

# **Decision and Finding of No Significant Impact for the Environmental Assessment: Predator Damage Management in Colorado**

## **United States Department of Agriculture, Animal and Plant Health Inspection Service Wildlife Services**

**April 20, 2018**

### **1. Introduction**

Wildlife in Colorado are an important part of the social fabric that comprises the human environment. Abundant wildlife populations interact with the 5.4 million citizens of the state every day. The wildlife brings joy, happiness, improves the quality of life, and at times, brings conflict, damage, and some frustration. As human populations expand and land is used for human needs, there is also increased potential for conflicting human/wildlife interactions. United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) Wildlife Services (WS) responds to requests from individuals, organizations, and agencies experiencing damage caused by predators in Colorado. WS's State Office in Colorado (WS-Colorado) conducts its activities at the request of, and in cooperation with, other federal, state, tribal, and local agencies, as well as private organizations and individuals.

In February 2017, WS-Colorado decided to prepare an Environmental Assessment (EA) evaluating the potential environmental impacts of alternatives for WS-Colorado involvement in predator damage management activities (PDM) in the state. The new EA was written to provide additional information in a format more informative to the public. The EA was prepared in cooperation with Colorado Parks and Wildlife (CPW), the Colorado Department of Agriculture, USDA Forest Service (USFS), and the United States Bureau of Land Management (BLM). Consultations with the U.S. Fish and Wildlife Service (USFWS) from the previous EA and FONSI signed in January 2017 were still timely and pertinent to this EA. This Decision document provides notification of WS-Colorado's choice of an alternative and determination regarding the environmental impacts of the chosen alternative.

### **2. Purpose and Need**

The purpose of the proposed action is to reduce conflicts involving predators that prey on or harass livestock and wildlife, damage other agricultural resources and property, impact wildlife species of management concern, or threaten human health and safety in Colorado. Details on the need for action to resolve these conflicts are provided in Section 1.17 of the EA. The predator species in Colorado that cause frequent damage to agricultural and natural resources, property, or threaten human health and safety include coyotes (*Canis latrans*), black bears (*Ursus americanus*), mountain lions (*Puma concolor*), striped skunks (*Mephitis mephitis*), red fox (*Vulpes vulpes*), and raccoons (*Procyon lotor*). WS-Colorado has also received requests for assistance with predators that have caused localized damage on an occasional to annual basis, at least once in the last 5 federal fiscal years (FY12-FY16; i.e., Oct. 1, 2011 - Sept. 30, 2016) including: bobcats (*Lynx rufus*), swift fox (*Vulpes velox*), feral/free roaming cats (*Felis domesticus*), badgers (*Taxidea taxus*), feral/free roaming dogs (*Canis familiaris*),

and opossums (*Didelphis virginiana*). WS has provided very limited operational PDM or technical assistance for these species.

### **3. Public Involvement**

On December 14, 2017, WS-Colorado issued an invitation soliciting public comments on alternatives and issues addressed in the Pre-decisional Draft of the 2018 Predator Damage Management in Colorado EA. WS-Colorado posted notices of the invitation for comment in the APHIS Stakeholder Registry, the WS NEPA web page, and the federal e-rulemaking portal (Regulations.gov). A Legal Notice was published in *The Denver Post* the week of December 15, 2017. The comment period closed on January 29, 2018. WS-Colorado received 540 submissions in response to the request for public comments, and responded to the public comments in Chapter 5 of the EA.

This Decision and Finding of No Significant Impact (FONSI), and the Final EA, will be made available to the public using the same methods listed above for the Pre-decisional EA. Through the public involvement process, WS-Colorado communicated to the public and interested parties the analyses of potential environmental impacts on the quality of the human environment.

### **4. Related Analyses**

Prior to the completion of the Final 2018 EA on PDM in Colorado and the associated Decision and FONSI herein, WS-Colorado PDM actions were conducted under the guidance of the 2017 EA for Predator Damage in Colorado (WS 2017), and the 2017 Finding of No Significant Impact and Decision for PDM in Colorado. This Decision and FONSI, and the final 2018 EA on PDM in Colorado will replace the 2017 PDM EA and FONSI/Decision.

### **5. Affected Environment**

Although the range and habitat used by individual species varies, at least some of the predators discussed in the EA can be found in any location in the state where suitable habitat exists for foraging and shelter. Consequently, damage or threats of damage caused by the species addressed in the EA could occur statewide, wherever those species occur. PDM would only be conducted by WS-Colorado when requested by a landowner, affected resource owner or manager, land manager, or tribe, and only on properties where a documented agreement, Work Plan, or other comparable document has been established with the cooperating entity. Upon receiving a request for assistance, PDM activities could be conducted on federal, state, tribal, municipal, and private properties in Colorado. Actions on public lands will be coordinated with the appropriate management agency and will be consistent with applicable land and resource management plans. The types of permissible activities that may be conducted on public lands varies among sites, as does the potential for conflicts with wildlife. For example, public lands managed for multiple uses, including livestock grazing, may have a higher likelihood of conflicts with predators than sites that are used exclusively for recreation.

The majority of property under agreement for PDM is privately owned 2.967 million acres (69%) of land. Of the other lands under agreement, 1.076 million acres (25%) are BLM or USFS administered lands, 197,771 acres are state public lands (5%), and 2,541 acres are tribal lands. A detailed discussion of the Affected Environment is provided in Chapters 1, 2, and 3 of the EA. The methods which may be used for PDM are provided in Appendix A of the EA.



## 6. Issues

The following issues were identified during the development of the EA and were used to drive the environmental analysis and compare the potential impacts of the alternatives.

- Impacts to Populations of Target Species – What might be the direct, indirect, and cumulative impacts of removing predators on target predator populations?
- Impacts to Populations of Non-target Species – What might be the direct, indirect, and cumulative impacts on non-target wildlife populations and ecosystems? What are the potential impacts on threatened and endangered (T/E) species?
- Impacts to Ecosystem Function – How would the alternatives impact trophic cascades, biodiversity, and ecosystem resilience? Does PDM cause trophic cascades, loss of biodiversity, declines in habitat quality due to unbalanced ungulate populations, or broad wildlife population changes which impact the ecosystem?
- Impacts to Human and Pet Health and Safety – What are the potential risks and benefits of PDM alternatives to human and pet health and safety?
- Impacts to Use of Public Lands – How would PDM affect recreation, such as wildlife watching, fishing, hunting, hiking, and other activities such as camping, biking, horseback riding and ATV riding?
- Impacts to Other Sociocultural Issues – What would be the direct, indirect, and cumulative impacts on aesthetics, especially on public lands? The issue of humaneness and other sociological issues, including ethical perceptions pertaining to PDM, can be interpreted in a variety of ways depending upon individual perspectives, philosophies, and experience. What are the varying perspectives on this issue relative to the proposed management actions for each alternative?

Twelve additional issues were considered in the EA but not analyzed in detail; they are discussed in Section 2.3. WS-Colorado's responses to additional issues raised during the comment period for the EA are addressed in the Responses to Comments in Chapter 5 of the EA, and were incorporated into the analysis in Chapter 3 of the EA as appropriate. Additional information was included in Chapters 1 and 2 to provide clarification and additional information.

## 7. Alternatives Analyzed in Detail

Chapter 3 of the Final EA considered and analyzed four alternatives that were developed to address the six primary issues identified. Twenty eight additional alternatives were considered, but not analyzed in detail in the EA (EA Section 2.10). The following is a summary of the management alternatives considered in detail in the EA.

- **Alternative 1: Continue the Current Federal WS-Colorado PDM Program.**  
This is the Proposed Action Alternative to continue the current WS-Colorado activities. It is also the "No Action" Alternative, as defined by the CEQ for ongoing programs. Under this alternative, WS-Colorado PDM uses the full range of legally available methods in accordance with applicable federal, state and local laws.

Under this alternative, WS-Colorado would continue to provide information and training on the use of nonlethal methods including, but not limited to, herding and other livestock management and cultural practices, livestock guarding animals, exclusion, and frightening devices (See Appendix A). WS-Colorado would also assist resource owners and managers through

educational seminar workshops. The workshops would provide information on damage identification, prevention, and control, and by providing information on sources of supplies of PDM materials. WS-Colorado would also continue to provide direct control assistance upon request. The methods which might be used by WS-Colorado would include a variety of frightening devices, ground shooting, aerial PDM, denning, various trap devices, snares, trained decoy and tracking dogs, and M-44s to manage coyotes and red foxes. Work Plans with federal and state land management agencies would be developed and reviewed annually to address specific activities and restrictions required to safely conduct PDM on public lands, including State Endowment lands. No M-44s would be used on public lands.

Current federal statutes would classify gray wolves as an endangered species upon arrival in Colorado. If and when gray wolves arrive, WS-Colorado will respond to requests for assistance in accordance with all federal and state laws. Under current law, management actions for gray wolf damage would include damage identification, providing non-lethal recommendations, notification of USFWS and CPW, and, maybe, implementation of non-lethal operational methods (e.g., fladry, strobe-sirens, temporary fencing) by WS-Colorado. A Section 7 consultation with USFWS resulted in the designation of a wolf conservation area where additional WS-Colorado activity modifications were made to protect gray wolves, if and when they arrive in Colorado. This conservation area was created because this is where wolves seem to enter Colorado. Any management actions beyond non-lethal management would require additional NEPA analysis as discussed in the EA at Section 2.11.2.3 "Gray Wolf." WS-Colorado response to requests for assistance for gray wolf predation on livestock would be contingent on funding. WS-Colorado would also conduct education programs to inform livestock producers about co-existing with gray wolves, regardless of funding.

Under Alternative 1, WS-Colorado conducts preventive PDM for coyotes. In most cases, predator damage cannot be predicted, so preventive lethal PDM would not be effective. However, coyote depredation on lambs and calves is predictable during lambing or calving season, and preventive lethal PDM during winter or early spring can prevent damage later in the year. This is most often conducted by aerial PDM because it is the most cost-effective method.

Alternative 1 is the baseline against which all other alternatives are compared as explained in Section 1.16.4 in the EA.

A more detailed discussion about Alternative 1 can be found in Section 3.1.1, 3.2.1, 3.3.1, 3.4.1, 3.5.1, 3.6.1 and 3.7.1 in the EA.

- **Alternative 2: Lethal PDM Methods Used by WS-Colorado Only for Corrective Control.**

This alternative is similar to Alternative 1 (Proposed Action/No Action), in that WS-Colorado would provide technical assistance, including both non-lethal and lethal recommendations, advice, and information for others to implement. Under this alternative, WS-Colorado would recommend lethal and non-lethal methods, including all methods discussed in Section 2.6 and Appendix A of the EA. WS-Colorado would also provide direct operational assistance to implement non-lethal and lethal corrective PDM activities.

This alternative differs from Alternative 1 in that WS-Colorado field personnel would not directly provide any lethal operational assistance for preventive control, even if formally requested as an agent of CPW. WS-Colorado might recommend preventive lethal PDM, but cooperators would



be dependent on contracting assistance from commercial companies, pilots with state aerial depredation permits, or CPW or their agents. Cooperators could also conduct the actions themselves, as allowed by state law. Private individuals can obtain permits from CDA to perform these activities on private land. This alternative would effectively preclude the use of certain methods, such as M-44s, due to constraints on the use of these methods by other agencies/entities. It would also limit the use of other methods such as aerial PDM, foot-hold traps, snares, thermal imaging, night vision, and trained dogs used on public lands.

WS-Colorado would have no responsibility for any lethal and non-lethal actions implemented by requester upon advice and recommendations from state or other federal agency personnel. The requester is responsible for compliance with the Endangered Species Act and all other federal, state, and local laws and regulations.

A more detailed discussion about Alternative 1 can be found in Section 3.1.2, 3.2.2, 3.3.2, 3.4.2, 3.5.2, 3.6.2 and 3.7.2 in the EA.

- **Alternative 3: WS-Colorado Provides Technical Assistance Only.**

Under Alternative 3, WS-Colorado would provide both non-lethal and lethal technical assistance, similar to Alternatives 1 and 2. However, under this alternative, WS-Colorado would provide no operational assistance, including non-lethal and lethal methods. All operational PDM in Colorado would be conducted by state or local governmental agencies, other federal agencies, or private entities. This would effectively preclude the use of certain methods, such as M-44s by state agency, other federal agency or private individuals, due to constraints on the use of these methods by other state or federal regulatory agencies. It would also limit the use of other methods such as aerial PDM, foot-hold traps, snares, thermal imaging, night vision, and trained dogs used on public lands.

Non-lethal technical assistance includes collecting information about the species involved, the nature and extent of the damage, and previous methods that the cooperator had used to alleviate the problem. WS-Colorado would then provide the cooperator with information on appropriate non-lethal and lethal methods to alleviate the damage themselves. Examples of the types of technical and direct non-lethal assistance projects might include a visit to the affected property, written communication, telephone conversations, or presentations to groups, such as homeowner associations or civic leagues.

In some cases, WS-Colorado might loan supplies, equipment or materials for non-lethal methods that are of limited availability for use by private entities, such as loaning propane cannons or strobe-sirens. WS-Colorado could describe several non-lethal management strategies to the requester for short- and long-term solutions to managing damage, as well as recommend and provide training on lethal techniques. Individuals receiving technical assistance from WS-Colorado could implement recommended methods, could use other lethal and non-lethal methods not recommended by WS-Colorado, could seek assistance from other entities, or take no further action. WS would advise requestors of permits needed.

For non-lethal methods, this Alternative would not be substantially different from Alternative 1, because most non-lethal methods are implemented by the cooperator, as discussed earlier. The major difference under Alternative 3 is that WS-Colorado would not conduct operational lethal PDM. Many cooperators rely on these services from WS-Colorado because they lack the

technical expertise to implement these methods on their own, are prohibited by state or federal regulatory agencies from using the method (e.g., M-44's) or from using the method on public land, or it is more cost-effective to work with WS-Colorado. Under Alternative 3, cooperators would need to conduct these methods on their own, or hire other entities or individuals to conduct these methods. This would limit the lethal methods available for use as discussed in Alternative 2 to traps, snares, trained dogs, night vision or thermal imagers, shooting on private land.

WS-Colorado would have no responsibility for any lethal and non-lethal actions implemented by the requester upon advice and recommendations from agency personnel. State agencies or private companies would need to provide all technical assistance and operational PDM to assist livestock producers. The livestock producer would be responsible for compliance with the Endangered Species Act and all other federal, state, and local laws and regulations associated with PDM.

A more detailed discussion about Alternative 1 can be found in Section 3.1.3, 3.2.3, 3.3.3, 3.4.3, 3.5.3, 3.6.3 and 3.7.3 in the EA.

- **Alternative 4: No WS-Colorado PDM Program.**

Under this Alternative, WS-Colorado would not be involved in any PDM efforts in Colorado. PDM would still be implemented by other legally-authorized entities, such as CPW, USFWS, property owners, commercial PDM companies, certified CPW volunteers, and private individuals. Entities experiencing damage caused by predators could continue to resolve damage by employing all methods legally available. PDM in Colorado to alleviate damage or threats would continue to occur despite the lack of involvement by WS-Colorado.

WS-Colorado would not provide assistance with any aspect of managing damage caused by predators in Colorado, including lethal and non-lethal technical or operational assistance and actions. Requesters would need to seek PDM information on existing and new methods (including methods developed and tested by the APHIS-WS NWRC) from other sources, such as CPW, University of Colorado Extension Service offices, or pest control companies. Currently, CPW only provides direct PDM assistance in limited situations, but does provide technical assistance and issues depredation permits for such activities as appropriate and within available resources. Requests for PDM information directed to WS-Colorado would be redirected to these entities.

For non-lethal methods, this Alternative would be different from Alternative 1, in that Alternative 4 would not allow WS-Colorado to recommend the use of non-lethal methods or loan equipment such as sirens or fladry. The major difference under Alternative 4 is that WS-Colorado would not conduct operational lethal PDM or provide any technical assistance. PDM would be addressed by state agencies or private individuals. State agencies and private individuals have less technical expertise to implement PDM on their own, are prohibited by state or federal regulatory agencies from using some methods (e.g., M-44's) or from using some methods on public lands, such as traps, snares, shooting, night-vision or trained dogs. Under Alternative 4, cooperators would need to conduct these methods on their own, or hire other entities or individuals to conduct these methods.

State agencies or private companies would need to provide all technical assistance and operational PDM to assist livestock producers. The livestock producer would be responsible for



compliance with the Endangered Species Act and all other federal, state, and local laws and regulations.

A more detailed discussion about Alternative 1 can be found in Section 3.1.4, 3.2.4, 3.3.4, 3.4.4, 3.5.4, 3.6.4 and 3.7.4 in the EA.

## **8. Monitoring**

Under the no action alternative, WS-Colorado provides data to CPW and USFWS on the take of target and non-target animals to help ensure the cumulative impact on wildlife populations, including WS actions, do not adversely impact the viability of state and USFWS managed wildlife populations. Under Alternative 1, WS-Colorado will monitor program activities annually to determine whether the analyses and determinations in the EA adequately address current and anticipated future program activities, and whether there is new information that warrants supplementing or replacing the EA.

## **9. New Information**

New information has become available since the EA was made available to the public. It has been reviewed and incorporated into the final Decision. This new information is consistent with conclusions and material presented in the EA, or it reduces the likelihood of adverse impacts on the human environment from WS-Colorado's actions.

- Additional analysis of black bear predation on livestock has shown a broader and larger problem for livestock producers, including sheep and cattle producers, than originally understood. Compensation programs offered by the state reduce the financial impact on losses suffered by sheep producers, but rarely offset losses incurred by cattle producers, due to the differences in livestock production practices and compensation program requirements. While black bear damage losses overall are decreasing, losses suffered by livestock producers are increasing. Despite the data showing a larger depredation problem, WS-Colorado will keep its black bear take within the parameters addressed in the EA.

## **10. Clarifications to the Draft EA**

WS-Colorado has also made some clarifications to the Draft EA in response to public comments and review of available information. These clarifications are consistent with the analyses, conclusions, and material presented in the Draft EA. The clarifications will more fully describe potential effects of WS-Colorado PDM under the alternatives. Key items are:

- The description of Alternative 2 was clarified in Section 2.7 to reflect the actions which would be conducted under this alternative.
- Language in several Sections was updated to make the meaning and intent more clear.

## **11. Use of the Best Available Science**

There is much new information being published about different ecological functions. Many of these publications are based on assumptions, opinions, and ideas, but no data is presented. Sometimes incomplete data are presented, and leading to misunderstandings and misinterpretations about the information. Wildlife damage management, wildlife management theories and practices, and

rigorous scientific testing and statistical analysis contain complex nuances. Some ideas presented by conservation biologists and biology departments at universities, may sound persuasive, but may not be practical or effective. In order to conduct efficient and effective PDM and be aware of new information, WS-Colorado relies on the best available science and peer reviewed publications for its conclusions.

## **12. Review of Alternatives**

WS-Colorado conducted an analysis of the issues within each alternative in detail in the EA. This review of the alternatives summarizes numerous analyses within each alternative. The analysis is further streamlined for clarity and ease of comparison in Table 1.

After reviewing the EA and carefully evaluating all alternatives, WS-Colorado has determined that Alternative 1 offers the greatest opportunity at maximizing effectiveness and meeting WS-Colorado's purpose and need within current program funding constraints. Under Alternative 1, access to the full range of legally available PDM methods, in combination with use of the WS Decision Model, enables development of effective site-specific PDM strategies that accommodate resource owner/manager objectives and minimize the risk of adverse impacts on the human environment. The ability to continue PDM for the protection of natural resources under Alternative 1 best enables WS-Colorado to effectively respond to the full range of needs for action in the state. While WS-Colorado implements activities to protect natural resources the environmental impacts will stay within the parameters addressed by the EA. Coordination with the WS National Wildlife Research Center (NWRC) and CPW Research Section under Alternative 1 will improve understanding of the efficacy and issues associated with PDM projects for the protection of natural resources. Furthermore, coordination with WS NWRC provides understanding and counsel on reducing conflicts in urban areas with coyotes and bears.

The restrictions on available PDM methods for private PDM providers and individuals under Alternative 2, 3, and 4 would likely result in less effective resolution of PDM issues. Private companies and individuals are not authorized to conduct aerial PDM on federal land and some state lands, and they may not use M-44s for PDM. Similarly, private PDM providers are prohibited from implementing PDM on federal lands and some state lands where livestock may graze. These restrictions may reduce take of coyotes for livestock protection under Alternative 2, 3, and 4. Consequently, livestock losses under Alternatives 2, 3, and 4 would likely be higher and may result in livestock producers being unable to protect their livestock from predation.

WS-Colorado corrective PDM actions under Alternative 2 are anticipated to be less effective than Alternative 1 due to the lack of preventive PDM in areas that have a history predators depredating livestock. (Wagner and Conover 1999). Under Alternative 2, there may be some increases in damage to livestock and property where there are delays in implementing nonlethal methods (e.g., time required to acquire livestock guarding dogs) and where nonlethal methods are attempted, but prove ineffective. Potential benefits to livestock owners from WS-Colorado implementation of preventive lethal control of coyotes would be reduced under Alternative 2, but increased implementation of corrective PDM efforts would likely make up the difference (Wagner and Conover 1999) if funding is available. WS-Colorado anticipates that private use of preventive lethal PDM options to reduce coyote damage would make up for some decreases or loss of WS-Colorado program activities, but the private PDM operators would not be as effective as WS-Colorado due to their lack of expertise, training, laws, and methods restrictions.



The EA indicates that WS-Colorado's use of lethal methods would not have significant impacts on target or non-target species populations under any of the alternatives analyzed. Moreover, WS-Colorado's analysis of impacts on target and non-target species is predicated on conservative estimates of population size which would overstate the actual impact. WS-Colorado's lethal take of target species would be highest under Alternative 1, followed by Alternative 2. Some nominal risk of unintentional take by livestock producers associated with nonlethal methods implemented under Alternative 2 might occur and would be greater under Alternative 3 and 4 by livestock producers and private PDM providers who may have less skill and access to new technology (e.g., fladry) to avoid take of non-target wildlife. Alternative 2 might result in higher levels of displacement of target species associated with increased use of nonlethal methods, such as frightening devices. Under Alternatives 3 and 4, there would be no WS-Colorado intentional lethal take of any species.

The EA indicates that under all alternatives, lethal take (intentional and unintentional) by WS-Colorado would not be of sufficient magnitude, duration, or scope to trigger substantial adverse impacts on biodiversity or ecosystem stability that could result in trophic cascades. WS-Colorado does not strive to eliminate predator populations from any area on a long-term basis. No predators or prey would be extirpated, and none would be introduced into an ecosystem. As discussed in detail in Section 3.1.1 of the EA, impacts are generally temporary and in relatively small or isolated geographic areas compared to overall predator population distributions. WS-Colorado actions are not of sufficient magnitude or scope to result in ecosystem-level shifts or trophic cascades. Cumulative take by WS-Colorado and non-WS entities would likely decline under Alternatives 2, 3 and 4 simply because WS-Colorado would take animals for corrective control under Alternative 2 and no longer take any animals under Alternative 3 and 4. There are some circumstances, discussed above, where non-WS entities would not effectively fill the void under Alternatives 2, 3, or 4.

The EA indicates that Alternatives 1 and 2 are better suited for ensuring cumulative impacts on wildlife populations do not result in adverse consequences for native wildlife populations. Under those alternatives, WS-Colorado reports take of target and non-target species to the public (e.g., Program Data Reports) and applicable state, federal, and tribal agencies. Any unintentional take of target or non-target species associated with WS-Colorado actions would also be reported. Agencies with responsibility for maintaining sustainable wildlife populations can use this information to help monitor cumulative impacts on wildlife populations. The state requires the general public to obtain permits and report take for several predator species when animals are taken for damage management. However, not all persons are aware they must report take to CPW each year. Despite CDA's continued educational program to encourage reporting of take, reporting and monitoring of potential cumulative impacts are still likely to be more reliable under Alternatives 1 and 2. WS-Colorado submits complete detailed reports for each black bear and mountain lion taken to CPW. Consequently, under Alternatives 3 and 4, agencies, tribes, and the public would have reduced information on any PDM conducted, as private PDM providers and livestock producers do not have the same reporting and public involvement requirements.

Risks and potential impacts to non-target species from WS-Colorado's actions are low for all the alternatives. Risks associated with PDM conducted by non-WS entities would vary depending on the skill level and equipment available to individuals conducting the PDM. However, under Alternatives 2, 3 and 4, non-WS entities conducting lethal PDM activities in lieu of WS-Colorado do not have the same obligations under NEPA. Non-WS entities also do not have the same experience or system of coordinating with affected public land management agencies. Lack of coordination increases potential risks of adverse impacts on recreation and Special Management Areas (SMAs). As a result,



overall risks to target and non-target species, public resources (e.g., SMAs), and public safety would likely exceed that of Alternatives 1.

Alternative 1 offers the best opportunities for tribal input and consultation regarding impacts of lethal PDM on traditional uses of natural resources, cultural practices, and sensitive sites. These opportunities for tribal involvement would be diminished under Alternatives 2, 3 and 4 because non-WS entities do not have the same obligations to federally-recognized tribes as federal agencies.

Ethical perspectives and perceptions of humaneness vary depending upon individual values and experiences. Some individuals oppose the use of lethal methods under all circumstances. These individuals are likely to only consider Alternatives 3 and 4 acceptable and they may still be distressed because lethal methods are likely to be used by other entities. For others, acceptance of lethal methods may be conditional. For example, individuals primarily concerned about the well-being of individual predators are likely to prefer Alternatives 2, 3 and 4, in part because they perceive the value of the individual animal to be equal to or greater than the resource they may be damaging, and they prefer not to see federal tax monies used for lethal PDM. These individuals may have greater tolerance for use of lethal methods for the protection of human health and safety and T/E species, and strongly disapprove of the use of lethal methods to protect livestock. In contrast, individuals concerned about livestock protection, protection of T/E species and enhancement of game populations may have the opposite perspective. They may share support for use of PDM to protect human health and safety and T/E species, but may be more likely to additionally support PDM for the protection of livestock. These individuals may particularly prefer Alternative 1.

Moreover, for some individuals overall perceptions of humaneness may not differ substantially among alternatives, only the knowledge of what lethal actions have been taken and by whom. As such, alternatives which result in PDM by non-WS entities and less reporting on PDM actions may be considered less ethical than continuation of the Proposed Action (Alternative 1) which includes WS-Colorado's stringent reporting and accountability requirements.

Risks to human health and safety from WS-Colorado's actions were determined to be low under all of the alternatives. Risks may be slightly higher for alternatives that have increased PDM by non-WS entities (i.e., Alternatives 2, 3 and 4), depending on the level of training and equipment available to the entities conducting PDM. Non-WS entities would not have access to the WS Aviation Training and Operations Center and are not held to WS' standards for aircraft use and maintenance, which exceed the Federal Aviation Administration requirements for safe use of aircraft. The APHIS-WS accident rate is below the norms of general aviation even though WS low level aerial operations are inherently more dangerous. No aerial accidents have involved the general public. The risks are determined to be low, and expected to remain low in the foreseeable future. Alternatives that result in increased use of aircraft by non-WS entities conducting aerial PDM are likely to have slightly greater safety risks than the WS-Colorado aerial PDM because of less stringent training and safety equipment (e.g., Automatic Flight Following, periodic reporting of flight status) requirement of non-WS pilots.

In recent years, guard dog use by sheep producers has increased concomitantly with greater use of the outdoors by recreationists, resulting in more conflicts and injuries from guard dogs. WS-Colorado has provided information, research, and educational materials to livestock producers and public land managers to educate them and outdoor recreationists for the purpose of reducing conflicts and injuries to people from guard dogs. Under Alternative 4, there would be no agency to undertake these duties in the short term, and conflicts and injuries to recreationists would likely increase. The livestock



industry would provide what information it could to fill in the duties previously performed by WS-Colorado.

Implementation of PDM on any scale has the potential for creating short-term, localized, seasonal disturbance of sociocultural resource. However under Alternative 1 the impacts are expected to be minimized by using the WS Decision Model and annual Animal Damage Management plans to determine the best method for resolving or preventing conflicts with predators and people. Alternatives 2, 3, and 4 may result in greater disturbance of sociocultural resources over a longer period of time because of restrictions on methods and entities conducting the PDM may be less effective at resolving PDM issues in a timely manner. One example of this is that nonlethal methods may sometimes need to be implemented continuously or for longer periods of time than lethal methods (*e.g.*, livestock guarding dogs that may chase wildlife or intimidate recreationists, light/siren frightening devices disturbing campers). Under Alternative 1, WS-Colorado will continue to work with land management agencies and the tribes to identify times and areas where adverse impacts are most likely to occur. WS-Colorado would select methods and modify procedures to minimize risk of adverse impacts to sociocultural resources. Alternative 1, which includes WS-Colorado's use of preventive lethal PDM for coyote damage management, may have fewer risks of contact between summer PDM activities and recreational use of public lands because the amount of corrective PDM is likely to be lower in areas where preventive PDM, primarily aerial PDM, has previously been conducted (Wagner and Conover 1999). Moreover, aerial PDM is usually conducted at the time of year and locations when few recreationalist are using public lands. The use of traps and snares on public lands is precluded for protecting livestock from predation; thus, the impact of these methods on recreationalist is likely non-existent.

Potential beneficial impacts on opportunities for hunting game species and opportunities to view and enjoy T/E species that may benefit from WS-Colorado PDM would be greatest under Alternative 1, with some benefits also occurring under Alternative 2, because these alternatives support greater protection for these species than Alternatives 3 or 4. The prohibition of using traps and snares on public lands for the protection of T/E species makes recovery more costly. Because fewer projects may be conducted which would be smaller in scope. The success of T/E species recovery may be slower. As discussed above, reductions in WS-Colorado use of lethal methods may result in increases in uses of the same or similar methods by non-WS entities. These entities are not under the same obligations to consult with land managers and the tribes as WS-Colorado and their actions may increase the risks to recreational and cultural uses of sites relative to similar actions by WS-Colorado. Without such consultations, the general public, land managers, or the tribes will have limited or no ability to influence PDM activities conducted by non-WS entities.

### **13. Accomplishment of Goals**

WS-Colorado developed goals and objectives for implementing PDM to protect various resources and evaluate impacts on the human environment. These goals and objectives were cited throughout this EA, and they are important to the decision-making process. We evaluated the four alternatives for implementing PDM and considered the numerous related issues. The interaction of the issues upon each alternative were also considered and evaluated on the ability of the WS-Colorado program to implement PDM and achieve stated goals and objectives. Only Alternative 1, the Proposed Action met all goals and objectives (Table 2).

Alternative 2 accomplishes most goals for implementing PDM. Currently, the largest field program to protect a resource in Colorado is the livestock protection program. Unfortunately, Alternative 2

comes up short at preventing livestock losses from predation, because lethal action can only be used in a corrective manner, which would require livestock producers to incur losses before some effective forms of assistance would be provided. Further, the corrective response by WS-Colorado would overwhelm existing staff because most losses occur during lambing and calving seasons, which is concentrated into a few months during the spring each year.

Alternative 3 can marginally meet goals and objectives associated with implementing PDM. The success of Alternative 3 would be contingent on state and local government agencies and the private sector being able to implement effective PDM. The success of meeting these goals and objectives would also be greatly influenced by technical assistance being provided by WS-Colorado and its research division, the National Wildlife Research Center. The private sector must recover costs and make a profit, making implementation of a cost effective and efficient program that minimizes livestock losses unlikely under Alternatives 3 and 4. There are additional restrictions that would be placed on private companies and individuals for implementing PDM on federal and state lands.

Alternative 4 would be unable to meet nearly all goals and objectives. This Alternative would be similar to the analysis for Alternative 3, but inability to meet goals and objectives is exacerbated by the lack of technical assistance provided by WS-Colorado and the National Wildlife Research Center.

#### **14. Decision**

I have carefully reviewed the EA and the input resulting from the public involvement process. I believe the need for action and issues identified in the EA would be best addressed through implementation of Alternative 1, the Proposed Action, to continue the current PDM program (Alternative 1). Alternative 1 is selected because: (1) it offers the greatest chance at maximizing effectiveness and benefits to the broadest range of affected resources within current funding constraints; (2) it offers a balanced approach to the issues of humaneness, ethics and recreational values when all facets of the issue are considered; (3) it will continue to minimize risk of wildlife conflicts with the public through consultation and coordination with land management agencies and tribes; (4) it will minimize risks to non-target species; (5) it will result in low to moderate magnitude of effects on predator populations, with moderate effects being short-term, localized, and intentional under the direction of the state wildlife agency to achieve specific goals beneficial to wildlife; and, (6) impacts on target predator populations would not be of significant magnitude, scope, or duration to result in substantial indirect impacts due to trophic cascades. Alternative 1 also enables WS-Colorado to maximize opportunities for tribal consultation and participation on PDM decision-making and facilitates efforts to reduce risk of adverse impacts on sites of cultural importance to the tribes, tribal uses of natural resources, and cultural practices of tribal members.

#### **15. Finding of No Significant Impact**

The analysis in the EA indicates that Alternative 1, the Proposed Action, does not constitute a major federal action significantly affecting, individually or cumulatively, the quality of the human environment. I agree with this conclusion and, therefore, determine that an Environmental Impact Statement (EIS) will not be prepared. This determination is based on consideration of the following factors:

- A. The proposed activities will occur in limited areas of Colorado, when requested, and are not national or regional in scope.



- B. The proposed activities will not significantly affect human health and safety. PDM methods are target specific and are not likely to adversely affect human health and safety. In some cases, PDM may be conducted to reduce risks to human health and safety caused by predators. Over the last two decades no humans have been harmed in Colorado by lethal PDM methods. There have been a few instances of guard dogs biting recreationists who ignored guard dog warning signs and rode bicycles into flocks of sheep, triggering protective responses from guard dogs. These incidents prompted national WS, U.S. Forest Service and sheep producers to develop an educational program posting notices at trailheads and along trails informing outdoor recreationalists that guard dogs may be with sheep and to keep their distance. Also, the U. S. Forest Service notified event organizers they must coordinate and get permitted by the U. S. Forest Service to host events on public lands. Event organizers now plan events that avoided inserting participants into sheep herds that may be protected by guard dogs. These efforts have reduced conflicts between guard dogs and outdoor recreationalists.
- C. The proposed activities will not have an impact on unique characteristics of the geographic area, such as historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. The nature of the methods proposed for removing predators do not significantly affect the physical environment. WS-Colorado consults with public land management agencies during development of work plans to identify sensitive areas and times when PDM actions may need to be avoided or modified to minimize risks of significant beneficial or negative impacts on these types of areas or to the general public. In most years, WS-Colorado does not conduct any PDM in Wilderness or Wilderness Study Areas.
- D. The effects on the quality of the human environment of the proposed activities are not highly controversial. Although some people are opposed to aspects of PDM, the failure of any particular special interest group to agree with every act of a federal agency does not result in a controversy, and NEPA does not require the courts to resolve disagreements among various scientists as to the methodology used by an agency to carry out its mission. Regardless, methods and impacts of PDM are not controversial among experts in the field of managing conflicts caused by wildlife. Disagreement among members of the public as to the appropriateness of an action are not sufficient cause for preparation of an EIS.
- E. The possible effects of the proposed activities on the quality of the human environment are not highly uncertain and do not involve unique or unknown risks. Although exact population estimates are not available for some target species, the EA uses the best information available. This EA uses conservative population estimates, and evaluates the upper limit of take to provide bounds on the impacts which might occur. Consultation and coordination with state and federal agencies with management responsibility for preserving sustainable populations of target and non-target species and ecosystems and project monitoring helps to ensure that program activities do not have significant unintended adverse impacts.
- F. The proposed activities do not establish a precedent for actions with future significant effects or represent a decision in principle about a future consideration. Management decisions made by WS-Colorado based on the analysis in the EA do not set a precedent for other WS state programs. Management decisions made for each WS state program are made independently, based on: state-specific information on wildlife populations and ecosystems; state-specific land use patterns; state, local and tribal regulations and policies; state-specific wildlife management plans and objectives; and, other state and local factors, including the types of PDM services requested and authorized by state and local (e.g., county) management entities.

- G. There are no significant cumulative effects identified by this EA. All PDM activities, including removal, will be coordinated with the applicable regulatory agency (*e.g.*, CPW, CDA, USFWS, tribes) to help ensure cumulative impacts of WS-Colorado actions do not have significant adverse impacts on native wildlife populations and ecosystems. Analysis of direct, indirect and cumulative impacts on target and non-target species indicates that the impacts of WS-Colorado predator take are not of significant duration, scope, or magnitude to result in sustained reductions in predator populations and associated potential for disruptions to trophic cascades. Moreover, CPW builds protections into management programs to limit harvest of mountain lions to less than 11% of the population in most Data Analysis Units. State laws and constitutional amendments that limit legal hunter harvest of black bears have contributed to populations growing larger each year. Other factors contributing to bear population growth include habitat changes producing more natural foods, more anthropogenic food resources available as the human population continues to increase across Colorado and an increasing population of prey species in new areas that are alternative food resources. All these new food resources increase the carrying capacity of Colorado to support additional bears bringing new consequences. The state laws and constitutional amendments prohibit legal hunting of bears before September 2, with dogs or over bait. Even with no restrictions on killing bears depredating livestock, bear depredation continues to increase. Coyote harvest, while numerically large, has had no adverse effect on sustainable populations. There have been no threatened or endangered species taken or harmed by PDM activities in Colorado over the last 20 years. WS-Colorado continues coordination with USFWS and CPW to avoid take of threatened and endangered species. PDM activities were successfully modified to prevent all accidental take of lynx since reintroduced to Colorado during the 1990's.
- H. The proposed activities do not affect districts, sites, highways, structures or objects listed in or eligible for listing in the National Historic Register of Historic Places, nor will it cause loss or destruction of significant scientific cultural or historical resources. In general, PDM does not have the potential to affect historic resources. Further consultation will be requested if PDM actions are to be conducted that may affect historic resources. Federally recognized tribes in Colorado were contacted during preparation of this EA. As requested by the tribes, WS-Colorado is establishing a system of ongoing reporting and consultation to ensure that WS-Colorado actions do not have a significant adverse impact on tribal cultural resources or practices.

**Table 1. Analysis of key issues within each alternative of the environmental assessment titled "Predator Damage Management in Colorado, April 2018".**

<b>Issues</b>	<b>Alternative 1: Continue Predator Management Program</b>	<b>Alternative 2: Lethal Predator Management for Corrective Action Only</b>	<b>Alternative 3: Provide Technical Assistance Only</b>	<b>Alternative 4: No Wildlife Services predator management program</b>
Effective at reducing predation losses	Most often	2 <sup>nd</sup> most often	Slightly effective	Least effective
Protect natural resources	Most effective	Slightly effective	Ineffective	Ineffective



<b>Issues</b>	<b>Alternative 1: Continue Predator Management Program</b>	<b>Alternative 2: Lethal Predator Management for Corrective Action Only</b>	<b>Alternative 3: Provide Technical Assistance Only</b>	<b>Alternative 4: No Wildlife Services predator management program</b>
Protect citizens from bear, coyote and mountain lion attacks	Immediate response by WS	Immediate response by WS	No PDM by WS. State must certify damage then contract with private entities	No PDM by WS. State must certify damage then contract with private entities
Minimize risk of other adverse impacts on human health and safety	Lowest risk of impacts	2 <sup>nd</sup> lowest risk of impacts	Moderate risk of impacts	Most risk of impacts
Participate in research	High participation by WS	High participation by WS	Low participation by WS	No participation by WS
Use of M-44's and aerial PDM on private land	Full use of methods by WS; Few non-WS entities doing PDM.	Full use of methods by WS, only after livestock loss from predators; Few non-WS entities doing PDM.	No use of M-44's or aerial PDM by WS; More aerial PDM by non-WS entities but less than Alt. 1 and 2.	No use of M-44's or aerial PDM by WS; More aerial PDM by non-WS entities but less than Alt. 1 and 2.
Use of M-44's on public land	None by WS or Non-WS entities.	None by WS or non-WS entities.	None by WS or non-WS entities.	None by WS or non-WS entities.
Use of aerial PDM on federal land	Use by WS; no aerial PDM by non-WS entities.	Use by WS only after livestock loss from predators; No aerial PDM by non-WS entities.	No aerial PDM on federal lands by WS or non-WS entities.	No aerial PDM on federal lands by WS or non-WS entities.
Use of aerial PDM on state land	Use by WS; No aerial PDM by non-WS entities	Use by WS; No aerial PDM by non-WS entities	No aerial PDM by WS; No aerial PDM by non-WS entities	No aerial PDM by WS; No aerial PDM by non-WS entities
Use of aerial PDM on private land	Use by WS. Imperceptible use by non-WS entities.	Use by WS after some livestock loss from predators. Imperceptible use by non-WS entities	No aerial PDM by WS. Increase in use of aerial PDM by non-WS entities over Alt. 1 and 2.	No aerial PDM by WS. Increase in use of aerial PDM by non-WS entities over Alt. 1 and 2.
Use of traps, snares and decoy dogs to protect livestock on private land	Use of all methods by WS. Imperceptible use by non-WS entities	Use of all methods by WS only after livestock loss from predators. Imperceptible use by non-WS entities.	No PDM by WS. Use of all methods allowed by non-WS entities, but few non-WS entities have knowledge	No PDM by WS. Use of all methods allowed by non-WS entities, but few non-WS entities have knowledge

<b>Issues</b>	<b>Alternative 1: Continue Predator Management Program</b>	<b>Alternative 2: Lethal Predator Management for Corrective Action Only</b>	<b>Alternative 3: Provide Technical Assistance Only</b>	<b>Alternative 4: No Wildlife Services predator management program</b>
Use of traps or snares to protect livestock on public land	None by WS or non-WS entities	None by WS or non-WS entities	None by WS or non-WS entities	None by WS or non-WS entities
Use of traps and snares to protect T/E species on state land	Only for research conducted by WS or state agency.	Only for research conducted by WS or state agency.	Limited research by WS. Some reduction in research by state agencies due to loss of funds	No research by WS. Some reduction in research by state agencies due to loss of funds
Use of traps and snares to protect T/E species on private land	Only for research conducted by WS or state agency.	Only for research conducted by WS or state agency.	Limited research by WS. Some reduction in research by state agencies due to loss of funds.	No research by WS. Some reduction in research by state agencies due to loss of funds.
Use of traps or snares to protect pets from predation	Yes by WS; Low use by non-WS entities	Yes by WS. Low use by non-WS entities	No PDM by WS. Low use by non-WS entities.	No PDM by WS. Low use by non-WS entities.
Risk of guard dogs to human safety	Very low	Very low	Low	Higher risk than Alt. 3, but still low
Take of non-target wildlife	Low risk by WS; Moderate risk by non-WS entities.	Low risk by WS; Moderate risk by non-WS entities	No PDM by WS; Moderate risk by non-WS entities	No PDM by WS; Moderate risk by non-WS entities
Take of coyote	WS coyote take was < 2% of the total coyote harvest in Colorado during the timeframe of this EA; Remainder of take was by hunters and non-WS entities.	Small decrease in WS take due to no preventative PDM; Small increase in take compared to Alt.1 by hunters and non-WS entities.	No take by WS; >45,000 taken by hunters or non-WS entities. Small increase in take by non-WS entities compared to Alt.1.	No take by WS; > 45,000 taken by hunters or non-WS entities. Small increase in take by non-WS entities compared to Alt.1.



<b>Issues</b>	<b>Alternative 1: Continue Predator Management Program</b>	<b>Alternative 2: Lethal Predator Management for Corrective Action Only</b>	<b>Alternative 3: Provide Technical Assistance Only</b>	<b>Alternative 4: No Wildlife Services predator management program</b>
Take of black bear and mountain lion	WS black bear and mountain lion take was < 0.5% of the total black bear and mountain lion harvest in Colorado during the timeframe of this EA; Remainder of take was by hunters and non-WS entities.	WS black bear and mountain lion take would be the same as Alt 1; Similar take compared to Alt.1 by hunters and non-WS entities.	No take by WS; > 1,125 taken by hunters and non-WS entities. Small increase in take by non-WS entities compared to Alt 1 and 2.	No take by WS, > 1,125 taken by hunters and non-WS entities. Small increase in take by non-WS entities compared to Alt. 1 and 2.
Reporting bear and lion take	All take reported by WS; Most take reported by private persons.	All take reported by WS; Most take reported by private persons.	No WS take; Most take reported by private persons.	No WS take; Most take reported by private persons.
Impacts to biodiversity and ecosystem stability	No significant impacts by WS.	No significant impacts by WS.	No significant impacts by WS. None to slightly detectable impacts generally by non-WS entities, but some impacts to gray wolves by non-WS entities	None by WS. Low impacts generally by non-WS entities, but moderate impacts to gray wolves by non-WS entities
Lethal methods for wolf predation on livestock.	None by WS or non-WS entities	None by WS or non-WS entities	None by WS or non-WS entities	None by WS or non-WS entities
Use of non-lethal methods should gray wolves occur	Use by WS and non-WS entities. WS would loan equipment or implement expensive or technical PDM methods.	Use by WS and non-WS entities. WS would loan equipment or implement expensive technical PDM methods.	No PDM by WS. WS would loan equipment for implementation of expensive or technical PDM methods but less use expected than Alt. 1 or 2. Less use by non-WS entities.	No PDM by WS. No loan of equipment for expensive or technical PDM methods. Less use by non-WS entities due to cost and lack of knowledge.

<b>Issues</b>	<b>Alternative 1: Continue Predator Management Program</b>	<b>Alternative 2: Lethal Predator Management for Corrective Action Only</b>	<b>Alternative 3: Provide Technical Assistance Only</b>	<b>Alternative 4: No Wildlife Services predator management program</b>
Educational programs about PDM	Yes by WS; infrequent by non-WS entities.	Yes by WS; infrequent by non-WS entities.	Yes by WS; more than Alt. 1 and 2 by non-WS entities	No educational programs by WS; more than Alt. 1 and 2 by non-WS entities
Consult with land managers and tribes before implementing PDM	WS would consult; non-WS entities unlikely to consult.	WS would consult; non-WS entities unlikely to consult	No PDM by WS; non-WS entities unlikely to consult	No PDM by WS; non-WS entities unlikely to consult
Risk to recreation on public land	Low to none	Low to none	Low to none	Low to none
Impacts to Wilderness Areas	Coordination and Minimum Requirement Analysis (RMA) by federal agencies, as appropriate. No coordination or RMA by non-WS entities except state agencies.	Same as Alt. 1	No PDM by WS. No coordination or analysis required by non-WS entities except state agencies.	No PDM by WS. No coordination or analysis by non-WS entities except state agencies.

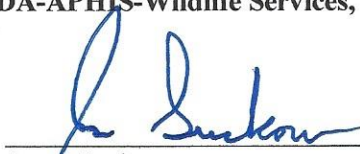
**Table 2. Analysis of the ability of four alternatives to meet the goals and objectives of WS-Colorado regarding predator damage management in Colorado (WS 2018).**

<b>Goals and Objectives</b>	<b>Alternative 1 Continue WS-Colorado PDM Program</b>	<b>Alternative 2 WS-Colorado Lethal PDM for Corrective Only</b>	<b>Alternative 3 WS-Colorado Provides Technical Assistance Only</b>	<b>Alternative 4 No WS-Colorado PDM Program</b>
Provide for WS Personnel Safety	Yes	Yes	Yes	Not Applicable
Respond to All Reported Losses or Threats	Yes	Yes	Resolves few	No
Respond to Requests for Assistance in a Timely Manner	Yes	Resolves most, but not as many as Alt. 1.	Resolves less than Alt. 2.	No



<b>Goals and Objectives</b>	<b>Alternative 1 Continue WS-Colorado PDM Program</b>	<b>Alternative 2 WS-Colorado Lethal PDM for Corrective Only</b>	<b>Alternative 3 WS-Colorado Provides Technical Assistance Only</b>	<b>Alternative 4 No WS-Colorado PDM Program</b>
Resolve Predator Damage Problems	Yes	Resolves most, but not as many as Alt. 1.	Resolves few	No
Address Predator Risks to Human and Pet Health and Safety	Yes	Yes	Resolves few	No
Address Predator Damage and Threats to Agriculture	Yes	Resolves most, but not as many as Alt. 1.	Resolves few	No
Address Predator Damage and Threats to Natural Resources	Yes	Resolves most, but not as many as Alt. 1.	Resolves few	No
Reduce Risk of Wildlife Strike Hazards to Aircraft	Yes	Yes	Resolves few	No
Prevent Predator Damage When Feasible	Yes	No	No	No
Minimize Non-target Take	Yes	Yes	Resolves most, but not as many as Alt. 1 and 2.	No

**For additional information regarding this decision, please contact Martin Lowney, State Director, USDA-APHIS-Wildlife Services, 12345 West Alameda Parkway, Suite 204. Lakewood, CO 80228.**

  
 Jason Suckow  
 Director, Western Region  
 USDA-APHIS-Wildlife Services

  
 Date