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## EXECUTIVE SUMMARY

### AN OVERVIEW OF WILDLIFE DAMAGE PROGRAMS IN THE UNITED STATES, WITH SPECIFIC RECOMMENDATIONS FOR MINNESOTA

by

Minnesota Department of Natural Resources  
in cooperation with  
Minnesota Department of Agriculture

This report summarizes state wildlife damage control programs and presents recommendations for wildlife damage prevention and control in Minnesota as required by Laws of MN 1991, Ch. 254, Art. 1, Subd. 7.

The DNR conducted a mail survey of all 50 states (43 responding) to obtain basic data and characterize wildlife damage control programs in other states. Nonresponding states were contacted by phone to obtain information on their deer damage management programs.

#### I. Recommendations

Although Minnesota already has a large and active animal damage control program, high populations of some species and increasing encroachment of humans on wildlife habitat areas have resulted in more human-wildlife conflicts. An expanded animal damage program for Minnesota is recommended with the following components:

1. conduct a survey coordinated by the Minnesota Animal Damage Control Council to determine research, abatement, and education/training needs and to seek additional funding support, where appropriate;
2. additional management authorities to provide more flexibility in hunting and trapping seasons;
3. establishment of animal damage specialists to improve expertise and delivery of wildlife damage control assistance;
4. reallocation of staff to establish an urban wildlife area manager whose primary duties would be to address animal damage problems and other wildlife management issues unique to the metropolitan area;
5. production of additional brochures, technical manuals, videos, and workshops or demonstrations for property owners;

6. purchase of supplies and materials for short-term emergency wildlife damage abatement assistance;
7. establishment of additional food or lure crops on public lands to divert wildlife from feeding on private lands;
8. providing additional census and surveys to more closely monitor populations and damage problems; and
9. continued development and increased use of information systems to improve habitat and population management programs.

## II. Minnesota Overview

1. The results of this survey indicated that Minnesota has one of the larger and more active state animal damage management programs in the country. Total state expenditures of \$561,000 ranked Minnesota in the top third among states responding. A total of 95% of these funds come from the State Game and Fish Fund and 5% from the State General Fund. Other state programs were funded by 78% game and fish and 22% general funds.
2. Minnesota's program focuses on long-term abatement of damage problems through use of population management, habitat management, technical assistance, and education and training. Such measures provide for cost-effective and long-term reduction or elimination of damage problems.
3. Minnesota programs have greatly expanded in recent years to reduce wildlife damage by:
  - a) use of hunting and trapping programs and expanded use of special hunts and subareas to reduce some wildlife populations (deer and geese);
  - b) increasing the quality and availability of technical assistance to landowners;
  - c) purchase of emergency abatement materials (temporary fences, scare devices, repellents) for loan to landowners experiencing damage;
  - d) development of an animal damage policy, nuisance bear directive, deer shooting permit guidelines, and other measures to ensure consistent and timely responses to animal damage complaints;
  - e) development of improved animal damage monitoring programs and wildlife habitat and population modeling processes; and
  - f) improved communication with individuals and groups experiencing wildlife damage problems.

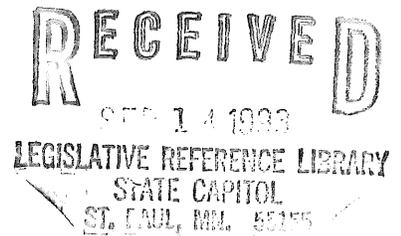
### III. Other States

1. Most other states had antlerless deer hunting programs using deer management units and allocation of permits. Approximately one-third of the states conducted special hunting seasons and two states (Minnesota and Michigan) were experimenting with efforts to reduce deer densities in localized areas.
2. All but four states provided technical assistance to landowners, but only three states had wildlife damage management field specialists who deal directly with landowners on damage problems. Most states (80%) had shooting permit programs for landowners.
3. Seven other states reported programs for compensating landowners for damage caused by wildlife (in Minnesota, compensation is provided only for timber wolf and elk damage). Compensation programs are characterized by high costs, such as the \$1.1 million annually in Wisconsin, with increasing demand. They can also serve as dis-incentives for landowners to implement long-term abatement practices or for deer hunters to support restrictive population management.
4. Twenty-six states provided damage control materials to landowners, but only six provided cost-share assistance for deer damage control. Program costs are high in some states, including Oregon (\$1.2 million annually) and Arizona (\$1 million annually). Most of these abatement methods are cost-effective investments even without government subsidies, and many landowners in Minnesota have successfully implemented such practices in recent years.
5. In many states, landowners are provided benefits such as free or reduced-cost licenses or preference for special permits. Generally, these programs are ineffective in reducing damage, and are not recommended unless they are designed to ensure additional harvest pressure on animals causing damage.

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**Introduction**

This report summarizes state wildlife agency damage control programs and presents recommendations for wildlife damage prevention and control in Minnesota. It has been prepared in accordance with legislation passed in 1991 directing the Commissioner of Natural Resources, in cooperation with the Commissioner of Agriculture, to study and make recommendations to the legislature for a program for providing assistance to farmers for crop damage caused by wild animals (Laws of MN 1991, Ch. 254, Art. 1, Subd. 7). For purposes of this report, damage to aquaculture was not included. Also, birds other than waterfowl were not investigated.

This report presents information on state wildlife damage control programs in other states for a variety of species or groups of species that most commonly cause damage or nuisance complaints. It also summarizes current programs in Minnesota and provides a comparison with those of the other states. No formal survey has been made in Minnesota to determine the extent of damage incurred by Minnesota's various publics, but information has been compiled from DNR reports and records. The report also presents a summary of findings and includes recommendations for providing assistance to farmers for crop damage caused by wild animals in Minnesota, as required in the 1991 law.

**Methods**

To determine wildlife damage control programs in other states, a questionnaire (Appendix A) was mailed to all 50 state wildlife agencies. The questionnaire included an assessment of the most important wildlife damage problems, agency responsibilities, sources of funds and costs for programs, and types of damage assistance offered. General information was collected from each state for the following species or groups of species: beaver, waterfowl, white-tailed deer, other ungulates, bears, and predators. A total of 43 of the 50 states (86%) returned written questionnaires. In addition, because deer depredation was the focus of much recent discussion involving agricultural crop damage, all nonresponding states were contacted by telephone to obtain a more detailed response on their deer damage programs. A tabular summary of all survey responses is included (Appendix A).

## OVERVIEW OF MINNESOTA PROGRAMS AND COMPARISON TO OTHER STATES

### GENERAL WILDLIFE DAMAGE PROGRAMS

This section summarizes general programs, problem species, and budgets for animal damage control in Minnesota and in other states. Species-specific summaries are provided following this general section (for a complete tabular summary of all questionnaire responses, see Appendix A).

#### Primary Problem Species

In Minnesota and other states, the primary species causing economic damage were, in order of priority:

<u>Minnesota</u>	<u>Other States</u>
1) white-tailed deer	1) white-tailed deer
2) beaver	2) beaver
3) Canada geese	3) raccoon
4) black bear	4) geese
5) raccoon	5) black bear

In terms of the numbers of damage or nuisance complaints received, the order of priority was:

<u>Minnesota</u>	<u>Other States</u>
1) white-tailed deer	1) white-tailed deer
2) beaver	2) beaver
3) raccoon	3) raccoon
4) black bear	4) coyote
5) Canada geese	5) squirrel

#### Responsibilities

Minnesota: A variety of agencies and individuals have responsibilities in the area of wildlife damage control in Minnesota. The ownership of wild animals in Minnesota is with the state, in its sovereign capacity for the benefit of all people of the state (M.S. 97A.025). The Department of Natural Resources (DNR) has responsibilities for managing all species of wild animals in the state (M.S. 97A.045). As a result, the DNR has a responsibility and role in managing damage caused by both resident and migratory wildlife species. A variety of other agencies also have roles in managing wildlife damage in the state. The state Department of Agriculture administers a program of compensation payments to property owners experiencing damage caused by endangered species (i.e. timber wolf) or elk (M.S. 3.737). The University of Minnesota Cooperative

Extension Service provides animal damage management information through training programs for government workers, volunteer natural resource educators such as Master Gardeners, pest control operators and horticultural professionals. Public inquiries are answered for a fee by trained staff or faculty through the Dial U program hotline. The University of Minnesota's Landscape Arboretum has participated in a cooperative project with the DNR to construct and maintain a variety of deer-proof fence designs and to provide demonstrations of these techniques to the public.

The U.S. Department of Agriculture's Animal Damage Control (ADC) program helps solve problems that arise when wildlife species cause damage to agriculture, urban environments, natural resources or human health and safety. Wolf control in response to livestock depredation complaints is one of ADC's primary functions in this state, accounting for 60% of program expenditures.

The Department of Interior, U.S. Fish and Wildlife Service, is not charged with wildlife damage control responsibilities, but issues migratory bird depredation permits based on ADC's certification of damage and conducts some control on federal lands. In addition, a variety of county, township and municipal agencies conduct wildlife damage control activities related to lands or structures that they own, administer, or exert regulatory control over.

Other States: As in Minnesota, most states reported that wildlife damage responsibilities were divided among a number of agencies. The state wildlife agency had responsibility for wildlife damage control in all states. In addition, the U.S. Department of Agriculture was reported to have animal damage control responsibilities in 95% of the responding states; state Departments of Agriculture in 35%; the Extension Service in 28%; the Department of Interior in 26% (permit issuance or on Department lands only); and local governments in 21%. The Department of Interior was present in 26% of our sample, but as noted above while they have 100% enforcement responsibility, they are not responsible for damage control.

### **Minnesota DNR Wildlife Damage Program Overview**

The DNR provides a wide variety of assistance to property owners experiencing conflicts with wildlife. The Department seeks solutions for resolving wildlife-human problems that are timely, consistent, effective and economical and that have the least negative environmental impact. The Department's primary objective in these situations is long-term abatement of damage. This is accomplished using four primary strategies:

1. **Population Management** using hunting and trapping within established season frameworks is the primary strategy to prevent or reduce problems with most game species. When possible, adjustments in hunting and trapping seasons are made in specific locales where general season frameworks do not produce satisfactory results. This includes the development of special permit areas or zones, extended

seasons, or increased number of permits. The Department also works with local governments to maintain or re-establish hunting and trapping seasons as management options.

2. **Habitat Management** is a strategy used to prevent, reduce or eliminate wildlife problems in affected locales. This is accomplished by modifying food and cover through land and vegetation management on public and private land, planting supplemental food and lure crops where benefits to local wildlife populations can be demonstrated, acquiring critical habitat areas and/or components (e.g. deer wintering area), eliminating predator denning sites, etc.
3. **Technical Assistance** for long-term abatement is accomplished primarily by providing advice, written materials, training, and demonstrations on the best methods available to prevent, reduce, or eliminate wildlife problems. Non-lethal methods such as fencing, repellents, deer reflectors on roads, and livestock husbandry techniques are emphasized. The Department facilitates the communication between complainants and other public or private organizations that have legal jurisdiction over the problem or can implement the needed abatement. The Department also works closely with agencies and organizations in locating and designing development projects to minimize potential wildlife problems (e.g. roads near deer wintering areas, airports, landfills). The Department maintains research and extension programs that keep abreast of the best abatement techniques available, develop new techniques, and disseminate the information.
4. **Education and Training** are used to prevent, reduce or eliminate wildlife problems by increasing the public's understanding and tolerance of wildlife populations and behavior, by teaching people how to modify their behaviors which encourage problems (e.g. exposed garbage, isolated crop fields), and by providing information on effective abatement techniques. Written or visual materials, workshops, and demonstrations are used to transfer this knowledge to agencies and organizations involved in resolving wildlife problems and to the general public.

In situations where long-term abatement cannot be implemented in a timely manner, or will not provide timely relief, short-term abatement will be accomplished by technical assistance or through special actions. Short-term abatement is initiated to respond to an immediate need, but is continued only if a long-term solution has been agreed to and scheduled. Short-term abatement is accomplished using five strategies:

1. **Technical Assistance** is provided on actions that can be implemented to provide immediate relief. Non-removal methods are emphasized. In selected cases, methods or permits are recommended to kill or relocate offending animals. Such actions, however, are sometimes contingent on long-term abatement efforts that have been or will be implemented.

2. **Loan of Materials** to landowners experiencing damage is done if necessary supplies are not readily available to the complainant. Specialized equipment (e.g. exploders) or materials (e.g. temporary fencing) is loaned by the Department until the items can be obtained by the complainant.
3. **Food Plots** may be purchased by the Department if damage is occurring to unharvested crops and if the food will benefit wildlife populations and damage is expected to continue. Any such purchase is subject to availability of funds and no more than that portion of the standing crop calculated to be used after the complaint has been filed will be purchased.
4. **Lure Crops** are provided by the Department to attract or hold wildlife away from problem areas. This approach is used only when the complainant has already made reasonable attempts to reduce damage to property (e.g. move haystacks to farmyard) and where the natural movements of the offending wildlife allow them to be "shortstopped". Where feasible, this method may also be used as a long-term abatement technique.
5. **Removal Permits** may be issued by the Department to individuals, corporations, or local governments to eliminate offending wildlife or control wildlife populations where public hunting or trapping are not practical (timely) or legal options. In some cases, a mutually acceptable population management plan for the species in question must be developed before permits will be issued.

For a complete text of Minnesota's general wildlife-human problem management guidelines, deer shooting permit guidelines, nuisance bear and beaver directives, see Appendices B through E.

### **Budgets and Expenditures**

Expenditure data in this report is incomplete and fragmented because state agencies apparently reported in a variety of ways. Some included only state expenditures, while others included a variety of state, federal and local expenditures. Tables 4 and 5 in Appendix A summarize expenditures reported by state agencies in this survey, and table 5B in Appendix A summarizes expenditures nationally in the USDA's Animal Damage Control program. The USDA-ADC expenditures include federal funds, cooperative funds, and other funds for federal programs, but do not include state or local wildlife damage control expenditures that are not a part of a federal program.

**Expenditures:** At the state and federal level in Minnesota, most expenditures on wildlife damage control are to provide technical assistance to property owners, followed by direct assistance (primarily wolf control), and the use of food or lure crops to mitigate damage (Table 1).

Table 1. Approximate annual state expenditures for wildlife damage control in Minnesota, including DNR and State Department of Agriculture.	
Program Type	Minnesota Annual Expenditures
Technical Assistance (Technical advice and training on prevention and removal techniques)	\$381,000
Demonstration Materials (loaned damage control materials)	10,000
Compensation Payments (timber wolf and elk damage)	30,000
Food plots/lure crops related to depredation	140,000
<b>Total Annual State Expenditures</b>	<b>\$561,000</b>

The above figures include only expenditures of the State DNR and the State Department of Agriculture. The USDA ADC program spends approximately \$265,000 annually on wolf damage control, damage to aquaculture, and general wildlife damage. Local and municipal governments probably spend several hundred thousand dollars annually to control wildlife damage associated with roads, bridges, timber, parks, golf courses, etc. If the costs of all damage control efforts by public agencies in Minnesota could be calculated, it would probably amount to over one million dollars annually.

Total reported state budgets for wildlife damage control programs in the 43 responding states averaged \$433,000 annually, but were highly variable. Five states had state wildlife damage control budgets totalling over \$1 million annually: Wisconsin (\$2.4 million); Oregon (\$2.3 million); Texas (\$1.6 million); Arizona (\$1.2 million); and Wyoming (\$1.2 million). Minnesota ranked in the top third of reporting states for state expenditures on wildlife damage control. The general breakdown of wildlife damage budgets in the states was approximately as follows: direct assistance (37%); technical assistance (18%); cost-share (17%); demonstration materials (10%); and compensation for damage (10%).

**Funding:** At the state level, most funding for wildlife damage control programs comes from "Game and Fish" funds, derived from hunting, trapping and fishing-related fees (Table 2).

Table 2. Primary state program funding for wildlife damage compared to the average for other states surveyed.		
Source	Minnesota	Nationally
State Game and Fish Fund	\$531,000 (95%)	\$337,000 (78%)
State General Fund	30,000 ( 5%)	96,000 (22%)
<b>TOTALS</b>	<b>\$561,000</b>	<b>\$433,000</b>

Sources of state funds for other states' wildlife damage management programs varied widely, but most reported funding (78%) came from "game and fish" or hunting and trapping related fees. State general revenue funds provided (22%).

Species: Expenditures nationally were directed primarily at deer or other ungulates (38%); predators (17%); and beaver (13%) (Table 3).

Table 3. Approximate animal damage control expenditures, by species, in Minnesota and nationally		
Species or Species Group	Minnesota Approximate Annual Exp. (%)	Approx. Annual Expenditures Nationally
Deer	30%	37%
Predators	28%	16%
Bear	13%	NA
Beaver	11%	13%
Migratory Birds	10%	7%
Other	5%	27%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

## DEER PROGRAMS

**Minnesota.** Based on a preliminary summary of reports of deer damage complaints received by DNR Wildlife Managers from May 1992 through March of 1993, damage to ornamental shrubs, flower gardens, and vegetable gardens and nuisance and public safety problems in residential areas accounts for 44% of all complaints, followed by damage to row crops (27%), commercial vegetable farms (8%), forage crops and orchards (7% each), stored grains (2%), and Christmas trees and nurseries (1% each). Damage problems are most acute near urban areas and parks, refuges, and other areas where hunting has been restricted or eliminated. Damage complaints are rare from the forested part of the state, and are most common in transition and agricultural areas.

The primary method of managing damage by deer is population management by regulation of annual hunting seasons and other control methods. A variety of technical assistance and habitat management techniques are also used to provide both long-term and short-term abatement of deer damage. The following strategies are used to regulate deer populations and to provide short- and long-term abatement of deer damage:

- 1. Antlerless Permit System-** The antlerless permit system is the primary tool DNR managers use to control deer populations by regulating the take of antlerless deer (i.e. does and fawns). Permits are allocated in each of 111 deer permit areas, and adjusted annually to manage populations at goal levels.
- 2. Deer Management Permits-** Deer management permits allow hunters to take a second, antlerless deer in those permit areas where there are insufficient numbers of firearms hunters to take all available antlerless permits. Management permits are issued to both firearms and archery hunters. A total of 52,857 deer management permits in 57 permit areas were offered to firearms hunters in 1992.
- 3. Special Deer Hunts-** Special hunts are commonly held in parks, refuges, and urban areas to reduce deer populations in these areas. Often, these hunts are "antlerless-only". A total of 32 special hunts were conducted in 1992.
- 4. Sub-Permit Area Hunt-** A special sub-permit area hunt has been held the last two years in a small area in the southeastern part of the state with a preponderance of apple orchards that have reported long-term damage by deer. The intent is to reduce deer populations in a relatively small area while maintaining higher deer populations in the surrounding permit area. This technique will be used in other areas of the state facing similar problems in the future.
- 5. Deer Removal Programs-** The DNR assists local municipalities and agencies in assessing deer populations, developing deer management programs, and designing and implementing deer shooting programs. The shooting is conducted by municipal or agency employees, and the meat from harvested animals is turned over to local charitable organizations.

6. **Deer Shooting Permits-** The DNR issues permits to individual landowners experiencing damage to take deer outside of the normal hunting seasons if it is determined that other short-term abatement measures are not feasible, and the landowner agrees to implement long-term abatement. Approximately 40 shooting permits are issued annually.

7. **Technical Assistance-** Technical assistance is a critical component of the Department's deer damage abatement program. Area wildlife managers have been provided training, technical manuals, and other information to assist landowners in developing cost-effective techniques for eliminating or minimizing deer damage. These techniques include use of temporary or permanent energized fence systems, spray repellents, scare devices, and other proven methods.

8. **Habitat Management/Food Plots-** Another strategy used by the DNR for long-term abatement of deer damage is management of habitat. This is accomplished by establishment of food plots on state lands, purchase of food plots on private lands, acquisition of critical deer wintering habitats, and improvement of food and cover on state lands.

9. **Demonstrations/Emergency Abatement-** In recent years, the Section has purchased emergency abatement materials for area managers to provide or loan to landowners suffering damage for use until long-term abatement can be implemented. Materials include temporary energized fences, repellents, and scare devices. In some cases, demonstration fences on public lands have been used to provide examples of cost-effective techniques. However, shortage of funds has prevented the Section from purchasing adequate materials to address damage problems in all areas of the state.

**Other States.** Of the 38 states reporting damage by deer, 22 indicated row crops were the top damage problem, while damage to ornamentals and forage crops were the top problem for four states each, and orchards and vegetable farms for two states each.

We evaluated deer hunting programs, emergency shooting programs, shared control programs, food plot/lure crop programs, and compensation programs. Our assessment of the programs of each state was intended to determine the similarities, not to evaluate the quality, cost-effectiveness and environmental impact of the programs.

Only the states using antlerless permits to control white-tailed deer populations were included in the summary of deer hunting programs.

**Hunting Programs.** Most states had some type of antlerless deer hunting program (Table 4). The states that did not have an antlerless removal program reported their deer populations to be either limited in distribution and/or were hunted only for recreational purposes. Nearly every state reported using some type of deer management units within which antlerless permits were allocated to achieve population control objectives.

Two-thirds of the states used special hunting programs with preference for some groups while slightly less than half the states used a program designating areas for increased hunting pressure. Only 35% of the states reported holding special hunting seasons at times designed to maximize antlerless kill.

Currently, experimental work on localized efforts to reduce deer densities is underway in Michigan and Minnesota. The Michigan Block Permit program was developed to allow landowners with damage to focus hunting pressure on their properties and adjoining properties with permission. Permits are antlerless and are transferable. Preliminary results suggest the program resulted in an increased antlerless deer kill, but also created many compliance problems and a need for additional restrictions.

**Shooting Programs.** Thirty-four states have deer shooting permit programs for landowners (Table 5). In most cases, landowners were required to obtain a permit to shoot deer and agreed to do the shooting themselves. In only 11 states were landowners allowed to shoot depredating deer without a permit. Pennsylvania was an example of a state in which a landowner observing deer causing damage to their crops could shoot the offending deer.

The wildlife agency staff carried out the shooting program in 12 states although the guidelines were applicable to other ungulates or hogs. In some of these cases, wildlife damage management was provided by USDA, APHIS, ADC staff.

**Technical Assistance.** All but 4 western states provided technical assistance to landowners on deer or other ungulates. In the cases where no technical assistance was offered, Cooperative Extension, state agricultural departments or the USDA, APHIS, ADC program delivered program services. States with abundant white-tailed deer populations reported a wide variety of technical assistance activities such as making control recommendations, holding training sessions, developing and distributing written materials, and establishing demonstration sites. In many states, technical assistance was not well coordinated among agencies or within agencies and was cited as a critical need.

Missouri was one of only 3 states that had wildlife damage management field staff who deal directly with landowners on damage problems. The program consists of 3 biologists working in 3 regions of the state and each office provides technical assistance as well as operational guidance and support upon request.

**Shared Control.** The most common program for shared control was the loan of control materials (n = 26) (Table 6). Eighteen states donated the materials for damage control programs while 6 states shared in the purchase of materials. Only Pennsylvania and Maine have offered programs where the labor involved in implementing damage control materials was cost-shared. In every case where the materials and/or labor are cost-shared, the state wildlife staff make the specific damage management recommendations. In many western states materials are listed as donated, but the donations consist of a small amount of materials for protecting stored hay in winter.

Wisconsin's wildlife damage management abatement program provides compensation to applicants who have implemented damage control measures on their properties. If applicants meet county requirements for damage control measures and file requests in a form acceptable to the county, then the county may pay the applicant part of the cost of the control measures. The DNR may pay counties up to 50% of the cost of providing abatement assistance. Since 1986-1991 Wisconsin has spent between \$132,220 and \$327,162 on cost-shared control programs.

**Food Plots/Lure Crops.** The only states with a food plot/lure crop program are North Dakota, South Dakota, Wisconsin, and Minnesota. The Minnesota program does not provide for crops already consumed which is a variation from the other programs. Each of the other states considered this program limited in impact and in use more to satisfy deer hunters than landowners.

**Compensation for Losses.** Seven states provided landowners with compensation for losses incurred as a result of deer damage. The Colorado program involved the state accepting liability for damage caused to nurseries, orchards, cultivated crops, harvested crops, fences (in excess of \$100.00), livestock forage, artificially seeded range lands deferred for seasonal use. To receive compensation, landowners have to file a notice of discovery with the Division of Wildlife within 10 days of finding the damage and file a proof of loss form with the Division within 90 days. The Division must then investigate the damage within 30 days, reach an agreement with the claimant, and pay the claim. Expenditures averaged nearly \$200,000 per year.

The Wisconsin compensation program provides money in compensation for damage to agricultural property by deer. The funds for the program are coordinated by the DNR although the program is administered at the county level. To be eligible for compensation, Wisconsin landowners property must be located in a county that has both compensation and Wisconsin's cost-shared program. Hunting must be allowed on the property either for the general public or for at least 2 persons on each day of the open season for every 40 acres of huntable land. To claim damage, a claim statement must be filed within 14 days with the county and the claimant must comply with the deer damage management programs recommended by the county.

Payments are limited to the amount of the damage or \$5,000 whichever is less. No payment is made on the first \$250 of each claim. If the claimant has not filed within 14 days, implemented deer control measures, or permitted hunting as stated in the law, then \$2,000 of any claim for compensation is not paid. Claimants must subtract from their payments the amount of payments received from people who hunt on the land.

The funding for Wisconsin's compensation program is from a \$1 surcharge on hunters license fees (over \$1 million annually) and from bonus deer permit fees (\$2.25 million annually). Money not used in 1 year is carried over. From revenues of \$3.2 million dollars, expenditures were \$1.7 million in 1991 including slightly more than \$1 million in compensation claims. The average value of all claims has grown from less than \$400,000 in 1985-87 to more than \$1 million in every year since 1989.

**Discussion.** Every state surveyed had at least 1 program aimed at mitigating deer or ungulate damage (Table 7). Only 6 states had at least 5 programs of the 6 potential programs listed. Minnesota, by comparison with other states, had a highly developed and interactive deer population and damage management program. In most other states, technical assistance was the most popular form of damage control program, followed closely by hunting seasons and shooting permits. Alternatively, the use of food plots and lure crops was least common, followed by compensation. A large share of deer problems in Minnesota are the direct result of limited population control in refuge situations, as indicated by the high proportion of damage reported by urban and residential landowners. Where the Department is able to exert effective population management, reported damage problems are relatively rare. However, generally these are situations where the economic value of the damage is significant, and the potential for hardship to affected landowners is greater.

Minnesota's philosophy of working with landowners to implement long-term abatement strategies depends on an effective population management program, responsive field staff able to offer sound technical assistance, and the availability of cost-effective abatement techniques.

The presence of deer populations at or near goal levels in nearly all areas of the state has focused attention on the need to aggressively manage populations to maintain damage at tolerable levels. The Department has dramatically increased the availability of antlerless permits in recent years. Areas with localized high deer populations that have developed because of refuge situations or reduced hunting effort have been identified, and wildlife managers have worked with landowners and other agencies to reduce local deer populations through the use of special hunts and innovative hunting programs. The Department also has improved the availability and reduced the cost of deer management permits to make better use of this important management tool, and has requested additional authority from the legislature to set deer bag limits and season dates to provide more management flexibility. The Section of Wildlife is also developing improved methods of assessing habitat quality and evaluating populations and season results through use of Geographic Information Systems. Minnesota has a sound, flexible, and effective deer population management program that continues to improve as new data becomes available, and managers become more proficient at estimating populations and implementing control strategies.

The Department has greatly improved the quality of the technical assistance provided to landowners in recent years, and has demonstrated that many of the abatement alternatives are cost-effective for landowners to implement without public assistance. All wildlife field staff have been provided very intensive training on abatement techniques. A comprehensive deer damage manual has been produced, and the Department's Madelia Wildlife Research station has field-tested a number of abatement products and developed effective recommendations for use by field staff. Many landowners have successfully and cost-effectively alleviated deer damage problems on

their property. A number of landowners have been provided use of emergency abatement materials loaned to them by the Section to avoid short-term damage problems until more permanent measures could be undertaken by the landowner. The Section has worked to communicate programs with interest groups representing landowners that could be impacted by deer damage (Apple Growers Association, Christmas Tree Growers Association, Farm Bureau, Farmers Union, etc.). A deer damage monitoring system has been developed to enable managers to better respond to localized damage problem areas and assess results of population management efforts. Finally, the process for issuing emergency deer shooting permits has been streamlined to ensure that any landowner meeting the requirement for a permit is provided one in a timely manner.

Because deer are widespread and could potentially affect every landowner in the state, the potential for very high expenditures for cost-share or compensation programs similar to those in place in a small number of states exists. This is typified by the Wisconsin program that offers both of these programs to landowners, and spends more than \$2 million each year, primarily on deer damage. Most pressure to implement cost-share or compensation programs in Minnesota has come as the result of deer damage concerns, and the DNR continues to oppose such programs. The existing population management, technical assistance, and emergency abatement programs have been largely successful in reducing many of the serious damage problems that were evident in recent years, and are more effective strategies for dealing with deer damage for the long-term.

Some states also offer landowners free or reduced cost deer hunting licenses and/or preference for permits. There are numerous twists to these programs, but the overriding intent is to offer the landowner some sort of benefit from the deer season not available to non-landowners. Such programs do not necessarily reduce damage levels for landowners, but may increase landowner tolerance for damage caused by deer. The DNR has supported legislation that would give preference to landowners for any available deer management (second deer) permits and to provide them to landowners at no charge. These permits have the potential to actually target the harvest of antlerless deer on private lands in localized areas with high deer populations to reduce deer damage. However, the DNR continues to oppose free deer licenses and preference for antlerless permits, in part because these programs would not be effective in alleviating damage programs.

## WATERFOWL PROGRAMS

**Minnesota.** Waterfowl damage in Minnesota is caused primarily by Canada geese, although ducks, other geese and sandhill cranes occasionally cause significant damage to swathed grains in northwestern portions of the state. Most damage involves row crops adjacent to wetlands used for brood-rearing, small grains (particularly those swathed in the field for drying), and nuisance problems (especially lawns and golf courses near wetlands in urban areas).

The primary tools used to manage waterfowl damage are technical assistance to property owners, habitat management, and waterfowl (goose) population management. Technical assistance includes instructing landowners in the use of fencing material or mylar tape to keep flightless geese out of crop fields and demonstrations of deterrent methods such as propane cannons and shellcrackers. Habitat management involves planting of goose pastures or producing lure crops on public lands to draw waterfowl away from private crops. In some cases in northwestern Minnesota, Commodity Credit Corporation (CCC) surplus grain is provided on WMAs as alternative feed to lure birds away from crop fields. Population management includes: 1) annual hunts; 2) special early-season hunts targeted at controlling populations of resident, nesting geese; 3) direct removal ("round-ups") of geese by municipalities in urban areas; and 4) kill permits for waterfowl at airports where there is a threat to human safety. USDA-APHIS-ADC has a major role in addressing migratory bird damage in Minnesota because of the federal protection afforded these birds.

**Other States.** Results of the survey indicated that most states offer technical assistance (90%) or use of deterrents (76%). Fewer states provided direct removal options (43%), shooting permits (21%), lure crops (19%), or fencing (17%). Only 3 states (7%) offered compensation for damage caused by waterfowl.

Most states (86%) reported using regular hunting seasons as a population management technique to address goose problems. Other direct population management techniques reported by states included: direct removal by state or federal personnel (45%), special seasons or hunts (43%), direct removal by private individuals or local governments under permit (29%), and egg-addling permits (7%).

Table 4. Types of agency deer hunting programs.

State	Antlerless deer removal program	Special damage control programs		
		Designated areas	Designated groups	Designated times
Alabama	X			
Arizona				
Arkansas	X			
California		X		
Colorado	X	X	X	
Connecticut	X	X	X	X
Delaware	X	X	X	X
Florida	X			
Georgia	X		X	
Idaho		X	X	X
Illinois	X	X	X	
Indiana	X	X	X	
Iowa	X	X	X	X
Kansas	X	X	X	X
Kentucky	X	X	X	X
Louisiana	X	X	X	
Maine	X		X	
Maryland	X		X	X
Massachusetts	X		X	
Michigan	X		X	X
Minnesota	X	X		X
Mississippi	X			
Missouri	X	X	X	
Montana	X		X	X
Nebraska	X	X	X	
Nevada		X (other ungulates)	X (other ungulates)	

Table 4. Continued.

State	Antlerless deer removal program	Special damage control programs		
		Designated areas	Designated groups	Designated times
New Hampshire	X		X	
New Jersey	X	X	X	X
New Mexico		X (other ungulates)		
New York	X			X
North Carolina	X		X	
North Dakota	X	X	X	
Ohio	X			
Oklahoma	X			
Oregon	X	X	X	X
Pennsylvania	X	X	X	X
Rhode Island	X			
South Carolina	X			
South Dakota	X	X	X	X
Tennessee	X		X	
Texas	X			
Utah	X	X (other ungulates)		X (other ungulates)
Vermont	X		X	
Virginia	X		X	
Washington				
West Virginia	X		X	
Wisconsin	X	X	X	X
Wyoming	X		X	

Table 5. Features of agency deer shooting removal programs.

State	Landowner operated		Agency operated
	Permit required	No permit required	
Alabama	X		
Arkansas	X		
California	X		
Colorado	X		
Connecticut	X		X (moose)
Florida	X		
Georgia		X	
Idaho	X		X
Illinois	X		
Indiana	X		
Kansas	X		
Kentucky	X	X	
Maine		X	
Maryland	X		
Massachusetts		X	X (moose)
Michigan	X		
Minnesota	X		
Mississippi			X
Missouri	X		
Montana	X		X (other ungulates)
Nebraska	X		
Nevada	X (other ungulates)		X (other ungulates)
New Hampshire	X		
New Jersey	X		

Table 5. Continued.

State	Landowner operated		Agency operated
	Permit required	No permit required	
New York	X		
North Carolina	X	X	
Ohio	X	X	X
Oklahoma	X		
Oregon	X	X	
Pennsylvania		X	
Rhode Island	X		
South Carolina	X		
South Dakota			X
Tennessee	X		X (hogs)
Texas	X		X
Utah	X (other ungulates)	X (other ungulates)	X (other ungulates)
Vermont		X	
Virginia	X		
Washington			
West Virginia	X		
Wisconsin	X	X	
Wyoming	X		X

Table 6. Features of agency shared deer damage control programs.

State	Materials			Labor
	Loaned	Donated	Cost-shared	Cost-shared
Arizona	X (elk)	X (elk)		
Colorado	X	X		
Delaware		X		
Georgia		X		
Idaho	X	X		
Indiana	X			
Iowa	X			
Kansas	X	X	X	
Kentucky	X			
Maine	X	X	X	
Massachusetts	X			
Minnesota	X			
Mississippi	X			
Missouri	X			
Montana	X	X		
Nebraska	X	X	X	
Nevada	X (other ungulates)	X (other ungulates)		
New Hampshire	X			
New Jersey	X	X		
North Dakota	X	X	X	
Oklahoma	X			
Oregon	X	X	X	
Pennsylvania		X		X
South Dakota	X	X		
Texas	X			
Utah	X (other ungulates)	X (other ungulates)		
Washington				
West Virginia	X			
Wisconsin	X	X	X	
Wyoming	X	X		

Table 7. Composition of agency deer population and damage management programs.

State	Hunting seasons	Deer shooting	Technical assistance	Cost-shared control	Food plots/lure crops	Compensation for losses
Alabama	X	X	X			
Arizona			X			
Arkansas	X	X	X			
California		X	?			
Colorado	X	X	X	X		X
Connecticut	X	X	X			
Delaware	X		X	X		
Florida	X	X	X			
Georgia	X	X	X	X		
Idaho		X	X	X		X
Illinois	X	X	X			
Indiana	X	X	X	X		
Iowa	X		X	X		
Kansas	X	X	X	X		
Kentucky	X	X	X	X		
Louisiana	X		X			
Maine	X	X	X	X		
Maryland	X	X	X			
Massachusetts	X	X	X	X		
Michigan	X	X	X			
Minnesota	X	X	X	X	X	
Mississippi	X	X	X	X		
Missouri	X	X	X	X		
Montana	X	X	X	X		

Table 7. Continued.

State	Hunting seasons	Deer shooting	Technical assistance	Cost-shared control	Food plots/lure crops	Compensation for losses
Nebraska	X	X	X	X		
Nevada						X (elk)
New Hampshire	X	X	X	X		
New Jersey	X	X	X	X		
New Mexico						
New York	X	X	X			
North Carolina	X	X	X			
North Dakota	X		X	X	X	
Ohio	X	X	X			
Oklahoma	X	X	X	X		
Oregon	X	X	X	X		
Pennsylvania	X	X	X	X		
Rhode Island	X	X	X			
South Carolina	X	X	X			
South Dakota	X	X	X	X	X	
Tennessee	X	X	X			
Texas	X	X	X	X		
Utah						X (other ungulates)
Vermont	X	X	X			X
Virginia	X	X	X			
Washington						
West Virginia	X	X	X	X		
Wisconsin	X	X	X	X	X	X
Wyoming	X	X	X	X		X

## BEAR PROGRAMS

**Minnesota:** A 1989 study found that there was an average of 556 bear complaints investigated per year by DNR staff from 1981-1988. In some years, more than 5,000 hours of DNR staff time is devoted to handling bear complaints, and some conservation officers and wildlife managers may spend as much as 90% of their time during some summer months dealing with bear problems. Total annual damage caused by bears was estimated at \$30,000. Damage to beehives accounted for the greatest monetary loss (about \$10,000 of the total). Other agricultural commodities damaged were crops (\$6,000) and livestock (\$3,000). Types of complaints were as follows:

<u>Type of Complaint</u>	<u>% of Total Complaints Received</u>
Garbage Disturbance	43%
Threat to Humans	42%
Property Damage	26%
Crop Damage	14%
Livestock Threat/Loss	9%
Campground Nuisance	9%
Damage to Beehives	7%

(Note: Totals do not add to 100% because multiple reasons were often listed)

Harvest by hunters is the primary tool used to manage bear populations in the state. Ten quota areas have been established and permit quotas are based on population goals that have been established for each area. Special quota areas have been established around the Iron Range cities and near Bemidji to address chronic and severe bear problems in these areas. In addition, the number of bear hunting licenses is not limited in most of the agricultural part of the state to allow more flexibility to harvest bears doing damage to crops, especially in east-central Minnesota.

A Bear Nuisance Directive has been established (see Appendix D) to guide efforts of DNR staff in dealing with nuisance bear complaints. The following actions are undertaken by DNR conservation officers and wildlife managers, in order of priority:

1. Technical Assistance/Deterrence-Information is offered on how to eliminate the problem or modify the bear's behavior. Brochures have been developed on avoidance of general bear problems and on use of energized fences for beekeepers. A bear fence demonstration for beekeepers was established, and some offices loan abatement materials (temporary fences primarily) to property owners with short-term damage problems until more permanent abatement measures can be implemented.
2. Trapping and Relocation-Approximately 90 bear traps are used by conservation officers and wildlife managers to trap and relocate nuisance bears. Because of the time and effort required for this activity and questionable effectiveness of the practice, traps are used

primarily in situations where it is impractical to shoot the bear. There are some areas where bear traps are unavailable because of a lack of funds to purchase additional traps.

3. Harvest by Licensed Hunters-Licenses are issued to bear hunters in early July so that they can be authorized to take bears doing damage prior to the September 1 start of the bear season.

4. Shooting by Property Owner-M.S. 97B.415 authorizes property owners to take bears at any time to protect property. Bears taken in this manner must be turned over to conservation officers.

5. Shooting Under a Nuisance Bear Permit-Conservation officers and wildlife managers may issue permits to individuals to take bears for property owners who are unwilling or unable to take bears causing damage, and where harvest by licensed hunters is not feasible.

In 1992, there were 342 nuisance bears trapped and relocated, 57 taken by licensed hunters, 28 taken under a nuisance bear permit, and 186 taken by property owners.

**Other States:** The survey found that few states provide programs that Minnesota is not providing. A total of 31 states reported bear populations. Like Minnesota, all 31 offer technical assistance, 30 offer direct removal of bears for landowners (trap and relocate and/or shooting by DNR personnel), and 13 loan fencing or repellent materials to landowners for short-term abatement. Only four states (Idaho, Oregon, Pennsylvania, and Wisconsin) purchase or cost-share the purchase of abatement materials for landowners, and eight states (Colorado, Idaho, Pennsylvania, Utah, Virginia, West Virginia, Wisconsin, and Wyoming) offer compensation for damage by bears.

Population management programs of surveyed states are also very similar to those provided by Minnesota. Like Minnesota, 20 states manage populations through annual hunting seasons, three offer special hunts or subareas, 13 offer out of season shooting permits, and 14 allow property owners to take bears doing damage without a permit. Only seven states offer either free licenses to landowners (five) or preference to landowners for licenses or permits (two).

**Discussion:** A significant effort is provided by Department staff in dealing with bear damage complaints. Most complaints are related to "nuisance" activities or public safety concerns rather than economic damage. A very flexible program has been implemented to harvest or translocate bears doing damage by hunters, property owners, Nuisance Bear Permittees, or DNR staff. Most bear complaints can be readily solved through education efforts (removal of food sources, etc.), cost-effective abatement measures (energized fences, repellents), or harvest or translocation of the bears doing damage. Survey results indicate that Minnesota's programs for dealing with bear complaints include most provisions of other state's programs, and relatively few states offer compensation, cost-share, or landowner preference programs for bears.

## PREDATOR PROGRAMS

### Minnesota

Predator damage to livestock in Minnesota has not been a major problem. Records from the Directed Predator Control Program during the past three years show that complaints were received from only nine counties. Three counties comprised 78% of all predator damage complaints (Roseau, Beltrami, Becker). However, when and where damage does occur, it is very significant to the individual livestock managers experiencing the damage.

In descending order of significance, predators causing agricultural damage are:

<u>Minnesota</u>	<u>Other States</u>
1. Coyote	1. Coyote
2. Timber Wolf	2. Raccoon
3. Red Fox	3. Red Fox

Timber wolves are classified as Threatened under the Endangered Species Act, and are federally protected. The Department currently has no authority to manage timber wolf populations, and has taken the position that timber wolf damage control is a federal responsibility. The US Department of Agriculture investigates wolf livestock damage complaints, verifies damage, and traps wolves on properties with documented wolf damage. During the past five years, USDA has received an annual average of 64 verified wolf damage complaints, and an annual average of 81 wolves were trapped and killed. Compensation for livestock losses to wolves has been made available by the legislature from general funds and is administered by the MN Department of Agriculture. Payments under this program have averaged \$27,000 annually during the past five years. The Eastern Timber Wolf Recovery Team has recommended that these compensation payments be a federal responsibility.

In descending order of frequency, the most common types of livestock losses to predation are:

<u>Minnesota</u>	<u>Other States</u>
1. Poultry	1. Poultry
2. Sheep	2. Sheep
3. Cattle (primarily calves)	3. Cattle
4. Dogs/Cats (infrequently reported)	4. Dogs/Cats
	5. Watermelons

The Department's management consists of technical assistance to livestock producers, and the Directed Predator Control Program. Directed Predator Control provides predator population reduction and/or the elimination of offending animals, in response to damage complaints. Actual control of predators is performed by private certified predator controllers, who receive reimbursement for predators removed. The funding source for Directed Predator Control is the Game and Fish Fund.

A summary of recent Directed Predator Control statistics is provided in the following table:

Year	# Fox Complaints	# Fox Removed	Payment	# Coyote Complaints	# Coyote Removed	Payment	Total Payment
1990	21	180	\$2,700	36	102	\$4,200	\$6,900
1991	6	67	\$1,065	25	67	\$2,655	\$3,720
1992	4	7	\$ 150	16	32	\$1,290	\$1,440
Average	13	85	\$1,305	26	67	\$2,715	\$4,020

### **Other States**

Most states provide technical assistance to livestock growers experiencing predator damage (95%), and half provide government and/or private removal of offending predators (50%). Only 7 states provide compensation for losses (17%), and only one state provides bounties on predators.

Most states provide regular hunting and/or trapping seasons for predators (90%), and many (52%) allow year-round hunting of coyotes (21 states). Most states allow property owners to take predators out of season, without a license (67%).

### **Discussion**

The Department's primary and traditional role in predator management has been the establishment and adjustment of open trapping and hunting seasons. Considerable biological evidence reveals that only intensive, repetitive, and concentrated removal efforts result in significant reduction of predator populations. In fact, the only unprotected predator in Minnesota is the coyote, and this species still causes the most damage. Hunting and trapping harvest levels fluctuate for various reasons, and thus are not reliable damage or population control methods.

The Department recommends continuation of the Directed Predator Control program, to provide local relief for those livestock producers who are actually experiencing damage. In addition, the Department will provide technical assistance as requested, to assist livestock producers in reducing predator damage.

The Department also recommends that management, and funding for timber wolf damage control continue to be by the federal government.

## BEAVER PROGRAMS

### Minnesota

Beavers cause significant property damage in Minnesota. Although some damage directly results from beaver activity (gnawing damage to trees), greater indirect damage results from flooding caused by dam-building or plugging of culverts or other devices. In descending order of significance, beaver damage issues are:

#### Minnesota

1. Flooded roads. (Also including road-bed degradation, culvert washouts, resulting maintenance, etc.)
2. Flooded agricultural fields.
3. Flooded commercial timber.
4. Gnawing damage to commercial and ornamental trees.

#### Other States

1. Flooded Roads
2. Flooded Agricultural Fields
3. Gnawing Damage (commercial/ornamental trees)
4. Flooded Timber
5. Damaged Irrigation Systems

The DNR is the primary Minnesota agency responsible for beaver management at the population level, and assists other agencies and individuals in local nuisance and damage control. Historically, the Division of Enforcement has handled the majority of beaver damage complaints, and the Section of Wildlife has primarily managed harvest and conducted aerial censuses.

Prior to 1990, Conservation Officers were directly involved in the removal of nuisance beavers, and the removal of dams. Enforcement estimates that nuisance beaver work at that time required approximately 15,000 hours annually, and about \$100,000 in direct expenses. In 1990, in response to budgetary constraints, the DNR eliminated dam and beaver removal except on state lands, but continued to provide technical assistance. The Department continues this extension approach to nuisance beaver management; an information packet Controlling Beaver Damage is available to complainants, to assist them in removing or controlling nuisance beavers

#### Other States

All states provide technical assistance to agencies and landowners. 66% provide direct removal of beavers by agency personnel, and 50% provide removal of beaver dams by agency personnel. 21% provide installation of water control devices by agency personnel. 47% issue beaver and/or dam removal permits, and 44% allow property owners to remove nuisance beaver without a permit.

Population management methods in other states are similar to Minnesota's. All states provide open trapping seasons on beaver, and 21% provide hunting seasons as well. A few states allow year-round trapping and hunting of beavers. Only three states offer bounties on beaver.

### **Discussion**

Although the DNR does not maintain statistics on nuisance beaver complaints, beaver problems appear to be increasing in Minnesota. The annual aerial lodge surveys show an increasing population, and trapping harvests have declined as fur prices have dropped since 1987.

Harvest by trapping can be an effective tool for population control of beavers. However, in contrast to other game species management (deer), it is difficult for the DNR to use trapping as a precise beaver population management tool. The supply of beaver greatly exceeds the trapping demand; beaver trapping is influenced primarily by pelt values, which are currently depressed. The number of beaver trappers in Minnesota has declined from 12,000 in 1987 to 3,000 in 1991. It is unlikely that the DNR will be able to effectively contain beaver populations in the near future solely by means of trapping harvest.

The major damage caused by beavers is flooding of roads, agricultural crops, and timber. Removal of beavers and their dams is costly, and only temporarily effective in controlling damage. By contrast, installation of permanent water leveling devices is inexpensive, and may provide long-term benefits. In situations where managing water levels can reduce or eliminate beaver damage, the DNR is currently recommending the Clemson Leveler for beaver pond level control, and will be evaluating this methodology over the next several years. This technology represents one of the most effective and economical approaches available for beaver damage control.

## ELK AND MOOSE PROGRAMS

**Minnesota:** Moose damage is relatively rare and is confined to the extreme northwestern part of the state. Most damage involves small grains, harvested and unharvested forage crops, and destruction of fences. The primary tools used to control moose damage are technical assistance to landowners, and moose hunts conducted in odd-numbered years to regulate moose populations. Twenty percent of permits in this area are issued to landowners or tenants of 160 acres or more of agricultural or grazing land. Some special "sub-areas" have been introduced to target additional harvest to areas experiencing moose damage. Also, habitat development projects are conducted on state lands to help keep moose from entering private lands, and abatement materials (exploders, energized fences, etc.) are loaned to individuals with short-term damage problems. Shooting permits are issued to landowners to take moose outside of the regular season if short-term abatement is attempted and/or unsuccessful.

Elk damage is also very rare because of the small elk population (approximately 25 animals in 1993) and the limited geographic range occupied by the elk herd. Legislation passed in 1987 authorized an elk hunting season if the population exceeds 20 animals. Only one hunt has been held in 1987 when 2 elk were taken. This legislation also provided up to \$40,000 of funding to pay for crop damage. Under this program, a total of \$3,900 has been paid, all in 1987. No claims have been received since that time. Food plots and other habitat development work is done on state lands in the elk range to help avoid problems on private lands.

**Other States:** The survey found that of the 21 states that reported programs for ungulate species other than white-tailed deer, only Maine, Wyoming, and Alaska have large enough moose populations to warrant regular hunting seasons. Maine provides free landowner licenses and allows landowners to shoot moose doing damage without a permit. Like Minnesota, Wyoming offers preference to landowners for permits, and issues permits to landowners to take moose outside of the regular season. All five states with moose populations offer technical assistance, but only two cost-share or provide free abatement materials to landowners, and three states remove moose doing damage using government personnel. Most states with elk populations are mountain states with large, migratory elk populations that are not comparable to Minnesota's small, isolated population.

**Discussion:** Moose and elk are large ungulates with potential for causing significant damage to individual landowners. Damage complaints are rare, and habitat management on state lands, hunting seasons, providing abatement assistance, and issuing shooting permits to landowners have been effective in minimizing problems for most landowners in this area of the state. Other enhancements to the moose hunting season framework including annual hunts and additional sub-areas are being discussed to further address damage problems.

## RECOMMENDATIONS

The Minnesota DNR's goal is to provide for long-term abatement of wildlife-human problems by assisting property owners in a timely, consistent, effective and economical manner that has the least negative environmental impact. The four primary strategies to accomplish this are: 1) population management; 2) habitat management; 3) technical assistance; and 4) education and training.

Currently, these strategies are accomplished through direct actions by area, regional and central office DNR staff working with affected property owners; federal, state and local governments; and other public or private organizations and individuals that have legal jurisdiction or can implement needed abatement practices.

## EXPANSION NEEDS

The coordinated efforts of all agencies charged with wildlife damage control are necessary to efficiently provide long-term assistance with wildlife-human problems. The best vehicle for such coordination is the Minnesota Animal Damage Control Council (MADCC) formed in 1989. This body has been formally recognized by MNDNR, MDA, MDH, U of MN-CNR & MES, USFWS Cooperative Research Unit and USDA APHIS ADC.

MADCC promotes cooperative efforts among members to provide timely, consistent and economical assistance using the most current and effective strategies.

Authority for agency involvement in wildlife damage-related population management, habitat management, technical assistance, and education exists in present state and federal law and by current cooperative agreements among the above agencies. The MADCC needs to become more active in focusing available resources and coordinating agency roles to avoid duplication of effort.

Existing budgets for agencies involved in animal damage management are strained. Of the members of MADCC, only USDA-ADC employs one or more full-time damage control personnel (total approximately 4.6 FTE). The Department of Natural Resources Wildlife Section and Division of Enforcement currently devote significant amounts of effort to wildlife damage abatement by reallocating existing game and fish funds derived from hunting fees (total of approximately 9.5 FTE). DNR recently reallocated a St. Paul staff position to have specific wildlife damage responsibilities statewide, but has no full-time wildlife damage personnel. MDA and USDI have no staff specifically assigned. MES and U of Mn-CNR together contribute 0.35 FTE to wildlife damage management. Even with this minimal staffing, tremendous strides have been made in identifying and applying effective techniques. The addition of at least 3 FTE is necessary if this progress is to continue pending results of a comprehensive state survey.

### Management Needs

- Provide the Department of Natural Resources the authority to prescribe the number of deer that an individual may take per year (current authority limits an individual to two).
- Expand the allowable framework for firearms deer hunting (currently Nov. 1 - Dec. 15).
- Authorize the DNR to give landowner preference for deer management permits for taking additional deer and authorize that such permits can be provided to landowners for no fee.
- Investigate authority needed in the Department of Agriculture to deal with wildlife damage as it affects the agricultural community.
- Statutorily link eligibility for compensation payments for wolf and elk damage with a commitment on the part of the recipient to incorporate best management and/or direct abatement strategies to reduce or prevent future problems.
- Implement the recommendations of the Eastern Timber Wolf Recovery Team to make compensation payments for wolf damage a federal responsibility.

### Staffing

Provide agency funding for a survey coordinated by MADCC, to determine research, abatement, and education/training needs and to seek additional funding support where appropriate.

Two wildlife damage management specialist positions (FTEs) are needed in DNR to focus on damage from wildlife in forest and agricultural areas. The Department of Agriculture would like one FTE. The MDA FTE will develop animal damage and hazard survey and economic assessment procedures for small mammals and birds causing nuisance and/or crop/animal damage, develop cooperative control and abatement programs with state, federal and local jurisdictions, promulgate rules for quarantine and control and coordinate interagency task force(s).

Mutual roles for these positions include developing and identifying the best current abatement techniques; acquiring appropriate demonstration supplies and materials; training property owners, field staff, public and private land managers, and pest control operators; and responding quickly and effectively to citizens.

Increase staffing of U of MN Extension Service to one FTE to develop and distribute training materials, fact sheets, videos and other audio visual or interactive computer programs in support of all state wildlife damage management activities.

### **Urban Wildlife**

In the Twin Cities metropolitan region, reallocate DNR staff to form an urban wildlife area manager position. This position would work with urban and suburban orchardists, nurseries, truck farmers, property owners, and local governments to address the unique needs of these areas.

### **Information and Demonstrations**

Develop and distribute brochures, technical manuals, and videos and conduct training and demonstrations for field personnel and property owners.

### **Emergency Abatement Materials**

Provide field personnel with supplies and materials for short-term emergency assistance to property owners experiencing damage until long-term abatement practices can be implemented.

### **Food and Lure Crops**

Establish food or lure crops on public lands where appropriate to provide alternative sources of food and reduce damage to private property.

### **Research and Special Surveys**

Develop and refine depredation control methods and conduct special surveys to monitor and evaluate the effectiveness of population and depredation management efforts. There is also a need to expand aerial deer surveys in agricultural areas to provide for more precise population monitoring and harvest management.

### **Information Management**

Implement and support the deer management information system developed under a one-time appropriation of deer habitat funds in the FY 92-93 Biennium. This system will allow managers to integrate information on deer populations, habitats, harvests and depredation problems to better manage populations and their associated problems and benefits.

**APPENDIX A.**  
**SURVEY DATA TABLES**

Table 1. Wildlife species causing damage, in descending order of economic importance.

STATE	DAMAGE COST #1	DAMAGE COST #2	DAMAGE COST #3	DAMAGE COST #4	DAMAGE COST #5
AK					
AL	DEER	BEAVER	CORMORANT	COYOTE	SQUIRREL
AR	BEAVER	BLACK BIRD	DEER	RODENT	RACCOON
AZ	ELK	COUGAR	JAVELINA	COYOTE	RABBIT
CO	ELK	DEER	BLACK BEAR	COUGAR	PRONGHORN
CT	DEER	BEAVER	RACCOON	SQUIRREL	WOODCHUCK
DE	DEER	WOODCHUCK	RACCOON	SQUIRREL	GOOSE
FL	DEER	BEAVER	PREDATOR	BLACK BEAR	BIRD
GA	DEER	BEAVER	GOOSE	BLACK BEAR	RACCOON
HI	FERAL PIG	FERAL SHEEP	FERAL GOAT	RED VENT BULBUL	RED WHIS BULBUL
IA	DEER	GOOSE	BEAVER	RACCOON	RODENT
ID	ELK	BEAVER	DEER	PRONGHORN	GOOSE
IL	DEER	BEAVER	RACCOON	GOOSE	SQUIRREL
KS	DEER	BEAVER	COYOTE	RACCOON	GOPHER
KY	DEER	COYOTE	MUSKRAT	RACCOON	WOODCHUCK
LA	BEAVER	BLACK BIRD	DEER	WADING BIRD	SMALL MAMMAL
MA	RACCOON	BEAVER	DEER	BLACK BEAR	COYOTE
MD	DEER	RACCOON	BLACK BIRD	SQUIRREL	GOOSE
ME	BEAVER	DEER	BLACK BEAR	COYOTE	
MI	DEER	RACCOON	BLACK BIRD	GOOSE	TURKEY
MN	DEER	BEAVER	GOOSE	BEAR	RACCOON
MO	COYOTE	BEAVER	DEER	RACCOON	GOOSE
MS	BEAVER	DEER	CORMORANT	RACCOON	
MT					
NC	DEER	BEAVER	WOODPECKER	SQUIRREL	GOOSE
NE	COYOTE	DEER	PRAIRIE DOG	RACCOON	BEAVER
NH	RACCOON	BEAVER	DEER	BLACK BEAR	SQUIRREL
NJ	DEER	GOOSE	BLACKBIRD	WOODCHUCK	RACCOON
NM	ELK	DEER	BLACK BEAR	PRONGHORN	BEAVER
NV	DEER	PRONGHORN	COUGAR	BEAVER	GROUND SQUIRREL
NY	BEAVER	RACCOON	DEER	GOOSE	COYOTE
OH	DEER	GOOSE	RACCOON	COYOTE	BEAVER
OR	DEER	ELK	WATERFOWL	BLACK BEAR	BEAVER
PA	DEER	RODENT	RABBIT	RACCOON	BLACK BEAR
RI	RACCOON	GOOSE	DEER	WOODCHUCK	CROW
SC	DEER	BEAVER	GOOSE	SQUIRREL	RACCOON
TN	BEAVER	DEER	BLACK BIRD	GOOSE	SQUIRREL
TX	COYOTE	DEER	BEAVER	WATERFOWL	SQUIRREL
UT	DEER	COYOTE	COUGAR	BLACK BEAR	RACCOON
VA	DEER	BEAVER	BLACK BIRD	BLACK BEAR	GOOSE
WI	DEER	BLACK BEAR	GOOSE	BLACK BIRD	SANDHILL CRANE
WV	RODENT	DEER	SQUIRREL	BEAVER	COYOTE
WY	DEER	ELK	PRONGHORN	COUGAR	

Table 2. Wildlife species damage complaints, in descending order of frequency.

STATE	COMPLAINT #1 FREQ	COMPLAINT #2 FREQ	COMPLAINT #3 FREQ	COMPLAINT #4 FREQ	COMPLAINT #5 FREQ
AK	BLACK BEAR	GRIZZLY BEAR	BEAVER	MOOSE	
AL	DEER	BEAVER	CORMORANT	COYOTE	SQUIRREL
AR	BEAVER	BLACK BIRD	RACCOON	RODENT	SKUNK
AZ	COYOTE	SKUNK	JAVELINA	ELK	RABBIT
CO	ELK	DEER	BLACK BEAR	COUGAR	PRONGHORN
CT	RACCOON	SQUIRREL	BEAVER	DEER	COYOTE
DE	DEER	GOOSE	WOODCHUCK	SNAKE	URBAN
FL	PREDATOR	BEAVER	DEER	BLACK BEAR	BIRD
GA	DEER	RACCOON	BEAVER	BLACK BEAR	GOOSE
HI	FERAL PIG	FERAL SHEEP	FERAL GOAT	RV BULBUL	RW BULBUL
IA	DEER	BEAVER	GOOSE	RACCOON	URBAN
ID	BEAVER	DEER	ELK	GOOSE	PRONGHORN
IL	RACCOON	SQUIRREL	OPOSSUM	SKUNK	WOODCHUCK
KS	GOPHER	MOLE	SKUNK	DEER	RACCOON
KY	DEER	COYOTE	MUSKRAT	RACCOON	WOODCHUCK
LA	DEER	BEAVER	BLACK BIRD	WADING BIRD	SMALL MAMMAL
MA	RACCOON	SQUIRREL	WOODCHUCK	SKUNK	BEAVER
MD	SQUIRREL	WOODCHUCK	BLACK BIRD	DEER	RACCOON
ME	BEAVER	COYOTE	RACCOON	DEER	
MI	DEER	RACCOON	GOOSE	BEAVER	BLACK BEAR
MN	DEER	BEAVER	RACCOON	BLACK BEAR	GOOSE
MO	DEER	RACCOON	SQUIRREL	BEAVER	COYOTE
MS	DEER	BEAVER	ALLIGATOR	RACCOON	GOOSE
MT	MULE DEER	ELK	COYOTE	BEAVER	COUGAR
NC	DEER	BEAVER	WOODPECKER	SQUIRREL	GOOSE
NE	COYOTE	PRAIRIE DOG	RACCOON	SKUNK	DEER
NH	RACCOON	SKUNK	SQUIRREL	WOODCHUCK	BLACK BEAR
NJ	DEER	RACCOON	BEAVER	BLACK BEAR	GOOSE
NM	BLACK BEAR	BEAVER	ELK	COUGAR	DEER
NV	GROUND SQUIRREL	RACCOON	WOODPECKER	COUGAR/BEAR	DEER
NY	RACCOON	BEAVER	SKUNK	SQUIRREL	DEER
OH	RACCOON	DEER	WOODCHUCK	SQUIRREL	GOOSE
OR	DEER	BEAVER	RACCOON	ELK	PREDATOR
PA	DEER	WOODCHUCK	RABBIT	BEAVER	BLACK BEAR
RI	RACCOON	SQUIRREL	WOODCHUCK	SKUNK	GOOSE
SC	DEER	BEAVER	SQUIRREL	RACCOON	GOOSE
TN	GOOSE	RACCOON	COYOTE	BEAVER	SKUNK
TX	COYOTE	BEAVER	DEER	SQUIRREL	
UT	DEER	COUGAR	BLACK BEAR	RACCOON	SKUNK
VA	DEER	BEAVER	BEAR	GOOSE	
WI	DEER	BLACK BEAR	RACCOON	WOODCHUCK	GOOSE
WV	SQUIRREL	SKUNK	RACCOON	DEER	BLACK BEAR
WY	DEER	ELK	PRONGHORN	MOOSE	

Table 3. General agency responsibilities for wildlife damage control and abatement.

STATE	State Wildlife Agency	State Agriculture Agency	USDA	USDI	Cooperative Extension Service	County/Township/Municipal/	OTHER
AK	Yes						
AL	Yes		Yes				
AR	Yes		Yes				
AZ	Yes	Yes	Yes	Yes	Yes	Yes	Private
CO	Yes	Yes	Yes	Yes	Yes	Yes	
CT	Yes		Yes				
DE	Yes		Yes				
FL	Yes		Yes				
GA	Yes		Yes	Yes			
HI	Yes		Yes				
IA	Yes		Yes		Yes	Yes	Private
ID	Yes	Yes	Yes	Yes		Yes	
IL	Yes		Yes			Yes	
KS	Yes				Yes		
KY	Yes	Yes	Yes				
LA	Yes	Yes	Yes	Yes	Yes	Yes	
MA	Yes		Yes				
MD	Yes	Yes	Yes				Health
ME	Yes		Yes				
MI	Yes		Yes				
MN	Yes	Yes	Yes	Yes	Yes	Yes	
MO	Yes		Yes				
MS	Yes		Yes				
MT	Yes	Yes	Yes			Yes	
NC	Yes		Yes				
NE	Yes	Yes	Yes	Yes			
NH	Yes		Yes				Co-op
NJ	Yes		Ye				
NM	Yes		Yes				
NV	Yes	Yes	Yes				
NY	Yes		Yes				
OH	Yes	Yes	Yes				
OR	Yes		Yes	Yes	Yes		
PA	Yes		Yes		Yes		
RI	Yes		Yes		Yes		
SC	Yes		Yes				
TN	Yes		Yes	Yes	Yes		
TX	Yes	Yes	Yes	Yes	Yes	Yes	
UT	Yes	Yes	Yes				
VA	Yes	Yes					
WI	Yes		Yes	Yes	Yes		
WV	Yes		Yes				
WY	Yes	Yes	Yes				

Table 4. State wildlife damage control budgets (thousands \$).

STATE	Technical Assistance	Demo Materials	Cost Sharing	Direct Assistance	Compensate	Total Budget	No Estimate
AK	0	0	0	0	0	10	
AL	0	0	0	0	0	0	X
AR	0	0	6	0	0	6	
AZ	1000	1000	1000	3000	0	6000	
CO	0	0	163	0	500	663	
CT	150	0	0	3	0	153	
DE	5	2	3	10	0	20	
FL	150	2	0	2	0	154	
GA	126	6	0	0	0	132	
HI	10	0	0	100	0	110	
IA	0	0	0	0	0	0	X
ID	0	0	0	0	100	100	
IL	0	0	0	0	0	50	
KS	4	5	0	0	0	9	
KY	10	5	2	0	0	17	
LA	400	25	19	50	0	519	
MA	0	0	0	0	0	0	X
MD	20	5	35	10	0	70	
ME	35	5	20	35	0	95	
MI	75	0	0	35	0	110	
MN	420	10	0	225	30	824	
MO	200	1	0	0	0	201	
MS	100	5	0	100	0	205	
MT	0	0	0	0	0	0	X
NC	0	0	0	0	0	100	
NE	32	2	0	285	0	314	
NH	70	25	0	5	10	110	
NJ	50	5	0	30	0	275	
NM	0	0	0	0	0	0	X
NV	0	0	0	0	2	87	
NY	0	0	0	0	0	0	X
OH	0	0	0	0	0	0	X
OR	143	153	1236	797	0	2329	
PA	0	0	600	0	0	600	
RI	0	0	0	0	0	0	X
SC	0	0	0	0	0	0	X
TN	20	0	15	10	0	45	
TX	410	205	410	3075	0	4100	
UT	70	55	245	200	170	840	
VA	10	0	0	20	0	30	
WI	480	587	367	250	1100	2600	
WV	0	0	0	0	0	0	X
WY	0	0	0	0	250	1237	

Table 5. Wildlife damage funding sources as percentages of total wildlife damage budgets.

STATE	STATE GAME FISH	GENERAL STATE FUNDS	FEDERAL USDA	FEDERAL USDI	LOCAL GVMNT	PRIVATE SOURCES	OTHER
AK	0	100	0	0	0	0	0
AL	45	0	40	15	0	0	0
AR							
AZ	10	10	50	0	10	20	0
CO	100	0	0	0	0	0	0
CT	50	0	0	50	0	0	0
DE	35	35	10	0	0	20	0
FL	100	0	0	0	0	0	0
GA	16	9	0	75	0	0	0
HI	0	50	25	25	0	0	0
IA	25	0	0	75	0	0	0
ID	100	0	0	0	0	0	0
IL	60	40	0	0	0	0	0
KS	100	0	0	0	0	0	0
KY	0	0	100	0	0	0	0
LA	20	0	60	0	15	5	0
MA	100	0	0	0	0	0	0
MD	100	0	0	0	0	0	0
ME	80	0	20	0	0	0	0
MI	90	0	0	10	0	0	0
MN	64	4	32	0	0	0	0
MO	50	0	0	0	0	0	50
MS	5	40	40	10	5	0	0
MT							
NC	98	2	0	0	0	0	0
NE	0	0	67	1	31	1	0
NH	45	0	45	0	0	0	10
NJ	100	0	0	0	0	0	0
NM							
NV	3	97	0	0	0	0	0
NY	75	25	0	0	0	0	0
OH							
OR	100	0	0	0	0	0	0
PA	100	0	0	0	0	0	1
RI	25	0	0	75	0	0	0
SC							
TN	50	0	30	0	10	10	0
TX	0	38	35	0	27	0	0
UT	89	11	0	0	0	0	0
VA	100	0	0	0	0	0	0
WI	79	13	13	0	1	7	0
WV	60	0	40	0	0	0	0
WY	100	0	0	0	0	0	0

Table 6. Percent of wildlife damage budgets spent on selected species.

STATE	BEAVERS	DEER	GEESE	PREDATORS	OTHERS
AK					
AL	25	50	5	10	10
AR					
AZ	0	20	1	50	29
CO	0	84	0	16	0
CT	15	25	5	25	30
DE	1	1	1	0	0
FL					
GA	6	47	5	3	39
HI	0	0	0	0	10
IA					
ID	20	45	5	0	20
IL	15	25	15	5	40
KS	10	20	40	10	20
KY	0	0	0	100	0
LA	35	9	1	20	35
MA					
MD	3	40	5	2	50
ME	30	30	0	20	20
MI					
MN	11	30	10	28	21
MO	20	25	5	20	30
MS	70	20	5	5	0
MT					
NC					
NE	1	0	1	60	35
NH	10	50	10	30	0
NJ	10	70	5	10	5
NM					
NV	10	30	5	19	36
NY	60	15	15	5	5
OH					
OR	5	65	5	15	10
PA	2	92	2	2	2
RI	15	50	15	10	10
SC	40	50	5	0	5
TN	5	5	60	10	20
TX					
UT	1	81	0	17	1
VA	5	30	5	0	60
WI	0	90	5	5	0
WV	5	40	5	40	10
WY	0	88	1	6	5

Table 7. Beaver damage categories in descending order of significance.

STATE	DAMAGE #1	DAMAGE #2	DAMAGE #3	DAMAGE #4	DAMAGE #5
AK	FL ROADS	GNAWING	TROUT ST		
AL	GNAWING	FL TIMBER	FL FIELDS	FL ROADS	
AR	FL TIMBER	FL FIELDS	FL ROADS	GNAWING	DOCKS
AZ	IRRIG SYS	GNAWING			
CO	IRRIG SYS	FL ROADS	GNAWING		
CT	FL ROADS	FL HOMES	FL FIELDS	GNAWING	FL TIMBER
DE	FL ROADS	FL FIELDS	FL TIMBER	GNAWING	
FL	FL ROADS	FL TIMBER	GNAWING	FL FIELDS	
GA	FL TIMBER	FL ROADS	FL FIELDS	GNAWING	
HI					
IA	FL FIELDS	FL ROADS	FL TIMBER	GNAWING	
ID	FL ROADS	FL FIELDS			
IL	FL FIELDS	FL ROADS	GNAWING	FL TIMBER	
KS	FL FIELDS	GNAWING	FL ROADS	FL TIMBER	
KY	FL FIELDS	FL TIMBER	FL ROADS	GNAWING	
LA	FL TIMBER	FL ROADS	FL FIELDS	GNAWING	
MA	FL ROADS	FL TIMBER	FL WELLS	FL FIELDS	GNAWING
MD	FL ROADS	FL TIMBER	GNAWING	FL FIELDS	
ME	FL ROADS	GNAWING	FL FIELDS	FL TIMBER	
MI	FL ROADS	FL TIMBER	FL FIELDS	GNAWING	
MN	FL ROADS	FL FIELDS	FL TIMBER	GNAWING	
MO	FL FIELDS	FL ROADS	GNAWING	FL TIMBER	
MS	FL TIMBER	FL ROADS	FL FIELDS	GNAWING	
MT	FL FIELDS	FL ROADS	GNAWING		
NC	FL TIMBER	FL ROADS	GNAWING	FL FIELDS	
NE	FL FIELDS	FL ROADS	GNAWING	FL TIMBER	EQUIP
NH	FL HOMES	GNAWING	FL ROADS	FL TIMBER	FL FIELDS
NJ	FL ROADS	GNAWING	FL HOMES	FL TIMBER	FL FIELDS
NM	FL FIELDS	GNAWING			
NV	IRRIG SYS	GNAWING	FL ROADS	FL FIELDS	
NY	FL ROADS	FL FIELDS	FL TIMBER	GNAWING	FL HOMES
OH	FL FIELDS	FL ROADS	GNAWING	FL TIMBER	
OR	FL FIELDS	IRRIG SYS	GNAWING	FL ROADS	FL TIMBER
PA	FL FIELDS	FL ROADS	GNAWING	FL TIMBER	
RI	FL ROADS	FL TIMBER	GNAWING	FL WELLS	
SC	FL TIMBER	FL ROADS	FL FIELDS	GNAWING	
TN	FL TIMBER	FL FIELDS	GNAWING	FL ROADS	
TX	FL TIMBER	FL ROADS	GNAWING	FL FIELDS	
UT	FL ROADS	GNAWING	FL FIELDS	FL TIMBER	
VA	GNAWING	FL ROADS	FL TIMBER	PRVT POND	
WI	FL ROADS	TROUT ST	FL TIMBER	FL FIELDS	GNAWING
WV	FL TIMBER	FL FIELDS	FL ROADS	GNAWING	
WY	FL FIELDS	IRRIG SYS	GNAWING	FL ROADS	FL TIMBER

Table 8. Beaver damage control assistance.

STATE	Technical Assistance	Bounties	Beaver Removal	Beaver Dam Removal	Water Control Devices	Compensate	Other
AK	Yes		Yes	Yes			
AL	Yes						
AR	Yes	Yes	Yes	Yes			
AZ	Yes		Yes				
CO	Yes		Yes	Yes			
CT	Yes						
DE	Yes		Yes	Yes	Yes		
FL	Yes						Vol Trappers
GA	Yes						
HI							
IA	Yes	Yes		Yes			Dynamite
ID	Yes		Yes				
IL	Yes						
KS	Yes						Trap Loans
KY	Yes						
LA	Yes	Yes	Yes	Yes			
MA	Yes				Yes		Vol Trappers
MD	Yes		Yes		Yes		
ME	Yes		Yes	Yes	Yes		
MI	Yes		Yes	Yes	Yes		
MN	Yes						
MO	Yes						
MS	Yes		Yes	Yes			
MT	Yes		Yes	Yes			
NC	Yes		Yes	Yes			
NE	Yes		Yes				
NH	Yes						Private
NJ	Yes		Yes	Yes	Yes		
NM	Yes		Yes	Yes			
NV	Yes		Yes	Yes			
NY	Yes				Yes		
OH	Yes		Yes				
OR	Yes		Yes				
PA	Yes		Yes	Yes	Yes		
RI	Yes		Yes		Yes		
SC	Yes						
TN	Yes		Yes	Yes			
TX	Yes		Yes	Yes			
UT	Yes		Yes	Yes			
VA	Yes		Yes				
WI	Yes	Yes					
WV	Yes		Yes	Yes			
WY	Yes		Yes	Yes			

Table 9. Beaver management methods.

STATE	Seasonal Trapping	Seasonal Hunting	Unlimited Trapping	Unlimited Hunting	Contract Removal	Removal Permits	Landowner Removal W/O Permit	OTHER
AK	Yes					Yes		
AL	Yes	Yes	Yes	Yes				
AR	Yes	Yes	Yes	Yes				Night Shoot Prt
AZ	Yes					Yes	Yes	
CO	Yes						Yes	
CT	Yes					Yes		
DE	Yes				Yes		Yes	
FL	Yes	Yes						Steel Ttap Prmt
GA			Yes	Yes				
HI								
IA	Yes						Yes	
ID	Yes							
IL	Yes				Yes	Yes	Yes	
KS	Yes	Yes					Yes	Vol Asst Remove
KY	Yes	Yes						Prvt Business
LA	Yes			Yes		Yes		
MA	Yes					Yes	Yes	
MD	Yes					Yes	Yes	
ME	Yes				Yes	Yes		
MI	Yes					Yes		
MN	Yes					Yes	Yes	
MO	Yes						Yes	
MS			Yes	Yes			Yes	
MT	Yes				Yes			
NC	Yes	Yes				Yes		
NE	Yes					Yes		
NH	Yes						Yes	Private
NJ	Yes							
NM								
NV	Yes				Yes	Yes		
NY	Yes					Yes		
OH	Yes						Yes	Special Seasons
OR	Yes	Yes				Yes		
PA	Yes					Yes	Yes	
RI					Yes			
SC	Yes	Yes				Yes		
TN			Yes	Yes			Yes	
TX	Yes						Yes	
UT	Yes				Yes	Yes	Yes	
VA	Yes					Yes		
WI	Yes				Yes		Yes	USDA/ADC Remove
WV	Yes					Yes	Yes	
WY	Yes						Yes	

Table 10. Goose damage categories in descending order of significance.

STATE	DAMAGE #1	DAMAGE #2	DAMAGE #3	DAMAGE #4
AK	AIRCRAFT			
AL	NUISANCE	SM GRAIN	ROW CROP	
AR	NUISANCE	SM GRAIN		
AZ	NUISANCE	ROW CROP		
CO	NUISANCE	SM GRAIN		
CT	NUISANCE	W POLLUTE	SM GRAIN	ROW CROP
DE	NUISANCE	SM GRAIN		
FL	NUISANCE			
GA	NUISANCE	SM GRAIN		
HI				
IA	ROW CROP	NUISANCE	SM GRAIN	PASTURE
ID	SM GRAIN	NUISANCE	ROW CROP	
IL	NUISANCE	ROW CROP	AIRCRAFT	
KS	SM GRAIN	ROW CROP	NUISANCE	W POLLUTE
KY	NUISANCE	SM GRAIN	ROW CROP	
LA	SM GRAIN			
MA	NUISANCE	W POLLUTE	SM GRAIN	
MD	SM GRAIN	NUISANCE	ROW CROP	
ME				
MI	NUISANCE	ROW CROP	SM GRAIN	
MN	ROW CROP	NUISANCE	SM GRAIN	
MO	NUISANCE	SM GRAIN	ROW CROP	
MS	NUISANCE	SM GRAIN	ROW CROP	
MT	ROW CROP	SM GRAIN	NUISANCE	
NC	NUISANCE	SM GRAIN	ROW CROP	
NE	NUISANCE	SM GRAIN	ROW CROP	
NH	NUISANCE	AIRCRAFT		
NJ	NUISANCE	SM GRAIN	ROW CROP	
NM	ROW CROP	FM GRAIN		
NV	NUISANCE	AIRCRAFT		
NY	NUISANCE	SM GRAIN	ALFALFA	
OH	NUISANCE	ROW CROP	SM GRAIN	
OR	PASTURE	SM GRAIN	NUISANCE	ROW CROP
PA	NUISANCE	SM GRAIN	ROW CROP	
RI	NUISANCE	SM GRAIN	ROW CROP	
SC	NUISANCE	SM GRAIN	ROW CROP	
TN	NUISANCE	ROW CROP	SM GRAIN	
TX	SM GRAIN	W POLLUTE	ROW CROP	NUISANCE
UT	SM GRAIN	NUISANCE	ROW CROP	
VA	NUISANCE	SM GRAIN		
WI	ROW CROP	ALFALFA	SM GRAIN	NUISANCE
WV	NUISANCE	ROW CROP	SM GRAIN	
WY	SM GRAIN	ROW CROP	NUISANCE	

Table 11. Goose damage control assistance.

STATE	Technical Assistance	Pastures/ Lure Crops	Fencing	Frightening Deterrents	Shooting Permits	Agency Removal	Compensate	Other
AK	Yes				Yes			
AL	Yes			Yes				
AR	Yes	Yes		Yes				
AZ	Yes			Yes		Yes		
CO	Yes							
CT	Yes							
DE	Yes			Yes		Yes		
FL	Yes							
GA	Yes			Yes		Yes		
HI								
IA	Yes		Yes	Yes		Yes		
ID				Yes				
IL	Yes			Yes	Yes	Yes		Pvt Remove
KS	Yes	Yes	Yes	Yes		Yes		
KY	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
LA	Yes							
MA	Yes				Yes			
MD	Yes			Yes	Yes			
ME								
MI	Yes			Yes		Yes		
MN	Yes	Yes	Yes	Yes		Yes		
MO	Yes			Yes				
MS	Yes			Yes		Yes		
MT	Yes			Yes				
NC	Yes			Yes	Yes			
NE	Yes			Yes		Yes		
NH	Yes			Yes				
NJ	Yes			Yes				
NM								
NV	Yes			Yes		Yes		
NY	Yes			Yes	Yes			
OH	Yes		Yes	Yes		Yes		
OR	Yes	Yes	Yes	Yes		Yes		
PA	Yes			Yes		Yes		
RI	Yes			Yes				
SC	Yes			Yes		Yes		
TN	Yes	Yes	Yes	Yes		Yes		
TX	Yes			Yes	Yes			
UT	Yes							
VA	Yes			Yes		Yes		
WI	Yes	Yes		Yes	Yes		Yes	
WV	Yes	Yes		Yes				
WY	Yes			Yes			Yes	

Table 12. Goose management methods.

STATE	Regular Hunting Seasons	Special Hunting Seasons	Agency Removal	Private Removal	Other
AK	Yes			Yes	
AL	Yes			Yes	
AR	Yes		Yes		
AZ	Yes		Yes	Yes	
CO	Yes				
CT	Yes	Yes		Yes	Egg Addle Pmt
DE	Yes		Yes		
FL	Yes				
GA	Yes		Yes	Yes	
HI					
IA	Yes		Yes		
ID	Yes				
IL	Yes	Yes	Yes	Yes	
KS	Yes	Yes	Yes		
KY	Yes	Yes	Yes	Yes	
LA	Yes				
MA	Yes	Yes			
MD	Yes	Yes			
ME					
MI		Yes	Yes		
MN	Yes	Yes		Yes	
MO	Yes	Yes			Egg Addle Pmt
MS	Yes		Yes		
MT	Yes	Yes			
NC	Yes	Yes	Yes		
NE	Yes		Yes		
NH	Yes		Yes		
NJ	Yes				Comm. Remove
NM		Yes			
NV	Yes				
NY	Yes	Yes		Yes	Egg Addle Pmt
OH	Yes		Yes	Yes	
OR	Yes	Yes		Yes	Haze Prmt
PA	Yes	Yes	Yes		
RI	Yes		Yes		
SC		Yes	Yes		
TN	Yes		Yes		
TX	Yes			Yes	
UT		Yes			
VA	Yes	Yes	Yes		
WI	Yes	Yes			
WV	Yes				
WY	Yes				

Table 13. Deer damage categories in descending order of significance.

STATE	DAMAGE #1	DAMAGE #2	DAMAGE #3	DAMAGE #4	DAMAGE #5	DAMAGE #6	DAMAGE #7	DAMAGE #8	DAMAGE #9
AK									
AL	ROW CROP	VEG/TRUCK	ORNAMENT	SM GRAIN	FRG CROP	ORCHARD	TR FARM	NURSERY	
AR	ROW CROP	VEG/TRUCK	ORCHARD	NURSERY	FRG CROP	ORCHARD	TR FARM	SM GRAIN	
AZ	ORNAMENT	FRG CROP	ROW CROP						
CO	HRV CROP	FRG CROP	ORCHARD	NURSERY					
CT	ORCHARD	NURSERY	ORNAMENT	FRG CROP	ROW CROP	VEG/TRUCK	TR FARM		
DE	ROW CROP	VEG/TRUCK	ORNAMENT	TR FARM	FRG CROP	ORCHARD	FRG CROP	SM GRAIN	
FL	VEG/TRUCK	ROW CROP	SM GRAIN	FRG CROP	ORCHARD	NURSERY	TR FARM	ORNAMENT	
GA	ROW CROP	VEG/TRUCK	ORCHARD	ORNAMENT	NURSERY	GARDEN	FRG CROP	SM GRAIN	TR FARM
HI									
IA	ROW CROP	TR FARM	ORCHARD	NURSERY	ORNAMENT	FRG CROP	SM GRAIN	VEG/TRUCK	
ID	SM GRAIN	FRG CROP	NURSERY	ORCHARD	ORNAMENT	TR FARM			
IL									
KS	ROW CROP	SM GRAIN	ORCHARD	TR FARM	FRG CROP	NURSERY	ORNAMENT	VEG/TRUCK	
KY	ROW CROP	VEG/TRUCK	FRG CROP	ORCHARD	TOBACCO				
LA	ROW CROP	FRG CROP	VEG/TRUCK	ORNAMENT					
MA	ORNAMENT	ROW CROP	ORCHARD	NURSERY	VEG/TRUCK	FRG CROP			
MD	ROW CROP	FRG CROP	VEG/TRUCK	SM GRAIN	NURSERY	ORCHARD	TR FARM	ORNAMENT	
ME	ORCHARD	ROW CROP	ORNAMENT	TR FARM	NURSERY	VEG/TRUCK	SM GRAIN	FRG CROP	
MI	ROW CROP	FRG CROP	ORCHARD	TR FARM	ORNAMENT	VEG/TRUCK	NURSERY	SM GRAIN	
MN	ROW CROP	FRG CROP	ORNAMENT	ORCHARD	TR FARM	VEG/TRUCK	NURSERY	SM GRAIN	
MO	ROW CROP	FRG CROP	SM GRAIN	ORCHARD	NURSERY	ORNAMENT	VEG/TRUCK	TR FARM	
MS	ROW CROP	VEG/TRUCK	GARDEN	ORNAMENT					
MT	HRV CROP	FRG CROP	TR FARM						
NC	ROW CROP	SM GRAIN	TR FARM	ORCHARD	VEG/TRUCK	ORNAMENT	NURSERY	FRG CROP	
NE	HRV CROP	ROW CROP	FRG CROP	SM GRAIN	ORCHARD	ORNAMENT			
NH	ORNAMENT	ORCHARD	NURSERY	VEG/TRUCK	TR FARM	ROW CROP			
NJ	ROW CROP	ORCHARD	VEG/TRUCK	FRG CROP	SM GRAIN	NURSERY	ORNAMENT	TR FARM	
NM									
NV									
NY	VEG/TRUCK	FRG CROP	ORCHARD	NURSERY	ORNAMENT				
OH	ROW CROP	FRG CROP	ORCHARD	NURSERY	ORNAMENT	TR FARM	VEG/TRUCK	SM GRAIN	
OR	FRG CROP	ROW CROP	GARDEN						
PA	ROW CROP	FRG CROP	SM GRAIN	VEG/TRUCK	ORCHARD	NURSERY	TR FARM	ORNAMENT	
RI	ORNAMENT	TR FARM	NURSERY	ORCHARD	VEG/TRUCK	NURSERY	TR FARM	ORNAMENT	
SC	ROW CROP	SM GRAIN	TR FARM	ORCHARD	ORNAMENT				
TN	ROW CROP	NURSERY	VEG/TRUCK	TR FARM	ORCHARD	ORNAMENT	SM GRAIN	FRG CROP	
TX	FRG CROP	VEG/TRUCK	SM GRAIN	ROW CROP	ORCHARD	ORNAMENT	SM GRAIN	FRG CROP	
UT	FRG CROP	SM GRAIN	ORCHARD	ORNAMENT	NURSERY	TR FARM	ROW CROP	VEG/TRUCK	
VA	ROW CROP	ORCHARD	TR FARM	ORNAMENT					
WI	ROW CROP	FRG CROP	VEG/TRUCK	TR FARM	ORCHARD	SM GRAIN	NURSERY	ORNAMENT	GINSENG
WV	ROW CROP	VEG/TRUCK	FRG CROP	ORCHARD	ORNAMENT	NURSERY	TR FARM	SM GRAIN	
WY	FRG CROP	ORNAMENT	ROW CROP						

Table 14. Deer damage control assistance.

STATE	Technical Assistance	Damage Material Loans	Damage Cost Share	Cost Share Labor	Cost Share Equip	Cost Share Other	Material No Charge	Agency Deer Removal	Compensate	Other
AK										
AL	Yes									
AR	Yes									
AZ	Yes									
CO	Yes	Yes					Yes		Yes	
CT	Yes									
DE	Yes						Yes			
FL	Yes									
GA	Yes						Yes			
HI										
IA	Yes	Yes								
ID	Yes	Yes	Yes				Yes	Yes	Yes	
IL										
KS	Yes	Yes	Yes		Yes		Yes			
KY	Yes	Yes								
LA	Yes	Yes								
MA	Yes	Yes							Yes	Appraisal
MD	Yes									
ME	Yes	Yes	Yes				Yes			
MI	Yes									
MN	Yes	Yes								
MO	Yes	Yes								
MS	Yes	Yes						Yes		
MT	Yes	Yes	Yes		Yes		Yes			
NC	Yes									
NE	Yes	Yes	Yes		Yes		Yes			
NH	Yes	Yes					Yes			
NJ	Yes	Yes					Yes			
NM										
NV										
NY	Yes									
OH	Yes							Yes		
OR	Yes	Yes	Yes		Yes		Yes			
PA	Yes		Yes	Yes			Yes			
RI	Yes									
SC	Yes									
TN	Yes									
TX	Yes	Yes						Yes		
UT	Yes	Yes	Yes		Yes		Yes	Yes	Yes	
VA	Yes									
WI	Yes	Yes	Yes		Yes		Yes		Yes	
WV	Yes	Yes								
WY	Yes	Yes					Yes	Yes	Yes	

Table 15. Deer management methods.

STATE	Regular Hunting Seasons	Extended Hunting Seasons	Special Hunting Seasons	Free Landowner Licenses	Landowner Preference Permits	Shooting Permits Off-Season	Landowner Shoot W/O Permit	Other
AK								
AL	Yes					Yes		
AR	Yes					Yes		Bonus Pmt
AZ	Yes		Yes					
CO	Yes		Yes		Yes	Yes		
CT	Yes	Yes	Yes	Yes		Yes		
DE	Yes	Yes	Yes		Yes			
FL	Yes					Yes		
GA	Yes			Yes			Yes	
HI								
IA	Yes	Yes	Yes	Yes				
ID	Yes	Yes			Yes	Yes	Yes	
IL								
KS	Yes	Yes	Yes		Yes	Yes		
KY	Yes	Yes		Yes		Yes	Yes	Control Pmt
LA	Yes							
MA	Yes				Yes		Yes	
MD	Yes	Yes		Yes		Yes		
ME	Yes			Yes			Yes	
MI	Yes	Yes			Yes	Yes		
MN	Yes	Yes	Yes			Yes		
MO	Yes		Yes	Yes	Yes	Yes		
MS	Yes						Yes	
MT	Yes	Yes	Yes		Yes	Yes		
NC	Yes			Yes		Yes	Yes	
NE	Yes		Yes	Yes	Yes		Yes	
NH	Yes					Yes		
NJ	Yes	Yes	Yes	Yes	Yes	Yes		
NM								
NV								
NY	Yes	Yes				Yes		
OH	Yes					Yes	Yes	
OR	Yes	Yes	Yes		Yes	Yes	Yes	
PA	Yes	Yes	Yes	Yes	Yes		Yes	
RI	Yes					Yes		
SC	Yes					Yes		
TN	Yes				Yes	Yes		
TX	Yes			Yes		Yes		
UT	Yes	Yes	Yes			Yes	Yes	Control Pmt
VA	Yes			Yes		Yes		Contro Asst
WI	Yes	Yes	Yes		Yes	Yes	Yes	
WV	Yes			Yes		Yes		
WY	Yes				Yes	Yes		

Table 16. Predator species and damage categories in descending order of significance.

STATE	PREDATOR #1	PREDATOR #2	PREDATOR #3	DAMAGE #1	DAMAGE #2	DAMAGE #3	DAMAGE #4	DAMAGE #5
AK	GRIZZLY BEAR	WOLF		REINDEER	DOGS/CATS			
AL	COYOTE			POULTRY	CATTLE	WATERMELON	SHEEP	
AR	COYOTE	RACCOON	SKUNK	POULTRY	CATTLE	WATERMELON	SHEEP	DOGS/CATS
AZ	COYOTE	COUGAR	BLACK BEAR	CATTLE	SHEEP	DOGS/CATS	WATERMELON	
CO	BLACK BEAR	COUGAR		CATTLE	SHEEP	APIARIES	DWELLINGS	
CT	RACCOON	COYOTE		SWEET CORN	SHEEP	DOGS/CATS	POULTRY	CATTLE
DE	FOX	RACCOON		POULTRY				
FL	BOBCAT	FOX	COYOTE	POULTRY	CATTLE	WATERMELON		
GA	COYOTE	FOX	BOBCAT	WATERMELON	HOG	SHEEP	CATTLE	POULTRY
HI	DOG	CAT		POULTRY	SHEEP			
IA	COYOTE	FOX		SHEEP	HOG	CATTLE	POULTRY	DOGS/CATS
ID	COYOTE	BLACK BEAR	COUGAR	SHEEP				
IL	RACCOON	OPOSSUM	COYOTE	DWELLINGS	DOGS/CATS	POULTRY	SHEEP	CATTLE
KS	COYOTE	RACCOON	FOX	SHEEP	CATTLE	POULTRY	DOGS/CATS	
KY	DOG	COYOTE	RAPTOR	CATTLE	SHEEP	POULTRY	HOG	GOAT
LA	COYOTE	WADING BIRD	SMALL MAMMAL	AQUACULTURE	POULTRY	SHEEP		
MA	COYOTE	FOX	OTTER	SHEEP	DOGS/CATS	POULTRY	CATTLE	HATCHERIES
MD	RACCOON	FOX		DWELLINGS	POULTRY			
ME	COYOTE	BLACK BEAR	SHEEP	CATTLE				
MI	COYOTE	FOX		SHEEP	POULTRY			
MN	COYOTE	WOLF	FOX	POULTRY	SHEEP	CATTLE	DOGS/CATS	
MO	COYOTE	RACCOON	FOX	POULTRY	SHEEP	CATTLE	DOGS/CATS	
MS	COYOTE	FOX		POULTRY	CATTLE	SHEEP		
MT	COYOTE	COUGAR	BLACK BEAR	SHEEP	APIARIES	CATTLE		
NC	FOX	RAPTOR	FURBEARERS	POULTRY				
NE	COYOTE	RACCOON	RAPTOR	SHEEP	CATTLE	POULTRY	HOG	DOGS/CATS
NH	RACCOON	BLACK BEAR	COYOTE	NUISANCE	SHEEP	POULTRY	DOGS/CATS	CATTLE
NJ	RACCOON	FOX	COYOTE	POULTRY	SHEEP			
NM	COUGAR	BLACK BEAR	COYOTE	CATTLE	SHEEP			
NV	COUGAR	COYOTE	BLACK BEAR	SHEEP	DOGS/CATS			
NY	RACCOON	SKUNK	COYOTE	DWELLINGS	POULTRY	SHEEP		
OH	COYOTE	RACCOON		SHEEP	POULTRY	CATTLE	DOGS/CATS	
OR	COUGAR	COYOTE	BOBCAT	CATTLE	SHEEP	POULTRY	DOGS/CATS	
PA	RACCOON	FOX	COYOTE	SWEET CORN	POULTRY	SHEEP		
RI	COYOTE	FOX		DOGS/CATS	SHEEP			
SC	FOX	COYOTE		POULTRY				
TN	COYOTE	RACCOON	SKUNK	POULTRY	CATTLE	DOGS/CATS	SHEEP	DWELLINGS
TX	COYOTE	BOBCAT	RACCOON	SHEEP	POULTRY	CATTLE	WILDLIFE	DOGS/CATS
UT	COYOTE	COUGAR	BLACK BEAR	SHEEP	POULTRY	CATTLE	DOGS/CATS	APIARIES
VA	COYOTE	BOBCAT		CATTLE	POULTRY			
WI	RAPTOR	WOLF	EAGLE	POULTRY	DOGS/CATS	SHEEP	CATTLE	
WV	RACCOON	COYOTE	WEASEL	SHEEP	ROW CROPS	POULTRY		
WY	COYOTE	COUGAR		SHEEP	HORSE	CATTLE		



Table 18. Predator management methods.

STATE	Regular Hunting Season	Extended Hunting Season	Year-round Hunting (Species)	Free Landowner Licenses	Damage Control Permits	Landowner Removal W/O Permit
AK	Yes					Yes
AL	Yes		Coyote		Yes	
AR	Yes	Yes			Yes	Yes
AZ	Yes		Coyote Fox Skunk			Yes
CO	Yes					Yes
CT	Yes		Coyote	Yes	Yes	Yes
DE	Yes		Raccoon			
FL	Yes		Coyote			
GA	Yes		Coyote			Yes
HI	Yes	Yes			Yes	
IA	Yes		Coyote	Yes		Yes
ID	Yes					
IL	Yes		Coyote Skunk	Yes	Yes	Yes
KS	Yes		Coyote	Yes		Yes
KY	Yes		Coyote	Yes	Yes	Yes
LA	Yes		Coyote			
MA	Yes					Yes
MD	Yes			Yes	Yes	Yes
ME	Yes	Yes	Coyote		Yes	Yes
MI						
MN	Yes		Coyote Skunk	Yes	Yes	Yes
MO	Yes			Yes	Yes	
MS	Yes		Coyote			Yes
MT	Yes					Yes
NC	Yes		Coyote	Yes	Yes	Yes
NE	Yes		Coyote Fox Skunk		Yes	Yes
NH	Yes		Coyote		Yes	
NJ	Yes	Yes		Yes	Yes	Yes
NM					Yes	Yes
NV	Yes					Yes
NY	Yes					Yes
OH						Yes
OR	Yes		Coyote		Yes	
PA	Yes		Coyote Skunk Opposum	Yes	Yes	Yes
RI	Yes		Coyote			
SC	Yes		Coyote		Yes	
TN	Yes		Coyote	Yes		Yes
TX	Yes		Coyote Bobcat			Yes
UT	Yes		Skunk Fox		Yes	Yes
VA	Yes					
WI					Yes	
WV	Yes			Yes	Yes	
WY	Yes		Predators			Yes

Table 19. Black bear damage categories in descending order of significance.

STATE	DAMAGE #1	DAMAGE #2	DAMAGE #3	DAMAGE #4	DAMAGE #5	DAMAGE #6
AK	NUISANCE	REINDEER				
AL	NUISANCE	APIARIES				
AR	APIARIES	ANIMAL FEED				
AZ	NUISANCE	CATTLE/SHEEP	APIARIES			
CO	CATTLE/SHEEP	NUISANCE	APIARIES			
CT	APIARIES	NUISANCE	CATTLE/SHEEP	ROW CROPS		
DE						
FL	APIARIES	NUISANCE				
GA	NUISANCE	APIARIES	ROW CROPS			
HI						
IA						
ID	NUISANCE	APIARIES	CATTLE/SHEEP			
IL						
KS						
KY	GARBAGE	ROW CROPS	APIARIES	NUISANCE	CATTLE/SHEEP	SMALL GRAINS
LA	NUISANCE	APIARIES				
MA	ROW CROPS	NUISANCE	APIARIES			
MD	APIARIES	ROW CROPS	NUISANCE	SMALL GRAINS	CATTLE/SHEEP	
ME	APIARIES	CATTLE/SHEEP	NUISANCE			
MI	NUISANCE	APIARIES	SMALL GRAINS			
MN	NUISANCE	APIARIES	SMALL GRAINS	ROW CROPS	CATTLE/SHEEP	
MO	NUISANCE	APIARIES				
MS	APIARIES					
MT	NUISANCE	CATTLE/SHEEP	APIARIES			
NC	ROW CROPS	APIARIES	NUISANCE			
NE						
NH	NUISANCE	APIARIES	ROW CROPS	CATTLE/SHEEP		
NJ	NUISANCE	APIARIES	CATTLE/SHEEP	HORSES	ROW CROPS	
NM	NUISANCE	APIARIES				
NV	NUISANCE	APIARIES	CATTLE/SHEEP			
NY	NUISANCE	APIARIES	ROW CROPS	CATTLE/SHEEP		
OH	NUISANCE	APIARIES				
OR	TREE DAMAGE	CATTLE/SHEEP	NUISANCE			
PA	NUISANCE	ROW CROPS	APIARIES	POULTRY	CATTLE/SHEEP	
RI						
SC	APIARIES					
TN	NUISANCE	APIARIES	ROW CROPS	ORCHARDS		
TX						
UT	CATTLE/SHEEP	NUISANCE	APIARIES	ROW CROPS		
VA	ROW CROPS	NUISANCE	APIARIES	SMALL GRAINS		
WI	ROW CROPS	APIARIES	NUISANCE	SMALL GRAINS	CATTLE/SHEEP	
WV	APIARIES	CATTLE/SHEEP	NUISANCE	ROW CROPS		
WY	CATTLE/SHEEP	APIARIES	NUISANCE			

Table 20. Black bear damage control assistance.

STATE	Technical Assistance	Damage Material Loan	Damage Cost Share	Cost Share Labor	Cost Share Equip	Cost Share Other	Damage Materials No Charge	Agency Removal	Contract Removal	Compensate	Other
AK	Yes							Yes			
AL	Yes	Yes						Yes			
AR	Yes							Yes			
AZ	Yes							Yes			
CO	Yes							Yes		Yes	
CT	Yes							Yes			
DE											
FL	Yes							Yes			
GA	Yes	Yes						Yes			
HI											
IA											
ID	Yes	Yes	Yes				Yes	Yes		Yes	
IL											
KS											
KY	Yes							Yes			
LA	Yes							Yes			
MA	Yes	Yes						Yes			
MD	Yes	Yes						Yes			
ME	Yes	Yes						Yes	Yes		
MI	Yes	Yes						Yes			
MN	Yes	Yes						Yes			
MO	Yes							Yes			
MS	Yes										
MT	Yes	Yes	Yes		Yes		Yes	Yes			
NC	Yes							Yes			
NE											
NH	Yes	Yes						Yes		Yes	
NJ	Yes	Yes						Yes			
NM	Yes							Yes			
NV	Yes							Yes			
NY	Yes	Yes						Yes			
OH	Yes							Yes			
OR	Yes	Yes					Yes	Yes			
PA	Yes	Yes					Yes	Yes		Yes	
RI											
SC	Yes							Yes			
TN	Yes							Yes			
TX											
UT	Yes							Yes	Yes	Yes	
VA	Yes							Yes		Yes	
WI	Yes	Yes	Yes		Yes		Yes	Yes		Yes	
WV	Yes	Yes						Yes		Yes	
WY	Yes							Yes		Yes	

Table 21. Black bear management methods.

STATE	Regular Hunting Seasons	Special Hunting Seasons	Free Landowner License	Landowner License Preference	Damage Shooting Permits	Landowner Removal W/O Permit	Other
AK	Yes					Yes	
AL							
AR	Yes				Yes		
AZ	Yes					Yes	
CO	Yes					Yes	
CT						Yes	
DE							
FL							
GA	Yes				Yes		
HI							
IA							
ID	Yes		Yes		Yes		
IL							
KS							
KY							
LA							
MA	Yes					Yes	
MD					Yes		
ME	Yes				Yes	Yes	
MI	Yes				Yes		
MN	Yes				Yes	Yes	
MO							
MS							
MT	Yes	Yes				Yes	
NC	Yes		Yes		Yes	Yes	
NE							
NH	Yes				Yes		
NJ							
NM						Yes	
NV							
NY	Yes	Yes			Yes	Yes	
OH							
OR	Yes	Yes		Yes	Yes	Yes	
PA	Yes		Yes			Yes	
RI							
SC	Yes						
TN	Yes		Yes			Yes	
TX							
UT	Yes	Yes			Yes	Yes	
VA	Yes				Yes		
WI	Yes			Yes	Yes		
WV	Yes		Yes		Yes		
WY	Yes					Yes	

Table 22. Non-deer ungulate damage categories in descending order of significance.

STATE	SPECIES	DAMAGE #1	DAMAGE #2	DAMAGE #3	DAMAGE #4	DAMAGE #5	DAMAGE #6	DAMAGE #7	DAMAGE #8
AK	MOOSE	ORNAMENT							
AL									
AR	ELK	FRG CROP							
AZ	ELK	FRG CROP	FENCES	ORNAMENT					
CO	ELK PRONGHORN MULEDEER	HRV HAY	ORCHARD	NURSERY					
CT	MOOSE	AUTOS							
DE									
FL									
GA									
HI	AXISDEER	PINEAPPL							
IA									
ID	ELK	FRG CROP	SM GRAIN	ROW CROP					
IL									
KS	ELK PRONGHORN	ROW CROP	SM GRAIN	FRG CROP					
KY									
LA									
MA	MOOSE	LIVESTCK							
MD	SIKA	ROW CROP	FRG CROP	VEG/TRCK	SM GRAIN				
ME	MOOSE	ORCHARD	ROW CROP	ORNAMENT	TR FARM	NURSERY	VEG/TRCK	SM GRAIN	FRG CROP
MI	ELK	ROW CROP	FRG CROP	SM GRAIN					
MN	MOOSE ELK	SM GRAIN	ROW CROP	FRG CROP					
MO									
MS									
MT	ELK MOOSE PRONGHORN	FRG CROP	TR FARM	ORNAMENT					
NC									
NE	PRONGHORN	HRV HAY	SM GRAIN	FRG CROP					
NH		VEG/TRCK	FENCES	MAPLE TR	ORCHARD	ORNAMENT			
NJ									
NM	ELK PRONGHORN	ROW CROP	FRG CROP	ORCHARD					
NV	ELK PRONGHORN MULEDEER	FRG CROP	ORCHARD	ORNAMENT					
NY									
OH									
OR	ELK	ROW CROP	FRG CROP	HRV HAY	ORCHARD	TR FARM			
PA	ELK	ROW CROP	SM GRAIN	FRG CROP	ORCHARD				
RI									
SC									
TN	HOG	VEG/TRCK							
TX	PRONGHORN EXOTICS	FRG CROP	VEG/TRCK	ORCHARD	ORNAMENT	SM GRAIN	ROW CROP		
UT	ELK PRONGHORN	FRG CROP	SM GRAIN	ORCHARD	ORNAMENT	NURSERY	TR FARM	ROW CROP	VEG/TRCK
VA									
WI									
WV									
WY	ELK MOOSE PRONGHORN	FRG CROP	ORNAMENT	ROW CROP	FENCES	SM GRAIN			

Table 23. Non-deer ungulate damage control assistance.

STATE	Species	Technical Assistance	Damage Material Loans	Damage Cost Share	Cost Share Labor	Cost Share Equip	Cost Share Other	Damage Materials No Charge	Agency Removal	Compensate	Other
AK	Moose	Yes									
AL											
AR	Elk	Yes							Yes		
AZ	Elk	Yes	Yes					Yes			
CO	Elk Pronghorn Muledeer	Yes	Yes					Yes		Yes	
CT	Moose								Yes		
DE											
FL											
GA											
HI	AxisDeer	Yes							Yes		
IA											
ID	Elk	Yes	Yes	Yes				Yes	Yes	Yes	
IL											
KS	Elk Pronghorn	Yes	Yes	Yes		Yes		Yes			
KY											
LA											
MA	Moose	Yes							Yes		
MD	Sika	Yes									
ME	Moose	Yes	Yes	Yes				Yes			
MI	Elk	Yes									
MN	Moose Elk	Yes	Yes							Yes	
MO											
MS											
MT	Elk Moose Pronghorn	Yes	Yes	Yes		Yes		Yes	Yes		
NC											
NE	Pronghorn	Yes	Yes	Yes		Yes		Yes			
NH		Yes	Yes						Yes		
NJ											
NM	Elk Pronghorn	Yes									
NV	Elk Pronghorn Muledeer	Yes	Yes					Yes	Yes	Yes	
NY											
OH											
OR	Elk	Yes	Yes	Yes		Yes		Yes			
PA	Elk	Yes	Yes	Yes	Yes			Yes			
RI											
SC											
TN	Hog	Yes							Yes		
TX	Pronghorn Exotics	Yes	Yes						Yes		
UT	Elk Pronghorn	Yes	Yes	Yes		Yes		Yes	Yes	Yes	
VA											
WI											
WV											
WY	Elk Moose Pronghorn	Yes	Yes					Yes	Yes	Yes	

Table 24. Non-deer ungulate management methods.

STATE	Species	Regular Hunting Seasons	Extended Hunting Seasons	Special Hunting Seasons	Free Landowner License	Landowner License Preference	Permits	Landowner Removal W/O Permit	Other
AK	Moose	Yes							
AL									
AR	Elk								
AZ	Elk	Yes	Yes	Yes					
CO	Elk Pronghorn Muledeer	Yes		Yes		Yes	Yes		
CT	Moose								
DE									
FL									
GA									
HI	Axisdeer	Yes	Yes				Yes		
IA									
ID	Elk	Yes	Yes	Yes		Yes	Yes		
IL									
KS	Elk Pronghorn	Yes		Yes		Yes	Yes		
KY									
LA									
MA	Moose							Yes	
MD	Sika	Yes	Yes		Yes		Yes		
ME	Moose	Yes			Yes			Yes	
MI	Elk	Yes							
MN	Moose Elk	Yes		Yes		Yes	Yes		
MO									
MS									
MT	Elk Moose Pronghorn	Yes	Yes	Yes		Yes	Yes		
NC									
NE	Pronghorn	Yes			Yes	Yes			
NH		Yes							
NJ									
NM	Elk Pronghorn			Yes					
NV	Elk Pronghorn Muledeer	Yes		Yes			Yes		
NY									
OH									
OR	Elk	Yes	Yes	Yes		Yes	Yes		
PA	Elk							Yes	Food Plots
RI									
SC									
TN	Hog	Yes			Yes				
TX	Pronghorn Exotics	Yes					Yes		
UT	Elk Pronghorn	Yes	Yes	Yes			Yes	Yes	Control Pmts
VA									
WI									
WV									
WY	Elk Moose Pronghorn	Yes				Yes	Yes		Food Plots

**APPENDIX B**

GUIDELINES  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF FISH AND WILDLIFE  
SECTION OF WILDLIFE

TITLE: HANDLING WILDLIFE-HUMAN PROBLEMS

I INTRODUCTION

Increasing human demands on Minnesota's land and water resources and abundance of some wildlife populations greatly increase the potential for conflicts between people and wildlife. These problems take the form of property<sup>1</sup> damage (e.g. crop losses), human safety (e.g. vehicle-wildlife collisions), human and livestock health threats (e.g. Lyme disease, rabies), and nuisance (e.g. woodpecker drumming, garbage can dumping).

Often, people experiencing wildlife problems feel animals should be controlled, removed or eliminated. However, those who hunt, trap, photograph or enjoy viewing wildlife usually prefer abundant populations. The mission of the Section of Wildlife (Section) includes managing Minnesota's wildlife resources for their intrinsic value and benefits to the people of Minnesota. Therefore, wildlife management programs must balance the concerns of various publics with the Section's primary mission of perpetuating the state's wildlife resources.

II PURPOSE

These guidelines provide the framework for resolving wildlife-human problems in a timely, consistent, effective, and economical manner that has the least negative environmental impact. The guidelines: 1) identify responsibilities of Section personnel for handling reported wildlife problems; and 2) specify the relationships of the Section to other Department of Natural Resources (DNR) Divisions, local, state and federal governmental agencies, and private organizations and individuals.

III PROCEDURES

- A. The Section's primary objective is Long Term Abatement using four strategies: population management, habitat management, technical assistance, and education and training.

<sup>1</sup>Underlined words are defined in Section V.

1. **Population Management** using hunting and trapping within established season frameworks is the primary strategy to prevent or reduce problems with most game species. When possible, adjustments in hunting and trapping seasons will be made in specific locales where general season frameworks do not produce satisfactory results. This may include the development of special permit areas or zones, extended seasons, or increased number of permits. The Section will also work with local governments to maintain or re-establish hunting and trapping seasons as management options.
2. **Habitat Management** is a strategy used to prevent, reduce or eliminate wildlife problems in affected locales. This can be accomplished by modifying food and cover through land and vegetation management on public and private land, planting supplemental food and lure crops where benefits to local wildlife populations can be demonstrated, acquiring critical habitat areas and/or components (e.g. deer wintering area), eliminating predator denning sites, etc.
3. **Technical Assistance** for long term abatement is accomplished primarily by providing advice, written materials, training and demonstrations on the best methods available to prevent, reduce or eliminate wildlife problems. Non-lethal methods such as fencing, repellents, deer reflectors on roads, and livestock husbandry techniques will be emphasized. The Section will facilitate the communication between complainants and other public or private organizations which have legal jurisdiction over the problem or can implement the needed abatement. The Section will also work closely with agencies and organizations in locating and designing development projects to minimize potential wildlife problems (e.g. roads near deer wintering areas, airports, landfills). The Section will maintain pro-active research and extension programs to keep abreast of the best abatement techniques available, develop new techniques and disseminate the information.
4. **Education and Training** are used to prevent, reduce or eliminate wildlife problems by increasing the public's understanding and tolerance of wildlife populations and behavior, by teaching people how to modify their behaviors which encourage problems (e.g. exposed garbage, isolated crop fields), and by providing information on effective abatement techniques. Written or visual materials, workshops and demonstrations will be used to transfer this knowledge to agencies and organizations involved in resolving wildlife problems as well as to the general public.

B. **Short Term Abatement** is employed where long term abatement strategies can not be implemented in a timely manner or will not provide timely relief. This will be accomplished by technical assistance and/or through special Section actions. Short term abatement will be initiated to respond to the immediate need but continued only if a long term solution has been agreed upon and implementation scheduled.

1. **Technical Assistance** is accomplished by providing advice that can be implemented by the complainant to provide immediate relief. Non-removal methods will be emphasized. In selected cases, however, methods and/or permits may be recommended to kill or relocate offending animals. Such actions, however, maybe contingent on Long Term Abatement efforts which have been or will be implemented. For specific details refer to the Emergency Shooting Permit Guidelines and the Nuisance Bear Directive.

2. **Special Actions Taken by Section** can be implemented in the following situations.

a. If necessary supplies are not readily available to the complainant, the Section may lend specialized equipment (e.g. exploders) or materials (e.g. temporary fencing) until the items can be obtained by the complainant.

b. In the case of damage to unharvested crops, the Section may purchase a portion of the crop as supplemental food plots if the food will benefit wildlife populations and damage is expected to continue. Any such purchase is subject to availability of funds and no more than that portion of the standing crop calculated to be used after the complaint has been filed will be purchased (refer to Standards for Emergency Corn Food Plot Purchase issued on 11/5/82).

c. Where appropriate and feasible, the Section will provide supplemental or lure food to attract or hold wildlife away from the problem area. This approach will be used only when the complainant has already attempted to reduce damage to property (e.g. move haystacks to farmyard) and where the natural movements of the offending wildlife allow them to be "shortstopped". Where feasible, this method may be used as a long term abatement technique.

- d. Where public hunting and/or trapping are not practical (timely) or legal options, the Section may provide individuals, corporations, or local governments with permits for removal activities to eliminate offending wildlife or control wildlife populations. In some cases, a mutually acceptable population management plan for the species in question must be developed before permits will be issued.
- C. Actions not allowed by these guidelines will be prohibited including paying for damage, shooting offending wildlife by Section personnel (except as authorized by Director), and purchasing supplies and constructing fences for complainants.

#### IV GENERAL RESPONSIBILITIES

- A. **Section of Wildlife** is to respond to all wildlife problems unless responsibility has been assigned to other DNR Divisions or local, state or federal governmental agencies. The primary responsibility for implementation of abatement activities, however, lies with the property owner or manager (whether public or private) where the damage is occurring or originated. The extent of Section involvement with such problems is related to both the level of control or management and the degree of authority afforded the Section by the DNR, legislature, other local, state and federal governmental agencies, and private parties.
1. **Area or Nongame Wildlife Staff (AWS)** will respond to any wildlife complaint in their geographic area of responsibility. AWS will contact complainant directly (in person or telephone) as soon as possible after being notified (preferably within 1 working day). Staff will evaluate information provided by the complainant, and then: a) provide assistance to alleviate the problem; b) refer the complainant to the appropriate agency; or c) make arrangements to visit the site to gather additional information. The decision to provide written summaries of recommendations to complainants will be left to the discretion of the AWS. However, in cases of severe damage or when there is a potential for confusion, controversy or disagreement over the appropriate course of action, the AWS should provide the complainant with a written summary of the advice and recommendations. Information on each complaint will be recorded on the appropriate standardized reporting form provided by the Section for the purpose of identifying and documenting problem areas, and workload planning.
  2. **Regional Wildlife Staff (RWS)** will immediately forward

2. **Regional Wildlife Staff (RWS)** will immediately forward any non-routine complaints to the appropriate AWS. Shooting permits requested by the AWS and approved by RWS will be provided as soon as possible, preferably within 3 days of approval.
3. **Central Office Staff (COS)** will immediately forward non-routine complaints to the appropriate AWS. Complaints forwarded in writing by COS to AWS should include a copy to the appropriate RWS. COS will maintain and/or obtain the legislative authority to establish hunting and trapping season frameworks that have sufficient flexibility to manage wildlife populations at levels that reduce complaints and problems. The COS will develop legislation in conjunction with RWS and AWSS that will allow field personnel and complainants to effectively resolve wildlife problems. COS will maintain appropriate staffing, and funding levels and will appoint liaisons to represent the Section on committees concerned with wildlife problems.
  - a. **Program Leaders** (i.e. Farmland, Forest, Wetland) will be responsible for compiling and disseminating information on effective control techniques to Section and Department personnel and the general public through timely publications, demonstrations, and training workshops. They will also be responsible for coordinating memoranda of understanding and training workshops between the appropriate DNR Divisions, federal, state, county and municipal agencies. Program Leaders will be assisted in compiling information and developing memoranda of understanding by wildlife specialists (i.e. Furbearer, Wetland), standing committees (i.e. Bear, Deer, Furbearers, Nongame, Waterfowl), and Research Groups (i.e. Farmland, Forest, Nongame, Wetland).
4. **Research Staff** will, when needed, develop new techniques and/or test the effectiveness of existing control products and procedures. Research staff will provide support services to AWSS and Program Leaders to help resolve problems. This will include evaluating and keeping abreast of the most effective techniques, conducting literature reviews, providing recommendations to specific problems, conducting field inspections, and assisting in disseminating information through publication, demonstrations and workshops.

- B. **Federal Agencies** (U.S. Fish and Wildlife Service (USFWS) and USDA Animal and Plant Health Inspection Service - Animal Damage Control (ADC)). Both USFWS and ADC have responsibilities for controlling migratory bird damage and should be contacted in any situation involving the removal of migratory species. ADC has primary responsibility for controlling damage caused by Eastern Timber Wolf, and therefore, all complaints involving wolves should be referred immediately to ADC.
- C. **Cooperative Extension Service** has the responsibility to assist in developing and disseminating information and recommendations for preventing, reducing or eliminating wildlife problems. The Section staff should work closely with this agency.
- D. **DNR Divisions** have primary responsibility for implementing abatement techniques on lands they administer. Section involvement on lands of other Divisions is limited to technical assistance and population management. On non-DNR lands adjacent to DNR parcels, resolution of wildlife problems is a joint responsibility of the administering DNR Division, the property owner and the Section. The Section is responsible for managing wildlife populations, resolving wildlife problems on or associated with wildlife management areas, and developing and disseminating resource materials used in providing technical assistance.
1. **Division of Enforcement** is primarily responsible for fox and coyote removal under the Directed Predator Control Program. Responsibility for handling problems with black bear and beaver is shared between the Division of Enforcement and the Section. However, because of the frequent need for removal during the closed season and the specialized removal techniques required the Division of Enforcement handles the majority of these problems. For additional information please refer to their appropriate directives.
- E. **Other State Agencies.**
1. **Department of Agriculture** is responsible for administering the compensation programs for damage caused by timber wolves and elk. County Extension Agents and federal crop adjusters determine the appropriate compensation levels.
  2. **Department of Health** has the primary responsibility of informing the public of health threats to humans caused by wildlife and of proper treatment (i.e. rabies, Lyme disease).

3. **Board of Animal Health** has the primary responsibility of informing the public of health threats to livestock caused by wildlife and of proper treatment (i.e. Brucellosis).
- F. **Animal Damage Control Council**, consisting of all the agencies listed above and the University of Minnesota's Department of Fisheries and Wildlife, has the primary function of "providing guidance, leadership and innovation to the management and research of animal damage problems within Minnesota." For a more precise description of this council's function refer to the attached Resolution and By-Laws.
- G. **Local Governments** (municipal, township and county) have primary responsibility for implementing abatement techniques on land they administer (e.g. parks, roads). Section involvement is limited to population management and technical assistance. Local governments share a greater responsibility in dealing with affected property owners where local ordinances contribute to the problem by restricting the Section's ability to manage wildlife populations (e.g. closing areas to hunting).
- H. **Property Owners/Complainants** have a basic need and responsibility to protect their property from damage or nuisance caused by wildlife. They can provide protection by implementing effective techniques provided through self-help information, by implementing the recommendations provided by the Section or other governmental agencies, or by hiring private contractors/consultants. Continued assistance by the Section may be dependent upon a good-faith effort by the complainant to implement Section recommendations.

V DEFINITIONS

**Abatement** is any technique(s) that attempts to prevent, reduce or eliminate a wildlife problem.

**Nuisance** refers to the wildlife whose presences or behavior causes a complaint but is doing no personal or real property damage.

**Complainant** is a person, company, incorporated business or governmental agency which has reported a problem with wildlife to the Section's Staff.

**Control** refers to maintaining wildlife populations at levels generally acceptable to the public.

**Damage** is harm to property caused by wildlife.

**Good Faith Effort** is the concerted attempt by the complainant to implement the corrective measures recommended by the Wildlife Staff.

**Property** is the real or personal possessions of the complainant.

**APPENDIX C**

GUIDELINES FOR DEER SHOOTING PERMITS  
MINNESOTA DEPARTMENT OF NATURAL RESOURCES  
SECTION OF WILDLIFE

SEPTEMBER, 1992

INTENT

Shooting permits allow landowners, land administrators, or municipalities to temporarily reduce damage until long term abatement measures can be implemented, and to reduce localized deer problems in areas where hunting is prohibited.

ELIGIBILITY

Landowners, lessees, or occupants of private lands (or their designated agents), and administrators of public lands or municipalities will be issued permits under the following conditions:

- 1) Damage to agricultural crops or personal or public property, or threats to public safety or human health from deer have been verified by a DNR wildlife manager based on a site visit and discussion with the applicant;
- 2) The wildlife manager determines that shooting deer is likely to be effective in temporarily reducing damage or lowering localized deer populations, and that other short-term abatement measures are not feasible;
- 3) The applicant agrees that the shooting will be done in a safe, humane, and effective manner in accordance with permit guidelines; and
- 4) The applicant has implemented or attempted to implement long-term abatement measures approved by the area wildlife manager, or the applicant agrees to implement or improve such long-term measures as a condition of the permit.

Note: In the case of deer trapped inside of deer exclosures, a shooting permit may be issued without verification of continued damage by the area wildlife manager.

APPLICATION PROCEDURE

All written or verbal shooting permit inquiries must be referred to the appropriate area wildlife manager. Interested landowners must submit a written request or permit application form to the area wildlife manager for a shooting permit. Requests for permits must be accompanied by a description of completed or planned long-term abatement measures. Area managers will submit the application to the regional supervisor along with a transmittal form that includes the area recommendation and supporting information. Conservation officers must be consulted by the area wildlife manager prior to transmitting the recommendation to the region.

## PERMIT DENIAL OR APPROVAL

Regional wildlife managers will approve or deny a permit application based on information contained in the application and area wildlife manager recommendations. Written responses will be provided to applicants on all permit denials. Approved permits will be drafted and issued by regional wildlife managers or the St. Paul Operations Manager<sup>1</sup>. Unusual requests or extreme damage situations will be immediately brought to the attention of the Wildlife Operations Manager through the regional manager. In emergency situations, permits may be issued prior to a written application if approval is obtained from the St. Paul Operations Manager, and the regional enforcement supervisor is notified.

## PERMIT CONDITIONS

All permits must include the following information, as shown on the attached example:

- 1-Name, address, and telephone number of the applicant;
- 2-legal description of all properties where the shooting will take place;
- 3-names of all individuals who will be authorized to do the shooting, including designated agents of the landowner;
- 4-dates for which the permit is valid;
- 5-the number and age/sex of deer that may be taken;
- 6-any restrictions on weapons, hours, and use of artificial lights;
- 7-conditions for carcass salvage including the name and phone number of the local conservation officer;
- 8-an acceptance clause that the permittee is required to sign stating that the permittee agrees to all permit conditions (including abatement measures specified in the permit application), and that unless such measures are undertaken, the permittee will be ineligible for future permits; and
- 9-the following standard provisions:
  - a.The permittee shall be solely responsible for any and all damage or injury to persons, domestic or wild animals, and real or personal property of any kind resulting from any activities undertaken pursuant to this permit.

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<sup>1</sup>In all cases where the St. Paul Operations Manager is referenced in these guidelines, any other member of the Section Management Team may be contacted if the Operations Manager is not available.

b. The permittee shall hold the Department of Natural Resources, its officers, agents, and employees harmless from any and all liability and damages resulting from any activities undertaken pursuant to this permit.

c. This permit shall not be construed as a guarantee or representation by the Department of Natural Resources that any particular method or degree of deer removal will reduce the depredation problem of the permittee.

d. This permit shall not be construed to exempt the permittee, his agents, or employees from any provisions of local law, ordinances, or regulations which may apply to the activities authorized by this permit.

e. The permittee shall consult with appropriate law enforcement authorities concerning public safety in the activities authorized by this permit.

f. The permittee must report the number and sex of deer taken within 10 days of the expiration of the permit, using the form attached to the permit.

Copies of signed permits will be sent to the permittee, area wildlife manager, regional enforcement supervisor, area enforcement supervisor, local conservation officer, St. Paul Wildlife Populations and Research Unit Manager, St. Paul Operations Manager, and the St. Paul Enforcement Director.

#### GENERAL PROVISIONS

-The permit will be for removal of the minimum number of deer necessary to reduce the damage. If an individual is authorized by permit to take more than 20 deer per year, the St. Paul Operations Manager must be advised and approve the permit.

-All deer must be immediately field-dressed and turned over to a conservation officer within 24 hours in salvageable condition for distribution.

-Permittees may be required to collect biological data. Instructions and pre-addressed envelopes for this purpose will be provided to permittees by the area wildlife manager.

-If the permit expires or the allowable number of deer is taken, the permit may be amended (if the original permit has not yet expired), or an additional permit may be issued upon receipt of a written application. The area wildlife manager must verify that deer damage is still occurring and other abatement techniques are not feasible, and forward transmittal sheets with permit recommendations to the regional wildlife supervisor. All other provisions of these permit guidelines shall apply for permit amendments and renewals.

-Night shooting, use of lights, and use of rifles and scopes or bows and arrows may be authorized if necessary to accomplish permit objectives.

-Conservation Officers must approve all requested shooters before the permit is approved. If any requested shooters are not family members or employees of the property owner, the St. Paul Operations Manager should be advised.

-Department employees are not authorized to shoot deer on private property to control damage, except that the Director of Enforcement may authorize conservation officers to shoot deer on special projects with unusual conditions.

-Sharpshooting by governmental units will be the responsibility of the governmental unit or land administrator. The Section of Wildlife will provide technical assistance to help ensure the effectiveness of shooting, and the Division of Enforcement will coordinate safety issues and carcass salvage or removal.

-Harvest of adult does, followed by other antlerless deer and adult bucks, will be emphasized from September 1 to April 30. From May 1 to August 31, permits will generally be for antlered deer only, although there may be some cases where it is necessary to allow deer of either sex to be shot during this time if approved by the St. Paul Operations Manager. Permits will not be issued during or immediately preceding open deer hunting seasons unless public hunting is prohibited by state or local ordinance.

-Deer that are wounded and leave the permittee's property may be pursued if prior permission is obtained from the landowner. No firearm shall be permitted off of the permittee's property. If a wounded deer is not retrieved, the permittee must notify the conservation officer within 24 hours.

**APPLICATION FOR SHOOTING PERMIT  
MINNESOTA DEPARTMENT OF NATURAL RESOURCES  
SECTION OF WILDLIFE**

INSTRUCTIONS TO LANDOWNERS: The following information is required to make a decision on any request for a permit to shoot deer doing damage. Please fill out the form and return to your local area wildlife manager:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**PHONE-WORK:** \_\_\_\_\_ **HOME:** \_\_\_\_\_

**LEGAL DESCRIPTION-TOWNSHIP** \_\_\_\_\_ **RANGE** \_\_\_\_\_ **SECTION** \_\_\_\_\_ **QUARTER** \_\_\_\_\_

**DESCRIPTION OF DAMAGE:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**PLANNED ABATEMENT ACTIVITIES IN NEXT YEAR: (CHECK ALL THAT APPLY)**

PERMANENT FENCE _____	SCHEDULE _____
TEMPORARY FENCE _____	SCHEDULE _____
REPELLANT PROGRAM _____	SCHEDULE _____
HUNTING PROGRAM _____	SCHEDULE _____
OTHER (DESCRIBE) _____	

**NUMBER OF DEER REQUESTED ON PERMIT:** \_\_\_\_\_

**LIST ALL INDIVIDUALS WHO WILL BE DOING THE SHOOTING:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**AGREEMENT**

If a permit is granted, I will undertake the abatement actions listed above and will abide by all permit restrictions.

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE





## APPENDIX D

## DIRECTIVE

Department of Natural Resources  
Division of Enforcement  
Division of Fish and Wildlife

### NUISANCE BEAR

Effective Date: April 1, 1992  
Directive Number: 58-92  
Special Instructions: Signature Return  
Distribution: All Conservation Officers  
Wildlife Managers  
Number of Pages: 7

#### **JUSTIFICATION**

The black bear is a valuable part of Minnesota's wildlife heritage. Some bears, however, damage or threaten crops, apiaries, fruit trees, campgrounds, livestock and buildings. Occasionally bears become aggressive toward people, although actual injuries in Minnesota are rare. Others become a nuisance or a perceived threat merely by their presence in places when and where they are not wanted.

The goal of the Department is to minimize bear-human conflicts through population management and education of the public on dealing with nuisance bear problems. The purpose of this directive is to establish uniform statewide methods for handling nuisance bear problems.

Nothing in this directive shall be construed to conflict with Minnesota Statute 97B.415 which states: "A person may take a bear at any time to protect the person's property. The person must report the bear taken to a conservation officer within 48 hours. The bear may be disposed of as prescribed by the Commissioner."

#### **RESPONSIBILITY**

Responsibility for nuisance bear complaints is with the local Conservation Officer or Area Wildlife Manager within whose area the problem occurs. At locations assigned to both a Conservation Officer and a Wildlife Manager, control activities will be conducted under a mutually agreed upon system. On major wildlife management areas, the resident Wildlife Area Manager has responsibility for control.

## GUIDELINES

Upon receiving a complaint of actual or likely property damage, the property owner must be informed that M.S. 97B.415 allows a person to take bear to protect the person's property. However, unless the bear is posing immediate danger to humans or causing significant property damage, immediate destruction of the bear should not be recommended. If immediate destruction of the bear is not recommended, an inspection of the site should be made with the complainant to gather additional information and assess and document the nature and magnitude of the damage problem. The following five options will be recommended as feasible, in order of priority.

### 1. Technical Assistance/Deterrence

The first priority will be to offer information to the complainant on how to eliminate the problem or modify the bear's behavior without relocating or killing the bear. This will include providing educational information, because many "problems" are the result of misperceptions or unfounded fears about bears. In addition to preventive techniques (exclusion, management of food sources, etc.), the use of plastic slugs, spray repellents, or emetic compounds (such as lithium chloride) may also be attempted or recommended.

### 2. Trapping and Relocation

When feasible and practical, trapping and relocating bear should be attempted. This may be the only option in urban or resort settings where safety concerns, ordinances, or other considerations do not allow shooting of bear. If a sow with cubs is trapped prior to August 1, every attempt should be made to relocate the cubs with her.

Trapping will be conducted under procedures outlined in Appendix 1.

### 3. Harvest by Licensed Hunters

If it is determined that a nuisance bear must be shot, licensed hunters will be utilized if practical. Generally, this option is available from July 1 (when quota area licenses are mailed and no-quota licenses go on sale) until the close of the bear season. Sows with cubs may not be taken by licensed hunters before August 1 each year. Bear cubs may not be taken by licensed hunters at any time.

Harvest of nuisance bear by hunters will be conducted under procedures outlined in Appendix 2.

4. Shooting by Complainant

Property owners have the authority under M.S. 97B.415 to take bear at any time to protect property. However, this option should only be recommended after the first 3 options are considered, unless there is reason to believe that the bear is posing immediate danger, or causing significant property damage. Property owners are not entitled to keep or purchase bear taken while doing damage, unless specifically authorized by the officer or manager.

5. Taking Under Nuisance Bear Permit

If options 1 through 4 are not feasible or practical, nuisance bear permits may be issued to individuals other than property owners to take nuisance bear on complainant's property. Nuisance bear permits will be issued under the procedures outlined in Appendix 3.

6. Monthly Nuisance Bear Investigations Report

All nuisance complaints investigated will be tallied on a Monthly Nuisance Bear Investigations form. Forms and instructions will be provided by Section of Wildlife for distribution to field personnel.

7. Confiscation, Disposal, Collection of Biological Material

Whenever a nuisance bear is destroyed or taken under a nuisance bear permit, by DNR personnel, or by a private individual, a Confiscation Report Form (NA 1189) will be filled out. Disposition of carcasses will be as directed in Division of Enforcement Policy 27-83, Disposal of Big Game Animals. In addition, a premolar will be obtained and sex of the bear determined. This material should be submitted to Forest Wildlife Populations and Research Group in a regular bear tooth envelope marked "nuisance". Tooth envelopes will be supplied by Section of Wildlife for distribution to field personnel and will be mailed as needed.

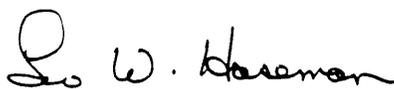
8. Personal Injury

Any personal injury caused by a bear will be investigated by the Area Conservation Officer or Wildlife Manager and reported within 24 hours to the immediate supervisor with a copy attached to the Nuisance Bear Investigations form.

9. Sows With Cubs

If a sow with cubs of the year is destroyed before August 1, an attempt will be made to find short-term care of orphaned cubs if they are considered unlikely to survive on their own. If such care is not available and if a permanent home such as a zoo cannot be found, the cubs should be destroyed.

By Authority of:



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Leo W. Haseman  
Director  
Division of Enforcement

Appendix 1. Procedures for trapping and relocating bear

- a. Prior to trapping, the complainant will be warned of the potential dangers associated with such traps and trapping operations. Conspicuous warning information will be posted on the trap. The complainant should also be informed of the difficulty in trapping bears and the possibility that the bear may return.
- b. Trapped bear should be relocated at least 40 air miles from the capture site if possible. When adjacent work areas are involved, agreement should be reached between adjoining wildlife managers and conservation officers as to where bear should be released to minimize chances of the animal remaining a nuisance.
- c. Officers or managers should consider destruction of relocated nuisance bears that can be identified and return to the problem site and resume nuisance activity, or become a nuisance elsewhere (in the same year). Nuisance bear may be color-marked or tagged for ID purposes. Marking procedures will be developed and coordinated by the Section of Wildlife.
- d. Immobilizing drugs are to be used by trained personnel only and pursuant to current state and federal regulations.

Appendix 2. Procedures for harvest of nuisance bear by licensed hunters.

- a. In quota areas, officers or managers will contact licensed hunters who indicated on their license application that they are willing to harvest nuisance bear prior to opening of the bear season. Hunters who agree to take a nuisance bear must have their license validated by an officer or manager.
- b. In the no-quota area, potential hunters will be identified and recruited from lists kept by officers or wildlife managers, or from lists of unsuccessful quota area applicants. Hunters interested in taking a bear before the season must purchase a no-quota bear license. If it is prior to the season, these individuals will be authorized to harvest nuisance bear by validating their no-quota bear license.
- c. Nuisance bear taken by licensed hunters between July 1 and the first day of the bear season must be registered by the issuing officer or manager. Nuisance bear taken by licensed hunters after the start of the season will be registered at registration stations. Requirements and materials for data collection (including tooth collections or other biological data) will be provided by the Section of Wildlife.

Appendix 3. Procedures for issuing nuisance bear permits.

- a. Nuisance permits can be issued during any month. However, from July 1 through the end of the bear season, officers and managers should initially attempt to find licensed hunters to take nuisance bear, before nuisance permits are issued.
- b. Nuisance permits must specify valid dates (no longer than 14 days), legal description of the property, and a sign-off by the landowner(s) before the permit becomes valid.
- c. Only one bear may be taken under each permit issued. However, more than one permit may be issued per individual permittee if additional permittees cannot be found.
- d. Bear cubs may not be taken except as specifically authorized by the permit.
- e. No bait or attractants may be placed or used by permittees, except that materials present at the damage site at the time of the complaint may be used during the term of the permit.
- f. Nuisance bear permits are valid for taking bears from one-half hour before sunrise to one-half hour after sunset except as specifically authorized by the permit. Permittees are required to take bear with firearms, except that bow and arrow may be authorized in situations where ordinances or safety concerns restrict firearms use.
- g. Officers or Managers must send the pink copy of the permit to the Forest Wildlife Populations and Research Group at the time the permit is issued.
- h. The Section of Wildlife will provide materials and procedures for collecting biological data from harvested bear. Permittees will be required to submit the same biological data and specimens as licensed hunters using envelopes provided to permittees when the permit is issued.

**DIRECTIVE #58-92 SIGNATURE**

I have received a copy of Directive #58-92 Nuisance Bear, which I have read and understand.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

This sheet shall be signed and returned to your Area Supervisor (or respective supervisor) no later than seven days after receipt of the Directive.

## APPENDIX E

# DIRECTIVE

DEPARTMENT OF NATURAL RESOURCES

Division of Enforcement

## CONTROL OF NUISANCE BEAVER

Effective Date: July 1, 1990  
Directive Number: 1-90  
Special Instructions: Superseding Policy 2-81  
Distribution: All Conservation Officers  
Director of Wildlife  
Commissioner's Office  
Regional Administrators  
Number of Pages: 3

\* \* \* \* \*

### Justification

Based upon decisions and subsequent budgetary constraints placed on the Division by the Minnesota Legislature, the Division of Enforcement will no longer be able to provide extensive service to the public and governmental agencies involving nuisance beaver and dam control.

The public feels that the Department is obligated to handle beaver damage problems, and in fact, demands it.

In many areas of the state, beaver damage complaints are far and above what gasoline, manpower and other budgetary constraints permit the Division to handle. Now, because of the high cost of explosives and the before-mentioned budgetary constraints and because M.S. 97B.655 allows a landowner to destroy beaver causing damage to their own property, the Department must encourage landowners to destroy nuisance beaver before a beaver dam is removed.

The State of Minnesota places no restrictions, seasons, or methods of control on the landowner except prohibiting the use of poisons or artificial lights. Certain local governments have imposed additional limitations which have seriously affected the normal means of controlling beaver.

In order to have a uniform statewide directive and in order to allow Conservation Officers to more effectively pursue their primary function, that of law enforcement, the following Directive shall prevail.

## Directive

If a county board acting under M.S. 97B.655 requests the Commissioner to take action, Conservation Officers will not take action unless they are directed to do so by the Commissioner.

Recognizing it is futile to remove a beaver dam unless the beaver are first removed from a colony, the local Conservation Officer will advise the occupant, landowner or governmental agency to remove nuisance beaver. Conservation Officers will make every attempt to provide expertise and information on methods to destroy nuisance beaver but shall not be required to personally do so.

After beaver are removed, the occupant, landowner or governmental agency shall be responsible for the removal of the dam(s).

Governmental agencies should be advised to place steel gates, rods, etc., in front of culverts to prevent blockage and subsequent removal problems.

Nuisance beaver and dams located on state land will be the responsibility of the Department in accordance with M.S. 97B.661.

This is not meant to be an inflexible directive. There are going to be situations where it is impossible for the landowner, because of physical health or other circumstances, to handle their own problem. In these situations, Conservation Officers will attempt to provide every act of assistance.

### **STATUTE M.S. 97B.655 TAKING ANIMALS CAUSING DAMAGE**

Subdivision 1. "Owners and occupants may take certain animals. A person may take mink, squirrel, rabbit, hare, raccoon, lynx, bobcat, fox, muskrat, or beaver on land owned or occupied by the person where the animal is causing damage. The person may take the animal without a license and in any manner except by poison, or artificial lights in the closed season. Raccoons may be taken under this subdivision with artificial lights during open season. A person that kills mink, raccoon, lynx, bobcat, fox, muskrat, or beaver under this subdivision must bring the entire animal to a conservation officer or employee of the division within 24 hours after the animal is killed.

Subd. 2. Special permit for taking protected wild animals. The commissioner may issue special permits under section 97A.401, subdivision 5, to take protected wild animals that are damaging property."

### **STATUTE M.S. 97B.665 IMPAIRMENT OF DRAINAGE BY BEAVER DAMS**

Subdivision 1. "Agreement by county board, landowner, and commissioner. (a) When a drainage watercourse is impaired by a beaver dam, the commissioner shall take action to remove the impairment, if:

- (1) the county board unanimously consents;
- (2) the landowner approves;
- (3) the commissioner agrees; and

(4) the action is financially feasible.

(b) In a county with unanimous consent of the county board of commissioners and approval of the landowner, the department shall take action agreed to by unanimous consent of the county board, the commissioner, and the landowner. The action may include destruction or alteration of beaver dams and removal of beaver. This subdivision does not apply to state parks, state game refuges and federal game refuges.

Subd. 2. Petition to district court. If a beaver dam causes a threat to personal safety or a serious threat to damage property, and a person cannot obtain consent under subdivision 1, a person may petition the district court for relief. The court may order the commissioner to take action to reduce the threat.

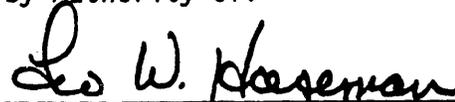
**STATUTE M.S. 97B.661 REMOVAL OF BEAVER FROM STATE LANDS**

"The commissioner may remove beaver at state expense from state land if the county board where the land is located adopts a resolution requesting the removal.

**STATUTE M.S. 97A.401**

Subd. 5. Wild animals damaging property. Special permits may be issued with or without a fee to take protected wild animals that are damaging property. A special permit issued under this subdivision to take beaver must state the number to be taken.

By Authority of:



Leo W. Haseman, Director  
Division of Enforcement

