United States Department of Agriculture

Marketing and Regulatory Programs

Animal and Plant Health Inspection Service

Wildlife Services

Idaho State Office

9134 West Blackeagle Drive
Boise, ID 83709

(208) 378-5077
(208) 378-5349 Fax

DECISION AND FINDING OF NO SIGNIFICANT IMPACT

FOR THE ENVIRONMENTAL ASSESSMENT:

GRAY WOLF DAMAGE MANAGEMENT IN IDAHO for PROTECTION OF LIVESTOCK and OTHER DOMESTIC ANIMALS, WILD UNGULATES, and HUMAN SAFETY

March 2011

I. INTRODUCTION

The reduction of gray wolf conflicts (*Canis lupus)* is considered important for wolf recovery and is addressed in "*The Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho"* EIS (USFWS 1994, 59 FR 60266), subsequent rules (50 CFR 17.84(i)(3)(vii), 50 CFR 17.84 (n), and management plans (USFWS 1987, 1990, ILWOC 2002, IDFG 2008[1]). It is believed that prompt, professional reduction of damage and conflicts with wolves is an important component of wolf management, conservation and recovery[2] because it facilitates local acceptance and tolerance of wolves (Fritts 1993, Mech 1995, Bangs et al. 1995, 2009, ILWOC 2002, Fritts et al. 2003, IDFG 2008, Creel and Rotella 2010)[3].

The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service, Wildlife Services (WS) program is authorized and directed by Congress to conduct wildlife damage management, as requested, to protect American agricultural, industrial and natural resources, property and human health and safety from damage associated with wildlife (Act of March 2, 1931 as amended 46 Stat. 1486; 7 USC 426-426c). WS is a cooperatively funded, service-oriented program that assists requesting public and private entities and government agencies. The U.S. Fish and Wildlife Service (USFWS), Idaho Department of Fish and Game (IDFG), organizations, and individuals have requested WS assistance with the reduction of gray wolf conflicts and damage in Idaho, currently subject to USFWS decisions and authorizations (B. Kelly, USFWS letter to M. Collinge, WS, October 20, 2010[4]) and court rulings[5, 6].

---

1 On December 8, 2010 the Idaho Fish and Game Commission, voted unanimously to suspend Idaho's 2008-2012 species management plan for wolves, and directed the IDFG to prepare "an appropriate wolf species management plan, consistent with the 2002 Idaho Wolf Conservation and Management Plan approved by the Idaho Legislature and the U.S. Fish and Wildlife Service" (IDFG 2010a)

2 At the time of the reintroduction of wolves into central Idaho, the USFWS addressed depredating wolves in their 1994 10j rule with this determination: "*All chronic problem wolves (wolves that depredate on domestic animals after being moved once for previous animal depredations) will be removed from the wild (killed or placed in captivity"* (59 FR 60266).

3 These researchers suggest that one of the best ways to promote wolf recovery is to encourage education about wolf management issues so that a significant portion of the public support wolf recovery while tolerating some level of control (Mech 1995).

4 On October 20, 2010 the USFWS sent a letter to WS, authorizing WS to act as a "designated agent" for the USFWS to conduct wolf depredation control actions.

5 On December 31, 2009, plaintiffs allege that WS is killing wolves in Idaho without conducting the analysis required under NEPA. However, for reasons stated in Judge Winmill's, U.S. Federal District Court in Boise, Idaho, January 21, 2011 memorandum decision, the Court found that plaintiffs lacked standing. Therefore the Court granted WS' motions for summary judgment and entered a judgment pursuant to Rule 58(a) (Case No. 4: CV-09-686-BLW).

In August, 2010, while wolves were federally delisted from the protections of the Endangered Species Act (ESA) of 1973, WS, and the IDFG released an Environmental Assessment (EA) evaluating ways by which the agencies could cooperatively work together to resolve human-wolf conflicts in Idaho. The EA documented the need for wolf damage management in Idaho and assessed and analyzed the potential environmental and social effects from the various alternatives for resolving wolf damage. Comments made during the public involvement processes for the EA were reviewed for substantive issues and new alternatives. However several events occurred during the comment period and shortly thereafter related to the wolf management in Idaho and the Northern Rocky Mountains (NRM) whereby the agencies believed a revised EA (REA) with an updated analysis would be appropriate[6]. If the legal status or classification of wolves in Idaho changes as a result of delisting, current or future litigation, legislation, or other actions outside of WS' control, wolf management activities would be conducted under the appropriate management strategy or guidance as authorized by the USFWS, IDFG or the courts, as appropriate[7].

In December 2010, WS, in consultation with the USFWS, IDFG, Bureau of Land Management (BLM), US Forest Service (USFS), Idaho State Department of Agriculture, Idaho Department of Lands, and Nez Perce Tribe[8] released a REA for public comment which analyzed wolf damage and conflict management in Idaho. The analysis documented the need for wolf damage management in Idaho and compared potential environmental and social effects from the various alternatives for responding to wolf damage conflicts; the REA also took into account the changes in wolf management in Idaho and the NRM and public comments from the public review of the draft EA (Appendix C of the REA). This Finding of No Significant Impact (FONSI) provides the rationale and notification of WS' selection of a management alternative to reduce human-wolf conflicts while wolves are listed under the protections of the ESA and after the delisting of wolves in Idaho or the NRM, and a response to public comments on the REA.

The REA only evaluated alternatives for WS involvement in wolf damage management in Idaho and cannot change the USFWS wolf management policies (USFWS 1994, 50 CFR 17.84(n)) or IDFG wolf management policies (ILWOC 2002) or court decisions. WS has selected Alternative 2, "Continue the Current Program, Plus Assist IDFG with Ungulate Protection (Proposed Action/Preferred Alternative)," to reduce wolf damage and conflicts on public and private lands[9] in Idaho, as authorized by the USFWS

---

6 1) On August 5, 2010, the U.S. Federal District Court in Missoula, Montana issued an order vacating the delisting of the Northern Rocky Mountains (NRM) Distinct Population Segment (DPS) of the gray wolf (Defenders of Wildlife et al. v. Salazar, CV 09-77-M-DWM, and Greater Yellowstone Coalition v. Salazar, CV 09-82-M-DWM). In compliance with that court order, wolves were once again considered endangered throughout the NRM DPS, except where they are classified as experimental nonessential (XN) populations (southern Montana, Idaho south of Interstate 90, and all of Wyoming). For a summary of relevant delisting and litigation activities, go to http://www.fws.gov/mountain-prairie/species/mammals/wolf/

2) The same Montana District Court is considering a challenge to the USFWS 2008 10j rule (Defenders of Wildlife et al. v. H. Dale Hall et al., CV 08-14-M-DWM). That challenge had been rendered moot by the USFWS' March 2008 delisting of wolves from the provisions of the ESA, but with the delisting decision vacated by the court, the 2008 10j rule is now once again being litigated.

3) On October 18, 2010, the Governor of Idaho sent a letter to the Secretary of Interior, informing the Secretary that the State of Idaho would no longer continue to act as a "designated agent" of the USFWS for conducting wolf management in Idaho (http://fishandgame.idaho.gov/cms/wildlife/wolves/esa/govOtterLetter10_18_10.pdf). This means that the IDFG, for the time being, will no longer be involved in the day-to-day decision-making or conducting routine wolf management in Idaho. On October 20, the USFWS sent a letter to WS, authorizing WS to act as a "designated agent" for the USFWS to conduct wolf depredation management actions.

4) Idaho officials and Montana Fish, Wildlife and Parks have asked the 9th U.S. Circuit Court of Appeals to reverse the Montana District Court ruling which put gray wolves back onto the endangered species list in the NRM and which blocked Montana and Idaho's wolf management plans and the fall hunting season. A second appeal was filed by the Idaho Farm Bureau Federation and Montana Farm Bureau Federation.

5) In addition, the U. S. Representative from Montana drafted legislation in Congress which advocates state control of wolves and is backing legislation in the U.S. House of Representatives that would remove wolves from consideration under the ESA. Similar legislation has been introduced by U.S. Senators from Montana, Wyoming, Idaho and Utah.

7 On January 28, 2011, Judge Molloy, U.S. Federal District Court in Missoula, Montana ordered each party to the "10(j) lawsuit" to file a brief showing cause as to why this case should not be dismissed as moot due to the absence of a population meeting the statutory requirements for 10(j) status; briefs shall be submitted by February 22, 2011 (CV-08-14-M-DWM).

8 The American Indian Tribes found in Idaho retain the right to manage wolves within reservation boundaries.

9 The wolf damage and conflict management methods used by WS are not based on punishing offending animals, but are components of damage management strategies developed and implemented using the WS Decision Model thought process (Slate et al. 1992, USDA 1994, WS Directive 2.201).

or IDFG (which ever agency is responsible for wolf management in Idaho at the time) and in compliance with court rulings. This alternative includes implementation of the recent court rulings, the Governor of Idaho's recent decision about the State's role in wolf management in Idaho, recent drafted legislation, and the USFWS's request to WS as their designated agent to assist in wolf management in Idaho (B. Kelly, USFWS letter to M. Collinge, WS, October 20, 2010). WS' wolf damage management approach, commonly known as Integrated Pest Management (WS Directive 2.105), involves the simultaneous or sequential use or recommendation of a combination of nonlethal and lethal methods to reduce damage, however preference is given to non-lethal methods if they are deemed effective and practical (WS Directive 2.101), depending on the decisions made by the USFWS or IDFG for wolf conflict resolution.

II. BACKGROUND

Gray wolf populations in North America, specifically the wolf population in Idaho, have undergone dramatic population increases in recent years (Mack et al. 2010, USFWS et al. 2010). In the NRM, wolf population growth was hastened by the release of wolves by the USFWS into central Idaho and Yellowstone National Park (YNP) in the mid-1990s and Idaho and the NRM wolf population has far surpassed the biological recovery goals set by the USFWS[10] (USFWS 1994, Nadeau et al. 2009, Mack et al. 2010, USFWS et al. 2010). As a result of this recovery, the USFWS announced a final decision to remove (delist) gray wolves from the list of federally-protected threatened and endangered (T/E) species[11] on February 8, 2007 (73 FR 10514). The expansion of the wolf population from backcountry areas into areas of greater human use has increased conflicts between wolves and humans in Idaho (USDA 2010). The primary conflicts with wolves involve injury and predation on livestock and pets. In addition, in parts of Idaho wolf predation has also been implicated in the decline or continued suppression of ungulate (*e.g.*, elk (*Cervus canadensis*)) populations below IDFG wildlife management goals (IDFG 2010b, 2010c).

Following the issuance of the 1994 10j rules for management of the experimental, nonessential (XN) gray wolf population in the NRM[12], subsequent 10j rules (issued in 2005 and 2008) allowed for greater wolf management flexibility and provided for more assertive management actions to reduce wolf depredations on livestock and other domestic animals (59 FR 60266, 70 FR 1286, 73 FR 4720, 50 CFR 17.84 (n))[13]. At the time of the reintroduction of XN wolves into central Idaho, the USFWS addressed depredating

---

10 The 1987 Recovery Plan for Gray Wolves in the Northern Rocky Mountains stated (USFWS 1987): The primary objective was, "To remove the northern Rocky Mountain wolf from the Endangered Species List by securing and maintaining a minimum of 10 breeding pairs in each of three recovery areas for a minimum of 3 consecutive years." The secondary objective was, "To reclassify the NRM wolf to threatened status over its entire range by securing and maintaining a minimum of ten breeding pairs in each of two recovery areas for a minimum of three consecutive years." The USFWS conducted another review of what constitutes a recovered wolf population in 2001 and 2002 (USFWS et al. 2002, 2003) to re-evaluate and update USFWS (1994). A majority (78%) of a panel of wolf experts supported USFWS (1994) conclusions and agreed that wolf population viability was enhanced by higher (500 or more wolves) rather than lower population levels (300) and longer (more than 3 years) rather than shorter demonstrated time frames.

11 On August 5, 2010, the U.S. Federal District Court in Missoula, Montana issued an order vacating the delisting of the Northern Rocky Mountains (NRM) Distinct Population Segment (DPS) of the gray wolf (Defenders of Wildlife et al. v. Salazar, CV 09-77-M-DWM, and Greater Yellowstone Coalition v. Salazar, CV 09-82-M-DWM). In compliance with that court order, wolves were once again considered endangered throughout the NRM DPS, except where they are classified as experimental nonessential (XN) populations (southern Montana, Idaho south of Interstate 90, and all of Wyoming). For a summary of relevant delisting and litigation activities, go to http://www.fws.gov/mountain-prairie/species/mammals/wolf/

12 In October 1990, Congress directed the Secretary of Interior to appoint a 10-member Wolf Management Committee to develop a wolf reintroduction and management plan for central Idaho and YNP. The Wolf Management Committee consisted of representatives of the; USFWS; USFS; U.S. National Park Service Game and Fish Departments of Idaho, Montana, and Wyoming; two conservation groups; the livestock and hunting communities. The Wolf Management Committee's report recommended that Congress designate wolves in Idaho, Wyoming, and Montana (with the exception of the Glacier National Park area) as an XN population (WMC 1991).

13 On January 28, 2008, there was a challenge to the 2008 revisions of the 10(j) regulations that govern management of the wolf population of the NRM. In April 2009 the court stayed the proceedings while multiple groups challenged the USFWS's decision to designate and partially remove protections from the NRM gray wolf DPS under the ESA. On August 5, 2010 the court resolved the challenges to the wolf listing. On January 28, 2011, Judge Molloy ordered that each party to the "10(j) lawsuit" file a brief showing cause as to why this case should not be dismissed as moot due to the absence of a population meeting the statutory requirements for 10(j) status; briefs shall be submitted by February 22, 2011 (CV-08-14-M-DWM).

wolves in their 1994 10j rule (59 FR 60266, 50 CFR 17.84(i)(3)(vii)) by stating, "*All chronic problem wolves (wolves that depredate on domestic animals after being moved once for previous animal depredations) will be removed from the wild (killed or placed in captivity).*" This means that the WS program has limited ability to affect the environmental outcome (*status quo*) of wolf damage management in the NRM wolf population, except that the WS program is likely to have lower risks to non-target species and less impact on wildlife populations than actions that may be taken by others. Despite the limits to WS' influence on the environmental *status quo* and associated limits to federal decision-making, this National Environmental Policy Act (NEPA) process is valuable to inform the public and decision-makers of the substantive environmental issues and alternatives for reducing wolf damage and conflicts in Idaho and WS' wolf conservation assistance to the management agency(ies).

III. AGENCY AUTHORITIES

Wolf reintroduction and current management is led by the USFWS to provide a uniform and consistent policy for wolf recovery with sufficient management to reduce depredations on livestock, including removing wolves seen killing or harassing livestock (USFWS 1994, 59 FR 60266, 50 CFR 17.84(i)(3)(vii)). In addition, other federal and state agencies, and local cooperation is considered essential for wolf conservation and in compliance with the ESA. Following completion of USFWS approved state management plans, States could assume primary management authority throughout the XN population area except in national parks and national wildlife refuges. If the legal status or classification of wolves in Idaho changes as a result of delisting, current or future litigation, legislation, or other actions outside of WS' control, wolf management activities would be conducted under the appropriate management strategy or guidance as authorized by the USFWS, IDFG, or court rulings, as appropriate.

Wildlife Services

WS is a non-regulatory agency authorized and directed by Congress to conduct wildlife damage management to protect American agricultural, industrial and natural resources, property and human health and safety from damage associated with wildlife (Act of March 2, 1931 as amended 46 Stat. 1486; 7 USC 426-426c). WS is a cooperatively funded, service-oriented program that assists requesting public and private entities and government agencies. Before WS responds to or conducts any wildlife damage management, a request must be received and an *Agreement for Control* must be signed by the landowner/administrator for private lands or other comparable documents for public lands must be in place. WS responds to requests for assistance when valued resources are damaged or threatened by wildlife and responses can be technical assistance or operational damage management, depending on the complexity of the problem and if funding is available. WS activities are conducted in accordance with applicable federal, state and local laws, Cooperative Service Agreements, "Agreements for Control," Memoranda of Understanding (MOUs) with other state and federal management agencies, and other applicable documents (WS Directive 2.210). These documents establish the need for the requested work, legal authorities and regulations allowing the requested work, and the responsibilities of WS and its cooperators.

The mission of the WS program is to provide federal leadership in managing conflicts with wildlife. WS' mission, developed through its strategic planning process, is: 1) "*to provide leadership in wildlife damage management in the protection of America's agricultural, industrial and natural resources, and 2) to safeguard public health and safety.*" Idaho WS is authorized as a designated agent of the USFWS[14] to assist in wolf monitoring, research and to reduce damages from depredating wolves under the authority of the USFWS, IDFG or court rulings depending on circumstances beyond WS' control. WS recognizes that

[14] WS acts as an agent for USFWS, at their request, in conducting wolf damage management activities (B. Kelly, USFWS letter to M. Collinge, WS, October 20, 2010), but in the absence of WS involvement, USFWS or other responsible management agency would be responsible for conducting wolf damage management.

wildlife is an important public resource greatly valued by the American people. By its very nature, however, wildlife is a highly dynamic and mobile resource that can cause damage to agriculture and property, pose risks to human health and safety, and affect industrial and natural resources. WS conducts research programs and conducts technical assistance and applied management to resolve problems that occur when human activity and wildlife conflict.

U.S. Fish and Wildlife Service

The USFWS is a federal agency within the U.S. Department of the Interior authorized to manage fish, wildlife, and habitats. USFWS mission reads, "working with others to conserve, protect, and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people." As the principal federal agency responsible for administering the ESA, the USFWS takes the lead in recovering and conserving imperiled species by fostering partnerships, employing scientific excellence, and developing a workforce of conservation leaders.

Currently wolves in the NRM are managed by the USFWS with cooperation from the other agencies and tribes. While all federal agencies have the responsibility to "utilize their authorities in furtherance of the purposes of the ESA . . . pursuant to section 4" of the ESA, the USFWS has primary authority for endangered species recovery. Currently, the USFWS has legal responsibilities for wolf recovery however, the USFWS can, through cooperative agreements and other documents permit the states and tribes to lead implementation of wolf restoration efforts, as long as those programs are within the authorities of the ESA and within the provisions of each XN population rule.

U.S. Forest Service (USFS) and Bureau of Land Management (BLM)

The USFS and BLM have the responsibility for managing the resources on federal lands for multiple uses including livestock grazing, timber production, recreation and wildlife habitat, while recognizing the state's authority to manage wildlife. The USFS and BLM recognize the importance of reducing wildlife damage on lands and resources under their jurisdiction, as integrated with their multiple use responsibilities. These uses are outlined in their Land and Resource Management Plans and Resource Management Plans, respectively, and wildlife damage management actions may be taken on National Forest System and BLM administered lands to protect resources on adjacent properties. For these reasons, the USFS and BLM have entered into a national MOU with WS to facilitate a cooperative relationship regarding the reduction of wildlife damage and conflicts.

State of Idaho

Idaho Wolf Conservation and Management Plan (ILWOC 2002)

IDFG is charged by statute with the management of Idaho's wildlife (Idaho Code §36-103(a) and ILWOC (2002) enabled the management transition of the gray wolf to the IDFG[15]. ILWOC (2002) and the resultant classification of wolves as a big game animal in Idaho allowed IDFG to provide protection for wolves as well as consider the impacts of wolves on other big game species. The goal of ILWOC (2002) is to ensure the long-term survival and conservation of wolves in Idaho while minimizing wolf-human conflicts (Table 1). Conservation of wolves requires management and "management for wolves means ensuring adequate numbers for long-term persistence of the species as well as ensuring that landowners, land managers, other citizens, and their property are protected." The State of Idaho seeks delisting and to

15 On October 18, 2010, the Governor of Idaho sent a letter to the Secretary of Interior, informing the Secretary that the State of Idaho would no longer continue to act as a "designated agent" of the USFWS for conducting wolf management in Idaho (http://fishandgame.idaho.gov/cms/wildlife/wolves/esa/govOtterLetter10_18_10.pdf). This means that the IDFG, for the time being, is no longer involved in the day-to-day decision-making or conducting routine wolf management in Idaho. On October 20, the USFWS sent a letter to WS, authorizing WS to act as a "designated agent" for the USFWS to conduct wolf depredation management actions.

manage wolves at recovery levels that will ensure viable, self-sustaining populations.

IV. MONITORING

WS will continue to coordinate with the USFWS[16] or IDFG, depending on which agency is responsible for wolf management, to monitor wolf take, recovery, and non-target species that could be affected by wolf damage management. This will primarily be done by reporting, closely coordinating and conducting activities under the direction and authority of the responsible management agency (*i.e.*, USFWS or IDFG, as appropriate) to ensure that cumulative impacts of WS' actions in combination with all other wolf management activities are not having an adverse affect on the wolf population and recovery. The REA will also be reviewed each year to ensure that there are no new needs, issues or affects meriting additional analysis.

Table 1: Wolf Management Actions to Ensure Long-term Survival and Conservation of Wolves in Idaho[1] (ILWOC 2002).

Less than 15 Packs	More than15 Packs
Management IDFG will conduct a review of management policy to determine if changes are needed to maintain wolf population.	**Management** Wolves managed under IDFG Commission regulations, similar to black bears and mountain lions. Wolf plan updated in the same process as all other species plans.
Control Depredation control becomes increasingly stringent until at <10 packs it reverts to the control plan specified in the final rule (50 CFR Part 17, page 80270). In the unlikely event the number of packs in Idaho falls below 10, depredations will be addressed with nonlethal control unless unusual circumstances absolutely necessitate the use of lethal control to end the depredation problem.	**Control** Depredation control is treated like all other large mammalian predators.
Monitoring Monitoring becomes increasingly intensive to the point that each pack contains some radio-collared individuals and reproduction and survival in each pack is monitored on a regular basis.	**Monitoring** Monitoring is done primarily by indicators such as wolf depredation complaints, autumn scent station surveys, telemetry, winter track surveys, and other observations of field personnel.
Listing under ESA Listing remains a possibility for wolves if they are likely to become endangered as determined by Section 4 of the ESA (16 USC 1533).	

[1] ILWOC (2002) would be implemented if or when the State of Idaho resumes wolf management and "when wolves are delisted, then the state will redesign its wolf plan and conduct monitoring" (J. Gould, IDFG Wildlife Bureau Chief; http://www.magicvalley.com /news/local/twin-falls/article_161bcebd-d6b4-5b33-aea8-d2e2503c6aeb.html).

V. PUBLIC INVOLVEMENT

Issues related to the proposed action were initially developed by WS, based on an awareness of issues that were raised regarding predator damage management in general, and wolf damage management in particular. The draft EA on "Gray Wolf Damage Management in Idaho" was released for public comment on August 2, 2010. A Notice of Availability (NOA) was e-mailed to 89 persons and organizations who had expressed interest in WS wolf damage management, or who were presumed to be interested, and a NOA was also posted in the Idaho Statesman, the newspaper of state record for public notices (72 FR 13237), for 3 consecutive days (August 2-5, 2010). The NOA and the EA were also posted on the WS website at: http://www.aphis.usda.gov/wildlife_damage/nepa.shtml. WS received more than 115,000 e-mailed comment letters from across the U.S. and a number of foreign countries during the 30-day public comment period, most of which (more than 99.9%) were variations of form letters that were substantially similar and expressed opposition to the killing of wolves, sent as part of an organized campaign by two environmental organizations. Several substantive comment letters were also received, and most substantive comments had already been addressed in the draft EA or have additionally been addressed in

[16] ESA, Section 4(g)(1) "requires the USFWS to implement a system, in cooperation with the States, to monitor for not less than 5 years the status of all species that have recovered and been removed from the Lists of Endangered and Threatened Wildlife and Plants" (50 CFR 17.11 and 17.12). The purpose of this post-delisting monitoring is to verify that a recovered species remains secure from risk of extinction after it no longer has the protections of the ESA. The status of the NRM wolf population will be assessed by estimating the numbers of packs, breeding pairs, and total numbers of wolves in mid-winter by State and by recovery area throughout the post-delisting monitoring period (73 FR 10514).

Appendix C of the REA. The REA was announced to the public using the same procedure and available at: (http://www.aphis.usda.gov/regulations/ws/ws_environmental_idaho.shtml); more than 45,000 comment letters were received. Any new issues or alternatives identified during a 30-day public comment period for the REA were fully considered to determine whether the REA should be modified prior to issuance of a decision. As part of WS' environmental analysis process, and as required by the Council on Environmental Quality (CEQ 1981) and APHIS-NEPA implementing regulations, this FONSI will be made available to the public through "NOA" published in the Idaho Statesman and on the APHIS website and through direct mailings of NOA to parties that have specifically requested to be notified.

VI. AFFECTED ENVIRONMENT

Idaho has a diverse landscape containing large expanses of high quality wolf habitat (IDFG 2010a). Central Idaho includes three contiguous Wilderness Areas; the Selway-Bitterroot, Frank Church River-of-No-Return, and Gospel Hump encompassing almost 4 million acres, which represent the largest block of federally-designated wilderness in the lower 48 states. Outside of Wilderness Areas, land ownership and human use patterns result in varying levels of potential human conflicts with wolves.

The proposed action could include wolf damage management activities by WS on private, tribal[17] or public lands[18] in Idaho where wolf damage is occurring or could occur when: 1) resource owners/managers request assistance to alleviate damage, 2) management is authorized by the USFWS, IDFG or other responsible agency(ies), or court rulings, 3) wolf damage or threats are verified, and 4) agreements or work plans have been completed specifying the details of the damage management action to be conducted. Most wolf damage management activities to protect livestock have been conducted on private land and that pattern is expected to continue.

VII. MAJOR ISSUES

The REA analyzed a range of management alternatives with regard to the issues relevant to the scope of the analysis, including:

- Effects on the wolf population in Idaho
- Effectiveness of lethal and nonlethal control efforts in reducing wolf predation on livestock and/or wild ungulates
- Effects on public and pet health and safety
- Animal welfare and humanness of methods to be used
- Impacts to stakeholders, including aesthetics of wildlife

VIII. ALTERNATIVES THAT WERE FULLY EVALUATED

The following five alternatives were developed and analyzed in detail (REA at Section 3.2) and seven additional alternatives were considered but not analyzed in detail (REA at Section 3.5). If the legal status or classification of wolves in Idaho changes as a result of delisting, current or future litigation, legislation, court rulings or other actions outside of WS' control, wolf management activities would be conducted under the appropriate strategy or guidance as authorized by the USFWS, IDFG or court rulings, as appropriate. A detailed discussion of the effects of the alternatives on the issues is described in Chapter 4 of the REA. The following is a summary of the alternatives analyzed in detail.

---

[17] WS will notify the Nez Perce tribe if it plans to conduct wolf damage management activities on tribal lands. Additionally, WS will contact the tribe if a wolf complaint is verified on tribal lands and will attempt to co-investigate; WS will consult with the tribe on wolf damage management activities on tribal lands. WS wolf damage management would only be conducted on tribal lands with the Tribes request/consent and only after appropriate documents had been signed by WS and the respective Tribe.

[18] Consultation will occur between the USFWS or IDFG, as appropriate, and the appropriate public land manager if wolf damage management is going to be conducted on public land.

Alternative 1 - Continue the Current Wolf Damage Management Program (No Action[19])

Alternative 1 would continue the current WS wolf damage management program as provided for under applicable agreements, rules and plans (USFWS 1994, ILWOC 2002, IDFG and ISADCB 2006, 71 FR 43410, 73 FR 10514, 74 FR 15123). Under Alternative 1, wolf damage management would continue to be conducted on private and public lands[20] in Idaho as currently authorized by the USWFS when the resource owners/managers request assistance to alleviate wolf damage, wolf damage is verified by WS, and an *Agreement for Control* or other work authorization has been completed. WS would provide technical assistance and operational wolf damage management using or recommending nonlethal and lethal management methods after applying the WS Decision Model (Slate et al. 1992). WS would be able to assist with wolf monitoring[21] and research, and wolf or wolf-dog hybrid removal when requested and authorized by the USFWS and IDFG, as appropriate. Nonlethal methods recommended to landowners could include, but would not be limited to, changes in ranch management practices and pet and livestock care/supervision, proper carcass disposal, frightening devices, exclusion, guarding animals, habitat modification, and behavior modification of problem wolves. Nonlethal methods used operationally by WS may include foot-hold traps and snares with "stops" (used to live capture wolves for attaching radio-collars), frightening devices (*e.g.*, electronic guard, Radio-activated Guard (RAG)), aversive conditioning (*e.g.*, modified dog training collars) and nonlethal projectiles (*e.g.*, rubber bullets, bean bag rounds). Aversive conditioning and other experimental damage management techniques would only be used by WS after consultation and authorized by the USFWS or IDFG, as appropriate.

In determining the most appropriate damage management strategy, preference is given to nonlethal methods when they are deemed practical and effective (WS Directive 2.101). Lethal methods would be used to reduce damage after practical nonlethal methods have been considered and determined to be ineffective or inappropriate to reduce damage to acceptable levels, or used and failed to reduce or stop the damage. In some instances, however, the most appropriate response to a wolf damage problem could involve concurrent use of a combination of nonlethal and lethal methods, or there could be instances where application of lethal methods alone would be the most appropriate strategy (*e.g.*, instances of risk to human safety from bold wolves or situations where the landowner has already implemented practical nonlethal methods prior to contacting WS and is still experiencing damage problems). Lethal methods could include shooting, calling and shooting, aerial shooting, and euthanasia of wolves live-captured in foot-hold traps, snares or other live-capture devices.

Alternative 2 – Continue the Current Program, Plus Assist IDFG with Ungulate Protection (Proposed Action/Preferred Alternative)

Under the Proposed Action/Preferred Alternative, WS would be able to employ all the methods included in the Current Program for protection of domestic animals when authorized by the USFWS, IDFG, or court rulings, as appropriate. WS could additionally assist the State to protect ungulates, primarily elk, in situations where the State has requested WS assistance after determining that wolves are impacting ungulate populations in a specific management area(s) and the wolf management actions are approved

19 The No Action Alternative serves as the baseline against which the impacts of management alternatives can be compared and can be defined as a continuation of current management practices (CEQ 1981).

20 WS could use lethal wolf damage management methods on public land to reduce depredation when authorized by the USFWS or IDFG and coordinated with the public land management agency.

21 Wolf trapping and radio-collaring for wolf population monitoring purposes is usually conducted on public land and authorized by the USFWS or IDFG and coordinated with the public land management agency.

and authorized by the USFWS (73 FR 4720)[22], as appropriate. As the NRM wolves are currently listed under the ESA, USFWS would have to approve any ungulate protection wolf management actions as allowed by 10j rules. If wolves are delisted again, then IDFG would utilize their authorities under State law to conduct or request WS assistance in conducting wolf removals for ungulate protection. If court decisions change the status of wolves or management rules[23], WS would comply with those decisions.

Alternative 3 - Continue the Current Program, Plus Assist IDFG with Ungulate Protection and Include Use of Gas Cartridges and Breeding Wolf Sterilization as Potential Additional Control Methods

Under Alternative 3, WS would be able to use all the methods included under the Current Program for protection of livestock and other domestic animals and could provide assistance to the State to protect ungulates when the USFWS or IDFG has authorized the removal of wolves to protect ungulates, as appropriate.

Additionally, under Alternative 3, if USFWS or IDFG, as appropriate, authorize the removal of a pack of wolves when the pack has been implicated in repeated depredations on livestock, there may be infrequent situations in the spring involving a pack with dependent pups in a den. If the USFWS or IDFG, as appropriate, determines that the entire pack is to be removed, this could include the pups. Excavating the den to retrieve the pups could involve unnecessary health and safety risks to personnel, and the most practical, humane approach to this infrequent scenario would be to employ the use of an Environmental Protection Agency registered den fumigant to euthanize the pups in the den.

An additional management strategy under this Alternative could be the infrequent use of sterilization[24] of one or both breeding wolves from packs implicated in chronic depredations on livestock, or from packs targeted for removal. For protection of livestock, this option would be considered on a case-by-case basis when the USFWS or IDFG, as appropriate, has authorized removal of a chronic depredating wolf pack[25]. In these cases, if the responsible management agency and the affected livestock producers' concur, all of the wolves except the breeding pair could be lethally removed, while the breeding pair would concurrently be live-captured, surgically sterilized, radio-collared and released to maintain and defend their territory against other wolves. Comparison of livestock losses prior to and after employing this strategy would provide data to determine whether this experimental management approach would be useful to reduce conflicts.

---

22 To ensure that wolf removals are necessary for a specific ungulate population or herd and before the USFWS would authorize wolf removals to protect ungulates, and before WS would conduct any removals, if requested, the State or Tribes must prepare a science-based document that: 1) describes the ungulate population or herd management objectives, 2) what data indicate that the population or herd is below management objectives, 3) what data indicate that wolves are a major cause of the unacceptable impact to the population or herd, 4) why wolf removal is warranted to help restore the population or herd to management objectives, 5) the level and duration of wolf removal being proposed, 6) how the ungulate population or herd responses to wolf removal will be measured and management actions adjusted for effectiveness. The proposal must also disclose what attempts were and are being made to address other identified major causes of herd or population declines, or the State or Tribe commits to implement possible remedies or conservation measures in addition to wolf removals. In addition, after the proposal is prepared, the State or Tribe must provide an opportunity for peer review and public comment prior to submitting it to the USFWS for approval. The agencies believe that by preparing a science-based proposal, providing for public review and USFWS reviews, it will enable the USFWS and responsible agencies to make sound science-based decisions on whether wolf removal is appropriate to protect a specific ungulate population or herd. Before the USFWS would authorize lethal removal, they also must determine that an unacceptable impact to the specific ungulate populations or herds has occurred based on sound science, will not contribute to reducing the wolf population in the State below 20 breeding pairs and 200 wolves, and will not impede wolf recovery (73 FR 4720).

23 On January 28, 2011, Judge Molloy ordered that each party to the "10(j) lawsuit" file a brief showing cause as to why this case should not be dismissed as moot due to the absence of a population meeting the statutory requirements for 10(j) status; briefs shall be submitted by February 22, 2011 (CV-08-14-M-DWM).

24 IDFG's Policy for Avian and Mammalian Predation Management would ordinarily preclude consideration of birth control or sterilization as a management tool, but the IDFG Director has concurred with exploring this approach on a limited trial basis.

25 A scientific study design would be developed and implemented if this approach would be employed beyond an initial 1-2 breeding pairs.

Alternative 4 – WS Nonlethal Wolf Damage Management Only

This Alternative would work similarly to the Current Program Alternative except Idaho WS would only use and provide advice on nonlethal wolf damage management methods. The USFWS or IDFG, as appropriate, and property owners would still be able to use lethal methods in accordance with federal regulations, State laws, as authorized by the USFWS or IDFG, whichever agency has management responsibilities at the time.

Nonlethal methods used or recommended by WS could include, but would not be limited to animal husbandry practices, installation of fencing, electronic guards, fladry and turbo-fladry, aversive conditioning, nonlethal projectiles, use of livestock guarding animals, and/or other nonlethal methods as appropriate. WS would still investigate wolf depredation complaints to determine if the loss meets the criteria for wolf damage compensation, and could assist USFWS or IDFG with radio-collaring wolves for monitoring purposes or to enhance effectiveness of nonlethal deterrents such as the RAG. WS could live-capture wolves or wolf-dog hybrids, but the responsible management agency would determine the disposition of any animals captured.

Alternative 5 – No Wolf Damage Management by WS in Idaho

Under Alternative 5, WS would not provide any wolf conflict management assistance in Idaho, but the USFWS or IDFG and property owners would still be able to use lethal and nonlethal methods in accordance with federal regulations or State laws, as authorized by the USFWS or IDFG, whichever agency has management responsibility at the time. All requests for wolf damage management assistance received by WS would be referred to the USFWS, IDFG, the Nez Perce Tribe, or other responsible management agency, as appropriate.

IX. DECISION AND FINDING OF NO SIGNIFICANT IMPACT

I have carefully reviewed the REA prepared for wolf damage management in Idaho and the input from the public involvement process and adopt the REA as final. I believe that the issues identified in the REA are best addressed by selecting Alternative 2, "Continue the Current Program, Plus Assist IDFG with Ungulate Protection," and applying the associated Standard Operating Procedures discussed in Chapter 3 of the EA. I am selecting Alternative 2 because: 1) it best enables the management agencies provide prompt, professional assistance with human-wolf conflicts and will help maintain local tolerance for wolf recovery in Idaho; 2) it offers the greatest chance of 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 wolf and non-target species populations; 3) it has the greatest chance of maximizing net benefits while minimizing adverse impacts to public health and safety; and 4) it offers a balanced approach to the issues of humaneness and aesthetics when all facets of these issues are considered. WS' decision to adhere to the Standard Operating Procedures detailed in the REA and annual monitoring insures that environmental impacts, including WS approved and authorized take of wolves and impacts on the wolf population, risks to non-target species, impacts on public and pet health and safety, humaneness of methods to be used and sociological issues, will remain as described in the REA.

The analysis indicates that this proposed action does not constitute a major federal action significantly affecting, individually or cumulatively, the quality of the human and natural environment under the meaning of NEPA Section 102(2)(c). I agree with this conclusion and therefore find that an EIS need not be prepared. This determination is based on the following factors:

1. Wolf damage management as proposed in the REA is not regional or national in scope; WS activities are limited to the State of Idaho and WS actions will only be conducted after approval

and authorization is received from the USFWS or IDFG, as appropriate and in compliance with court rulings.

2. Analysis of the cumulative impacts for this or other anticipated actions within the State or other NRM states indicate that the proposed action would not threaten the continued existence of the wolf population. Based on increases in the NRM wolf populations, the wolf population is large enough and healthy enough that even while the proposed action and all other mortality factors have adverse affects on individuals, they are not likely to adversely impact the viability of any state or NRM wolf population.

3. The proposed action would pose minimal risk to public health and safety. Risks to the public from WS' wolf damage management methods were determined to be low in a formal risk assessment (USDA 1994, Appendix P).

4. 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 measures that are part of WS' Standard Operating Procedures and adherence to laws and regulations will further ensure that WS' activities do not harm the environment.

5. The effects on the quality of the human environment are not highly controversial. Although there is opposition to wolf conflict management as proposed, this action is not highly controversial in terms of size, nature, or effect. Support and opposition over wolf management has been acknowledged and analyzed in the REA.

6. Based on the analysis in the REA 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.

7. The proposed action would not establish a precedent for any future action with significant effects. Authorizations and approvals are issued by the USFWS or IDFG, as appropriate, for all Idaho wolf damage management activities.

8. No significant cumulative effects were identified through this assessment. The REA discussed cumulative effects on the Idaho wolf population, effectiveness of efforts to reduce wolf predation on domestic animals and/or wild ungulates, effects on public and pet health and safety, animal welfare and humanness of methods to be used, and impacts to stakeholders, including aesthetics of wildlife and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State.

9. WS 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. If an individual activity with the potential to affect historic resources is planned under the selected alternative, then site-specific consultation, as required by Section 106 of the NHPA, would be conducted as necessary (REA Section 4.3.3).

10. The USFWS has previously determined that the proposed program would have no effect on or is not likely to adversely affect any federally listed threatened or endangered (T/E) species. This determination is based on Section 7 consultations completed by the USFWS for Idaho WS predator damage activities. To further insure no significant adverse effects to T/E species, WS has entered into a new Section 7 consultation/conference process with the USFWS to reassess and update previous consultations, if needed. Idaho WS will continue to abide by previously established reasonable and prudent measures and terms and conditions pending the conclusion of

the current consultation process. Further, WS will not conduct any wolf damage management in occupied grizzly bear habitat in Idaho until a new or revised Section 7 consultation addressing potential effects on grizzly bears is completed by the USFWS and will comply with any new reasonable and prudent alternatives that are identified in a new Biological Opinion.

11. The proposed action will comply with all federal, state, and local laws, rules, regulations and court rulings.

Therefore, it is my decision to implement the proposed action (Alternative 2) as described in the REA. Copies of the revised REA are available upon request from the Idaho Wildlife Services State Office, 9134 W. Blackeagle Dr., Boise, ID, (208) 378-5077, or on the WS website at: http://www.aphis.usda.gov/wildlife_damage/nepa.shtml.

Jeffrey S. Green, Regional Director
USDA-APHIS-WS, Western Region
Fort Collins, Colorado

3/29/11
Date

APPENDIX A

COMMENTS AND WS' RESPONSES TO COMMENTS ON THE REVISED IDAHO WOLF DAMAGE MANAGEMENT EA (REA)

More than 45,000 comment letters, most of which were a form letter, on the REA were received from organizations and the public. Many of the comments were addressed in the draft EA or REA and further addressed in this appendix which contains the comments from the public during the comment period for the REA and WS' responses. Comments from the public are numbered and are written in bold text. WS' response follows each comment and is written in standard text.

It should be noted that wolf management and wolf damage management plans for Idaho and the NRM have been established (USFWS 1987, 1988, 1990, 1994, ILWOC 2002, 59 FR 60266, 50 CFR 17.84(i)(3)(vii)). Idaho and the USFWS have committed to implementing these management decisions with or without the involvement of WS and the courts have upheld that decision (Case No. 4: CV-09-686-BLW). Therefore, the content and policies established in these documents are outside the scope of the REA. The purpose of the REA is to analyze the environmental impacts of WS involvement, if any, in the implementation of wolf damage management in Idaho as requested and authorized by the responsible management agency.

Comment 1: WS uses a "sledgehammer" approach when assisting to resolve wolf conflicts.

Response: We assume that the term "sledgehammer," as used by this commenter, means "nonselective broad scale removal of target species, and with broad unintended adverse effects to other wildlife or other environmental resources." WS does not engage in this sort of approach when resolving wildlife damage conflicts, including wolf damage management as described in the REA. As explained in Sections 1.3, 3.1, 3.2, 3.2.2., 3.2.3, 4.4.1.1, and 4.4.1.2, our proposal is to assist the USFWS or IDFG, depending on which agency is in charge of wolf management in Idaho at the time, to conduct out highly selective, specific and targeted wolf damage management actions, including removal of wolves as directed and authorized by the USFWS or IDFG. Our assistance would have little or no effect on wolf recovery or other management objectives that have not been identified by the USFWS or IDFG. As explained in the above mentioned Sections and in Section 2.4.4, our assistance and the wolf damage management methods we use would be authorized by the USFWS or IDFG, and the methods are highly selective for the target species and would thus have little or no effect on non-target wildlife species populations.

Comment 2: Some commenters expressed opposition for lethal control of wolves and promoted the use of non-lethal methods.

WS will continue to cooperate with the USFWS and IDFG, universities, and interest groups as appropriate, to investigate ways to reduce conflicts between people and wolves (USFWS et al. 2001-2009, http://www.aphis.usda.gov/ws/mission.html, http://www.aphis.usda.gov/wildlife_damage/nwrc/). For example, WS and the cooperating agencies have investigated and assisted in implementing the use of fencing; guard animals; extra herders; lights, sirens, and other scare devices, including those activated by wolf radio-collars (*i.e.*, RAG); shock aversion conditioning; flagging; less than-lethal munitions; offensive and repelling scents; supplemental feeding; harassing wolves at dens and rendezvous sites to move the center of wolf pack activity away from livestock; trapping and moving individual wolves or the entire pack; moving livestock and providing alternative pasture; investigating the characteristics of livestock operations that experience higher depredation rates; and research into the type of livestock and rate of livestock loss that are confirmed on public grazing allotments. WS also conducted research on non-lethal wolf management methods and corresponds with researchers and wildlife managers to learn of potentially better ways to deal with wolf conflicts (Shivik 2001, Bangs and Shivik 2001, Shivik and Martin 2001, Breck et al. 2002, Shivik et al. 2002a, 2002b, 2003, Shivik 2004, Bangs et al. 2005, 2006).

While preventative and nonlethal wolf management methods are useful (see Section 4.4.1.2 of the REA), they have not been consistently reliable, and lethal removal remains an important tool to reduce wolf damage when depredations on livestock or other conflicts occur (Fritts 1993, Mech 1995, Bangs et al. 1995, 2009, ILWOC 2002, Fritts et al. 2003, IDFG 2008, Creel and Rotella 2010).

Comment 3: Humaneness and lethally removing wolves

Response: WS treats wolves as humanely as conditions allow and uses euthanasia methods recommended by the AVMA (2007) and Julien et al. (2010). We routinely assist the responsible wolf management agency (currently the USFWS, or possibly IDFG in the future) capture wolves for monitoring, research, and control; we train our employees in humane wildlife handling techniques. The USFWS reports that wolf mortalities resulting from wolf monitoring captures are below 2% of the animals handled (70 FR 1286). When problem wolves must be killed, we only do so under the authorization of the USFWS or IDFG, as appropriate, and use the most effective and humane techniques possible under field conditions (AVMA 2007, Julien et al. 2010). We also investigate and consider non-lethal ways to reduce wolf-livestock conflicts prior to implementing lethal methods (WS Directive 2.101). We work to reduce losses and prefer to prevent livestock depredations, if possible, rather than react to them by killing depredating wolves (http://www.aphis.usda.gov/ws/mission.html).

Comment 4a: WS' proposed action to reduce wolf populations for the benefit of ungulates is supported by one agency that is in conflict with other agencies' broad approach to species conservation.

Response: WS' proposed action is not to reduce the wolf population below recovery levels but to assist the IDFG and USFWS manage resources, possibly ungulates in this case, and only when authorized by the appropriate wolf management agency. Whether "one agency is in conflict with other agencies' broad approach to species conservation" is outside the scope of the REA[26] and to the extent that lethal wolf management reduces the wolf population below recovery levels has not and will not occur (Bangs et al. 1995, 2004, 2005; ILWOC 2002, USFWS et al. 2007; Nadeau et al. 2007, 2008; Mack et al. 2010, 73 FR 4720, 73 FR 10514) and would not be permitted by the USFWS or IDFG (ILWOC 2002, 73 FR 10514). Under the preferred or any other alternative analyzed in the REA, the USFWS or IDFG would regulate human-caused mortality of wolves in a manner that reduces conflicts between wolves and people while maintaining a recovered wolf population (USFWS 1994, ILWOC 2002, 73 FR 10514). Currently wolf removals for ungulate protection would only occur after the USFWS approves a proposal put forth to them from the State wildlife management agency, IDFG in this case, or a Tribe (73 FR 4720)[27]. WS' role

---

[26] The USFWS's purpose for authorizing lethal take of gray wolves by IDFG is to address an unacceptable impact of predation by wolves on wild elk in the Lolo Zone, as provided for in the NRM gray wolf ESA Section 10(j) rule (73 FR 4720). The IDFG proposal (IDFG 2010b) documents unacceptable impacts to the Lolo Zone elk herd and requests approval to implement wolf control for the benefit of the Lolo Zone elk herd. Based on long-term elk population data for the Lolo Zone, elk numbers within this Zone have fallen below IDFG management objective levels. Since 2002 high mortality rates of cow and calf elk between mid-December and June 1 was determined to be largely caused by wolf predation resulting in a continuing decline in the elk population. The 2010 elk population for the Lolo Zone is estimated to be 1,952 animals and the IDFG established objective is 7,400–11,000 elk (IDFG 1999). Even with reduced elk hunting permits, eliminating cow elk harvest, and decreasing the number of black bears and mountain lions, the Lolo Zone elk population has declined, and is expected to continue to decline at a rate of 14-16% annually. Wolf predation is considered one of the major causes of elk mortality that is preventing the Lolo Zone elk population from increasing. At the end of 2009, a minimum of 79 wolves in estimated 9-10 packs occupied the Lolo Zone. The need for the USFWS authorization of the lethal take of wolves is to relieve unacceptable impacts to the elk herd in IDFG GMUs 10 and 12 due to wolf predation in the Lolo Zone.

[27] To ensure that wolf removals are necessary for a specific ungulate population or herd and before the USFWS would authorize wolf removals to protect ungulates, and before WS would conduct any removals, if requested, the State or Tribes must prepare a science-based document that: 1) describes the ungulate population or herd management objectives, 2) what data indicate that the population or herd is below management objectives, 3) what data indicate that wolves are a major cause of the unacceptable impact to the population or herd, 4) why wolf removal is warranted to help restore the population or herd to management objectives, 5) the level and duration of wolf removal being proposed, 6) how the ungulate population or herd responses to wolf removal will be measured and management actions adjusted for effectiveness. The proposal must also disclose what attempts were and are being made to address other identified major causes of herd or population declines, or the State or Tribe commits to implement possible remedies or conservation measures in addition to wolf removals. In addition, after the proposal is prepared, the State or Tribe must provide an opportunity for peer review and public comment prior to submitting it to the USFWS for approval. The agencies

in any wolf removals to protect ungulates would be to assist the responsible agencies, as they determine necessary, to maintain healthy ungulate and wolf populations after the USFWS reviews a proposal, the responsible agency authorizes the actions and a request is received. Only then would WS entertain a request to remove wolves to protect ungulates.

Comment 4b: Wolves in Idaho have not been defined by the USFWS as "problem" animals in regard to ungulate protection. The USFWS conceded in its EA of the 2008 10(j) regulation that "most elk herds in Idaho, Montana, and Wyoming are at or above State management objectives." Thus, there is not a compelling need for WS lethal wolf control to protect or artificially increase Idaho elk or deer herds.

Response: To ensure that wolf removals are necessary for a specific ungulate population/herd, the USFWS requires the State or Tribal governments prepare a science-based proposal before wolf removals can be conducted (73 FR 4720). Before the USFWS would authorize wolf removals to protect ungulates and before WS would conduct any removals, if requested, the State or Tribes must demonstrate the need for such an action and provide an opportunity for peer review and public comment on their proposal prior to submitting it to the USFWS. After completion of the reviews, the USFWS could authorize lethal removal (73 FR 4720). Only then would WS consider a request to protect ungulates from wolf predation and only after the USFWS has approved and authorized wolf removals.

Comment 5: The use of aerial gunning to reduce wolf numbers to bolster elk populations in Idaho violates the Airborne hunting Act (AHA) and would violate the Wilderness Act if conducted in Wilderness Area.

Response: The preferred alternative in the REA would allow WS to remove wolves, if authorized (see above responses), including by the use of aircraft. This type of agency activity is not a violation of the AHA. The AHA does make it unlawful[28] for "any person" to use aircraft to "shoot or attempt to shoot for the purpose of capturing or killing any bird, fish, or other animal," and it also prohibits the use of aircraft "to harass any bird, fish, or other animal" (16 U.S.C. §742j-1). However, the AHA also provides "if such person is employed by, or is an authorized agent of or is operating under a license or permit of, any State or the United States to administer or protect or aid in the administration or protection of land, water, wildlife, livestock, domesticated animals, human life, or crops, and each such person so operating under a license or permit shall report to the applicable issuing authority each calendar quarter the number and type of animals so taken" (16 U.S.C. §7421(b)). WS is a federal agency and conducts aerial activities in compliance with the AHA to protect valued resources, and therefore, it is not a violation of the AHA for WS to protect livestock, ungulates or human life from wildlife predation; WS wolf management actions are approved and authorized by the USFWS or IDFG, as appropriate. To ensure that wolf removals are necessary for a specific ungulate population, the USFWS requires the State or Tribal governments to prepare a science-based proposal before wolf control can be conducted (see above responses).

With regards to the Wilderness Act, WS would only conduct activities in compliance with the Wilderness Act and in cooperation with the land management agency.

---

believe that by preparing a science-based proposal, providing for public review and USFWS reviews, it will enable the USFWS and responsible agencies to make sound science-based decisions on whether wolf removal is appropriate to protect a specific ungulate population or herd. Before the USFWS would authorize lethal removal, they also must determine that an unacceptable impact to the specific ungulate populations or herds has occurred based on sound science, will not contribute to reducing the wolf population in the State below 20 breeding pairs and 200 wolves, and will not impede wolf recovery (73 FR 4720).

28 These prohibitions do not apply to state or federal employees, authorized agents, or persons acting under a license or permit, who are authorized to administer or protect land, water, wildlife, livestock, domesticated animals, human life or crops. Each state that issues permits must file with the Secretary of Interior an annual report listing permit holders, animals authorized to be taken, the animals actually taken and the reason for issuing the permits (§ 742j-1(a) and (b)).

Comment 6a: WS should teach tolerance of wolves.

Response: An adequate understanding of both biological and sociological factors in human wildlife conflict is essential for successful predator conservation and management; to optimize coexistence, behavioral modifications of both predators and humans are required (Treves and Karanth 2003). Social attitudes influence tolerance of predators and predator management techniques, and the success of predator conservation and management will come from a balance of biological, economic, and sociological factors (Lance 2009). When managers are deciding on a course of action to alleviate a wildlife problem, an important factor is public perception of damage and how the problem should be managed (Reiter et al. 1999). While biological factors are the easiest to manipulate, economic loss and social perceptions of predators and their management are the most common cause of predator-livestock conflicts and perhaps the most difficult to manage (Lance 2009).

WS' mission is to provide Federal leadership and expertise to resolve wildlife conflicts and create a balance that allows people to coexist peacefully with wildlife (see Section 2.3.5.1 and Appendix C of the REA). During the last 130 years, with the introduction of domestic livestock, urbanization, and other modern agricultural and cultural practices, wildlife management has also changed. Management of wolves should not be absolute protection or total elimination, but a discretionary management action where conflicts are minimized in an environmentally sensitive manner for multiple-use needs. Thus, it should be recognized that responsible management requires active management, not passive preservation when managing agricultural and natural resource, or protecting property and human health and safety. WS' vision is to improve the coexistence of people and wildlife, and those involved in management activities must consider a wide range of interests that can conflict with one another. We strive to develop and use wildlife damage management strategies that are biologically sound, environmentally safe, and socially acceptable while attempting to reduce damage caused by wildlife all while attempting to reduce wildlife mortality. WS also attempts to improve and modify management strategies that are constrained by technologies, knowledge, or resources (http://www.aphis.usda.gov/ws/mission.html).

WS operates in accordance with state and federal laws and wolf management plans intend to balance the level of wolf mortality, primarily human-caused mortality, with the wolf population growth rate to achieve desired management objectives. The 1980 and 1987 NRM wolf recovery plans (USFWS 1980, 1987) and wolf control plans (USFW 1988, 1990) recognize that conflict with livestock was the reason that wolves were extirpated, and the reduction of conflicts is a necessary component of wolf recovery. These plans and others also acknowledged that control of problem wolves is important to maintain local public tolerance of wolves and that removal of some wolves did not prevent the wolf population from achieving recovery (Bath 1987, McNaught 1987, Fritts 1993, Pate et al. 1996, Mech 1995, Bangs et al. 1995, Wolstenholmer 1996, Bjerke et al. 1998, Fritts et al. 2003, Bangs et al. 2009, Creel and Rotella 2010, Bruskotter 2010, 74 FR 15123). The USFWS analyzed the effectiveness of those plans in 1999, and revised their guidelines for management of problem wolves (USFWS 1999). The USFWS plans have proven successful, as wolf depredation on livestock and subsequent agency management actions have remained compatible with recovery; the wolf population expanded and its distribution and numbers went far beyond, and more quickly than, earlier predictions (USFWS 1994, USFWS et al. 2007, 2008, 2009, 2010). Despite agency wolf removal, nearly all suitable areas for wolves are being occupied by resident packs (Oakleaf et al. 2006, USFWS et al. 2008). The NRM wolf pack distribution has remained largely unchanged since 2000, indicating that wolf packs are occupying areas with suitable habitat, thus as the USFWS explained, the NRM wolf population is likely at or above long-term carrying capacity (74 FR 15123).

Rapid, effective assistance to human-wolf conflicts is critical to maintaining support for wolf populations, not just among affected stakeholder groups but the public in general (Bath 1987, McNaught 1987, Pate et al. 1996, Mech 1995, Wolstenholme 1996, Bjerke et al. 1998, Naughton et al. 2005, Bruskotter 2010, 74 FR 15123). The purpose of the proposed action is not to limit the size of the Idaho or NRM wolf

population and based upon data from Nadeau et al. (2008, 2009), Mack et al. (2010), and USFWS et al. (2008, 2009, 2010), there is no evidence supporting the concept that the Idaho or NRM wolf population will be limited by the proposed action.

Comment 6b: WS is misconstruing the need for maintenance of public tolerance without supporting science.

Response: We disagree with this comment and recognize that public tolerance or attitudes towards wolves are varied among the different segments of society (Biggs 1988, Bath 1991, Lohr et al. 1996). With the reintroduction and recovery of wolves, researchers have paid special attention to stakeholders' perceptions of wolves and management (Tucker and Pletscher 1989, Williams et al. 2002, Ericsson and Heberlein 2003, Naughton-Treves et al. 2003). Wolf predation on livestock can cause economic adversity for livestock producers and can increase animosity towards wolves, thus complicating the balance of wolf conservation and other human interests (Lance 2009). The benefits of improved social tolerance are not just measured in terms of an increase in cultural carrying capacity. Improved social tolerance also impacts the fate of individual wolves and risks to the environment from inappropriate wolf removal efforts. Considerable information from prominent social theory and research shows that tolerance toward a wildlife species is influenced by the value of losses attributable to that species, the benefits attributable to the species by the affected individual, and by the perception of the risk of losses as controlled or voluntary (Slovic 1987). Risks/threats considered involuntary by an individual are less likely to be viewed as acceptable whereas risks that can be controlled are generally considered to be more acceptable. In this context, the availability of prompt and effective wolf damage management has value (Fritts 1993, Mech 1995, Bangs et al. 1995, 2009, ILWOC 2002, Fritts et al. 2003, IDFG 2008, Creel and Rotella 2010, 50 CFR 17.84(n)). Improving social tolerance can result in an increase in the number of animals that can be supported without provoking increases in inappropriate behavior towards wolves (*e.g.*, poaching). Social tolerance is a relevant issue for wolf population management at any level when wolf damage and conflicts occur.

Further, Houston et al. (2010) concluded an increase in negative discourse about wolves. Williams et al. (2002) found that 51% of survey respondents had positive attitudes toward wolf reintroduction and 60% supported wolf restoration. However, their review concluded that wolf reintroduction and recovery was viewed more favorable among urban residents than rural residents (Hook and Robinson 1982, Bath 1987). Rural residents generally had more negative attitudes toward wolves which may have correlated with age[29] (McNaught 1987, Pate et al. 1996, Bjerke et al. 1998), ranching and farming occupations (Bath 1987, Wolstenholmer 1996, Bjerke et al. 1998), and hunters (Bruskotter 2010). Said another way, ranchers, farmers and hunters, more than urban residents, believed they needed to deal with wolves on a more personal, day-to-day basis[30], and believed they have more at risk than urban residents[31] (Bruskotter 2010, Houston et al. 2010). Houston et al. (2010), in a review of news media, reported "aggregated results indicate that roughly 72% (21,518) of all expressions were negative, while 28% (8,471) were positive over the ten year analysis time period. They further state that relative to the year, the belief that wolves positively impact human activities and the judgment that wolves should be protected both decreased significantly from 1999 to 2008, while the belief that wolves negatively impact ecosystems increased over this time period." Another example of more negative attitudes were from Scandinavia and Western Europe, where a majority of people did not support wolves and positive attitudes among all respondent toward wolves did not appear to be increasing over time (Ericsson and Heberlein 2003).

---

29 Groups that anticipate negative impacts (*e.g.*, livestock producers, big game hunters) have exhibited increased negative attitudes and support for more aggressive control of wolf populations (Kellert 1999, Enck and Brown 2002, Ericsson and Heberlein 2003).

30 Traditionally, people with the most positive attitudes toward wolves have been those with the least experience (Williams et al. 2002).

31 Hunters, ranchers, and other rural residents have direct access to wolves, and are thus more likely to have an opportunity to influence wolf populations (Williams et al. 2002, Bruskotter 2010).

As wolf populations in the U.S. rebound through legal protections and recovery efforts, local resistance and negative attitudes seems likely to increase (Kellert 1985, Ericsson and Heberlein 2003). Specifically, Houston et al. (2010) suggested "that attitudes may actually be increasingly negative toward wolves, at least in regions with new wolf populations and in recovery zone regions where the public has little familiarity with the species." Kellert (2000) suggested that people had an increased "affection for...wolves" in Minnesota, but he also found increased support for the control of wolf damage to livestock. Ericsson and Heberlein (2003) found similar results when comparing two Swedish surveys conducted over a 25-year period. Duda et al. (1998) found Adirondack area residents' support for wolf reintroduction decreased from 76% in 1996 to 46% in 1997, and a subsequent study found just 42% of those surveyed supported wolf reintroduction (Enck and Brown 2002).

Thus, WS responding to wolf conflicts and administering a responsible, responsive wolf management program is considered very important for wolf recovery and beneficial for building tolerance for wolves (Fritts 1993, Mech 1995, Bangs et al. 1995, 2009, ILWOC 2002, Fritts et al. 2003, IDFG 2008, Creel and Rotella 2010, 50 CFR 17.84(n)).

Comment: 6c. Agencies must continue education efforts to resource owners about ways to prevent conflicts with wolves. Problems with social tolerance can be addressed with educational programs and it is not acceptable to use unnecessary lethal control.

We agree. Education is an important component of maintaining support for wolf populations and recovery, and is discussed in Sections 1.1, 1.3.4, 3.3.2 of the REA and ILWOC (2002). IDFG, WS and the other NRM states have produced publications to educate ranchers and others, as well as numerous news releases, and other reports with information on "Living with Wolves" (http://fishandgame.idaho.gov/cms/wildlife/wolves/, http://fwp.mt.gov/tmc/vignettes/wolf.html, http://gf.state.wy.us/services/education/wolvesindex.asp). However, education alone is not sufficient to prevent the development of negative public attitudes among stakeholders, especially livestock producers experiencing actual depredation problems. Maintenance of public support demands effective resolution of problems at whatever frequency they occur (Fritts 1993, Mech 1995, Bangs et al. 1995, 2009, ILWOC 2002, Fritts et al. 2003, IDFG 2008, Creel and Rotella 2010, 50 CFR 17.84(n)).

Comment 7: There are inadequate regulatory mechanisms within Idaho and the NRM DPS for the management of wolves.

Response: As the principal federal agency responsible for administering the ESA, the USFWS takes the lead in recovering and conserving listed species, and the USFWS has primary authority and legal responsibilities for gray wolf recovery. Currently wolves in Idaho and the NRM are managed by the USFWS with cooperation from the other agencies and tribes.

In 1999, the Governors of Montana, Idaho, and Wyoming agreed that regional coordination of wolf management among the States, Tribes, and other jurisdictions was important, implemented approved management plans and signed a Memorandum of Understanding (MOU) to facilitate cooperation among the three States in developing adequate State wolf management plans[32]. The Montana (Montana Wolf Management Advisory Council 2003), Idaho (ILWOC 2002), and Wyoming (WDGF 2007) all commit to maintaining the meta-population structure in the NRM DPS and maintaining sufficient genetic diversity, by various methods including relocation if necessary, to ensure the long-term viability of the wolf population of the NRM DPS[33].

[32] Several issues were key to USFWS approval of State plans including: consistency between State laws, management plans, and regulations; regulations that prevent excessive take; methods used to measure wolf population status; the organizational ability and skill to successfully monitor and manage State wolf populations; and commitments to manage wolves safely above minimum recovery levels (74 FR 15123).

[33] The USFWS analysis of Idaho's regulatory framework determined that the combined impact of the State law, their wolf management plans and IDFG actions and implementing regulations constitute a biologically-based and scientifically sound wolf conservation strategy.

In addition, Section 4(g)(1) of the ESA, "requires the USFWS to implement a system, in cooperation with the States, to monitor for not less than 5 years the status of all species that have recovered and been removed from the Lists of Endangered and Threatened Wildlife and Plants" (50 CFR 17.11 and 17.12). The purpose of this post-delisting monitoring is to verify that a recovered species remains secure from risk of extinction after it no longer has the protections of the ESA. The status of the NRM wolf population will be assessed by estimating the numbers of packs, breeding pairs, and total numbers of wolves in mid-winter by State and by recovery area throughout the post-delisting monitoring period (73 FR 10514).

With respect to Idaho, the USFWS found that Idaho could manage their wolf population[34]. In January 2006, the Governor of Idaho signed a Memorandum of Agreement with the Secretary of the Interior that provided IDFG the responsibility as a designated agent of the USFWS and authority to manage all Idaho wolves[35]. The State's efforts were successful, as Idaho's minimum estimated wolf population increased from about 512 wolves in 36 breeding pairs in 2005 (USFWS et al. 2006) to a minimum of 835 wolves in 94 packs in 2009 (Mack et al. 2010). IDFG manages both ungulates and carnivores, including wolves, to maintain viable populations of each (ILWOC 2002, IDFG 2005, 74 FR 15123).

When wolves are again delisted, the Idaho Fish and Game Commission will direct IDFG to redesign its wolf plan and conduct monitoring consistent with the State's 2002 wolf plan (IDFG 2010c, J. Gould, IDFG Wildlife Bureau Chief, January 2001, pers. comm.); human-caused mortality will be regulated as directed by IDFG to maintain a recovered wolf population. This issue it is outside the scope of analysis for this REA.

Comment 8: The EA did not address the wolf population as a benefit to the ecosystem and possibly mesopredator (particularly coyotes) affects on prey.

Response: WS did recognize in the REA the benefits as well as the damages that wolves can cause[36]. As stated in the REA at Section 2.3.5.2, wildlife generally is regarded as providing economic, recreational, and aesthetic benefits (Decker and Goff 1987), and the mere knowledge that wildlife exists is a positive benefit to many people. Direct benefits are derived from a user's personal relationship or direct contact with wildlife and may include both consumptive (*e.g.*, using or intending to use the animal such as in hunting or fishing) and non-consumptive uses (*e.g.*, observing or photographing animals) (Decker and Goff 1987).

The REA also recognized, Section 2.4.3, that wolves may play an important role in the structure and function of ecological communities (*i.e.*, predator/prey relationships, interactions with scavengers, and other predators). When wolves cull vulnerable individuals (*i.e.*, old, young, sick, injured, weather

---

34 The Idaho Fish and Game Commission (IFGC) classified the gray wolf was as endangered in the State until March 2005, when the IFGC reclassified the species as a big game animal under Idaho Administrative Procedures Act (13.01.06.100.01.d). As a big game animal, State regulations will help adjust human-caused wolf mortality to ensure recovery levels are exceeded (74 FR 15123). Title 36 of the Idaho statutes has penalties associated with illegal take of big game animals. These rules are consistent with the legislatively adopted (ILWOC 2002) and big game hunting regulations currently in place. The ILWOC (2002) states that wolves will be protected against illegal take as a big game animal under Idaho Code 36–1402, 36-1404, and 36-202(h). Many special interest groups including legislators, sportsmen, livestock producers, conservationists, and IDFG personnel were involved in the development of the ILWOC (2002). The USFWS provided technical advice to the Committee and reviewed numerous drafts before ILWOC (2002) was finalized (74 FR 15123).

35 On October 18, 2010, the Governor of Idaho sent a letter to the Secretary of Interior, informing the Secretary that the State of Idaho would no longer continue to act as a "designated agent" of the USFWS for conducting wolf management in Idaho (http://fishandgame.idaho.gov/cms/wildlife/wolves/esa/govOtterLetter10_18_10.pdf). This means that the IDFG, for the time being at least, will no longer be involved in the day-to-day decision-making or conducting routine wolf management in Idaho. On October 20, the USFWS sent a letter to WS, authorizing WS to act as a "designated agent" for the USFWS to conduct wolf depredation control actions.

36 WS' vision is to improve the coexistence of people and wildlife and those involved must consider a wide range of public interests that can conflict with one another. We strive to develop and use wildlife damage management strategies that are biologically sound, environmentally safe, and socially acceptable while attempting to reduce damage caused by wildlife while at the same time reducing wildlife mortality. (http://www.aphis.usda.gov/ws/mission.html).

weakened, etc.) from a prey population, they may help maintain healthier, viable prey populations when other prey population mortality factors are in balance (Mech 1970, Gese and Grothe 1995, Crabtree and Sheldon 1999a). The REA also recognized that wolves may indirectly affect plant life by changing the herbivore density and behavior[37] (*e.g.*, elk reduced their use of riparian areas and moved to higher areas because of wolf predation or threats of predation) (Smith et al. 2003, Ripple and Beschta 2004, 2006, 2007, Beschta 2005, Mao et al. 2005, Beyer 2006); riparian areas provide habitat for other species such as beaver, fish, and birds. Fortin et al. (2005) found elk less likely to travel into aspen stands when wolves were present; while wolves were present elk travelled more frequently into conifer forests. Creel and Winnie (2005) showed that in the presence of wolves, elk retreated into forest cover whereas when wolves were absent elk foraged in open grassland. Gude et al. (2006) found that in the Madison River Valley, elk responded to wolf presence by moving away from wolves. However, more recent research documented that aspen have not regenerated well in YNP because elk continued to eat young aspen and researchers believed that elk learned to avoid "high-risk areas" where wolves frequent or when wolves were present (Kauffman et al. 2010).

To provide a more balanced analysis, WS also recognizes that these interactions come with trade-offs, depending on ecological principles and the desires of the human community (Paquet 1992, Arjo et al. 2002). For example, in the absence of wolves in the Greater Yellowstone Area (GYA), moose and elk numbers were greater. Berger et al. (2008) reported that mean densities of resident coyotes (*Canis latrans*) were similar between wolf-free and wolf-abundant sites. However, if coyote populations decrease because of wolf presence, researchers have reported that there is an increase in antelope neonates[38] (Berger et al. 2008, Berger and Conner 2008), but also may lead to an increase in other mesopredators (*i.e.*, mesopredator release of raccoons, skunks, red fox, grey fox, etc.) which in turn could result in an increase in predation of ground- and shrub-nesting birds and small rodents (Soule´ et al. 1988, Rogers and Caro 1998, Crooks and Soule´ 1999).

Wolves initially reduced coyote numbers in YNP through predation but coyote eventually adjusted to the presence of wolves (Crabtree and Sheldon 1999a, 1999b; Berger and Gese 2007). Berger and Gese (2007) stated that coyote "mortality factors differed significantly based on territorial status" with the abundance of transient coyotes, when compared to resident coyotes, significantly lower in areas used by wolves and resident coyotes appear to be significantly less affected. These data are supported by differences in the mortality rates of resident and transient coyotes in Grand Teton National Park (GTNP) between 2001 and 2004, and younger coyotes in YNP between 1989 and 1998 (Crabtree and Sheldon 1999a, 1999b; Berger and Gese 2007). Crabtree and Sheldon (1999b) stated that wolves killed coyotes opportunistically and that the coyote mortality tended toward younger, less experienced individuals (Berger and Gese 2007). Most of the coyote population reduction in YNP was from direct killing of coyotes at wolf kills when coyotes attempted to scavenge on carcasses (Crabtree and Sheldon 1999a, 1999b; Ballard et al. 2003). Based on Arjo (1998) and Atwood (2006), wolves were responsible for the deaths of just 13% and 3% of radio-collared coyotes in north-western Montana and the Northern Madison Study Area (NMSA), respectively and just 16% in the Berger and Gese (2007) study. In contrast, mountain lions (*Puma concolor*) killed 40% of radio-collared coyotes in north-western Montana (Arjo 1998) and 14% of coyotes at the NMSA (Atwood 2006).

In addition, any negative relationship between coyote and wolf densities does not appear to hold outside protected areas, such as YNP or GTNP, as no discernible pattern, or perhaps even a positive relationship is evident from the Berger and Gese (2007) analysis. Coyotes are an adaptable species and have adapted to wolves by avoiding them, travelling in groups, etc. (Crabtree and Sheldon 1999a, 1999b). Coyotes

[37] It has been hypothesized that a reduction in herbivore foraging pressure created by wolves would result in an increase in browse, providing for more songbird habitat, riparian stability and restoration and an increase in beaver (Baker and Hill 2003, Hansen et al. 2005).

[38] Berger and Conner (2008) reported that the mortality for antelope fawns was similar among years and between wolf-free and wolf-abundant areas.

have also apparently adjusted the areas they occupy. Coyote packs on the fringe of wolf territories, are faring better, number from six to ten individuals and have experienced little mortality, while still occupying areas close enough to wolves to effectively scavenge wolf kills (Crabtree and Sheldon 1999b).

In addition, when coyotes outnumber a single wolf or pair of wolves, the tables can turn on the wolf(ves). Coyotes have chased and even attacked individual wolves and wolf pups (Crabtree and Sheldon 1999b). When a pack of three or more coyotes encounter a single wolf feeding on a carcass, the coyotes may occasionally harass the wolf and chase it off. When coyote and wolf groups of similar size (3 to 6 animals) encounter each other, they may watch each other closely and sometimes engage. Occasionally groups of wolves chase groups of coyotes; Crabtree and Sheldon (1999b) observed growling and occasional nipping, but no serious contact or death of either a wolf or coyote.

Wolves, coyotes, and even red foxes continue to coexist in the Northern Rockies. The coyote's adaptability and demographic resiliency to exploitation is an evolutionary result from coexisting with competing species, mainly the gray wolf (Crabtree and Sheldon 1999a, 1999b). Since wolves have returned to the GYA, coyote populations have become wiser and more wary. Coyotes certainly will survive, and will very likely continue to outnumber wolves (Crabtree and Sheldon 1999b).

Wolves also compete with mountain lions where wolves are generally dominant over mountain lions[39] (Ruth 2004), however competition between wolves and mountain lions appears to be minimal as mountain lion prey selection and kill rates have not changed compared with pre-wolf monitoring (Murphy 1998, Ruth 2004). Researchers predict, however, that in another 10 years post-wolf in YNP, based on studies in Banff National Park, competition between wolves and mountain lions will increase to a degree that could reduce mountain lion abundance (Kortello et al. 2007, Hebblewhite and Smith (2005).

To analyze the balance that wolves can create in the human environment, the REA also discusses the damage or conflict from wolf activities. The ability of wolves to kill cattle, sheep, poultry, game farm animals, and other livestock is well documented (Young and Goldman 1944, Fritts 1982, Carbyn 1983, Fritts et al. 1992, USFWS 1994, Collinge 2008, Mack et al 2010). Domestic dogs and cats are also occasionally killed and eaten by wolves (Fritts and Paul 1989). The economic impact of wolf depredation on livestock can be substantial for individual producers. Further, when wolves come into contact with people or kill or injure their pets, there is both an economic and an emotional loss (Linnell et al. 2002).

Wolves can also negatively impact other wildlife species, especially wolf prey species. Where wolves are the dominant predator on an ungulate species (deer, moose, elk, etc.) and prey numbers are below carrying capacity, a significant reduction in wolf numbers can produce increases in the number of ungulate prey (Gasaway et al. 1983, Gauthier and Theberge 1987). Deer, moose, elk, and other ungulates have great economic and aesthetic value and therefore wolf control can sometimes be economically justified (see Issue 4 for more a detail discussion of ungulate protection).

Comment 9: WS did not do "scoping" when developing the EA.

Response: WS addressed this comment in the REA. NEPA and CEQ implementing regulations [40 CFR 1501.4(d)] do not require scoping in the preparation of an EA but only require "scoping" in the preparation of an EIS. Regulations that guide WS in completing an EA include: *II.A.3.b. - Scope and Scoping. Scoping is a critical step in EIS development because it helps to define the direction of the analysis process. (Scoping can be useful in the preparation of an EA and a finding of no significant impact (FONSI), but is not required).* Idaho WS did publish a legal notice of availability of the draft and REAs as required by APHIS NEPA implementing procedures, and additionally e-mailed the notice of

[39] Although wolves have clearly been the largest change to the carnivore community in the last 10 years in YNP, both grizzly bear and mountain lion densities have also been higher in the last 10 years.

availability to known persons and/or organizations believed to have an interest in wolf management and the EAs, including individuals and groups that promptly provided further internet distribution of the announcement. Two national organizations, Defenders of Wildlife and the Natural Resources Defense Council, both apparently sent out "action alerts" to their membership, and provided a link to facilitate commenting on the draft EA and Defenders of Wildlife sent out a notice on the revised REA. During the 30-day public comment opportunity for the draft EA, more than 115,000 e-mailed comments, mostly some variation of one or two "form" letters, were received from across the U.S. and from several foreign countries. During the 30-day public comment opportunity for the REA, more than 45,000 e-mailed comments, mostly "form" letters, were received from across the U.S. and from several foreign countries. These responses suggest that the notification which occurred provided for an adequate public comment opportunity and the REA took into account comments received on the draft EA. Further, as noted at Section 1.7.5 of the EAs, any new issues or alternatives identified during the 30-day public comment periods were fully evaluated to determine whether the REA should be revisited further prior to issuance of a decision.

Comment 10a: The EA states that wolves have had a dramatic recovery suggesting wolves should be delisted.

Response: Our REA simply stated the status of wolves as described in USFWS (1994) and subsequent wolf population recovery (Nadeau et al. 2007, 2008, 2009, Mack et al. 2010, USFWS et al. 2001-2010). USFWS (1987) initially specified a recovery criterion of a minimum of 10 breeding pairs[40] of wolves for a minimum of 3 successive years in each of three core recovery areas. USFWS (1994) subsequently revised wolf recovery parameters in the NRM to, "Thirty or more breeding pairs comprising some 300+ wolves in a metapopulation, with genetic exchange between subpopulations, should have a high probability of long-term persistence." The USFWS conducted another review of what constitutes a recovered wolf population in 2001 and 2002 (USFWS et al. 2002, 2003) to re-evaluate and update USFWS (1994). A majority (78%) of a panel of wolf experts supported USFWS (1994) conclusions and agreed that a NRM wolf population viability was enhanced by higher (500 or more wolves) rather than lower population levels (300) and a longer (more than 3 years) time frame. At the end of 2009, NRM wolves had exceeded recovery criteria every year since 2002 and IDFG and the Nez Perce Tribe estimated there were at least 835 wolves in Idaho and at least 1,706 wolves in 242 packs and 115 breeding pairs in the NRM (USFWS et al. 2010), and more than 8 times the number in Idaho that was analyzed for potential impacts in USFWS (1994) (Mack et al. 2010). The USFWS also determined that all threats in the foreseeable future have been sufficiently reduced or eliminated in Idaho and Montana.

The NRM wolf population occupies nearly 100% of the core recovery areas recommended in the 1987 recovery plan (*i.e.*, central Idaho, the GYA, and northwestern Montana) (USFWS 1987) and nearly 100% of the areas where suitable habitat was predicted to exist (USFWS 1994, Oakleaf et al. 2006, USFWS et al. 2008). This occupation is expected to continue, because management plans for public lands in the NRM DPS maintain suitable wolf habitat. These goals were designed to provide the NRM wolf population with sufficient representation, resilience, and redundancy for its long-term conservation (73 FR 10514).

Although gray wolves in the Idaho and Montana portions of the NRM recovery area were delisted and a legal challenge on procedural grounds[41] led to the delisting decision being vacated and set aside

40 A breeding pair is defined as two wolves of opposite sex and adequate age, capable of producing offspring.

41 In CV 09-82-M-DWM, the "record implies that the USFWS tried to find a pragmatic solution to the legal problem raised by the inadequacy of Wyoming's regulatory mechanisms, and Wyoming's choices about meaningful participation in a collective delisting agreement like that engaged in by Montana and Idaho. Even if the USFWS's solution is pragmatic, or even practical, it is at its heart a political solution that does not comply with the ESA. The NRM DPS must be listed, or delisted, as a distinct population and protected accordingly. The issues of the adequacy of the regulatory mechanisms of Montana and Idaho, population size, connectivity and genetic exchange are subsumed by the determination that the Final Rule is contrary to the law and as such are not decided here."

(Defenders of Wildlife et al. v. Salazar, CV 09-77-M-DWM and Greater Yellowstone Coalition v. Salazar, CV 09-82-M-DWM), it does not change the fact that recovery goals and objectives for the NRM DPS have been met and exceeded.

Comment 10b: The EA does not address whether wolves are recovered.

Response: This issue is outside the scope of the EA. Whether the USFWS declares wolves recovered and delists wolves, or goes through the delisting process is outside the decision-making process of WS and outside the analysis in the REA. Gray wolf populations in the NRM, including the wolf population in Idaho, have undergone dramatic increases and surpassed the biological recovery goals set by the USFWS (USFWS 1994, USFWS et al. 2002, 2003, 2010, Nadeau et al. 2009, Mack et al. 2010).

WS' role, in this situation, is to reduce wolf damage to American agricultural, industrial and natural resources, property and human health and safety as currently authorized by Congress (Act of March 2, 1931 as amended 46 Stat. 1486; 7 USC 426-426c). While wolves remain federally listed under the ESA, WS actions would also be authorized by the USFWS prior to being conducted. WS responds to requests for assistance when valued resources are damaged or threatened by wildlife, including wolves when authorized. WS activities are conducted in accordance with applicable federal, state and local laws, Cooperative Service Agreements, "Agreements for Control," MOUs with other state and federal management agencies, and other applicable documents (WS Directive 2.210). The USFWS and IDFG have both requested that WS continue its role as a "designated agent" to reduce wolf conflicts.

Comment 11: The EA fails to adequately assess potential threats to human health and safety.

Response: The REA addressed human health and safety in relation to wolf attacks because those situations can and have occurred and WS believes this information should be disclosed and analyzed in the REA. Wolves are generally not dangerous to humans, as long as they are in low numbers, have sufficient food, have little contact with humans and are occasionally hunted (Geist 2006) and the REA clearly states that "risk of being attacked or killed by a wolf is extremely low", but as the incidents discussed at Section 1.3.4 of the REA illustrate, "the possibility of wolf attacks does exist" (Korytin 1997, Linnell 2003). The REA also stated "although the above information indicates wolves can threaten human safety, we expect that requests for assistance in removing wolves for that reason to be rare."

Under current wolf management in Idaho, the USFWS could request assistance, approve and authorize Idaho WS to reduce any real or potential threats to human health and safety from a "bold" wolf or wolf attack. If wolves are again delisted and the IDFG assumes management responsibilities, under the terms of the MOU referenced at Section 1.4.12 of the REA, WS may be requested to respond and assist reduce risks to human safety from a "bold" wolf or other such types of incident. Because of this, it was deemed appropriate to discuss the possibility of this type request to WS.

Comment 12: The EA uses Helm and Mader, articles from the anti-wolf Sportsmen for Fish and Wildlife, as justification in the purpose and need sections. This is a clear violation of NEPA's requirements for scientific integrity.

Response: The EA cited more than 300 research publications, government reports and other publications on wolves and wolf affects to humans and the ecosystem. One of the benefits of NEPA is the opportunity for the public to raise issues or provide information that the agency can consider. We appreciate and will consider any and all relevant information provided as a result of public involvement. More importantly, WS does not believe that the validity or utility of a single study/report is the sole determinant of the information. Data from many reports and publications were used in the analysis and discussions which provided a better context on wolves and wolf management, and evaluations of wolf damage management strategies.

Comment 13: Idaho has chosen to rescind from any cooperative management of wolves and has no legitimate rights or obligations it may have in this regard and Idaho has abandoned its 2008 management plan for wolves. As such, APHIS can't act upon any request from the State of Idaho because the State has forfeited its right to request federal assistance.

Response: At the very beginning of the REA at, "Reasons for Revising the Idaho Wolf Damage Management EA," WS disclosed the events that recently occurred with NRM wolf management. All of those events could potentially affect how wolf management is conducted in Idaho, and the REA acknowledged and analyzed the potential environmental impacts of alternatives for WS involvement[42] in wolf damage management under the direction of the responsible wolf management agency (*i.e.*, either the USFWS or IDFG) depending on the wolf status[43], the decisions of the USFWS, court rulings and Governor of Idaho or other potential circumstances beyond WS' control.

WS currently, and into the foreseeable future, conducts wolf damage management actions subject to USFWS or IDFG decisions and authorizations, and applicable court rulings. The REA recognized the different scenarios for wolf management and the possible changes to wolf management in Idaho and the the NRM and incorporated potential management changes in the analysis. WS is a non-regulatory agency and currently only conducts wolf damage management in Idaho under the authority of the USFWS[44]. The USFWS has requested and authorized WS as a "designated agent" of the USFWS for wolf management activities[45].

If the State of Idaho requests WS assistance before receiving management authority for wolves in Idaho, or implementing an approved wolf management plan, WS would secure USFWS authority before conducting any wolf damage management activities.

Comment 14a: Non-lethal tools should be exhausted, especially in areas of key dispersal routes, and buffer zones should be implemented around core source populations.

Response: The NRM wolf population occupies nearly 100% of the core recovery areas recognized in the 1987 recovery plan (USFWS 1987) and nearly 100% of the areas where suitable habitat was predicted to exist (USFWS 1994, Oakleaf et al. 2006, USFWS et al. 2008). This occupation is expected to continue, because management plans for public lands in the NRM DPS maintain suitable wolf habitat. These goals were designed to provide the NRM gray wolf population with sufficient representation, resilience, and redundancy for its long-term conservation (73 FR 10514).

An Alternative to assess the exhaustion of nonlethal methods would work in a similar manner as the Current Program Alternative and most action alternative analyzed in the REA (Section 3.2 and 3.5.7)[46].

---

42 The REA stated that wolf management in Idaho could be conducted by the IDFG or USFWS and that WS would work cooperatively, at the request of the responsible management agency, currently the USFWS Idaho.

43 Wolves are currently considered endangered throughout the NRM DPS, except where they are classified as XN populations. Thus wolves found in the NRM DPS have all the protections of the ESA. On October 18, 2010 the Governor of Idaho sent a letter to the Secretary of Interior, informing the Secretary that the State of Idaho would no longer act as a "designated agent" of the USFWS for conducting wolf management (http://fishandgame.idaho.gov/cms/wildlife/wolves/esa/govOtterLetter10_18_10.pdf). This means that the IDFG, for the time being at least, will no longer be involved in the day-to-day decision-making or conducting routine wolf management in Idaho and returning management of wolves found in Idaho over to the USFWS. The USFWS and IDFG have both requested that WS continue its role as a designated agent of the State for managing wolf conflicts under their respective authorities.

44 In the future wolves may again be delisted and management of wolves found in Idaho may be again the responsibility of the IDFG. At that time, an acceptable wolf management plan will be in place to direct IDFG and WS' actions with respect to wolves (J. Gould, IDFG Wildlife Bureau Chief, January 2001, pers. comm.).

45 On October 20, 2010 the USFWS sent a letter to WS, authorizing WS to act as a designated agent for the USFWS to conduct wolf management activities as authorized by the USFWS.

46 The USFWS or IDFG, as appropriate, and property owners would still be able to use lethal methods in accordance with Federal regulations, state laws, and as authorized by the USFWS or IDFG, whichever of those two agencies has management responsibilities at the time.

WS already gives preference to using or recommending non-lethal methods[47] when they are deemed practical and effective as part of the Current Program and Proposed Action Alternatives (WS Directive 2.101), to the extent that it is allowed by the USFWS and/or IDFG when those agencies make decisions[48] about how to resolve wolf conflicts. The practicality of a particular nonlethal method(s) can vary substantially among producers and depredation situations. Therefore, it is difficult or impractical to determine appropriate and reasonable criteria to dictate ahead of time which particular non-lethal method(s) should be required in given situations (Mech 1966). Animals can become habituated to nonlethal methods, rendering them ineffective (Musiani et al. 2003), which results in disappearance of an animal's fear towards a novel object (Shivik et al. 2003). Habituation is determined by the intensity of a stimulus and the motivation of individual animals (Shivik et al. 2003). A key motivational factor for many animals is hunger (Wilson et al. 1993, 1994) or personal behavioral traits (Gosling 1998, Darrow 2006) and it has been suggested that hunger in wolves plays an important part in the process of habituation (Lance 2009). Thus, each situation needs to be evaluated before a management strategy can be effective implemented.

Some methods that would need to be used or attempted under an Alternative like this would be impractical, inappropriate, or have a low chance of being effective for a variety of reasons. And the potential for additional losses to occur while experimenting with nonlethal methods would be unacceptable to some which could result in an increase in individuals seeking to solve their own problems instead of working with the USFWS or IDFG, and WS personnel.

One reason for having effective damage management assistance available is to foster support for and minimize or reduce the amount of opposition to wolf conservation and recovery (See Response 6a). As stated in Section 1.1 of the REA and in Response 6b, prompt, professional management of wolf conflicts is an important component of wolf recovery because it facilitates local public acceptance and tolerance of wolves (Fritts 1993, Mech 1995, Bangs et al. 1995, 2009, ILWOC 2002, Fritts et al. 2003, IDFG 2008, Creel and Rotella 2010, 50 CFR 17.84(n)). We would expect that some, or perhaps many, experiencing losses from wolves would cease to request assistance from WS if the management agencies made the conditions for receiving such assistance too burdensome from their perspective. Greater incidence of illegal wolf killings could result, or increased political efforts to get laws changed by Congress, as evidenced by recent legislation introduced to delist wolves from ESA protection[49].

Thus, we believe that inclusion of this Alternative or an Alternative to assess the exhaustion of a full-range of nonlethal methods would not contribute new information or options for consideration and analyses that are not already considered in the REA, and maybe counterproductive to wolf recovery and conservation. Furthermore, pursuing an alternative to require that nonlethal methods be exhausted, in light of our current program alternative and the other alternative analyzed in the REA might even be considered inconsistent with NEPA (Eccleston 1995).

Comment 14b: The REA failed to fully discuss all of the nonlethal methods raised by NRDC and the REA did not adequately assess the full-range of nonlethal techniques available as an alternative to lethal removal.

---

47 Non-lethal methods used or recommended by WS could include all available and approved methods, including but not limited to, animal husbandry practices, installation of fencing, electronic guards, fladry and turbo-fladry, aversive conditioning, nonlethal projectiles, use of livestock guarding animals, and/or other nonlethal methods as appropriate.

48 Under any of the alternatives analyzed by WS, the primary decision-makers (*i.e.*, USFWS or IDFG) for determining how wolf depredation situations are resolved have not established any requirement for producers to use non-lethal methods prior to receiving WS assistance. Because WS acts as an agent of either the USFWS or IDFG (depending on whether the wolf remains listed or is again delisted) for wolf damage management in Idaho, we do not consider it appropriate for WS to establish these types of conditions before providing service.

49 U. S. Representative from Montana drafted legislation in Congress which advocates state control of wolves and is backing legislation in the U.S. House of Representatives that would remove wolves from consideration under the ESA. Similar legislation has been introduced by U.S. Senators from Montana, Wyoming, Idaho and Utah.

Response: WS thoroughly discussed the use of nonlethal methods in the REA during the description of Alternative 1 and the same nonlethal livestock protection approaches would be used for Alternatives 2, 3 and 4. When implementing any of these alternatives, "WS would provide technical assistance and operational wolf damage management using and/or recommending nonlethal[50] and lethal management methods after applying the WS Decision Model (Slate et al. 1992) (Section 3.3.3 of the REA). In determining the most appropriate damage management strategy, preference is given to nonlethal methods when they are deemed practical and effective (WS Directive 2.101) [to the extent that it is allowed to by the USFWS and/or IDFG when those agencies make decisions[51] about how to resolve wolf conflicts]. The discussion is not meant to be inclusive of all methods but rather a discussion of more general categories and possible methods that would be considered. The practicality of a particular nonlethal method(s) can vary substantially among producers and depredation situations (see Response 14a). Therefore, it would be difficult or impractical to determine every nonlethal method to dictate ahead of time which particular nonlethal methods should be used in given situations. Some methods would be impractical, inappropriate, or have a low chance of being effective for a variety of reasons. And the potential for additional losses to occur while having to take the time to experiment with nonlethal methods would be unacceptable to some which would likely result in an increase in individuals seeking to solve their own problems instead of working with the USFWS, IDFG, WS personnel.

In addition, CEQ (1981) provides guidance for analysis in NEPA documentation and states that, *"the EA is a concise public document which has three defined functions: (1) it briefly provides sufficient evidence and analysis for determining whether to prepare an EIS or FONSI; (2) it aids an agency's compliance with NEPA when no EIS is necessary; and (3) it facilities preparation of an EIS when one is necessary"* (40 CFR, 1508.9(b). WS attempted to reach a balance between providing adequate information to the public, interested entities and decision makers to understand past and present issues, to analyze new issues that have been identified through the public involvement process and comply with CEQ regulations. In terms of considering and providing a discussion and analysis of every possible nonlethal method, that analyses would not have provided addition information for the public or decision maker to make an informed decision. Furthermore, pursuing a more detailed and inclusive nonlethal methods analysis might even be considered inconsistent with NEPA (Eccleston 1995).

Comment 14c: The REA's rationale for rejecting the NRDC Alternative is flawed.

Response: When investigating an alleged wolf depredation and determining the most appropriate damage management strategy, preference is given to nonlethal methods when they are deemed practical and effective (WS Directive 2.101), and to the extent that it is allowed to by the USFWS and/or IDFG when those agencies make decisions. When nonlethal methods are not deemed appropriate and lethal management is authorized by the USFWS or IDFG (which ever agency is responsible for wolf management in Idaho at the time), wolf removal historically occurred incrementally, thus taking as few animal as necessary to stop the damage and removing as few animals as possible from the population. The USFWS also recognizes its responsibility and commitment they made to the public when wolves were reintroduced into Idaho; the 10j rule states that, "*All chronic problem wolves (wolves that depredate*

---

50 Nonlethal methods used by landowners or recommended by WS could include, but would not be limited to, changes in ranch management practices and pet care/supervision, proper carcass disposal, frightening devices, exclusion, guarding animals, habitat modification, and behavior modification of problem wolves, animal husbandry practices, installation of fencing, electronic guards, fladry and turbo-fladry, aversive conditioning, nonlethal projectiles, and/or other nonlethal methods as appropriate. Nonlethal methods used operationally by WS may include foot-hold traps and snares with "stops" (used to live capture wolves for attaching radio-collars), frightening devices (*e.g.,* electronic guard, RAG devices), aversive conditioning (*e.g.*, modified dog training collars) and nonlethal projectiles (*e.g.*, rubber bullets, bean bag rounds). Aversive conditioning and other experimental damage management techniques would only be used by WS after consultation and concurrence with USFWS or IDFG, as appropriate (Section 3.4 of the REA).

51 Under any of the alternatives analyzed by WS, the primary decision-makers (*i.e.,* USFWS or IDFG) for determining how wolf depredation situations are resolved have not established any requirement for producers to use non-lethal methods prior to receiving WS assistance. Because WS acts as an agent of either the USFWS or IDFG (depending on whether the wolf remains listed or is again delisted) for wolf damage management in Idaho, we do not consider it appropriate for WS to establish these types of conditions before providing service.

on domestic animals after being moved once for previous animal depredations) will be removed from the wild (killed or placed in captivity)" (59 FR 60266, 50 CFR 17.84(i)(3)(vii)).

Comment 15: WS should defray the costs of nonlethal management for livestock producers.

Response: Programs like WS reflect policy decisions made by Congress or State legislatures directed at serving the public as defined through the legislative process. Although WS does support ranching and livestock production in Idaho, it considers the expenditures and efforts of livestock owners to manage their businesses within the owner's control and financial responsibility. In this way, we believe operators will engage in more responsible husbandry practices. WS personnel provide technical assistance to assist in developing effective wildlife damage management practices. WS activities are conducted in a holistic way so that damage management is effective, balanced, and efficient for producers. Direct operational and technical assistance are provided to producers.

In 2010, more than $400,000 was spent by livestock producers in Idaho and Idaho WS on nonlethal methods to prevent wolf depredations that would have resulted in lethal wolf removals (D. Miller, Governor's Office of Species Conservation, pers. comm. 2011, T. Grimm, WS pers. comm. 2011). Several producers, who implemented nonlethal preventative methods, were able to graze their livestock through the year without any verified wolf depredations. Other producers, however, who used nonlethal preventative measures still sustained, confirmed wolf depredations, but we believe that the nonlethal efforts implemented prevented more depredations from occurring (T. Grimm, WS pers. comm. 2011). During the past five years (2006 - 2010), WS has installed fladry, electronic guards and flashing lights. The efficacy and practicality of some nonlethal methods declines as livestock are released onto grazing pastures and the herd begins to separate over a much larger area. In field trials in Montana, the cost of a complete electrified fladry system (posts, energizer, electrified fladry, clips, gates, battery, etc., many of which have to be purchased from different suppliers) to protect a 16 hectare (ha) square pasture was $3,685. Electrified fladry fencing supplies cost $3,252 each additional 1.6 km (*i.e.*, 1 square mile) (Lance 2009). The installation of 14.0 kilometers (km) of electrified fladry cost $2303 for the first km and $2032 for each additional km (*e.g.*, costing almost $29,000 for a 14 km installation), and required 31.8 person-hours/km to install (Lance et al. 2010). Lance et al. (2010) also reported 18 failures[52] (*i.e.*, the electrified fladry stopped working) during 81 total days of use and there was little interest by livestock producers to invest in electrified fladry as a tool as the practicality of the methods was questioned[53] (Lance 2009). Thus, in some situations nonlethal methods, in this case fladry, may not be practical for the situation (Shivik 2004, 2006).

WS provides literature and when applicable recommends the use of livestock guard animals. WS has referred several ranchers to a reputable livestock guard dog owner for advice or purchase of guard dogs. WS provided information to ranchers that have considered nonlethal methods and concerning the Office of Species Conservation providing financial assistance, and is aware of at least two recent instances when the Office of Species Conservation has assisted producers with wolf damage management supplies (T. Grimm, WS, 2011 pers. comm.).

Thus, substantial amounts of money are already used to implement nonlethal methods to reduce or prevent wolf predations. USFWS, IDFG and WS will continue to explore new management methods and alternate funding sources and will examine whether there would be possible resources available to Idaho livestock producers in this program. However, at what point lethal wolf management is warranted is a decision that is made by the responsible management agency, currently either the USFWS or IDFG.

---

52 Various factors caused the system to fail including branches on fence, deer, elk and cattle crossings, and heavy snows. Restoring a failed system involved locating and fixing specific problems as well as a check of the entire system.

53 Research tends to highlight success in changing animal behavior, and ignores the monetary costs or social willingness to apply such tools (Lance 2009).

It is also important to remember and note that at the time of the reintroduction of XN wolves to Central Idaho, the USFWS addressed the issue of depredating wolves in their 1994 10j rule (59 FR 60266, 50 CFR 17.84(i)(3)(vii)) with this specific language: "*All chronic problem wolves (wolves that depredate on domestic animals after being moved once for previous animal depredations) will be removed from the wild (killed or placed in captivity).*" This language did not specify chronic depredating wolves "*may*" be removed from the wild, but that they "*will*" be removed from the wild. WS only removes wolves after a request has been received and after the USFWS or IDFG, whichever agency is responsible for managing wolves in Idaho, has approved and authorized the removal.

Commenter also appears to use "Best Management Practices" (BMPs) as a term to define sound ranch management practices that will reduce risks of wolf depredation. We are not aware of any universal list of best management practices approved by livestock specialists that likely reduce wolf depredation under most circumstances. We have avoided the use of this phrase in the EAs because of the potential for confusion with the BMPs most commonly published for livestock production. These BMPs place an emphasis on healthy and successful livestock production but are not necessarily intended to prevent predation. Some recommendations commonly found in cattle BMPs may include actions contrary to the prevention of predation risks. For example, BMPs generally advise against practices that repeatedly concentrate animals in smaller areas as might occur if night penning is used to prevent depredation and calving in buildings or corrals may reduce depredation, but could increase disease risk.

Comment 16: The proposed action by WS is deficient under NEPA and CEQ regulations because presently there is not a monitoring program in place for populations of gray wolves.

Response: Section 4(g)(1) of the ESA, "requires the USFWS to implement a system, in cooperation with the States, to monitor for not less than 5 years the status of all species that have recovered and been removed from the Lists of Endangered and Threatened Wildlife and Plants" (50 CFR 17.11 and 17.12). The purpose of this post-delisting monitoring is to verify that a recovered species remains secure from risk of extinction after it no longer has the protections of the ESA. The status of the NRM wolf population will be assessed by estimating the numbers of packs, breeding pairs, and total numbers of wolves in mid-winter by State and by recovery area throughout the post-delisting monitoring period (73 FR 10514).

The USFWS is a federal agency authorized to manage fish, wildlife, and habitats and the principal federal agency responsible for administering the ESA; the USFWS takes the lead in recovering and conserving imperiled species by fostering partnerships, employing scientific excellence, and developing a workforce of conservation leaders. Currently wolves in the NRM are managed by the USFWS with cooperation from the other agencies and tribes. While all federal agencies have the responsibility to "utilize their authorities in furtherance of the purposes of the ESA . . . pursuant to section 4," the USFWS has primary authority for endangered species recovery. Currently, the USFWS has legal responsibilities for wolf recovery however, the USFWS can, through cooperative agreements and other documents permit the states and tribes to lead implementation of wolf restoration efforts, as long as those programs are within the authorities of the ESA and within the provisions of each XN population rule.

The USFWS is considering using an outside agent to monitor Idaho's wolf population and has held several meetings to discuss potential monitoring responsibilities with agencies qualified in wolf management (*i.e*., IDFG, the Nez Perce Tribe, Idaho Governor's Office of Species Conservation and WS). Since late November and currently, the USFWS designated the Nez Perce tribe to take over wolf monitoring activities while the USFWS makes a more long-term decision (B. Kelly, USFWS, pers. comm., March 2, 2011).

Comment 17: REA cites vonHoldt et al. (2010) as the justification that a reduction of wolves to increase ungulate populations would not harm genetic connectivity; to limit the number of dispersers would limit genetic connectivity.

Response: The reintroduction of gray wolves to the western U.S. is considered by many an accomplishment for science and the conservation of wolves in the U.S and the question of genetic diversity and connectivity was an important concern. As discussed in Section 4.2.1.2 of the REA, Oakleaf et al. (2006), Carroll et al. (2006), vonHoldt et al. (2008), and vonHoldt et al. (2010) determined that there appears to be enough habitat connectivity between occupied wolf habitat in Canada, northwestern Montana, GYA and Idaho to ensure exchange of sufficient numbers of dispersing wolves to maintain demographic and genetic diversity in the wolf population[54]. Furthermore, the NRM wolf population has doubled in size and expanded spatially since the study ended in 2004 (Hebblewhite et al. 2010), and more gene flow among the subpopulations has likely occurred since the end of the study. Data from a radio telemetry study (Smith et al. 2010a) are consistent with the findings of vonHoldt et al. (2010), which indicate there is a high level of gene flow throughout the NRM DPS.

Dispersal and the demographics of survival, mortality, and habitat connectivity are key to metapopulation dynamics in NRM wolves (Oakleaf et al. 2006, Murray et al. 2010, Smith et al. 2010b) and early in the process, the dispersal distances and rates in NRM wolves suggested a high potential for adequate genetic connectivity through natural processes[55] (Pletscher et al. 1991, Forbes and Boyd 1997, Boyd and Pletscher 1999, 73 FR 10514). vonHoldt et al. (2010) was able to evaluate genetic diversity of NRM wolf recovery by conducting sampling of wolves over the NRM because of intense monitoring[56], and a detailed knowledge of the founding wolf population. They analyzed DNA samples from 555 NRM wolves from the three recovery areas over the 1995 to 2004 recovery period, including the 66 reintroduced founders and found that genetic diversity was high in the three NRM recovery areas[57]. von Holdt et al. (2010) determined the NRM wolf population maintained high levels of genetic diversity with low levels of inbreeding, and the population expanded rapidly, surpassing recovery objectives in 2002. vonHoldt et al. (2010) also said their results should be viewed as a conservative minimum of the true number of migrants per generation in the NRM; the wolf population is larger and more genetic interchange is expected. Contrary to past studies on carnivores (Forbes and Boyd 1997, Cegelski et al. 2003) that used indirect estimates of gene flow, vonHoldt et al.'s (2010) approach focused on recent rather than historic levels of gene flow. This high genetic diversity was in spite of the potential for a "founding bottleneck" resulting from the reintroduction[58]. vonHoldt et al. (2010) attribute this finding to the relatively large and genetically diverse founding population coupled with rapid population expansion,

---

54 Wolf movements between Canada and northwestern Montana have been documented from radio-telemetry monitoring (Pletscher et al. 1991, Boyd and Pletscher 1999, Sime et al. 2007) and wolf movement between Idaho and Montana, and at least five wolves dispersing into the GYA have occurred (71 FR 6634).

55 Wolves have high dispersal capability and demographic resiliency to natural and anthropogenic mortality factors relative to other vertebrate species (Mech and Boitani 2003). From radio-telemetry monitoring, there have been routine wolf movements between Canada and northwestern Montana (Pletscher et al. 1991, Boyd and Pletscher 1999, 73 FR 10514), routine wolf movement between Idaho and Montana, including several transborder packs, and at least five wolves have dispersed into the GYA. Furthermore, because only about 30% of the wolf population has been radio-collared, additional dispersal (perhaps 3 times that documented) has occurred (73 FR 10514).

56 Because of the possibility of false-positives from a single test, vonHoldt et al. (2010) integrated results across multiple tests. This approach was highly successful as known nonmigrants, migrants, and admixed individuals were identified in their control sample set.

57 Despite relative close proximity of regional subpopulation cores (~200 km apart), genetic difference appeared to have increased towards the end of the study period (vonHoldt et al. 2010). In an analysis of habitat linkage and colonization probabilities between the recovery areas, Oakleaf et al. (2006) found that Idaho and Montana have higher connectivity than either of these areas has to the GYA. This finding was supported by dispersal patterns of radio-collared wolves (Oakleaf et al. 2006). vonHoldt et al. (2010) data indicate that indicates that effective dispersal was most successful outside of YNP during their study, presumably owing to greater opportunities to establish territories and breed. Since 2004, researchers have observed migrants copulating with YNP wolves; these dispersal events coincide with decreasing YNP wolf densities (Yellowstone Wolf Project, NPS, unpublished data).

58 Inbreeding coefficients were low throughout the study period, which indicated a lack of significant inbreeding in each population. In addition to a rapid population expansion and a genetically diverse founding population, low inbreeding was probably driven and maintained through behaviorally inbreeding avoidance (vonHoldt et al. 2008). In addition, the presence of reproductively successful migrants between recovery areas may have influenced genetic diversity.

suggesting that genetic variation was maintained in the NRM wolf population. Overall, genetic diversity throughout the NRM was comparable or greater than estimates for other gray wolf populations (Roy et al. 1994, Jedrzejewski et al. 2005, Musiani et al. 2007) and was similar to estimates for other parts of the study area (Forbes and Boyd 1997, vonHoldt et al. 2008).

Thus, vonHoldt et al. (2010) results showed that high genetic diversity was maintained when wolf numbers were much lower than today and genetically effective dispersal was documented between the three recovery areas. These findings demonstrate the success and effectiveness of the reintroduction and the wolf protections that promoted rapid population growth. Further, given that the vonHoldt et al. (2010) data set ended in 2004, their results are limited in their ability to infer population structure and genetic diversity for current or future conditions in the NRM. However, based on recent NRM population estimates (USFWS et al. 2010), and increasing evidence for population expansion and dispersal between recovery areas as determined from telemetry data (USFWS et al. 2010), it is likely that greater gene flow is currently occurring throughout the region.

As discussed previously, WS only conducts wolf management activities to reduced damage with the approval of the appropriate management agency, either USFWS or IDFG, thus WS has no ability to affect this particular environmental outcome with any decision we could make as a result of this REA process. The responsible management agency would monitor wolves to determine if genetic connectivity is a concern. As discussed above and in Section 4.1.1.2 of the REA, there appears to be sufficient wolf habitat connectivity between Canada, northwestern Montana, GYA and Idaho to ensure exchange of ample numbers of dispersing wolves to maintain demographic and genetic diversity in the NRM wolf population (Oakleaf et al. 2006, Carroll et al. 2006, vonHoldt et al. 2008, vonHoldt et al. 2010).

Comment 18: New research indicates that wolf population declines greater than (mortality is "highly additive") identified in state and federal policies with the initiation of state wolf hunts in 2009.

Response: The management of wolves in the NRM is litigious, and recent experience demonstrates that management strategies or policies face opposition or support from various constituencies (see Response 6b). Different stakeholders desire different numbers of wolves and management strategies. Prompt, professional active wolf management is an effective tool to broaden tolerance of wolves and is an important component of wolf recovery (Fritts 1993, Mech 1995, Bangs et al. 1995, 2009, ILWOC 2002, Fritts et al. 2003, IDFG 2008, Creel and Rotella 2010, 50 CFR 17.84(n)). In addition, Section 4(g)(1) of the ESA, "requires the USFWS to implement a system, in cooperation with the States, to monitor for not less than 5 years the status of all species that have recovered and been removed from the Lists of Endangered and Threatened Wildlife and Plants" (50 CFR 17.11 and 17.12). The purpose of this post-delisting monitoring is to verify that a recovered species remains secure from risk of extinction after it no longer has the protections of the ESA. The status of the NRM wolf population will be assessed by estimating the numbers of packs, breeding pairs, and total numbers of wolves in mid-winter by State and by recovery area throughout the post-delisting monitoring period (73 FR 10514).

WS' role, in this situation, is to reduce wolf damage to American agricultural, industrial and natural resources, property and human health and safety as currently authorized by Congress (Act of March 2, 1931 as amended 46 Stat. 1486; 7 USC 426-426c). While wolves remain federally listed under the ESA, WS actions would also be authorized by the USFWS prior to being conducted. WS simply responds to requests for assistance when valued resources are damaged or threatened by wildlife, including wolves when authorized by the USFWS or IDFG, as appropriate.

With regards to State administered and regulated sport harvest, currently state sponsored wolf hunting is not an option since wolves have been afforded protection under the ESA[59]. As long as wolves are listed under the ESA, hunting seasons are unlikely to be authorized, but should wolves be delisted again, IDFG could reinstate public hunting and possibly trapping of wolves as part of State management to focus hunter harvest of wolves in historic conflict areas. WS has no authority to authorize or deny a hunting or trapping season for wolves and this issue is outside the scope of any decision that WS could make in conjunction with this REA or how wolves will be management in Idaho or the NRM DPS.

Comment 19: If lethal control is implemented, every effort must be taken to target the individual wolf(ves) responsible for the depredation.

WS, USFWS and IDFG always strive to target the specific wolf and or wolf packs involved in the depredation problem. WS USFWS and IDFG personnel are highly trained in the methods of identifying wolf depredations, and use sound scientific information to assess wolf depredation (Acorn and Dorrance 1990). WS strives to target the specific wolves involved in depredation but cannot guarantee that the wolf taken is always the specific individual involved in the depredation. Identification of depredating individuals is complicated by the pack hunting behavior of wolves. In instances when a pack is involved in a depredation incident, multiple individuals may have been involved in the predation event. Measures used to identify and target depredating wolves include but are not limited to careful analysis of wolf sign at the site by trained professionals and review of information on radio-collared wolves and wolf observations in the area near the depredation site. Sign from the depredation site can be used to determine if the depredation was caused by an individual wolf or a pack. Traps will usually be set close to kill sites, and normally wolf packs responsible for making the kills would be the ones most likely visiting such kills. Because wolves are very territorial, strange wolves would not likely enter another packs area or feed on kills made by other packs. Data on wolf and pack activity and territory size is used to identify other areas used by the pack where traps may be set and reduce risks to non-target packs.

Comment 20: The EA assumes that the State of Idaho and WS will manage wolves without the ESA limitations

Response: At the very beginning of the REA at "Reasons for Revising the Idaho Wolf Damage Management EA," WS explains the events that recently occurred with NRM wolf management. All of those events could potentially affect how wolf management is conducted in Idaho and the NRM DPS, and the REA acknowledged and analyzed the potential environmental impacts of alternatives for WS involvement in gray wolf damage management under the direction of the responsible wolf management agency (*i.e.*, either the USFWS or IDFG depending on the wolf status, the decisions of the USFWS, court rulings, or Governor of Idaho).

WS' role, in this situation, is to reduce wolf damage to American agricultural, industrial and natural resources, property and human health and safety as currently authorized by Congress (Act of March 2, 1931 as amended 46 Stat. 1486; 7 USC 426-426c). While wolves remain federally listed under the ESA, WS actions would also be authorized by the USFWS prior to being conducted. WS activities are conducted in accordance with applicable federal, state and local laws, Cooperative Service Agreements, "Agreements for Control," MOUs with other state and federal management agencies, and other applicable documents (WS Directive 2.210). WS simply responds to requests for assistance when valued resources are damaged or threatened by wildlife, including wolves when authorized.

---

59 On August 5, 2010 the U.S. Federal District Court in Missoula, Montana issued an order which vacated the delisting of the Northern Rocky Mountains (NRM) Distinct Population Segment (DPS) of the gray wolf (Defenders of Wildlife et al. v. Salazar, CV 09-77-M-DWM, and Greater Yellowstone Coalition v. Salazar, CV 09-82-M-DWM). In compliance with that court order, wolves are once again considered endangered throughout the NRM DPS, except where they are classified as experimental nonessential populations. For a summary of relevant delisting and litigation activities, go to http://www.fws.gov/mountain-prairie/species/mammals/wolf/

Comment 21: What criteria does WS use when determining lethal vs. non-lethal control?

Response: As discussed in Sections 3.3.2 and 3.3.3 in the REA, WS uses adaptive integrate wildlife damage management (IWDM) to implement and apply safe and practical methods for the prevention and reduction of damage caused by wildlife based on local problem analyses and the informed judgment of trained personnel. WS personnel use an IWDM approach to reduce damage after applying the WS Decision Model (Figure 3-1 of the REA) to develop site-specific, adaptive management strategies (Slate et al. 1992). The adaptive strategies may incorporate cultural practices, habitat modification, animal behavior modification, removal of individual animals, local population reduction, or any combination of these, depending on the characteristics of the specific damage problem.

The WS Decision Model is a thought process used for evaluating and responding to damage complaints (Slate et al. 1992). The Decision Model is a problem-solving process similar to that used by many other response agencies when addressing specific situations or problems. Decisions made using the model are in accordance with standard operating procedures described in the REA and adopted or established as part of this FONSI. Trained personnel assess the problem, and evaluate the appropriateness and availability (legal and administrative) of damage management strategies and tools based on biological, economic and social considerations including:

- Species responsible for the damage (*e.g.*, did wolves cause the problem or was it something else?)
- Magnitude, geographic extent, frequency, historical damage and duration of the problem including review of animal husbandry practices and producer efforts at nonlethal management
- Status of target and non-target species, including T/E species
- Local environmental conditions
- Potential biological, physical, economic and social impacts
- Potential legal restrictions
- Costs of damage management

Following this evaluation, the methods deemed to be practical and potentially effective for the situation are incorporated into a management strategy and, for wolf management, consultation occurs with the USFWS or IDFG, the responsible management agency at the time. If the strategy is effective, the need for further management is ended. When damage continues intermittently over time, WS and USFWS or IDFG personnel and the requester monitor and reevaluate the situation. If one method or a combination of methods fails to reduce or stop damage, a different strategy is implemented. WS only conducts lethal wolf damage management after consultation with the USFWS or IDFG and as authorized by the responsible management agency at the time.

In addition, wolf damage management in Idaho follows a "co-managerial approach" as generally described by Decker and Chase (1997). Within this management model, trained personnel provide technical assistance[60] regarding the biology and ecology of wolves and effective, practical and reasonable methods available to requesters of WS assistance to reduce wolf damage.

Comment 22: WS should adopt the use of non-lead ammunition.

Response: Currently, there is no legal or policy requirement for WS to use non-lead ammunition, however most WS aerial gunning operations in Idaho for wolves are conducted using steel shot. Most studies that have examined lead ingestion by scavengers have focused on bullet fragments deposited in offal or carcasses during the sport hunting seasons. Rogers et al. (2009) collected samples of liver, hair, blood, and feces from black bears (*Ursus americanus*) and grizzly bears (*Ursus arctos horribilis*), wolves, coyotes, and mountain lions, and tested samples for the presence of lead. Preliminary results show that

60 Technical assistance on alleviating damage caused by wolves is also available from the USFWS and private organizations.

during the non-hunting season, no grizzly bear blood samples (n = 11) exhibited lead exposure. However, during the hunting season, 46% of 13 samples showed exposure with blood lead levels, presumably from feeding on offal or big game carcasses. In addition, of six liver samples collected from wolves during the non-hunting season, none have shown signs of lead exposure. In most cases when WS kills a wolf using lead ammunition, when practical, the wolf is retrieved and provided to the IDFG or USFWS and the number of wolf carcasses unrecovered is minimal. Thus, there appears to be little to no lead poisoning risk to scavengers from WS' wolf damage management activities.

Currently no federally listed threatened or endangered (T/E) species are deemed likely to encounter or scavenge on any wolf carcasses that may be left in the field by WS. Therefore, the risk of lead poisoning to a T/E species or other significant environmental effects because of lead toxicity is extremely low. Previously prepared Biological Assessments determined that the grizzly bear and the Canada lynx are the only federally listed T/E species which maybe potentially affected by WS wolf damage management activities. The USFWS has concurred that WS' predator damage management methods are not likely to adversely affect grizzly bears in Idaho, and are not likely to jeopardize the continued existence of Canada lynx (USDI 1996, 2002). To further insure no adverse effects to T/E species, WS has entered into a new Section 7 consultation/conference process with the USFWS to reassess and update previous consultations (USFWS 2011). We will continue to abide by previously established reasonable and prudent measures and terms and conditions and will comply with any new reasonable and prudent alternatives that are identified in a new Biological Opinion.

Comment 23: Wolf removal (through control actions or sport hunting) disrupts pack social structure.

Response: While it is true that wolf removal can have a short-term disruptive impact on pack structure, that disruption does not appear to result in adverse impact on the overall wolf population (Nadeau et al. 2008, 2009, Mack et al. 2010, USFWS et al. 2008, 2009, 2010). Pack resilience to mortality is inherent in wolf behavioral adaptation and reproductive capabilities (Brainerd et al. 2008). The data on wolf mortality rates suggests some wolf populations tend to compensate for losses and return to pre-removal levels rapidly, potentially within a year. Wolf populations have sustained human-caused mortality rates of 30 to 50% without experiencing declines in abundance (Keith 1983, Fuller et al. 2003). Based on mean pack size of 8, mean litter size of 5, and 38% pups in packs, Boertje and Stephenson (1992) suggested 42% of juveniles and 36% of adults must be removed annually to achieve population stability. Mech (1970) suggests that more than 50% of wolves older than 5-10 months must be killed to "control" the wolf population; other researchers have indicated declines may occur with human-caused mortality at 40% or less of fall wolf populations (Ballard et al. 1997, Peterson et al. 1984) (See Chapter 4, Section 4.4.1.1 for more discussion of wolf mortality effects). In addition, Brainerd et al. (2008) found that 62% of packs in recovering populations retained territories despite breeder loss, and of those who lost territories, one-half became re-established. Furthermore, pup survival was primarily dependent on size of pack and age of pup because multiple pack members feed pups despite loss of a breeder. Pup survival in 84% of packs with breeder loss was similar or higher than packs without breeder loss (Mech and Boitani 2003). Brainerd et al. (2008) stated that breeder replacement was highest and fastest in populations with more than 75 wolves, as is the case in Idaho. In Idaho, where wolf management has occurred since shortly after the reintroduction, the wolf population increased from the 40 founding individuals in the mid-1990's to an estimated 835 wolves in 94 packs in 2009 and 1,706 wolves in 242 packs in the NRM DPS.

Potential vacancies created by wolf conflict management would most likely be filled by dispersing animals from their natal packs in areas occupied by wolves. The rapid expansion of the wolf population in the NRM following initial reintroductions demonstrates the natural dispersal potential and population growth potential and resilience of wolves (Mack et al. 2010, USFWS et al. 2010). The movement of dispersing wolves among packs and populations would not be disrupted by the level of removal within

Idaho or other areas of the NRM DPS, and connectivity among populations would be maintained (73 FR 4720). Therefore, the Proposed Action nor any of the Alternatives analyzed in detail in the REA would impact genetic exchange among wolves in Idaho or throughout the NRM DPS, and would not impact the gray wolf recovery program or compromise meeting recovery goals for Idaho or NRM DPS. Given the resilience of wolf populations, there are no anticipated long-term direct impacts from wolf conflict management, and the biology, dynamics, or conservation status of the wolf population in Idaho or the NRM recovery areas would not be impacted.

WS' mission is to provide Federal leadership and expertise to resolve wildlife conflicts and create a balance that allows people and wildlife to coexist peacefully with wildlife (see Section 2.3.5.1 of the REA). WS only removes wolves after a request has been received and after the USFWS or IDFG, whichever agency is responsible for managing wolves in Idaho, has approved and authorized the removal. We strive to develop and use wildlife damage management strategies that are biologically sound, environmentally safe, and socially acceptable while attempting to reduce damage caused by wildlife to the lowest possible levels while at the same time reducing wildlife mortality.

It is also important to remember and note that at the time of the reintroduction of XN wolves to central Idaho, the USFWS addressed the issue of depredating wolves in their 1994 10j rule (59 FR 60266, 50 CFR 17.84(i)(3)(vii)) with this specific language: "*All chronic problem wolves (wolves that depredate on domestic animals after being moved once for previous animal depredations) will be removed from the wild (killed or placed in captivity).*" It is important to note that this language did not specify chronic depredating wolves "*may*" be removed from the wild, but that they "*will*" be removed from the wild. Thus, wolf management requires active management, not passive preservation when resolving conflicts with agricultural and natural resource, or protecting property and human health and safety. Managers are best served to approach damage management with an open mind, remembering that the goal of active management is the conservation of wildlife, including wolves (Fritts et al. 1992, Fritts 1993, Mech 1995, Fritts and Carbyn 1995, Bangs et al. 1995, 2009, ILWOC 2002, Boitani 2003, Fritts et al. 2003, Creel and Rotella 2010, 73 FR 10514, 50 CFR 17.84(n)).

As indicated in Figure 1-1 in Chapter 1 of the REA, as the number of wolf packs in Idaho has increased, the number of investigation and incidents of confirmed predation on livestock has increased (USDA 2010). And as discussed in Section 2.4.2 in the REA, from a conflict management standpoint, WS and the wolf management agencies removed wolves incrementally to disrupt pack behavior and reduce or eliminate the likelihood of additional depredations.

Comment 24: WS must complete ESA consultations on impacts to grizzly bears before it takes any action.

Response: The potential effects of WS authorized wolf damage management actions has been thoroughly discussed in Sections 2.4.3 and 2.4.4 of the REA. Further, previously prepared Biological Assessments have determined that the grizzly bear and the Canada lynx are the only federally listed T/E species which might potentially be affected by WS wolf damage management activities. The USFWS has determined that the proposed program would have no effect on or is not likely to adversely affect any Federal listed threatened or endangered (T/E) species. The USFWS has concurred that WS' predator damage management methods are not likely to adversely affect grizzly bears in Idaho, and are not likely to jeopardize the continued existence of Canada lynx (USDI 1996, 2002). To further insure no adverse effects to T/E species, WS has entered into a new Section 7consultation/ conference process with the USFWS to reassess and update previous consultations, if needed (USFWS 2011). We will continue to abide by previously established reasonable and prudent measures and terms and conditions pending the conclusion of the current consultation process. Further, WS will not conduct any wolf damage management in occupied grizzly bear habitat in Idaho until a new or revised Section 7 consultation

addressing potential effects to grizzly bears is completed by the USFWS and will comply with any new reasonable and prudent alternatives that are identified in a new Biological Opinion.

Comment 25: Concern about "Animal welfare/non-target species/traps used."

Response: The REA discussed and analyzed animal welfare (Sections 2.3.4, 4.4.1.4, 4.4.2.4, 4.4.3.4, 4.4.4., and 4.4.5.4), methods used (Section 3.3.3) and take of non-target species (Section 2.4.4) which are all taken into consideration when developing a management strategy for each wolf damage complaint. With regard to discussing each trap-type separately, WS does not believe this is necessary and the foot-hold traps used by WS are approved for use to capture wolves, are checked consistent with State rules and WS directives, and all the trap types operate in a similar manner.

In addition, CEQ (1981) provides guidance for analysis in NEPA documentation and states that, *"the EA is a concise public document which has three defined functions: (1) it briefly provides sufficient evidence and analysis for determining whether to prepare an EIS or FONSI; (2) it aids an agency's compliance with NEPA when no EIS is necessary; and (3) it facilities preparation of an EIS when one is necessary"* (40 CFR, 1508.9(b). WS attempted to reach a balance between providing adequate information to the public, interested entities and decision makers to understand past and present issues, to analyze new issues that have been identified through the public involvement process and comply with CEQ regulations. In terms of considering and providing a detailed discussion and analysis of every possible foot-hold trap that WS might potentially use would not provide addition information for the public or decision maker to use to make a more informed decision. Furthermore, analyzing the details of each foot-hold trap that may be used by WS might even be considered inconsistent with NEPA (Eccleston 1995).

Comment 26: The REA failed to analyze how large traps impact non-target species.

Response: WS not only analyze how the traps WS uses could affect non-target species, WS analyzed how all the methods they use affect non-target species (Section 2.4.4 of the REA). The only species for which an average of more than one non-target individual per year are taken unintentionally during Idaho WS wolf control efforts are coyotes and red fox. Both of these canid species are abundant in Idaho, and they occur to varying degrees in many of the same areas where wolves occur.

Idaho's coyote population has been conservatively estimated at 50,000 (USDA 1996, 2002). Connolly (1995) suggests that coyote populations can withstand annual harvest levels of 70% and still maintain a viable population. In addition, Pitt et al. (2001) used an "individual-based" computer model to mimic natural coyote populations and assess impacts to populations in relation to varying degrees of proportion removed. The model did not observe a population decrease until more than 60% of the population was removed annually (Pitt et al. 2001). Idaho's red fox population has been conservatively estimated at about 22,000 (USDA 1996, 2002), and similar to coyotes, red fox can compensate for up to a 70% annual harvest level (USDA 1994). There is essentially no measurable impact on Idaho's coyote or red fox populations related to WS wolf damage management efforts, and the cumulative impacts are of a very low magnitude.

Comment 27: The EA fails to adequately analyze how its control actions will impact public and private research and monitoring of wolves.

Response: WS responds to requests for assistance when valued resources are damaged or threatened by wildlife, including wolves when authorized. WS only removes wolves after a request has been received, damage has been documented and after the USFWS or IDFG[61], whichever agency is responsible for managing wolves in Idaho, has approved and authorized a removal. WS' objective is to improve the

[61] The USFWS and IDFG have both requested that WS continue its role as a "designated agent" to reduce wolf conflicts.

coexistence of people and wildlife. These objectives include wildlife conservation, biological diversity, and the welfare of animals, as well as the use of wildlife for purposes of enjoyment, recreation and livelihood.

Individuals and institutions involved in conducting research or monitoring of wolves in Idaho could only do so under permit from the USFWS or IDFG, whichever agency is responsible to manage wolves in Idaho, and they would be aware that individual wolves and/or wolf packs involved in depredations on livestock are subject to removal through authorized WS actions. Although wolf removals might conceivably impact some research projects to some degree, the projects are undertaken with the recognition that wolf removals may occur, and this possibility is considered when removals are authorized and in the development of research projects.

Comment 28: The EA failed to adequately analyze how its control actions will impact public land managers' mandates under respective laws.

Response: As indicated in Section 1.4 of the REA, all the agency (including the U.S. Forest Service and the BLM) MOUs, management plans, regulations and prior analyses were reviewed for consistency with the management direction described in the REA. The agencies were also consulted during the development of the EA. Additionally, WS meets at least annually with local officials of the Forest Service and the BLM to confer and coordinate wildlife damage management activities anticipated to occur in the coming year on lands administered by these agencies. Public land agencies also review work plans for consistency with land and resource management plans. Thus, WS closely coordinates wolf damage management actions on public lands and actions are not be conducted by WS without prior consultation with the responsible land management agency.

Comment 29: Depredating or problem wolves should be relocated.

Response: Nearly all suitable areas for wolves are being occupied by resident packs (Oakleaf et al. 2006, USFWS et al. 2008). The NRM wolf pack distribution has remained largely unchanged since 2000 (USFWS et al. 2001-2009), indicating that wolf packs are occupying areas with suitable habitat. As the USFWS explained, they believe that the NRM wolf population is likely at or above long-term carrying capacity[62] (74 FR 15123).

In addition, wolves have been relocated to other areas, but many returned to where they were caught or became a problem elsewhere (Fritts et al. 1984, 1985). Mech et al. (1996) concluded that where wolf populations are large and secure, relocation has little value in wolf management.

Comment 30: The IDFG website has information on hunting wolves but no information (not even in their Wildlife Watching guidebook) on wolf viewing opportunities.

Response: The information that the IDFG chooses to put on their website is solely their decision and outside the scope of this REA. The commenter is directed to express their desires to the IDFG and ask them to provide that or any other information the commenter would like to see on their website.

Comment 31: Ethics of government sponsored predation management to benefit commercial agriculture.

[62] Wolf populations continually try to expand and disperse and if suitable habitat is not available, we expect wolves will increasingly disperse into unsuitable areas (*i.e.*, areas used for livestock production). A higher percentage of wolves in those areas will become involved in conflicts with livestock, and a higher percentage of those wolves will be removed to reduce future livestock damage.

Response: Congress has directed that the federal government will provide assistance in predation and other wildlife damage management, so they [Congress] have deemed it an appropriate and ethical use of public funds and that it is an appropriate function of government. Also, wildlife is "held in trust" for the public, therefore, an argument for supporting that government-sponsored wildlife damage management is ethical and appropriate is that such government-sponsored management is one way, perhaps the only practical way, for the public to bear some of the responsibility for the damage to private interests caused by the public's wildlife. Regardless of whether such assistance is believed to be ethical or not, this issue is outside the scope of this EA because wildlife management is deemed appropriate and directed by Congress.

Comment 32: A former high level Wildlife Services employee, Carter Niemeyer, writes that he was discouraged from providing clear evidence to support or deny whether wolves were responsible for livestock depredations.

Response: Carter Niemeyer's book is a memoir of a former ADC employee in Montana (ADC being the former name of WS). His personal and unsubstantiated complaints against a former supervisor and colleagues have no bearing on the current wolf damage management program in Idaho. WS conducts investigations when they receive a wolf depredation complaint and documents their finding on WS Form 200 which is provided to the USFWS, IDFG, Nez Perce Tribe and livestock producer; the livestock producer then may forward the form to Defenders of Wildlife. To help preserve physical evidence of a wolf attack and verify the cause of the injuries or mortality, any wolf depredations should be reported within 24 hours and we use the carcass and evidence at the site and in the surrounding area to confirm that the livestock or dogs were wounded, harassed, molested, or killed by wolves. Investigations are conducted on a case-by-case basis and investigators look for evidence such as tracks, scat, bite marks, hematomas, etc. to determine if wolves killed the animal. The claim that Mr. Niemeyer "was discouraged from providing clear evidence to support or deny whether wolves were responsible for livestock depredations" is an issue and claim that is outside the scope of the REA.

Literature Cited

Acorn, R. C. and M. J. Dorrance. 1990. Methods of investigating predation of livestock. Alberta Agriculture, Food and Rural Development, Edmonton Alberta, Canada 35pp.

AVMA. 2007. AVMA guidelines on euthanasia (formerly report of the AVMA panel on euthanasia) June 2007. American Veterinary Medical Association, Schamburg, Illinois, USA.

Arjo, W.M., D.H. Pletscher, and R.R. Ream. 2002. Dietary overlap between wolves and coyotes in northwestern Montana. Journal of Mammalogy 83: 754-766.

Atwood, T. C. 2006. Wolves, coyotes, elk and mule deer: predator-prey behavioral interactions in southwestern Montana. PhD Dissertation Utah State University, Logan.

Ballard, W. B., L. A. Ayres, P. R. Krausman, D. J. Reed, and S. G. Fancy. 1997. Ecology of wolves in relation to a migratory caribou herd in northwest Alaska. Wildlife Monographs 135.

Ballard, W. B., L. N. Carbyn, and D. W. Smith. 2003. Wolf interactions with non-prey. (Pp. 259-271) *in* L. D. Mech and L. Boitani, eds. Wolves: behavior, ecology, and conservation. University of Chicago Press, Chicago IL.

Baker, B. W., and E. F. Hill. 2003. Beaver: *Castor canadensis*. (Pages 288-310) *in* G. A. Feldhamer, B. C. Thompson, and J. A. Chapman, eds. Wild mammals of North America: biology, management, and conservation. John Hopkins University Press, Baltimore, Maryland, USA.

Bangs, E. E., and J. Shivik. 2001. Managing wolf conflict with livestock in the Northwestern United States. Carnivore Damage Prevention News 3: 2-5.

Bangs, E. E., S. H. Fritts, D. A. Harms, J. A. Fontaine, M. D. Jimenez, W. G. Brewster, and C. C.Niemeyer. 1995. Control of endangered gray wolves in Montana. (Pages 127-134) *in* L. N. Carbyn, S. H. Fritts, and D. R. Seip, eds. Ecology and conservation of wolves in a changing world. Canadian Circumpolar Institute, Occasional Publication No. 35. Edmonton, Alberta, Canada.

Bangs, E., J. Fontaine, T. Meier, C. Niemeyer, M. Jimenez, D. Smith, C. Mack, V. Asher, L. Handegard, M. Collinge, R. Krischke, C. Sime, S. Nadeau, and D. Moody. 2004. Restoration and conflict management of the gray wolf in Montana, Idaho, and Wyoming. Transactions of the North American Wildlife and National Resources Conference 69: 89-105.

Bangs, E., M. Jimenez, C. Niemeyer, T. Meier, V. Asher, J. Fontaine, M. Collinge, L. Handegard, R. Krischke, D. Smith, and C. Mack. 2005. Livestock guarding dogs and wolves in the Northern Rocky Mountains of the United States. Carnivore Damage Prevention News 8: 32-39.

Bangs, E. E., M. Jimenez, C. Niemeyer, J. Fontaine, M. Collinge, R. Krischke, L. Handegard, J. Shivik, C. Sime, S. Nadeau, C. Mack, D. Smith, V. Asher, and S. Stone. 2006. Non-lethal and lethal tools to manage wolf-livestock conflict in the northwestern United States. Proceedings of the Vertebrate Pest Conference 22: 7-16.

Bangs, E., M. Jimenez, C. Niemeyer, J. Fontaine, C. Sime, S. Nadeau, and C. Mack. 2009. The art of wolf restoration in the northwestern United States: where do we go now? (Pages 95-114) *in* M. Musiano, L. Boitani, and P. Paquet, eds. A new era for wolves and people: wolf recovery, human attitudes, and policy. University of Calgary Press. Alberta, Canada.

Bath, A. J. 1987. Attitudes of various interest groups in Wyoming toward wolf reintroduction in Yellowstone National Park. Thesis, University of Wyoming, Laramie, USA.

Bath, A. J. 1991. Public attitudes in Wyoming, Montana, and Idaho toward wolf restoration in Yellowstone National Park. Transactions of the North American Wildlife and Natural Resources Conference 56: 91-95.

Berger, K. M., and E. M. Gese. 2007. Does interference competition with wolves limit the distribution and abundance of coyotes? Journal of Animal Ecology 76: 1075–1085.

Berger, K. M. and M. M. Conner. 2008. Recolonizing wolves and mesopredator suppression of coyotes: impacts on pronghorn population dynamics. Ecological Applications 18: 599-612.

Berger, K. M., E. M. Gese, and J. Berger. 2008. Indirect effects and traditional trophic cascades: a test involving wolves, coyotes, and pronghorn. Ecology 89: 818–828.

Beschta, R. L. 2005. Reduced cottonwood recruitment following extirpation of wolves in Yellowstone's Northern Range. Ecology 86: 391-403.

Beyer, H. 2006. Wolves, elk, and willow on Yellowstone's Northern Range. University of Alberta, Edmonton, Canada.

Biggs, J. R. 1988. Reintroduction of the Mexican wolf into New Mexico - an attitude survey. Thesis, New Mexico State University, Las Cruces, USA.

Bjerke, T., O. A. N. Reitan, and S. R. Kellert. 1998. Attitudes toward wolves in southeastern Norway. Society and Natural Resources 11: 169-178.

Boertje, R. D., and R. O. Stephenson. 1992. Effects of ungulate availability on wolf reproduction potential in Alaska. Canadian Journal of Zoology 70: 441-443.

Boitani, L. 2003. Wolf conservation and recovery. (Pages 317-340) *in* L. D. Mech and L. Boitani, eds. Wolves: behavior, ecology, and conservation. The University of Chicago Press, Chicago, USA and London, England.

Boyd, D. K., and D. H. Pletscher. 1999. Characteristics of dispersal in a colonizing wolf population in the central Rocky Mountains. Journal of Wildlife Management 63: 1094-1108.

Brainerd, S. M., H. Andre´n, E. E. Bangs, E. Bradley, J. A. Fontaine, W. Hall, Y. Iliopulos, M. D. Jimenez, E. A. Jozwiak, O. Liberg, C. M. Mack, T. J. Meier, C. C. Niemeyer, H. C. Pedersen, H. K. Sand, R. N. Schultz, D. W. Smith, P. Wabakken, and A. P. Wydeven. 2008. The effects of breeder loss on wolves. Journal of Wildlife Management 72: 89-98.

Breck, S. W., R. Williamson, C. Niemeyer, and J. A. Shivik. 2002. Non-lethal radio activated guard for deterring wolf predation in Idaho: summary and call for research. Proceedings of the Vertebrate Pest Conference 20: 223-226.

Bruskotter, J. T., E. Toman, S. A. Enzler, and R. H. Schmidt. 2010. Are gray wolves endangered in the Northern Rocky Mountains? A Role for Social Science in Listing Determinations. BioScience: 941-948.

Carbyn, L. N. 1983. Wolf predation on elk in Riding Mountain National Park, Manitoba. Journal of Wildlife Management 47: 963-976.

Carroll, C., M. K. Phillips, C. A. Lopez-Gonzalez, and N. H. Schumaker. 2006. Defining recovery goals and strategies for endangered species: the wolf as a case study. BioScience 56: 25-37.

Cegelski C. C., L. P. Waits, and N. J. Anderson. 2003. Assessing population structure and gene flow in Montana wolverines (*Gulo gulo*) using assignment-based approaches. Molecular Ecology 12: 2907-2918.

CEQ. 1981. Forty most asked questions concerning CEQ's NEPA regulations. (40 CFR 1500-1508) Federal Register 46: 18026-18038.

Collinge, M. 2008. Relative risks of predation on livestock posed by individual wolves, black bears, mountain lions and coyotes in Idaho. Proceedings of the Vertebrate Pest Conference 23: 129-133.

Connolly, G. E. 1995. The effects of control on coyote populations: another look. (Pages 23-29) *in* D. Rollings, C. Richardson, T. Blankenship, K. Canon, and S. Henke, eds. Coyotes in the Southwest: a compendium of our knowledge. Texas Parks and Wildlife Department, Austin, USA.

Crabtree, R. L, and J. W. Sheldon. 1999a. Coyotes and canid coexistence in Yellowstone. (Pages 127-163) *in* T. W. Clark, A. P. Culee, S. C. Minta, and P. M. Karieva, eds. Carnivores in ecosystems, the Yellowstone experience. Yale University Press, New Haven, Connecticut, USA.

Crabtree, R. L, and J. W. Sheldon. 1999b. The ecological role of coyotes on Yellowstone's Northern Range. Yellowstone Science 7:15-23.

Creel, S., and J. A. Winnie. 2005. Responses of elk herd size to fine-scale spatial and temporal variation in the risk of predation by wolves. Animal Behavior 69: 1181-1189.

Creel, S., and J. J. Rotella. 2010. Meta-analysis of relationships between human offtake, total mortality and population dynamics of gray wolves (*Canis lupus*). PLoS ONE 5(9): e12918. doi:10.1371/journal.pone.0012918.

Crooks, K.R., and M. E. Soulé. 1999. Mesopredator release and avifaunal extinctions in a fragmented system. Nature 400: 563-566.

Darrow, P. A. 2006. Habituation and variable captive coyote response to behavior contingent stimuli. M. S. Thesis, Utah State University, Logan, Utah, USA.

Decker, D. J., and G. R. Goff. 1987. Valuing wildlife: economic and social perspectives. Westview Press. Boulder, USA.

Decker, D. J., and L. C. Chase. 1997. Human dimension of living with wildlife - a management challenge for the 21st century. Wildlife Society Bulletin 25: 788-795.

Duda, M. D., S. J. Bissell, and K. C. Young. 1998. Wildlife and the American mind. Public opinion on and attitudes toward fish and wildlife management. Responsive Management National Office.

Eccleston, C. 1995. Determining when an analysis contains sufficient detail to provide adequate NEPA coverage. Federal Facilities Environmental Journal 6: 37-50.

Enck J. W., and T. L. Brown. 2002. New Yorkers' attitudes toward restoring wolves to the Adirondack Park. Wildlife Society Bulletin 30: 16-28.

Ericsson, G., and T. A. Heberlein. 2003. Attitudes of hunters, locals, and the general public in Sweden now that the wolves are back. Biological Conservation 111: 149–159.

Forbes, S., and D. Boyd. 1997. Genetic structure and migration in native and reintroduced Rocky Mountain wolf populations. Conservation Biology 11: 1226-1234.

Fortin, D., H. L. Beyer, M. S. Boyce, D. W. Smith, T. Duchesne, and J. S. Mao. 2005. Wolves influence elk movements: behavior shapes a trophic cascade in Yellowstone National Park. Ecology 86: 1320-1330.

Fritts, S. H. 1982. Wolf depredation on livestock in Minnesota. U.S. Fish and Wildl. Serv. Resour. Publ. 145. Washington, D.C. 11 pp.

Fritts, S. H. 1993. Controlling wolves in the Greater Yellowstone Area. (Pages 173-233) *in* R. S. Cook, ed. Ecological issues on introducing wolves into Yellowstone National Park. Sci. Mono. NPS/NRYELL/NRSM-93/22. USDI, National Park Service, Denver, Colorado.

Fritts, S. H., and W. J. Paul. 1989. Interactions of wolves and dogs in Minnesota. Wildlife Society Bulletin 17: 121-123.

Fritts, S. H., and L. N. Carbyn. 1995. Population viability, nature reserves, and the outlook for gray wolf conservation in North America. Restoration Ecology 3: 26-38.

Fritts. S. H., W. J. Paul, and L. D. Mech. 1984. Movements of translocated wolves in Minnesota. Journal of Wildlife Management 48: 709-721.

Fritts, S. H., W. J. Paul, and L. D. Mech. 1985. Can relocated wolves survive? Wildlife Society Bulletin 13: 459-463.

Fritts, S. H., W. J. Paul, L. D. Mech, and D. P. Scott. 1992. Trends and management of wolf livestock conflicts in Minnesota. Resource Publication 181. United States Fish and Wildlife Service, Washington D.C., USA.

Fritts, S. H., R. O. Stephenson, R. D. Hayes, and L. Boitani. 2003. Wolves and humans. (Pages 289-316) *in* L. D. Mech and L. Boitani, eds. Wolves: behavior, ecology, and conservation. The University of Chicago Press, Chicago, USA and London, England.

Fuller, T. K., L. D. Mech, and J. F. Cochrane. 2003. Wolf population dynamics. (Pages 161-191) *in* L. D. Mech and L. Boitani, eds. Wolves: behavior, ecology, and conservation. University of Chicago Press, Chicago, USA.

Gasaway, W. C., R. O. Stephenson, J. L. David, P. K. Sheperd, and O. E. Burris. 1983. Interrelationships of wolves, prey, and man in interior Alaska. Wildlife Monographs 84.

Gauthier, D. A., and J. B. Theberge. 1987. Wolf predation. (Pp. 120-127) *in* M. Novak, J. A. Baker, M. E. Obbard, and B. Mallach, eds. Wild furbearer management and conservation in North America. Ont. Minist. Nat. Resour., Toronto.

Geist, V. 2006. When do wolves become dangerous to humans? The University of Calgary, Calgary, Alberta, Canada.

Gese, E. M. and S. Grothe. 1995. Analysis of coyote predation on deer and elk during winter in Yellowstone National Park, Wyoming. American Midland Naturalist 133: 36-43.

Gosling, S.D. 1998. Personality dimensions in spotted hyenas (*Crocuta crocuta*). Journal of Comparative Psychology 112:107-108.

Gude, J. A., B. Garrott, J. J. Borkowski, and F. King. 2006. Prey risk allocation in a grazing ecosystem. Ecological Applications 16: 285-298.

Hansen, A., L. Baril, R. Renkin, T. McvEneaney, and D. W. Smith. 2005. Report to the Yellowstone centre for resources. Yellowstone National Park, Wyoming, USA.

Hebblewhite, M., and D. W. Smith. 2005. Wolf community ecology: ecosystem effects of recovering wolves in Banff and Yellowstone National Parks. (Pages 69-120) *in* M. Musiani, L. Boitaini, and P. C. Paguet, eds. The world of wolves: new perspectives on ecology, behavior, and policy. University of Calgary Press, Calgary, Alberta, Canada.

Hebblewhite, M., M. Musiani, and L. S. Mills. 2010. Restoration of genetic connectivity among Northern Rockies wolf populations. Molecular Ecology 19: 4383-4385.

Hook, R. A., and W. L. Robinson. 1982. Attitudes of Michigan citizens toward predators. (Pages 382–394) *in* F. A. Harrington and P. C. Paquet, eds. Wolves of the world. Noyes Publishing, Park Ridge, New Jersey, USA.

Houston, M. J., J. T. Bruskotter, and D. P. Fan. 2010. Attitudes toward wolves in the United States and Canada: a content analysis of the print news media, 1999-2008. Human Dimensions of Wildlife 15:389-403.

IDFG. 1999. Elk management plan. Idaho Department of Fish and Game, Boise, ID.

IDFG. 2005. The compass: Idaho department of fish and game strategic plan. Idaho Department of Fish and Game, Boise, USA. <http://fishandgame.idaho.gov>

IDFG. 2008. Idaho Wolf Population Management Plan 2008-2012. Idaho Department of Fish and Game, Boise, USA. http://fishandgame.idaho.gov/cms/wildlife/wolves/manage/PopManagePlan.pdf

IDFG. 2010a. Idaho wolf management progress report, February, 2010. Idaho Department of Fish and Game, Boise, USA. http://fishandgame.idaho.gov/cms/wildlife/wolves/wklyReport/2010/jan.pdf

IDFG. 2010b. Idaho Rule 10(j) Proposal, Lolo Zone. September 24, 2010.

IDFG. 2010c. Idaho Fish and Game Commission suspends wolf species management plan [press release]. <http://fishandgame.idaho.gov/apps/releases/view.cfm?NewsID=5692> (Accessed February 11, 2010).

IDFG and ISADCB. 2006. Memorandum of understanding between Idaho Department of Fish and Game and Idaho State Animal Damage Control Board. Idaho Department of Fish and Game, Boise, USA.

ILWOC (Idaho Legislative Wolf Oversight Committee). 2002. Idaho wolf conservation and management plan. Idaho State Capitol Building, Boise, USA. http://fishandgame.idaho.gov/cms/wildlife/wolves/manage/wolf_plan.pdf

Jedrzejewski W., W. Branicki, C.Veit, I. Međugorac, M. Pilot, A. N. Bunevich, B. Jedrzejewska, K. Schmidt, J. Theuerkauf, H. Okarma, R. Gula, L. Szymura, and M. Froter. 2005. Genetic diversity and relatedness within packs in an intensely hunted population of wolves *Canis lupus*. Acta Theriologica 50: 3-22.

Julien, T. J., S. M. Vantassel, S. R. Groepper, and S. E. Hyngstrom. 2010. Euthanasia methods in field settings for wildlife damage management. Human-Wildlife Interactions 42: 158-164.

Kauffman, M. J., J. F. Brodie, and E. S. Jules. 2010. Are wolves saving Yellowstone's aspen? A landscape-level test of a behaviorally mediated trophic cascade. Ecology 91: 2742–2755.

Keith, L. B. 1983. Population dynamics of wolves. (Pages 66-77) *in* L. N. Carbyn, ed. Wolves in Canada and Alaska: their status, biology, and management. Canadian Wildlife Service Report Series 45, Ottawa, Canada.

Kellert, S. R. 1985. Public perceptions of predators, particularly the wolf and coyote. Biological Conservation 31: 167-189.

Kellert, S. R. 1999. The public and the wolf in Minnesota. A report to the International Wolf Center, Minneapolis. http://www.wolf.org/wolves/learn/intermed/inter_human/survey_shows.asp

Kellert, S. R. 2000. The public and the wolf in Minnesota, 1999: a report for the International Wolf Center. International Wolf Center (www.wolf.org/wolves/learn/intermed/inter_human/attitudes.asp).

Kortello, D., E. Hurd, and L. Murray. 2007. Interactions between cougars (*Puma concolor*) and gray wolves (*Canis lupus*) in Banff National Park, Alberta. Ecoscience 14: 214-222.

Korytin, S. A. 1997. Sex and age structure of people attacked by wolves in different seasons. Proceedings of the scientific conference [Issues of applied ecology, game management and fur farming], 27–28 May 1997, Kirov p-143-146.

Lance, N. J. 2009. Application of electrified fladry to decrease risk of livestock depredation by wolves (Canis lupus). M. Sc. Thesis. Utah State University, Logan, UT.

Lance, N. J., S. W. Breck, C. Sime, P. Callahan, and J. A. Shivik. 2010. Biological, technical, and social aspects of applying electrified fladry for livestock protection from wolves (*Canis lupus*). Wildlife Research 37: 708-714.

Linnell, J. D. C., R. Anderson, Z. Andersone, L. Balciauskas, J. C. Blanco, L. Boitani, S. Brainerd, U. Breitenmoser, I. Kojloa, O. Liberg, J. Loe, H. Okarma, H. C. Pedersen, C. Promberger, H. Sand, E. J. Valdmann, and P. Wabakken. 2002. The fear of wolves: a review of wolf attacks on humans. NINA (Norsk Institute for Naturforskning) Oppdragsmelding 731: 1-65.

Linnel, J. D. C., E. J. Solberg, S. Brainerd, O. Liberg, H. Sand, P. Wabakken, I. Kojola. 2003. Is the fear of wolves justified? A Fennoscandian perspective. Acta Zoologica Lituanica 13: 27-33.

Lohr, C., W. B. Ballard, and A. Bath. 1996. Attitudes toward gray wolf reintroduction to New Brunswick. Wildlife Society Bulletin 24: 414-420.

Mack, C., J. Rachael, J. Holyan, J. Husseman, M. Lucid, and B. Thomas. 2010. Wolf conservation and management in Idaho: progress report 2009. Nez Perce Tribe Wolf Recovery Project, P.O. Box 365, Lapwai, Idaho; Idaho Department of Fish and Game, Boise, Idaho, USA.

Mao, J. S., M. S. Boyce, D. W. Smith, F. J. Singer, D. J. Vales, J. M. Vore, and E. H. Merrill. 2005. Habitat selection by elk before and after wolf reintroduction in Yellowstone National Park. Journal of Wildlife Management 69: 1691-1707.

McNaught, D. A. 1987. Wolves in Yellowstone? Park visitors respond. Wildlife Society Bulletin 15:518–521.

Mech, L. D. 1970. The wolf: the ecology and behavior of an endangered species. University of Minnesota Press, Minneapolis, USA.

Mech, L. D. 1995. The challenge and opportunity of recovering wolf populations. Conservation Biology 9: 270-278.

Mech, L. D. 1996. A new era for carnivore conservation. Wildlife Society Bulletin 24: 397–401.

Mech, L. D., and L. Boitani. 2003. Wolf social ecology. (Pages 1-34) in L. D. Mech and L. Boitani, eds. Wolves: behavior, ecology and conservation. University of Chicago Press, Chicago, Illinois, USA.

Mech, L. D., S. H. Fritts, and M. E. Nelson. 1996. Wolf management in the 21st century: from public input to sterilization. Journal of Wildlife Research 1: 195-198. http://www.npwrc.usgs.gov/resource/mammals/wolfman/index.htm (Version 02MAR2000).

Montana Wolf Management Advisory Council. 2003. Montana gray wolf conservation and management plan. Final environmental impact statement, C. Sime, ed. Montana Fish, Wildlife and Parks, Helena, USA.

Murphy, K. M. 1998. The ecology of the cougar (*Puma concolor*) in the northern Yellowstone ecosystem: interactions with prey, bears, and humans. Dissertation, University of Idaho, Moscow, USA.

Murray, D. L., D. W. Smith, E. E. Bangs, C. Mack, J. K. Oakleaf, J. Fontaine, D. Boyd, M. Jiminez, C. Niemeyer, T. J. Meier, D. Stahler, J. Holyan, and V. J. Asher. 2010. Death from anthropogenic causes is partially compensatory in recovering wolf populations. Biological Conservation 143: 2514-2524.

Musiani, M., C. Mamo, L. Boitani, C. Callaghan, C. C. Gates, L. Mattei, E. Visalberghi, S. W. Breck, and G. Volpi. 2003. Wolf depredation trends and the use of fladry barriers to protect livestock in western North America. Conservation Biology 17: 1538–1547.

Musiani M, J. A. Leonard, H. D. Cluff, C. C. Gates, S. Mariani, P. C. Paquet, C. Vilas, and R. K. Wayne. 2007. Differentiation of tundra/taiga and boreal coniferous forest wolves: genetics, coat color and association with migratory caribou. Molecular Ecology 16: 4149-4170.

Nadeau, M. S., C. Mack, J. Holyan, J. Husseman, M. Lucid, P. Frame, and B. Thomas. 2007. Wolf conservation and management in Idaho; progress report 2006. Idaho Department of Fish and Game, Boise, USA.

Nadeau, M. S., C. Mack, J. Holyan, J. Husseman, M. Lucid, and B. Thomas. 2008. Wolf conservation and management in Idaho; progress report 2007. Idaho Department of Fish and Game, Boise, USA.

Nadeau, M. S., C. Mack, J. Holyan, J. Husseman, M. Lucid, D. Spicer, and B. Thomas. 2009. Wolf conservation and management in Idaho: progress report 2008. Idaho Department of Fish and Game, Boise, USA. http://fishandgame.idaho.gov/cms/wildlife/wolves/manage/08report/08report.pdf

Naughton-Treves, L., R. Grossberg, and A. Treves. 2003. Paying for tolerance: Rural citizens' attitudes toward wolf depredation and compensation. Conservation Biology 17:1500-1511.

Naughton, L., A. Treves, R. Gossberg, and D. Wilcove. 2005. Public opinion survey: wolf management in Wisconsin. http://www.geography.wisc.edu/livingwithwolves/ public_reports.htm

Oakleaf, J. K., D. L. Murray, J. R. Oakleaf, E. E. Bangs, C. M. Mack, D. W. Smith, J. A. Fontaine, M. D. Jimenez, T. J. Meier, and C. C. Niemeyer. 2006. Habitat selection by recolonizing wolves in the Northern Rocky Mountains of the United States. Journal of Wildlife Management 70: 554-565.

Paquet, P.C. 1992. Prey use strategies of sympatric wolves and coyotes in Riding Mountain National Park, Manitoba. Journal of Mammalogy 73: 337-343.

Pate, J., M. J. Manfredo, A. D. Bright, and G. Tischbein. 1996. Coloradans' attitudes toward reintroducing the gray wolf into Colorado. Wildlife Society Bulletin 24: 421-428.

Peterson, R.O., J. D. Woolington, and T. N. Bailey. 1984. Wolves of the Kenai Peninsula, Alaska. Wildlife Monographs 88.

Pitt, W. C., F. F. Knowlton, and P. W. Box. 2001. A new approach to understanding canid populations using an individual-based computer model: preliminary results. Endangered Species Update 18:4.

Pletscher, D. H., R. R. Ream, R. Demarchi, W. G. Brewster, and E. E. Bangs. 1991. Managing wolf and ungulate populations in an international ecosystem. Transactions of the North American Wildlife and Natural Resources Conference 56: 539-549.

Reiter, D. K., A. D. Dayton, F. R. Henderson, R. L. Meduna, and C. W. Spaeth. 1999. Public attitudes towards wildlife damage management and policy. Wildlife Society Bulletin 27:746-758.

Ripple, W. J., and P. L. Beschta. 2004. Wolves, elk, willows and trophic cascade in the upper Gallatin Range of southwestern Montana, USA. Forest Ecology and Management 200: 161-181.

Ripple W. J., and R. L. Beschta. 2006. Linking wolves to willows via risk sensitive foraging by ungulates in the northern Yellowstone ecosystem. Forest Ecology and Management 230: 96-106.

Ripple, W. J., and R. L. Beschta. 2007. Restoring Yellowstone's aspen with wolves. Biological Conservation 138: 514-519.

Rogers, C. M., and M. J. Caro. 1998. Song sparrows, top carnivores and nest predation: a test of the mesopredator release hypothesis. Oecologia 116: 227-233.

Rogers, T., B. Bedrosian, D. Craighead, H. Quigley, and K. Foresman. 2009. Lead ingestion by scavenging mammalian carnivores in the Yellowstone ecosystem. Extended abstract *in* R.T. Watson, M. Fuller, M. Pokras, and W.G. Hunt (eds.). Ingestion of Lead from Spent Ammunition: Implications for Wildlife and Humans. The Peregrine Fund, Boise, Idaho, USA. DOI 10.4080/ilsa.2009.0121

Roy, M. S., E. Gefen, D. Smith, E. A. Ostrander, and R. K. Wayne. 1994. Patterns of differentiation and hybridization in North American wolflike canids, revealed by analysis of microsatellite loci. Molecular Biology and Evolution 11: 553-570.

Ruth, T. K. 2004. Ghost of the Rockies: the Yellowstone cougar project. Yellowstone Science 12: 13-24.

Shivik, J. A. 2001. The other tools for wolf management. WOLF! Magazine 2: 3-7.

Shivik, J. A. 2004. Nonlethal alternatives for predation management. Sheep and Goat Research Journal 19: 64-71.

Shivik, J. A. 2006. Tools for the edge: what's new for conserving carnivores. Bioscience 53:253-259.

Shivik, J. A., and D. J. Martin. 2001. Aversive and disruptive stimulus applications for managing predation. Proceedings of the Wildlife Damage Management Conference 9: 111-119.

Shivik, J. A., V. Asher, L. Bradley, K. Kunkel, M. Phillips, S. W. Breck, and E. E. Bangs. 2002a. Electronic aversive conditioning for managing wolf depredation. Proceedings of the Vertebrate Pest Conference 20: 227-231.

Shivik, J. A., A. Treves, and P. Callahan. 2003. Nonlethal techniques for managing predation: primary and secondary repellents. Conservation Biology 17: 1531-1538.

Shivik, J. A., V. Asher, L. Bradley, K. Kunkel, M. Phillips, S. W. Breck, and E. Bangs. 2002b. Electronic aversive conditioning for managing wolf predation. Proceedings of the Vertebrate Pest Conference 20: 227-231.

Sime, C. A., V. Asher, L. Bradley, K. Laudon, M. Ross, J. Trapp, M. Atkinson, L. Handegard, and J. Steuber. 2007. Montana gray wolf conservation and management 2006 annual report. Montana Fish, Wildlife and Parks, Helena, USA.

Slate, D. A., R. Owens, G. Connely, and G. Simmons. 1992. Decision making for wildlife damage management. Transactions of the North American Wildlife and Natural Resource Conference 57: 51-62.

Slovic, P. 1987. Perception of risk. Science, New Series, 236 (4799): 280-285.

Smith, D. W., R. O. Peterson, and D. Houston. 2003. Yellowstone after wolves. BioScience 53: 330-340.

Smith, D., D. Stahler, E. Albers, R. McIntyre, M. Metz, K. Cassidy, J. Irving, R. Raymond, H. Zaranek, C. Anton, and N. Bowersock. 2010a. Yellowstone Wolf Project Annual Report 2009. Yellowstone National Park, WY.

Smith, D. W., E. E. Bangs, J. K. Oakleaf, C. Mack, J. Fontaine, D. Boyd, M. Jimenez, D. H. Pletscher, C. C. Niemeyer, T. J. Meier, D. R. Stahler, J. Holyan, V. J. Asher, and D. L. Murray. 2010b. Survival of colonizing wolves in the Northern Rocky Mountains of the United States, 1982-2004. Journal of Wildlife Management 74: 620-634.

Soule´, M. E., D. T. Bolger, A. C. Alberts, J. Wrights, M. Sorice, and S. Hill. 1988. Reconstructed dynamics of rapid extinctions of chaparral-requiring birds in urban habitat islands. Conservation Biology 2:75-92.

Treves, A., and K.U. Karanth. 2003. Human-carnivore conflict and perspectives on carnivore management worldwide. Conservation Biology 17:1491-1499.

Tucker, P., and D.H. Pletscher. 1989. Attitudes of hunters and residents toward wolves in northwestern Montana. Wildlife Society Bulletin 17:509-514.

USDA. 1994. Animal damage control program, final environmental impact statement. United States Department of Agriculture, Animal and Plant Health Inspection Service, Animal Damage Control [Wildlife Services], Operational Support Staff, Riverdale, Maryland, USA.

USDA. 1996. Environmental assessment: predator damage management in northern and central Idaho. United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, Boise, Idaho, USA.

USDA. 2002. Environmental assessment: predator damage management in southern Idaho. United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, Boise, Idaho, USA.

USDA. 2010. Idaho Wildlife Services wolf activity report fiscal year 2009. United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, Boise, Idaho, USA.

USDI. 1996. Letter from the USFWS to Mark Collinge regarding consultation on predator control activities in northern Idaho (140.0000, 1-4-96-I-103). Letter dated August 14, 1996. United States Department of the Interior, Unites States Fish and Wildlife Service, Boise, Idaho, USA.

USDI. 2002. Letter from the USFWS to Mark Collinge regarding Section 7 consultation for the Idaho WS' predator damage management activities in 34 southern Idaho counties File # 140.0000 FWS # 1-4-02-F-0058. Letter dated March 28, 2002. United States Department of the Interior, United States Fish and Wildlife Service, Boise, Idaho, USA.

USFWS. 1980. Northern Rocky Mountain wolf recovery plan. U.S. Fish and Wildlife Service, Denver, Colorado, USA.

USFWS. 1987. Northern Rocky Mountain wolf recovery plan. U.S. Fish and Wildlife Service, Region 6, Denver, Colorado, USA.

USFWS. 1988. Interim Wolf Control Plan: Northern Rocky Mountains of Montana and Wyoming. Denver, CO. 29pp.

USFWS. 1990. Amendment to the Northern Rocky Mountain wolf control plan to include Idaho and eastern Washington. Denver, CO.

USFWS. 1994. The reintroduction of gray wolves to Yellowstone National Park and central Idaho: final environmental impact statement. U.S. Fish and Wildlife Service, Denver, Colorado, USA.

USFWS. 1999. Interim wolf control plan for northwestern Montana and the panhandle of northern Idaho (excluding the experimental population area). Denver, Colorado. 19pp.

USFWS. 2011. Section 7 consult on the USDA-APHIS-Idaho WS program (TAILS# 14420-2011-F-0079). U.S. Fish and Wildlife Service, Idaho Fish and Wildlife Office, 1387 South Vinnell Way, Suite 368, Boise, ID 83709-1657.

USFWS, Nez Perce Tribe, National Park Service, and USDA WS. 2001. Rocky Mountain wolf recovery 2000 annual report. U.S. Fish and Wildlife Service, Helena, Montana, USA. <http://www.fws.gov/mountain-prairie/species/mammals/wolf/annualrpt00/html/annualrpt2000.html>

USFWS, Nez Perce Tribe, National Park Service, MFWP, IDFG, and USDA WS. 2002. Rocky Mountain wolf recovery 2001 annual report. U.S. Fish and Wildlife Service, Helena, Montana, USA <http://www.fws.gov/mountain-prairie/species/mammals/wolf/annualrpt01/2001report.htm>

USFWS, Nez Perce Tribe, National Park Service, and USDA WS. 2003. Rocky Mountain wolf recovery 2002 annual report. T. Meier, ed. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA. <http://www.fws.gov/mountain-prairie/species/mammals/wolf/annualrpt02/2002report.pdf>

USFWS, Nez Perce Tribe, National Park Service, and USDA WS. 2004. Rocky Mountain wolf recovery 2003 annual report. T. Meier, ed. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA. <http://www.fws.gov/mountain-prairie/species/mammals/wolf/annualrpt03/2003report.pdf>

USFWS, Nez Perce Tribe, National Park Service, MFWP, IDFG, and USDA WS. 2005. Rocky Mountain wolf recovery 2004 annual report. D. Boyd, ed. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA. <http://www.fws.gov/mountain-prairie/species/mammals/wolf/annualrpt04/2004%20Annual%20Report_total_then_acc.pdf>

USFWS, Nez Perce Tribe, National Park Service, MFWP, IDFG, and USDA WS. 2006. Rocky Mountain wolf recovery 2005 annual report. C. A. Sime and E. E. Bangs, eds. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA. <http://www.fws.gov/mountain-prairie/species/mammals/wolf/annualrpt05/2005_WOLF_REPORT_TOTAL.pdf >

USFWS, Nez Perce Tribe, National Park Service, MFWP, IDFG, and USDA WS. 2007. Rocky Mountain wolf recovery 2006 annual report. C. A. Sime and E. E. Bangs, eds. USFWS, Ecological Services, Helena, Montana, USA.

USFWS, Nez Perce Tribe, National Park Service, MFWP, IDFG, and USDA WS. 2008. (Pages 237 -271 *in* C.A. Sime and E. E. Bangs, eds. Rocky Mountain Wolf Recovery 2007 Interagency Annual Report. USFWS, Ecological Services, 585 Shepard Way, Helena, Montana 59601. 275pp.

USFWS, Nez Perce Tribe, National Park Service, MFWP, IDFG, and USDA WS. 2009. Rocky Mountain wolf recovery 2008 interagency annual report. C. A. Sime and E. E. Bangs, eds. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA. <http://www.fws.gov/mountain-prairie/species/mammals/wolf/annualrpt08/FINAL_2008_USFWS_Recovery_Program_Update_3-17-09.pdf>

USFWS, Nez Perce Tribe, National Park Service, MFWP, IDFG, and USDA WS. 2010. Rocky Mountain wolf recovery 2009 annual report. C. A. Sime and E. E. Bangs, eds. U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana, USA. http://www.fws.gov/mountain-prairie/species/mammals/wolf/annualrpt09/FINAL_AR_FWS_2009_Recovery_Program_Update.pdf

vonHoldt, B. M., D. R. Stahler, D. W. Smith, D. A. Earl, J. P. Pollinger, R. K. Wayne. 2008. The genealogy and genetic viability of reintroduced Yellowstone grey wolves. Molecular Ecology 17: 252-274.

vonHoldt, B. M., D. R. Stahler, E. E. Bangs, D. W. Smith, M. D. Jimenez, C. M. Mack, C. C. Niemeyer, J. P. Pollinger, and R. K. Wayne. 2010. A novel assessment of population structure and gene flow in grey wolf populations of the Northern Rocky Mountains of the United States. Molecular Ecology 19: 4412-4427.

WDFG (Wyoming Game and Fish Department). 2007. Final Wyoming Gray Wolf Management Plan. 40pp.

Williams, C. K., G. Ericsson, and T. A. Heberlein. 2002. A quantitative summary of attitudes toward wolves and their reintroduction (1972–2000). Wildlife Society Bulletin 30: 575–584.

Wilson, D. S., K. Coleman, A. B. Clark, and L. Biederman. 1993. Shy bold continuum in pumpkinseed sunfish (*Lepomis gibbosus*) – an ecological study of a psychological trait. Journal of Comparative Psychology 107, 250-260.

Wilson, D. S., A. B. Clark, K. Coleman, and T. Dearstyne. 1994. Shyness and boldness in humans and other animals. Trends in Ecology and Evolution 9: 442–446.

WMC (Wolf Management Committee). 1991. Reintroduction and Management of wolves in Yellowstone National Park and the central Idaho wilderness area. A report to the United States Congress. 31 pp.

Wolstenholmer, R. C. 1996. Attitudes of residents toward wolves in a rural community in northwestern Montana. Thesis, University of Montana, Missoula, USA.

Young, S. P. and E. A. Goldman. 1944. The wolves of North America. Dover, New York/American Wildl. Inst., Washington, D.C.