MANAGEMENT OF WOLF-LIVESTOCK CONFLICTS IN MINNESOTA

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Abstract: In 1975, the gray wolf (*Canis lupus*) population in Minnesota was protected by the federal Endangered Species Act (USA). At that time, there were 500-750 wolves. By 2004, the population had grown to an estimated 3,020 wolves. Over time, conflicts between wolves and livestock increased. Wolf depredation control programs have been conducted by the U.S. Fish and Wildlife Service (1975-1986) and by the U.S. Department of Agriculture's Wildlife Services program (1986 to present). In 1978, Minnesota's wolves were reclassified from endangered to threatened which allowed authorized federal agents to lethally remove wolves that had depredated on livestock or pets. A State funded wolf compensation program was also established in 1978. Wildlife Services' wolf damage management approach utilizes both non-lethal and lethal methods of control. Currently, wolf depredations are verified at 60-85 farms annually and 125-175 wolves are taken each year. Wolf compensation payments to livestock producers have averaged $67,111 per year during the past five years. Most livestock losses occur during spring and summer. Selective removal of depredating wolves, coupled with improvements in animal husbandry practices, has potential for reducing wolf-livestock conflicts. Minnesota's wolf population is currently considered to be fully recovered and federal delisting is expected to occur in the near future.

Key words: Minnesota wolves, wolf control methods, wolf damage management

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MINNESOTA WOLF POPULATION STATUS

Minnesota's population of gray wolves (*Canis lupus*) was federally protected by the Endangered Species Act (USA) of 1974. In the mid-1970's, Minnesota contained an estimated 500-750 wolves and had the only known reproducing population of wolves in the lower 48 United States, except for those on Isle Royale. Wolves at that time were located mainly in the wilderness areas of northern Minnesota. Under federal protection, wolves expanded their range southward and westward in the state. The Minnesota Department of Natural Resources (MDNR) has conducted wolf distribution and abundance surveys at 10-year intervals (1978-79, 1988-89, 1997-98) and have shown an expanding population (Berg and Kuehn 1982, Fuller et al. 1992, Berg and Benson 1998). The MDNR's most recent wolf survey conducted during the winter of 2003-04 provided a population estimate of 3,020 wolves occupying 88,325 sq. km of range in the state (Erb and Benson 2005). Minnesota's wolves are currently classified as a federally threatened species.

WOLF-LIVESTOCK CONFLICTS

As the wolf population has grown and expanded into more agricultural areas of the state, conflicts between wolves and livestock have slowly increased. Depredation by wolves on livestock and poultry in Minnesota is a problem for some producers. In many instances, wolves live

around livestock without causing damage or causing only occasional damage. In other instances, wolves may prey repeatedly on livestock and cause significant, chronic losses at individual operations. While only 1-2 percent of the estimated 8,500 farms in the Minnesota wolf range have verified depredations annually, some of these farms will suffer substantial monetary loss in a given year. From 1976 through 2004, the number of farms suffering verified wolf depredations ranged from 9 to 99 per year (ave. = 68 during the past 5 years) out of about 8,500. From 1977 through 2004 the highest cattle losses claimed by farmers were 0.83 per 1,000 available in 1998; the highest sheep losses claimed were 13.87 per 1,000 available in 1990. Claims of losses (especially of calves) sometimes include missing animals. Livestock depredations caused by coyotes (*Canis latrans*) are often misidentified as wolf damage by farmers in the wolf range. As a result, the view of wolves as livestock predators has been somewhat magnified.

In Minnesota, wolf depredation on livestock is seasonal, with most losses occurring between April and October, when livestock are on summer pastures. Livestock are confined to barnyards during the winter months and therefore less susceptible to predation. Wolves kill cattle, sheep, poultry and other livestock as well as domestic dogs. Cattle, especially calves, are the most common livestock taken. Attacks usually involve only one or two cattle per event. Wolf depredation on sheep or poultry often involves surplus killing.

STATE WOLF COMPENSATION PROGRAM

In 1978, the Minnesota Legislature established a compensation program to reimburse livestock producers for damage caused by wolves to livestock and poultry. The compensation program, administered by the Minnesota Department of Agriculture, has paid an average of $67,111 per year during the past 5 years. Compensation payments from 1978 through 2004 have ranged from $14,444 to $88,097. For many years the state compensation program reimbursed livestock producers a maximum of $400 per animal killed by wolves. In 2003, the program was changed to pay full market value for livestock destroyed by wolves. The state's compensation program does not pay for missing livestock allegedly killed by wolves or for domestic dogs that are killed by wolves. Documentation of wolf-killed livestock and missing livestock at wolf depredation sites are both controversial issues associated with wolf compensation programs. Wolves also attack and kill or injure domestic dogs and the affected dog owners have requested that the state compensation program be revised to include reimbursement for pets killed by wolves.

WOLF DEPREDATION INVESTIGATION AND CONTROL PROGRAM

Wolf depredation control programs have been conducted in Minnesota by the U.S. Fish and Wildlife Service (1975-1986) and by the U.S. Department of Agriculture's Wildlife Services (USDA-WS) program (1986 to present). In 1978, Minnesota's wolves were reclassified from endangered to threatened which allowed authorized federal agents to lethally remove wolves that had depredated on livestock or pets. Verification of wolf damage is a requirement before lethal control can be initiated at damage sites. No preventive wolf control is authorized in Minnesota at the present time.

Livestock-producers or pet owners who suspect that wolves have killed or injured their animals are instructed to contact their local Minnesota Department of Natural Resources (MDNR) conservation

officer or USDA-WS for assistance. MDNR or USDA-WS personnel investigate wolf depredation complaints in a timely manner, usually within 24-48 hours, to minimize loss of evidence needed for verification of wolf damage. Livestock carcasses can deteriorate rapidly during the summer months or be consumed quickly by wolves. USDA-WS personnel use a number of investigative criteria to differentiate wolf depredation from depredation by other predators or natural mortality/scavenging of livestock including: (1) there must be a livestock carcass or wounded animal present for examination, (2) the livestock carcass must be in reasonable condition (not all rotted down) in order to make a good determination, (3) predator tracks associated with the depredation site, (4) the location of wounds and bite marks on the livestock carcass, including the size of the canine tooth holes, (5) the feeding pattern on the carcass and the amount eaten, and (6) considerations for natural mortality of livestock with subsequent scavenging by wolves or other predators. Wolf attacks on large livestock are characterized by bites and large ragged wounds on the hindquarters, flanks, and sometimes the upper shoulders. Attacks on young calves or sheep are characterized by bites on the throat, head, neck, back, or hind legs. Wolves usually begin feeding on the viscera and hindquarters of a livestock carcass. Much of the carcass may be eaten with large bones chewed and broken. The carcass is usually torn apart and scattered with subsequent feedings. Wolves are attracted to and will scavenge carcasses of livestock that have died of natural causes. It is important to distinguish between predation and scavenging. Evidence of predation includes signs of a struggle, and hemorrhaging beneath the skin in the throat, neck, back, or hindquarter area. A depredation investigation should include examining all possible clues such as the presence of tracks, feeding pattern, nature of wounds, size of canine tooth holes, and possible natural mortality factors.

Lethal Control Methods Utilized

Once USDA-WS personnel verify that wolves have killed a livestock animal, lethal control measures can be initiated at the depredation site. Lethal control measures include leghold traps, neck snares, and shooting. Trapping is usually conducted for a period of 10-15 days and is restricted to within ½ mile of the boundaries of the farm. Control devices are checked daily and captured wolves are euthanized by shooting. Annually, 125-175 wolves are taken during depredation control activities. Selective removal of livestock-depredating wolves at localized damage sites in Minnesota has helped resolve wolf-livestock conflicts while facilitating wolf recovery.

Non-lethal Control Methods Utilized

USDA-WS also utilizes non-lethal methods to resolve or mitigate wolf-livestock conflicts. Non-lethal methods that have been employed include antipredator fencing, strobelight/siren devices (Electronic Guard), livestock guarding animals (guard dogs, llamas, and donkeys), and improvements in animal husbandry practices such as proper disposal of dead livestock carcasses. Non-lethal methods should be viewed as tools that livestock producers may wish to utilize to reduce the potential for wolf depredations. However, USDA-WS has observed that non-lethal methods may work in only some situations and only some of the time. Non-lethal methods may have a short term effect and should not be viewed as an effective replacement for lethal control. The application of non-lethal methods may be more practical in the early

stages of wolf recovery when wolf numbers and conflicts are lower.

Role of a Wolf Control Program in Wolf Recovery/Management

A wolf depredation control program has played a major role in successful wolf management/recovery efforts in Minnesota by: (1) helping to define the extent of the perceived problem, (2) providing accurate information about wolves to all the parties involved, (3) mediating the need to control damage caused by wolves while facilitating wolf recovery, and (4) interacting daily with the public on the front lines of wolf control and wolf recovery issues to increase public tolerance for wolves. By selectively removing problem wolves that kill domestic animals, the USDA-WS wolf depredation control program has helped to resolve localized wolf damage situations, and thus ultimately facilitate wolf recovery by building public tolerance of wolves.

MINNESOTA WOLF MANAGEMENT PLAN AND FEDERAL DELISTING

Minnesota's wolf population is currently considered to be fully recovered and has exceeded the population goal identified in the Eastern Timber Wolf Recovery Plan (U.S. Fish and Wildlife Service 1978, 1992). That goal was 1,400 wolves in Minnesota. The Recovery Plan also set population goals of 200 wolves each in Wisconsin and Michigan for a geographically isolated population status. Current wolf population estimates are 3,020 for Minnesota, 373-410 for Wisconsin, and 360 for Michigan. State wolf management plans for Minnesota, Wisconsin, and Michigan have been developed and approved by the U.S. Fish and Wildlife Service and the plans for all three states establish post-delisting wolf population threshold goals that meet or exceed the population goals identified in the Eastern Timber Wolf Recovery Plan (U.S. Fish and Wildlife Service 1978, 1992). State wolf management plans call for a minimum goal of 1,600 wolves in Minnesota, 350 in Wisconsin, and 200 in Michigan. Federal delisting of wolf populations in the Western Great Lakes states is expected to occur in the near future. Wolf populations in these states are likely to continue to grow and expand even further during the time that the delisting process takes.

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