

**DECISION
AND
FINDING OF NO SIGNIFICANT IMPACT
FOR THE
INTEGRATED MANAGEMENT OF
COYOTE, RED FOX, FERAL DOG, WOLF-HYBRID, AND EXOTIC CARNIVORE
PREDATION ON LIVESTOCK
IN WEST VIRGINIA**

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS), Wildlife Services (WS) program responds to requests for assistance from individuals, organizations and other government agencies experiencing damage caused by wildlife. Ordinarily, according to APHIS procedures implementing the National Environmental Policy Act (NEPA), individual wildlife damage management actions may be categorically excluded (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). To evaluate and determine if any potentially significant impacts to the human environment would occur from WS' planned and proposed program, an environmental assessment (EA) was prepared. This EA examines potential impacts of various alternatives for responding to coyote, red fox, feral dog, wolf-hybrid, and exotic carnivore predation on livestock and concludes that there is a need for a livestock protection program in West Virginia. The EA analyzes the potential environmental and social effects for resolving predator damage related to the protection of livestock on private and public lands in West Virginia. WS' proposed action is to implement an Integrated Wildlife Damage Management (IWDM) program on public and private lands in West Virginia. Comments from the public involvement process were reviewed for substantial issues and alternatives which were considered in developing this decision.

WS is the Federal program authorized by law to reduce damage caused by wildlife (Animal Damage Control Act of 1931, as amended (46 Stat. 1486; 7 U.S.C. 426-426c) and the Rural Development, Agriculture, and Related Agencies Appropriations Act of 1988, Public Law 100-102, Dec. 27, 1987. Stat. 1329-1331 (7 U.S.C. 426c). Wildlife damage management is the alleviation of damage or other problems caused by or related to the presence of wildlife, and is recognized as an integral part of wildlife management (The Wildlife Society 1992). WS uses an Integrated Wildlife Damage Management (IWDM) approach, commonly known as Integrated Pest Management (WS Directive 2.105) in which a combination of methods may be used or recommended to reduce damage. WS wildlife damage management is but one means of reducing damage and is used as part of the WS Decision Model (Slate et al. 1992, USDA 1997, WS Directive 2.201). The imminent threat of damage or loss of resources is often deemed sufficient for wildlife damage management actions to be initiated (U.S. District Court of Utah 1993). Resource management agencies and individuals have requested WS to conduct IWDM to protect livestock throughout the state. All WS wildlife damage management activities are in compliance with relevant laws, regulations, policies, orders and procedures, including the Endangered Species Act of 1973.

Consistency

The analyses in the EA demonstrate that Alternative 5: 1) best addresses the issues identified in the EA; 2) provides safeguards for public health and safety; 3) provides WS the best opportunity to reduce

damage while providing low impacts on non-target species; and 4) allows WS to meet its obligations to government agencies or entities.

Monitoring

The West Virginia WS program will review its lethal take of coyotes, red fox, feral dog, wolf-hybrid, and exotic carnivores and non-target species each year to ensure that the statewide harvest does not impact the viability of target or non-target wildlife species. In addition, the EA will be reviewed each year to ensure that it and the analysis are sufficient.

Public Involvement

The pre-decisional EA was prepared and released to the public for a 30-day comment period by a legal notice in 19 newspapers in the state of West Virginia. The West Virginia Public Service Commission uses these newspapers for their legal advertisements and feel they reach more than 90% of the state population. The pre-decisional EA was also mailed directly to agencies, organizations, and individuals with probable interest in the proposed program. The one comment received during the 30 day comment period was from the West Virginia Division of Natural Resources supporting the proposed action.

Major Issues

The EA describes the alternatives considered and evaluated using the identified issues. The following issues were identified as important to the scope of the analysis (40 CFR 1508.25).

- Effects on target (coyote and red fox) species populations
- Effects on dogs, wolf-hybrids, and exotic carnivores
- Effects on non-target wildlife species, including T&E species
- Effects on human health and safety
- Humaneness of control methods used by WS
- Effects on the aesthetic values of target and non-target species

Affected Environment

The areas of the proposed action may include any property owner or manager who has suffered damage or loss of livestock or poultry from predators within the State of West Virginia. Control areas may include Federal, state, county, city, private, or other lands, where WS assistance has been requested by a landowner or manager to control predator damage to livestock or poultry. The control areas may also include property in or adjacent to identified sites where predation activities could cause damage or losses to livestock. Predator damage control may be conducted when requested by a landowner or manager, and only on properties with a Cooperative Agreement with WS.

Alternatives Analyzed in Detail

The following six alternatives were developed to respond to the issues. Seven additional alternatives were considered but not analyzed in detail with rationale. A detailed discussion of the effects of the Alternatives on the issues is described in the EA; below is a summary of the Alternatives.

Alternative 1 - Technical Assistance Only

This alternative precludes any and all IWDM direct control activities by WS to protect livestock from predation in West Virginia. Producers or any other entity directed at preventing or reducing predation of livestock could conduct IWDM direct control activities in the absence of WS involvement. However, if requested, affected producers would be provided with technical assistance information only.

Alternative 2 - Non-Lethal Control Only

Under this alternative, only non-lethal direct control activities and recommendations would be provided by WS to resolve coyote, red fox, feral dog, wolf-hybrid, and exotic carnivore predation on livestock (see Appendix B in EA). Requests for information regarding lethal management approaches would be referred to West Virginia Division of Natural Resources, local animal control agencies, or private businesses or organizations. In some cases, control methods employed by others could be contrary to the intended use or in excess of what is necessary. Non-lethal control methods include, but are not limited to, fencing, shed birthing, guard animals (i.e., dogs, llamas, and donkeys), harassment, and shepherds. Persons receiving non-lethal assistance could still resort to lethal methods, but not with WS assistance.

Alternative 3 - Non-Lethal Control Before Lethal Control

Alternative 3 would require that all methods or techniques described under Alternative 2 be applied and determined to be inadequate in each damage situation prior to implementation of any of the methods or techniques described in Alternative 4. This would be the case regardless of the severity or intensity of predation on livestock.

Alternative 4 - Lethal Control Only

This alternative would allow only the use of lethal removal of coyotes, foxes, feral dogs, wolf-hybrids, and exotic carnivores causing predation on livestock and would not require use of or consideration of non-lethal methods (see Appendix B in EA). Specific problem animals can be targeted and removed without negatively affecting the local population of a species (Baily 1984). All lethal control methods would be implemented in accordance with applicable Federal, state, and local laws, and WS policy. Technical assistance could still be provided, but requests for non-lethal control methods would be referred to West Virginia Division of Natural Resources, local animal control agencies, or private businesses or organizations. In some cases, control methods employed by others could be contrary to the intended use or in excess of what is necessary.

Alternative 5 - Integrated Wildlife Damage Management (Proposed Action/No Action)

This alternative, the proposed action, would continue IWDM utilizing any legal techniques and methods, used singly or in combination, described in Alternatives 1-4 to meet requester needs for resolving predation on livestock and conflicts with coyotes, foxes, feral dogs, wolf-hybrids, and exotic carnivores (see Appendix B in EA). The proposed action is to continue the current integrated wildlife damage management program assisting livestock producers with reducing losses of sheep, cattle, goats, pigs, poultry, and other livestock to predators in the State of West Virginia. Cooperators requesting assistance are provided with information regarding the use of effective non-lethal and lethal techniques. Most non-lethal methods are best implemented by the livestock producer and the following methods may be recommended by WS: guard dogs, llamas, and donkeys; Electronic Predator

Guard (Linhart et al. 1992); fencing; moving livestock to other pastures; birthing in buildings; night penning; habitat alteration; herders and scare devices. Additional methods used by WS, or recommended to producers include shooting, calling and shooting, trapping, snares, dogs, M-44's, Livestock Protection Collars, and gas cartridges. All management actions comply with appropriate Federal, state, and local laws.

Alternative 6 - No Federal WS Predator Damage Management in West Virginia

This alternative would result in no assistance from WS to reduce predator damage to livestock in West Virginia. WS would not provide technical assistance or operational damage management services. All requests for predator damage management would be referred to the West Virginia Division of Natural Resources, local animal control agencies, or private businesses or organizations. Assistance may or may not be available from any of these entities.

Alternatives Considered but not Analyzed in Detail are the Following:

Compensation for Wildlife Damage Losses

There is currently no reimbursement for livestock producers for losses due to coyote predation, though it has been proposed. Reimbursement provides producers monetary compensation for losses, it does not remove the problem nor does it assist with reducing future losses from predation. Analysis of this alternative in USDA (1997) shows it has many drawbacks:

- Compensation would not be practical for public health and safety problems.
- It would require larger expenditures of money to investigate and validate all losses, and to determine and administer appropriate compensation.
- Timely responses to all requests to assess and confirm losses would be difficult, and many losses may not be verified.
- Compensation would give little incentive to limit losses through other management strategies.
- Not all resource managers/owners would rely completely on a compensation program and unregulated lethal control would probably continue and escalate.

Regardless of the predator, compensation for losses does not resolve the initial problem of predation for producers and losses continue.

Coyote Bounties

During the early years of game management, many states relied on massive killing efforts (bounties) to reduce predator numbers (e.g., wolves, coyotes, foxes) which were competing with man for game animals (e.g., white-tailed deer). Bounties are not used by most wildlife agencies nor are they supported by WS for predator control because:

- Bounties are not effective in reducing damage.
- Circumstances surrounding take of animals is largely unregulated.
- No process exists to prohibit taking animals from outside the damage management area for compensation purposes.
- Bounty hunters may mistake dogs and foxes as coyotes.

- Coyote bounties have a long history (>100 years in the U.S.) of use in many states without ever achieving the intended result of reducing damage and population levels (Parker 1995).

The overwhelming disadvantage of coyote bounties is the misdirection of funds meant to, but not effectively and economically able to, reduce coyote damage to livestock.

Fertility Control of Predator Populations

Fertility control of predator populations may include surgical sterilization (vasectomies or tubal ligations), endocrine regulation (steroids, GnRH [gonadotropine-releasing hormone], antiprogestins), and immunocontraception. Endocrine regulation agents are designed to control hormone levels and regulate fertility in vertebrate species. Immunocontraception uses an individual's own immune system to disrupt reproduction. Although these fertility control methods have shown promise, they can be costly and with the exception of sterilization, need to be administered (boosted) regularly to maintain effectiveness. Many hurdles must be overcome before fertility control becomes a viable wildlife management control alternative. These include, but are not limited to, the development of contraceptive agents that are orally deliverable, species specific, reversible, have few side-effects, and are cost effective (Sanborn et al. 1994).

Fertility control is still in the developmental stages and the full effects on wildlife populations and cost effectiveness is being evaluated. The National Wildlife Research Center (NWRC) (the research branch of the WS program) is evaluating the effects of fertility control on coyote populations. Preliminary findings indicate that surgically sterilized coyotes maintain pair bonds, defend territories, and kill significantly fewer sheep than unsterilized coyotes. Furthermore, coyotes given multiple porcine zona pellucida (PZP, an immunosterilant) injections are immunologically sterilized and continue to maintain pair-bonds and successfully defend territories in pen tests. These results are promising; however, immunosterilization was not permanent and could break down, allowing previously sterile females to produce offspring. In addition, the effectiveness of surgical sterilization was only cost efficient when it involved 1-3 packs of coyotes.

Although there may be some applications for fertility control, use of these methods to protect livestock throughout the State of West Virginia would not be cost effective or practical at this time and is prohibited by state law (WVCSR §20-2-5d). Fertility control also may effect the genetics of a population over a large area. Because these management techniques are still in the preliminary stages and researchers do not fully understand the effects on wildlife populations, considering fertility control to reduce predation on West Virginia's livestock would be precipitous and premature. Before the use of fertility control could be used on predator populations in the State of West Virginia, the WVDNR would need to be consulted and would decide if these methods could be used for population control. The West Virginia WS program will keep updated on new findings with regards to fertility control use on predator populations and will consider use of these methods if they become feasible for controlling predation on livestock in West Virginia.

Corrective Predator Damage Management Only, No Preventative Management

Some people believe lethal management actions should be implemented to stop predation on livestock only after predation has started. These people oppose preventative lethal management actions which may involve removal of coyotes living near livestock operations even though these same livestock operations have chronic historic predation.

Gantz (1990) concluded that late winter removal of territorial coyotes from mountain grazing allotments would reduce predation on sheep grazing on those allotments the following summer. Blejwas et al. (2002) and Sacks et al. (1999a, 1999b) found that breeding adults whose territories contained sheep were typically responsible for the killing of livestock and that targeting those individuals for removal reduced predation to livestock. Conner et al. (1998) suggested that coyote removal efforts should occur just prior to known peaks of predation.

While WS is unable to predict which predator will kill livestock or which livestock operations will have substantial predator losses, WS can look at historical records for each farm and draw inferences. On livestock operations with historic predator losses, it is likely there will be future losses. Therefore, it is prudent for the livestock manager to have predators removed as good husbandry, especially prior to lambing, kidding, or calving. WS is able to better serve the livestock industry when requests for assistance are more evenly distributed rather than being overwhelmed with requests for service, especially during spring lambing, kidding, and calving.

Require Livestock Producers to Help Themselves Before Receiving Assistance from WS

Although no law or policy requires livestock producers to employ husbandry or other predator prevention practices to protect their livestock, 39% of cattle and 83% of sheep producers in the U.S. report using non-lethal methods to help themselves (NASS 1999). In 1998, cattle and sheep producers in the U.S. spent \$3.2 and \$4.1 million on non-lethal management methods, respectively (NASS 1999).

Livestock producers in the U.S. employ many lethal and non-lethal management methods to reduce predator losses. The most frequently used non-lethal methods include: guard animals, fencing, shed birthing, herding, night penning, and frightening tactics (NASS 1999). WS policy is to respond to all requests for assistance within program authority, responsibility, and budget. If improved husbandry and other non-lethal methods would reduce predation on livestock, then WS will recommend these practices following the IWDM approach.

No Use of Chemical Methods

Much of the public's concern over the use of registered toxicants for predator damage management is based on an erroneous perception that WS uses non-selective, outdated chemical methodologies. In reality, the chemical methods currently used by WS have a high degree of selectivity (see section 4.1.4 in EA). WS use of registered toxicants is regulated by the EPA through the FIFRA, by MOU's with other agencies, and by program directives. In addition, APHIS conducted a thorough risk assessment and concluded that chemicals used according to label directions are selective for target individuals or populations, and therefore, have negligible impacts on the environment (USDA 1997, Appendix P).

The decision to use registered toxicants falls within the WS Decision Model (see section 3.2.3 in EA) (Slate et al. 1992). Chemical methods are used because they allow for efficient and effective delivery

of service to more livestock producers than would be served if registered toxicants were unavailable. Most registered toxicants have the ability to work during inclement weather and solve predation problems, whereas, traps and snares may be inoperable and shooting impractical in the same inclement weather.

Relocation of Coyotes and Foxes Killing Livestock

Translocation of wildlife is discouraged by WS policy (WS Directive 2.501) because of stress to the relocated animal, poor survival rates, and difficulties in adapting to new locations or habitats (Nielsen 1988).

Finding of No Significant Impact

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of this proposed action. I agree with this conclusion and therefore find that an EIS need not be prepared. This determination is based on the following factors:

1. Predator damage management, as conducted by WS in West Virginia, is not regional or national in scope.
2. The proposed action would pose minimal risk to public health and safety. Risks to the public from WS methods were determined to be low in a formal risk assessment (USDA 1997, Appendix P).
3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. Built-in mitigation measures that are part of WS's standard operating procedures and adherence to laws and regulations will further ensure that WS activities do not harm the environment.
4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to wildlife damage management, this action is not highly controversial in terms of size, nature, or effect.
5. Based on the analysis documented in the EA and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.
6. The proposed action would not establish a precedent for any future action with significant effects.
7. No significant cumulative effects were identified through this assessment. The number of coyotes, red foxes, feral dogs, wolf-hybrids, and exotic carnivores killed by WS, when added to the total suspected natural mortality of these species, WS take falls well within allowable harvest levels. The EA discussed cumulative effects of WS on target and non-target species

populations and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State.

8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.
9. The proposed action would not adversely affect Federally or West Virginia State listed threatened or endangered species.
10. The proposed action would be in compliance with all federal, state, and local laws imposed for the protection of the environment.

Decision and Rationale

I have carefully reviewed the Environmental Assessment (EA) prepared for this proposal and the input from the public involvement process. I believe that the issues identified in the EA are best addressed by selecting Alternative 5 (Integrated Wildlife Damage Management Program (Proposed Action/No Action)) and applying the associated mitigation measures discussed in Chapter 3 of the EA.

Alternative 5 is selected because (1) it offers the greatest chance at maximizing effectiveness and benefits to resource owners and managers while minimizing cumulative impacts on the quality of the human environment that might result from the program's effect on target and non-target species populations; (2) it presents the greatest chance of maximizing net benefits while minimizing adverse impacts to public health and safety; and, (3) it offers a balanced approach to the issues of humaneness and aesthetics when all facets of these issues are considered. Therefore, it is my decision to implement the proposed action as described in the EA.

Copies of the EA are available upon request from the West Virginia Wildlife Services Office, 730 Yokum St., Elkins, West Virginia, 26241.

Charles Brown, Acting Regional Director
APHIS-WS Eastern Region

Date

Literature Cited:

- Bailey, J. A. 1984. Principles of wildlife management. John Wiley and Sons, Inc. 373 pp.
- Blejwas, K. M., B.N. Sacks, M. M. Jaeger, and D. R. McCullough. 2002. The effectiveness of selective removal of breeding coyotes in reducing sheep predation. *Journal of Wildlife Management* 66. In press.
- Conner, M. M., M. M. Jeager, T. J. Weller, and D. R. McCullough. 1998. Impact of coyote removal on sheep depredation. *Journal of Wildlife Management* 62: 690-699.
- Gantz, G. F. 1990. Seasonal movement patterns of coyotes in the Bear River Mountains of Utah and Idaho. M.S. Thesis. Utah State Univ., Logan. 67 pp.
- Linhart, S. B., G. J. Dasch, R. R. Johnson, J. D. Roberts, C. J. Packham, and J. E. Borrecco. 1992. Electronic frightening devices for reducing coyote predation on domestic sheep: efficacy under range conditions and operational use. *Proceeding of the 15th Vertebrate Pest Conference*. 15: 386-392.
- NASS. 1999. 1999 Livestock wildlife damage survey results. U.S. Dept. Agric., Natl. Agric. Statistics Serv., Washington, DC.
- Nielsen, L. 1988. Definitions, considerations and guidelines for translocation of wild animals. Pages 12-49 in *Translocation of wild animals*. Ed. L. Nielsen and R. D. Brown. WI Humane Society, Inc. and Ceaser Kleberg Wildlife Research Instit. 333 pp.
- Parker, G. 1995. *Eastern Coyote: The story of its success*. Nimbus Publishing Limited. P.O. Box 9301, Station A, Halifax, N.S. B3K 5N5.
- Sacks, B. N., K. M. Blejwas, and M. M. Jeager. 1999a. Relative vulnerability of coyotes to removal on a northern California ranch. *Journal of Wildlife Management* 63: 939-949.
- Sacks, B. N., M. M. Jeager, J. C. C. Neale, and D. R. McCullough. 1999b. Territoriality and breeding status of coyotes relative to sheep predation. *Journal of Wildlife Management* 63: 593-605.
- Sanborn, W. A., R. H. Schmidt, and H. C. Freeman. 1994. Policy considerations for contraception in wildlife management. *Proc. 16th Vertebr. Pest Conf.* 16: 311-316.
- Slate, D. A., R. Owens, G. Connolly, and G. Simmons. 1992. Decision making for wildlife damage management. *Trans. North Am. Wildl. Nat. Resour. Conf.* 57: 51-62.
- The Wildlife Society. 1992. *Conservation policies of The Wildlife Society: A stand on issues important to wildlife conservation*. The Wildlife Society, Bethesda, Md. 24pp.

USDA. 1997. Final Environmental Impact Statement. U.S. Dept. Agric., Anim. Plant Health Inspection Serv., Animal Damage Control, Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD 20737.

West Virginia Code of 1931, as Amended. Michie Co., Charlottesville, VA.