting occurs on several of the larger private properties in the town and the New Jersey Division of Fish and Wildlife has provided us with harvest numbers from the 2007-08 season.

Anytown proposes that ten bow hunters be allowed to hunt on Parks 1, 2, 3 and 5 during the fall bow and permit bow seasons prior to December 1, after which Anytown proposes to permit XYZ Sharpshooting Company to cull deer. The ten bow hunters will be chosen by lottery and preference will be given to Anytown residents that want to bow hunt at these sites.

Does the municipality have any ordinances that prohibit the discharge of firearms or bows? Please describe how that ordinance will be modified to allow for a deer culling program, and attach a copy of the ordinance.

An ordinance prohibiting hunting on township properties was recently amended to allow bow hunting during the regular deer season and sharp shooting as permitted under a Community Based Deer Management Permit. The amended ordinance is attached to this application.

Identify any organization and its employees who will conduct the alternative control efforts. Include appropriate credentials and references.
John Smith, Paul Jones and Tom Mitchell are the three employees of XYZ Sharpshooting Company. The company has been in operation since 1995. XYZ Sharpshooting Company has experience culling deer in suburban parks in Philadelphia, PA, Anothertown, NJ and Wherever, NJ. The three employees of XYZ Sharpshooting Company are also New Jersey Hunter Education instructors. Client references for XYZ Sharpshooting Company are attached to this application.

List the names of the individuals above along with their current firearm license number, valid rifle permit number (if applicable) and New Jersey Firearms Purchaser Identification number (NJFPID#), or provide proof that the person is in compliance with the applicable laws of the person’s state of residence.

John Smith
2007 NJ All-Around License # 9999999
NJFPID # 0000000000

Paul Jones
2007 NJ Firearm License # 9888888
NJFPID # 0000000001

Tom Mitchell
2007 NJ All-Around License # 9988888
NJFPID # 0000000002

Describe the methods that will be used to notify the public, including residents located within and adjacent to the special deer management area, of the alternative control methods and the specific places when and where they will be used. Such methods shall include written notice to adjacent landowners when the control method includes culling deer.

Letters will be mailed to all property owners adjacent to the five town parks and private golf course informing them of the shooting activity, boundaries of the special wildlife management area and when such efforts will occur (December 1 through March 31, 2007). Included in the letter will be a toll-free phone number that residents can call daily to find out which parks will be used. A notice will also be placed in the local newspaper informing town residents of the program, period of shooting activity and the toll-free phone number to call for more information.

Describe the precautions that will be taken to ensure public safety. Such provisions must include the use of local police or another appropriate law enforcement authority to enforce the closure of roads if necessary, and any restrictions regarding the use of public land not normally open to hunting.

Neither the five town parks, nor the golf course will be closed during shooting activity. Notices will be placed at the entrance of each park and the golf course informing residents of the shooting activity and listing the toll-free number to call. On-duty police
officers will have radio contact with XYZ Sharpshooting Company employees while they are operating. No public roads will be closed. XYZ Sharpshooting Company staff members operate from tree stands and shoot in a safe, downward angle.

Document the written consent of each affected landowner for access to that person’s land, if access to private property is necessary to implement the plan.

Attached to this application is written permission from the golf course to use their property for the culling operation.

Describe the proposed disposition of any deer captured or culled as part of the plan. Whenever practicable, ensure donation of venison to the needy in accordance with New Jersey’s venison donation program. Describe how the deer carcasses will be transported to the butcher.

XYZ Sharpshooting Company employees will field dress deer at the road department garage and deliver carcasses to the NJDOH-approved Standard Butcher Company, which participates in New Jersey’s Hunters Helping the Hungry program. Anytown, NJ will pay all butchering costs of the deer that will ultimately be donated to a regional food bank.

What butcher will be used to process the deer culled?

*Standard Butcher Company located in Newtown, NJ.*

Please outline the costs of the previous year’s deer management program, and the number of deer culled.

*Last year XYZ Sharpshooting Company culled 50 deer, at a cost of $300/deer for a total cost of $15,000.*

Describe plans to be implemented to discourage the feeding of deer.

*A township ordinance has been introduced to prohibit feeding deer in Anytown, NJ. The proposed ordinance is attached to this application. An article has also been written and provided to the local newspaper explaining why the ordinance was introduced.*

Describe plans to support traditional hunting where practical.

*An article will be written for the local newspaper explaining why five of the town parks will be open for bow hunting this year. The article will also solicit local hunters to apply for a permit to hunt in the town parks.*
Attach a resolution adopted by the Cooperator’s governing body endorsing the application for a community based deer management plan.

*See attached*

Attach a notarized letter stating that all agents involved in culling deer using firearms have passed the following shooting qualifications. Agents using rifles are required to pass that portion of the New Jersey Division of Criminal Justice, Scoped Rifle Qualifications from 50 and 25 yards which requires shooting two-inch and one and one-half inch targets from a sitting or kneeling position with artificial support. Agents using shotguns with slugs must be able to shoot a three-inch group, twice at 40 yards. Unless otherwise authorized, qualified agents using rifles must shoot deer at no more than 50 yards. Unless otherwise authorized, qualified agents using shotguns must shoot deer at no more than 40 yards.

*See attached*

If the alternate deer control includes the use of silencers or suppressors, the application shall include written authorization from the county prosecutor of the county in which the special deer management area is located.

*n/a*
SAMPLE RESOLUTION

Township of Anytown
Resolution Approving an Application for a
Community Based Deer Management Plan

WHEREAS, the increasing numbers of white-tailed deer living in Anytown have escalated
deer-human conflicts, including vehicle collisions and damage to landscaped plants; and

WHEREAS, the Anytown committee wishes to take prudent steps to minimize the danger
and damage caused by the deer in the township; and

WHEREAS, the township committee has previously been granted Designation as a
Special Deer Management Area and approval of a Community Based Deer Management
Plan; and

WHEREAS, the township committee has determined that continuing measures are
necessary to control the deer problem;

NOW, THEREFORE, BE IT RESOLVED that the Anytown committee hereby authorizes
the submission of an application for Designation of a Special Deer Management Area
and Community Based Deer Management Plan to the State of New Jersey Department of
Environmental Protection, Division of Fish and Wildlife and the New Jersey Fish and
Game Council.

CERTIFICATION

I, John Doe, Clerk of Anytown, in the County of Wherever, do hereby certify that the
foregoing is a true and correct copy of a resolution duly adopted by the township
committee at a regular meeting held on the 9th day of October, 2003.

IN WITNESS THEREOF, I have hereunto set my hand and affixed the seal of Anytown
Township on this 10th day of October, 2011.

John Doe
Township Clerk
Appendix B. Application for a CBDM Permit

Important: Call a Division representative at 609-259-6965 before submitting a CBDM application.

Application for Designation of a Special Deer Management Area

Name the municipality (municipalities), county, airport or county board of agriculture making application.

State the purpose of the proposed deer management plan i.e. reduce deer – vehicle collisions, reduce damage to forest understory or reduce damage to ornamental landscape plants.

If the purpose is to reduce damage to ornamental landscape plants, enumerate the extent of damage to landscape plants in the proposed special deer management area. Be specific. Include an estimate of the number of residents experiencing damage to landscape plants and the monetary loss due to deer depredating on gardens. Include photographs of deer damage, if possible.

If the purpose is to reduce damage to the forest understory, enumerate the damage to forest understory plants.

If the purpose is to reduce deer – vehicle accidents, state the number of vehicle collisions caused by deer in the proposed special deer management area and estimate of costs to motorists caused by deer – vehicle accidents.

If the stated purpose is to reduce deer – vehicle collisions, state the number of miles of road in the deer management area.

If the purpose is to reduce damage to agricultural crops, enumerate the number of farms experiencing damage from deer, and enumerate the extent of damage to crops.

Describe that portion of the Municipality (Municipalities) or Airport proposed for designation as a special deer management area. Attach a map and indicate the size of the area.
**Community Based Deer Management Plan**

Describe the proposed alternative control methods to be used to reduce the number of deer in the special management area. Include detailed information including but not limited to the capture methodology, the type of traps and destination of deer to be removed, or the method of euthanasia; the culling methodology, shooting methodology such as baiting, shooting from elevated platforms or detailed information on other methods to be employed.

On what properties will the alternate control methodology be employed? Who is the property owner of each of these sites? What is the property size of each of the sites employed? Does traditional sport hunting occur on any of the sites? If the property size of a site exceeds 60 acres and traditional hunting does not occur on the site, state the reasons.

On what dates or during what period will the alternate control methodology be employed?

During what hours will the agent operate?

What type of weapon and ammunition will be used?

Will unplugged guns be used?

Will the agent shoot from a motor vehicle?

Will the agent have an uncased gun in the vehicle?

Will the agent shoot across closed roads?

Will the agent carry a loaded firearm in the vehicle for culling purposes?

Will the agent be required to wear hunter orange?

Is there a number of deer culled or trapped and transferred above which will not be exceeded?

To where will trapped deer be transferred?

What is the quantitative estimate of the deer population or the deer population density in the special management area? How was this estimate obtained? What is the intended target population or density?

How will you measure the success of the program?
If the goal is to reduce deer – vehicle collisions, what level of deer – vehicle collisions is an acceptable level?

If the goal is to reduce damage to landscape plants, how often will residents be re-surveyed, and what will be the acceptable level of damage?

If the goal is to minimize damage to the forest understory, how often will forest health be re-evaluated? What is the level of damage that will be considered acceptable?

If the goal is to minimize crop damage, what extent of crop damage is tolerable, and how will that level be measured?

Describe the extent to which traditional hunting is currently being used to control deer numbers in the special management area, or why traditional hunting is not applicable.

Does the municipality have any ordinances that prohibit the discharge of firearms or other projectiles?

Identify any organization and all individuals that will participate in the implementation of the alternative control methods. Include appropriate credentials and references, pertinent experience, and experience utilizing the methods described in this application to control deer.

List the names of the individuals that will participate in the alternative control methods. List their current firearm license number, the valid rifle permit number and the New Jersey Firearms Purchaser Identification number, or provide proof that the person(s) is in compliance with the applicable laws of the person’s state of residence.

Describe the methods that will be used to notify the public, including residents located within and adjacent to the special deer management area, of the alternative control methods and the specific places when and where they will be used. Such methods shall include written notice to adjacent landowners when the control method includes culling deer.

Describe the precautions that will be taken to ensure the safety of the public. Such provisions shall include the use of local police or appropriate law enforcement authority to enforce the closure of roads if necessary, and the restriction of the normal use of public land not normally open to hunting.

Document the written consent of each affected landowner for access to that person’s land, if access to private property is necessary to implement the plan.

Describe the proposed disposition of any deer captured or culled as part of the plan. Whenever practicable, ensure donation of venison to the needy in accordance with New
Jersey’s venison donation program. Describe the means of transportation of the deer carcasses to the butcher.

What butcher will be used to process the deer culled?

Please outline the costs of the previous year’s deer management program, and the number of deer culled.

Describe plans to be implemented to discourage the feeding of deer

Describe plans to support traditional hunting where practical

Is there currently a township ordinance that prohibits the discharge of firearms and/or bows? Please describe how that ordinance will be modified to allow for a deer culling program and attach a copy of the ordinance

Attach a resolution adopted by the Cooperator’s governing body endorsing the application for a community based deer management plan.

Attach a notarized letter stating that all agents involved in culling deer using firearms have passed the following shooting qualifications. Agents using rifles are required to pass that portion of the New Jersey Division of Criminal Justice, Scoped Rifle Qualifications from 50 and 25 yards which requires shooting two-inch and one and one-half inch targets from a sitting or kneeling position with artificial support. Agents using shotguns with slugs must be able to shoot a three-inch group, twice at 40 yards. Unless otherwise authorized, qualified agents using rifles must shoot deer at no more than 50 yards. Unless otherwise authorized, qualified agents using shotguns must shoot deer at no more than 40 yards.

If the alternate deer control includes the use of silencers or suppressors, the application shall include written authorization from the county prosecutor of the county in which the special deer management area is located.
Appendix C.

Public Law 2000, Chapter 46


C.23:4-42.3 Crop and property damage by deer; designation of deer management areas

a. Whenever a county board of agriculture determines that a farm or farms located within the county has incurred significant crop damage caused by deer, based on evidence submitted by the county board of agriculture or the Center for Wildlife Damage Control in the New Jersey Agriculture Experiment Station at Rutgers, The State University, the county board of agriculture may apply to the Division of Fish and Wildlife for designation of a special deer management area. The application shall describe the nature and extent of crop damage incurred, and delineate the area proposed for designation as a special deer management area. If the division determines that the significant crop damage has been caused by an overpopulation of deer in the area described in the application, it shall designate it as a special deer management area. In designating a special deer management area, the division may, after consultation with the county board of agriculture, modify the area proposed for designation in an application. The county board of agriculture or the division may request the Center for Wildlife Damage Control to coordinate and facilitate the application and designation of a special deer management area pursuant to this subsection.

b. Whenever a municipality determines that the deer population has caused significant damage to property, not including damage to agricultural property, in the municipality or has caused a significant number of vehicle collisions therein, the municipality may apply to the Division of Fish and Wildlife for designation of a special deer management area. Two or more municipalities may submit a single application for the designation of an area that includes more than one municipality. The application shall describe the nature and extent of property damage or vehicle collisions caused by deer, and delineate the area proposed for designation as a special deer management area. If the division determines that the significant damage to property or the significant vehicle collisions have been caused by an overpopulation of deer in the area described in the application, it shall designate it as a special deer management area. In designating a special deer management area, the division may, after consultation with the municipality, modify the area proposed for designation in an application.

c. Whenever the owner or operator of an airport determines that the existing population of deer within its boundaries and immediately adjacent property constitutes a hazard to the safe operation of aircraft, the owner or operator of the airport may apply to
the Division of Fish and Wildlife for designation of a special deer management area. The application shall describe the nature and extent of the hazard to safe operations of aircraft, and delineate the area proposed for designation as a special deer management area. If the division determines that there is a hazard to the safe operation of aircraft at the airport due to deer in the area described in the application, it shall designate it as a special deer management area. In designating a special deer management area, the division may, after consultation with the owner or operator of the airport, modify the area proposed for designation in an application.

d. Whenever a county governing body determines that the deer population has caused significant damage to property, not including damage to agricultural property, in the county or has caused a significant number of vehicle collisions therein, the county governing body may apply to the Division of Fish and Wildlife for designation of a special deer management area. The application shall describe the nature and extent of property damage or vehicle collisions caused by deer, and delineate the lands owned by the county proposed for designation as a special deer management area. If the division determines that the significant damage to property or a significant number of vehicle collisions has been caused by an overpopulation of deer in the area described in the application, it shall designate it as a special deer management area. In designating a special deer management area, the division may, after consultation with the county governing body, modify the area proposed for designation in an application.

C.23:4-42.4 Community based deer management plans; review

a. Upon submission of an application pursuant to section 1 of P.L. 2000, c. 46 (C.23:4-42.3), or at any time thereafter, a county board of agriculture, municipal governing body, owner or operator of an airport or county governing body may submit to the division for its approval, a community based deer management plan proposing alternative control methods to reduce the number of deer in an area designated as a special deer management area pursuant to section 1 of P.L. 2000, c. 46. A county board of agriculture, municipal governing body, owner or operator of an airport or county governing body may submit a community based deer management plan concurrently with an application to the division for designation of a special deer management area.

Two or more municipalities may submit a single community based deer management plan for a special deer management area that covers more than one municipality.

The county board of agriculture or the division may request the Center for Wildlife Damage Control in the New Jersey Agricultural Experiment Station at Rutgers, The State University, to coordinate and facilitate the development of a community based deer management plan.

b. A community based deer management plan shall:
(1) delineate the boundaries of the special deer management area;

(2) describe the proposed alternative control methods to reduce the number of deer in the special deer management area, which may include the methods authorized pursuant to section 3 of P.L. 2000, c. 46 (C.23:4-42.5);

(3) identify any organization that will participate in the implementation of the alternative control methods proposed in the plan, and describe its qualifications;

(4) describe the methods that will be used to notify the public, including residents located within and adjacent to the special deer management area, of the alternative control methods proposed in the plan and the specific times and the specific places when and where they will be used;

(5) describe the precautions that will be taken to ensure the safety of the public;

(6) document the written consent of each affected landowner for access to that person's land if access to private property is necessary to implement the plan;

(7) attach a resolution, adopted by the governing body of the municipality in which the special deer management area is located, which endorses the community based deer management plan, except this requirement shall not apply to a community based deer management plan submitted by a county governing body for lands owned by the county; and

(8) include such additional information as the division may determine to be necessary to properly review a community based deer management plan.

c. The division shall promptly review a community based deer management plan submitted pursuant to this act, and either approve the plan, approve the plan subject to modification, or disapprove the plan and return it to the applicant setting forth in writing the reasons for its decision. If the division approves a community based deer management plan, the division shall submit it to the Fish and Game Council for its review and action pursuant to section 3 of P.L. 2000, c. 46 (C.23:4-42.5).

d. Whenever practicable, a community based deer management plan shall provide for the donation of deer in accordance with the venison donation program established pursuant to section 1 of P.L.1997, c.268 (C.23:4-42.7).

e. For the purposes of P.L. 2000, c. 46 (C.23:4-42.3 et seq.), "alternative control method" or "alternative deer control method" means any technique, other than traditional hunting, employed to reduce a deer population, which may include, but need not be limited to, controlled hunting, shooting by an authorized agent, capture and euthanization, capture and removal, and fertility control.
C.23:4-42.5 Exemptions or variations

a. The Fish and Game Council may authorize an exemption or variation from the following laws, rules or regulations to the extent necessary and appropriate to implement the alternative control methods set forth in an approved community based deer management plan:

(1) any provision of the State Fish and Game Code;

(2) any rule or regulation adopted by the council;

(3) the following provisions of Title 23 of the Revised Statutes: (a) R.S. 23:4-13 – Regulations concerning guns; (b) subsections a., b. and c. of R.S.23:4-16 – Hunting with a motor vehicle or lights, from a road; (c) P.L.1939, c.172 (C.23:4-24.1) – Carrying loaded firearms in vehicles; (d) section 11 of P.L.1990, c.29 (C.23:4-24.1a) – Transporting firearms in motor vehicle; (e) R.S.23:4-44 – Weapons authorized for hunting deer; (f) R.S.23:4-45 – Hunting by daylight and at designated time only and illuminating devices; and (g) R.S.23:4-48 - Penalties; and

(4) the provisions of subsection c. of N.J.S. 2C:39-3- Use of silencers.

b. The council shall authorize an exemption or variation from one or more of the laws, rules or regulations set forth in subsection a. of this section only upon a determination that the approved community based deer management plan adequately provides for the safety of the public. The council may condition the exemption or variation from one or more of the laws, rules or regulations set forth in subsection a. of this section on the implementation of one or more specific measures it determines to be reasonably necessary to ensure public safety, including but not limited to the on-site presence of law enforcement officers or on-site inspection by division personnel.

c. The council may authorize an exemption or variation from subsection c. of N.J.S. 2C:39-3 only upon the prior written approval of the county prosecutor of the county in which the special deer management area is located. The council may authorize an exemption or variation from R.S.23:4-13 and R.S.23:4-44 only upon the receipt of documentation that each individual authorized to administer the alternate control method possesses a valid firearm hunting license, a valid rifle permit issued by the division, and a valid New Jersey firearm purchaser identification card or proof that the person is in compliance with the applicable laws of the person's state of residence. The council may authorize an exemption or variation from subsection c. of R.S.23:4-16 only if, for public safety reasons, it is conditioned upon the road or highway being properly closed by law enforcement officers for the time authorized in the special deer management permit issued pursuant to section 4 of this act.
C.23:4-42.6 Special deer management permit

a. The division shall issue a special deer management permit to any applicant authorized to implement an alternative control method set forth in an approved community based deer management plan. The permit shall identify the time, place and alternative control method authorized by the division, the name of each individual authorized to administer the alternate control method, any exemption or variance from a law, rule or regulation authorized by the council pursuant to section 3 of this act, and any special conditions established by the council.

b. No person shall implement an alternative control method except when in possession of a special deer management permit issued by the division pursuant to this act. The permittee shall provide a copy of the permit issued by the division to each individual named in the permit who is authorized to administer the alternate control method.


a. Destructive devices. Any person who knowingly has in his possession any destructive device is guilty of a crime of the third degree.

b. Sawed-off shotguns. Any person who knowingly has in his possession any sawed-off shotgun is guilty of a crime of the third degree.

c. Silencers. Any person who knowingly has in his possession any firearm silencer is guilty of a crime of the fourth degree.

d. Defaced firearms. Any person who knowingly has in his possession any firearm which has been defaced, except an antique firearm or an antique handgun, is guilty of a crime of the fourth degree.

e. Certain weapons. Any person who knowingly has in his possession any gravity knife, switchblade knife, dagger, dirk, stiletto, billy, blackjack, metal knuckle, sandclub, slingshot, cestus or similar leather band studded with metal filings or razor blades imbedded in wood, ballistic knife, without any explainable lawful purpose, is guilty of a crime of the fourth degree.

f. Dum-dum or body armor penetrating bullets. (1) Any person, other than a law enforcement officer or persons engaged in activities pursuant to subsection f. of N.J.S.2C:39-6, who knowingly has in his possession any hollow nose or dum-dum bullet, or (2) any person, other than a collector of firearms or ammunition as curios or relics as defined in Title 18, United States Code, section 921 (a) (13) and has in his possession a valid Collector of Curios and Relics License issued by the Bureau of Alcohol, Tobacco
and Firearms, who knowingly has in his possession any body armor breaching or penetrating ammunition, which means: (a) ammunition primarily designed for use in a handgun, and (b) which is comprised of a bullet whose core or jacket, if the jacket is thicker than .025 of an inch, is made of tungsten carbide, or hard bronze, or other material which is harder than a rating of 72 or greater on the Rockwell B. Hardness Scale, and (c) is therefore capable of breaching or penetrating body armor, is guilty of a crime of the fourth degree. For purposes of this section, a collector may possess not more than three examples of each distinctive variation of the ammunition described above. A distinctive variation includes a different head stamp, composition, design, or color.

(1) Nothing in subsection a., b., c., d., e., f., j. or k. of this section shall apply to any member of the Armed Forces of the United States or the National Guard, or except as otherwise provided, to any law enforcement officer while actually on duty or traveling to or from an authorized place of duty, provided that his possession of the prohibited weapon or device has been duly authorized under the applicable laws, regulations or military or law enforcement orders. Nothing in subsection h. of this section shall apply to any law enforcement officer who is exempted from the provisions of that subsection by the Attorney General. Nothing in this section shall apply to the possession of any weapon or device by a law enforcement officer who has confiscated, seized or otherwise taken possession of said weapon or device as evidence of the commission of a crime or because he believed it to be possessed illegally by the person from whom it was taken, provided that said law enforcement officer promptly notifies his superiors of his possession of such prohibited weapon or device.

(2) Nothing in subsection f. (1) shall be construed to prevent a person from keeping such ammunition at his dwelling, premises or other land owned or possessed by him, or from carrying such ammunition from the place of purchase to said dwelling or land, nor shall subsection f. (1) be construed to prevent any licensed retail or wholesale firearms dealer from possessing such ammunition at its licensed premises, provided that the seller of any such ammunition shall maintain a record of the name, age and place of residence of any purchaser who is not a licensed dealer, together with the date of sale and quantity of ammunition sold.

(3) Nothing in paragraph (2) of subsection f. or in subsection j. shall be construed to prevent any licensed retail or wholesale firearms dealer from possessing that ammunition or large capacity ammunition magazine at its licensed premises for sale or disposition to another licensed dealer, the Armed Forces of the United States or the National Guard, or to a law enforcement agency, provided that the seller maintains a record of any sale or disposition to a law enforcement agency. The record shall include the name of the purchasing agency, together with written authorization of the chief of police or highest ranking official of the agency, the name and rank of the purchasing law enforcement officer, if applicable, and the date, time and amount of ammunition sold or otherwise disposed. A copy of this record shall be forwarded by the seller to the Superintendent of the Division of State Police within 48 hours of the sale or disposition.
(4) Nothing in subsection a. of this section shall be construed to apply to antique cannons as exempted in subsection d. of N.J.S.2C:39-6.

(5) Nothing in subsection c. of this section shall be construed to apply to any person who is specifically identified in a special deer management permit issued by the Division of Fish and Wildlife to utilize a firearm silencer as part of an alternative deer control method implemented in accordance with a special deer management permit issued pursuant to section 4 of P.L.2000, c.46 (C.23:4-42.6), while the person is in the actual performance of the permitted alternative deer control method and while going to and from the place where the permitted alternative deer control method is being utilized. This exception shall not, however, otherwise apply to any person to authorize the purchase or possession of a firearm silencer.

h. Stun guns. Any person who knowingly has in his possession any stun gun is guilty of a crime of the fourth degree.

i. Nothing in subsection e. of this section shall be construed to prevent any guard in the employ of a private security company, who is licensed to carry a firearm, from the possession of a nightstick when in the actual performance of his official duties, provided that he has satisfactorily completed a training course approved by the Police Training Commission in the use of a nightstick.

j. Any person who knowingly has in his possession a large capacity ammunition magazine is guilty of a crime of the fourth degree unless the person has registered an assault firearm pursuant to section 11 of P.L.1990, c.32 (C.2C:58-12) and the magazine is maintained and used in connection with participation in competitive shooting matches sanctioned by the Director of Civilian Marksmanship of the United States Department of the Army.

k. Handcuffs. Any person who knowingly has in his possession handcuffs as defined in P.L.1991, c.437 (C.2C:39-9.2), under circumstances not manifestly appropriate for such lawful uses as handcuffs may have, is guilty of a disorderly persons offense. A law enforcement officer shall confiscate handcuffs possessed in violation of the law.

C.23:4-42.7 Venison donation program established

a. The Commissioner of Health and Senior Services, in consultation with the Commissioner of Environmental Protection, the Secretary of Agriculture and the chairman of the Fish and Game Council, shall establish a venison donation program. The program shall permit, under controlled conditions, the slaughter, processing, distribution, and serving of venison donated by recreational hunters to nonprofit charitable organizations, in accordance with guidelines established by the Commissioner of Health and Senior Services and the State Fish and Game Code established pursuant to section 32
of P.L.1948, c.448 (C.13:1B-30), in order to protect the health and safety of those persons consuming the donated venison.

b. The Commissioner of Health and Senior Services, in consultation with the Commissioner of Environmental Protection, the Secretary of Agriculture, the chairman of the Fish and Game Council, and the United Bow Hunters of New Jersey, shall study the feasibility of expanding the program to include venison obtained from hunters licensed by the Department of Environmental Protection to participate in crop depredation control activities or obtained as a result of the implementation of other methods to manage and control deer populations, including, but not limited to, those established by sections 1 through 4 of P.L.2000, c.46 (C.23:4-42.3 through C.23:4-42.6), and shall expand the program accordingly if the commissioner deems it appropriate.

7. Section 5 of P.L.1997, c.268 is amended to read as follows:
This act shall take effect immediately.

8. Section 2 of P.L.1997, c.268 is hereby repealed.

9. There is appropriated from the General Fund to the Department of Agriculture the sum of $25,000 for the purpose of providing grants to county boards of agriculture for expenses resulting from the implementation of community based deer management plans pursuant to the provisions of P.L.2000, c.46 (C.23:4-42.3 et al.).

10. This act shall take effect immediately.

Appendix D.

N.J.A.C. 7:25-5.32 Special Wildlife Management Permits

In order to implement the above CBDM permit statutes, the Fish and Game Council amended the following section of the Game Code to clarify the CBDM program, application criteria and permit issuing process.

Special Wildlife Management Permits

(a) Special permits, known as special wildlife management permits, may be issued by the Director, in his or her discretion for the taking of any game species by any lawful manner and means and at any time subject to the requirements of this section. Such permits shall be valid for the times, conditions and areas or installations indicated thereon and need not conform to the provisions applicable to general permits.

(b) In granting this special wildlife management permit the Director shall consider any data available to him including, but not limited to, damage being done to crops or property, the biological condition of the animal or any other special management problem.

(c) Issuance of additional shotgun and muzzleloader season permits for specific farms within over-subscribed deer management zones shall be based on the following criteria:

1. The farm must include an area of 10 acres or more, produce a gross income in excess of $500, be assessed as farm land and have a documented history of deer damage;

2. The permit shall only be valid for the specific farm applied for and shall not be transferable; and

3. Site specific permits shall be issued for use only on farms with a history of deer damage. Site specific shotgun permits will only be issued if the regular permits are sold out. Site specific muzzleloader permits will only be issued if the regular quota of muzzleloader permits is sold out. There will be no limit on the number of site specific permits that can be issued. The permits shall be for antlerless deer only.

(d) Subject to the requirements of the subsection, the Director may, in his or her discretion, designate special deer management areas and issue Special Deer Management Permits to administer alternative deer control methods as part of an approved community based deer management plan.

1. As used in this section, except as otherwise noted:
“Agent” means a volunteer(s) or paid individual(s) listed by the cooperator on their Special Deer Management Permit to employ alternative deer control methods. Agents are restricted to weapons and/or ammunition as specified in the Game Code at N.J.A.C. 7.25-5.23 and 5.24.

“Alternative deer control methods” means those techniques other than traditional hunting employed to reduce deer populations, which may include, but not be limited to, shooting by agents, capture and euthanize, capture and remove, use of materials and methods to limit reproduction and controlled hunting.

“Biological carrying capacity” means the maximum number of deer that a given land area can support in good health over an extended period of time.

“Community based deer management plan” is a plan submitted by a cooperator in accordance with N.J.S.A. 23:4-42.4 and this section involving the use of alternate control methods to reduce the number of deer in an area designated as a special deer management area.

“Controlled hunting” means an alternative deer control method involving the capturing, taking or killing of deer during a modified season which is usually more restrictive than traditional hunting in terms of hunter density, methods of take, size of huntable area, etc. than deer hunting elsewhere in New Jersey as approved by the Council.

“Cooperator” means the local authority(ies), including airports, counties, county boards of agriculture, municipal governing bodies, or a combination thereof, and/or instrumentalities thereof that have secured the approval of their applicable governing body(ies), cooperating in the administration of a community based deer management plan.

“Coordinator” means the Division of Fish and Wildlife employee(s) designated by the Director as the Division’s official representative who, with the local authority(ies), will develop and monitor the administration of the community based deer management plan.

“Council” means the Fish and Game Council, which is an 11-member body that has legislative authority to determine seasons, bag limits, and manners and means of take for game species, and establishes policy regarding these matters.

“Cultural carrying capacity” means the number of deer that can co-exist compatibly with the local human population in a given area.

“Deer” means white-tailed deer (Odocoileus virginianus).

“Director” means the Director of the Division of Fish and Wildlife.
“Division” means the New Jersey Department of Environmental Protection, Division of Fish and Wildlife.

“Huntable” means those sites on which, due to their size, location and available habitat, traditional or controlled deer hunting seasons can be conducted.

“Special Deer Management Area” is an area designated by the Division as an area having excessive agricultural or property damage caused by an overabundance of white-tailed deer or an area within and adjacent to an airport where deer constitute a hazard to the safe operation of aircraft.

“Special Deer Management Permit” is a permit issued to the cooperator by the Division upon approval of the community based deer management plan by the Division and the Council authorizing the reduction of a deer population within a designated special deer management area, subject to conditions set by the Division and Council.

“Traditional hunting” means the pursuit of deer by licensed hunters during annual prescribed open seasons as approved by the Council and provided by the Game Code (firearm and bow) without additional restrictions.

2. A cooperator experiencing significant agricultural or property damage caused by deer or a significant number of deer/vehicle collisions caused by deer or a hazard to the safe operation of aircraft caused by deer may request assistance from the Division in order to develop an application requesting designation of a special deer management area(s) for lands under their jurisdiction. Such applications shall contain quantitative description of the significant damage caused by deer to agricultural crops or property, or the number of deer/vehicle collisions with the proposed special deer management area; and a map and description of the proposed deer management area, including the approximate acreage of the proposed deer management area. Whenever possible, the boundaries of the area shall coincide with readily recognizable boundaries such as roads, natural features such as streams or already established legal boundaries such as well posted property or administrative boundaries.

i. A cooperator may submit an application for designation as a special deer management area concurrently with an application for approval of a community based deer management plan. Two or more municipalities may submit a single application for a special deer management area that covers more than one municipality.

ii. The Division or the county board of agriculture may request the Center for Wildlife Damage Control of Rutgers University to coordinate and facilitate the development of a special deer management area and a community based deer management plan for an agricultural area.

iii. After consultation with the cooperator, the Division and Council may modify the area proposed for designation in an application.
3. Following the designation of a special deer management area or concurrent with the application for such an area, the cooperator, with the Division coordinator and, if applicable, the Center for Wildlife Damage, may submit for approval by the Division and Council, a community based deer management plan. Such plan shall be submitted to the Division 120 days prior to the proposed date of implementation and shall:

i. Include a quantitative estimate of the current deer population or deer population density and the intended target population or density necessary to reduce the damage caused by deer;

ii. Describe the proposed alternative control methods to reduce the number of deer in the special deer management area including the extent to which traditional hunting is or is not applicable. The description of the proposed alternative method shall include detailed information, including but not limited to, the capture methodology, the type of traps and destination of deer to be removed or the method of euthanasia; the culling methodology including type of weapons, type of ammunition, hours of culling activities, shooting methodology such as baiting, shooting from platforms or detailed information on other methods to be employed. Any proposal for reduction by limiting reproduction shall adhere to the provisions of N.J.A.C. 7:25-5.37, in addition to those applicable provisions of this section N.J.A.C. 5:25-5.32;

iii. Identify any organization that shall participate in the implementation of the alternative control methods proposed in the plan, and describe their qualifications. Cooperators shall include documentation denoting that volunteers or employees of the cooperator, or their agents, which will cull deer using firearms, possess a valid firearm hunting license, a valid rifle permit if required, and a valid New Jersey Firearms Purchaser Identification Card or proof that the person is in compliance with the applicable laws of the person’s state of residence. Cooperators shall provide a notarized letter that all agents involved in culling deer using firearms have passed the following shooting qualifications. Agents using rifles are required to pass that portion of the New Jersey Division of Criminal Justice, Scoped Rifle Qualifications from 50 and 25 yards which requires shooting two-inch and 1 ½-inch targets from a sitting or kneeling position with artificial support. Agents using shotguns with slugs must be able to shoot a three-inch group, twice at 40 yards. Unless otherwise authorized, qualified agents using rifles must shoot deer at no more than 50 yards. Unless otherwise authorized, qualified agents using shotguns must shoot deer at no more than 40 yards.

iv. Describe the methods and timing thereof that shall be used to notify the public, including residents located within and adjacent to the special deer management area, of the alternative control methods proposed in the plan and the specific times and places when and where they will be used. Such methods shall at a minimum include written notice to adjacent landowners when the control method includes culling deer;
v. Describe the precautions that will be taken to ensure the safety of the public. Such provisions shall at a minimum include the use of local police or appropriate law enforcement authority to enforce the closure of roads if necessary, the restriction of the normal use of public land not normally open to hunting, when deemed necessary by the Division or Council, or if required by the county prosecutor as a condition for the use of silencers or suppressors;

vi. Document the written consent of each affected landowner for access to that person’s land if access to private property is necessary to implement the plan;

vii. Attach a resolution adopted by the Cooperator’s governing body endorsing the application for approval of a community based deer management plan and special management permit. If the proposed alternate control methods require exemptions from restrictions concerning traditional weapons and/or ammunition used for deer hunting, exemptions regarding the hunting by the aid of lights and/or motor vehicles, the transportation of weapons within motor vehicles and/or the normal hours authorized for hunting deer, a resolution endorsing the plan adopted by the governing body of the municipality(ies) in which the special deer management area is located shall also be included;

viii. Include a description of a plan to implement the following measures: discouragement of deer feeding, support of traditional hunting where practicable, reasonable efforts to utilize deer killed by non-traditional means, including a plan by the cooperator to ensure donation of venison to the needy;

ix. If the alternate deer control includes the use of silencers or suppressors, include prior written authorization from the county prosecutor of the county in which the special deer management area is located; and

x. Include such additional information as the Division or the Council may determine to be necessary to properly review a community based deer management plan.

4. All costs associated with the application of alternative deer control options, including, but not limited to, those associated with the processing of venison, shall be borne by the Cooperator.

5. Fertility control methodologies, including contraception, contragestation and sterilization materials and procedures, may be used by the cooperator and/or its agents who have been issued the Special Permit to Inhibit Wildlife Reproduction approved by the Council and issued by the Division at N.J.A.C. 7:25-5.37. Approval for such efforts shall be restricted to bona fide researchers, following review and approval of a study plan by the Council and the Department of Animal Science, Cook College-Rutgers University. Any experimental use of chemicals and vaccines to inhibit wildlife reproduction on free-ranging deer populations shall be restricted to those individuals granted an Investigational Exemption for a New Animal Drug (INAD) by the U.S. Food and Drug Administration and the Special Permit to Inhibit Wildlife Reproduction, for use of those specific substances at specified locations.
6. Upon approval of the special deer management area and community based deer management plan by the Division and the Council, the Division shall issue a special deer management permit authorizing the cooperator to implement the alternate control method(s). The permit shall incorporate the community based deer management plan by reference and shall identify duration of the permit, the time, place and alternate control method authorized by the Division and Council, the name of each individual authorized to administer the alternate control method, any exemption or variance from a law, rule or regulation authorized by the Council and any special conditions established by the Council.

i. Individuals administering the alternative control method must not have been convicted of any violation of the fish and game laws of this state or any other state, or of any violation of any provision of the New Jersey Fish or Game Codes within five years of the issuance of the special deer management permit; or, of violation of any law included in N.J.S.A. 23:4-16.d, 23:7-1, 23:7-3, 23:9A-1 or 23:9A-2, or N.J.S.A. 23:4-42, 23:4-43, 23:4-44, 23:4-45, 23:4-46, 23:4-47, 23:4-47.1 or 23:4-48, or regulations authorized by these statutes within ten years of issuance of the special deer management permit. Any individual who has been convicted of said laws or regulations shall be ineligible to administer alternate control methods as provided for in the deer management permit.

7. No person shall implement an alternate control method except when in possession of a special deer management permit issued by the Division. The permittee shall provide a copy of the permit issued by the Division to that individual named in the permit that is authorized to administer the alternate control method.

8. During the implementation of the alternate control method, the Division may monitor operations in order to ensure compliance, ensure public safety, ensure the proper treatment of any animals captured, ensure proper disposition of deer remains, carcasses and/or venison. Unless otherwise authorized on the permit, antlers and other parts not disposed of are the property of the State.

9. Upon expiration of a special deer management permit, the Cooperator shall file a report, which shall include information on the costs, and efficacy of the alternate control method(s) employed to reduce the deer population and reduce deer damage.

10. Failure to comply with any of the provisions/requirements as contained in the special deer management permit and any applicable law may be cause for revocation of the permit or denial of subsequent permits.

(e) Authority: The authority for the adoption of the foregoing section is found in N.J.S.A. 13:1B-27 et seq. 13:1B-30, 23:4-1 et seq., 23:4-42, 23:4-43, 23:4-44, 23:4-45, 23:4-47, 23:4-52, 23:4-63.3 and other applicable statutes.
Appendix E.

Special Permit to Inhibit Wildlife Reproduction (N.J.A.C. 7:25-5.37)

(a) No person shall administer or otherwise employ the use of fertility control materials and/or methodologies including, but not limited to, those which result in contraception, contragestation and/or sterilization to any species of free ranging wildlife without first procuring a permit approved by the Council and issued by the Division under this section. No person shall employ any physical alteration or device that would alter the reproduction potential of any free-ranging wildlife species without first procuring a permit as required. The possession of such unauthorized materials or devices in the field shall be considered the attempt to take wildlife contrary to the provisions of the code. Prior to submission of an application, applicants must first obtain any necessary Federal permits. Each permit applicant must provide a written proposal describing the fertility control procedure, the credentials of the person(s) who will administer the contraceptive procedure, the purpose or intent of the procedure and an assessment of environmental impacts. The Division in cooperation with the Department of Animal Science, Cook College-Rutgers University and other scientists who may be selected by the Division will review each application and determine whether or not a permit is granted based on the overall justification and need for conducting such procedures, the qualifications of the person(s) administering the procedure and the anticipated environmental impacts affecting both wildlife and humans and the probability of success in controlling free-ranging wildlife populations. The permit shall identify the time, place and methodology to be utilized and any special conditions established by the Council.
Appendix F.

Fish and Game Council

The Fish and Game Council has the regulatory powers to protect and develop the fish and wildlife resources of New Jersey. It is comprised of eleven volunteer members appointed by the Governor. Three members represent the farming community and are appointed by the New Jersey Board of Agriculture. Six members represent the sporting community and are appointed by the New Jersey Federation of Sportsmen’s Clubs. Also serving are the Chairman of the New Jersey Endangered and Nongame Species Advisory Committee and one public member knowledgeable in land use management and soil conservation practices.