

APPENDIX E

Summary of Public Comments and Responses

Based on our request for public comments on the predecision Environmental Assessment (EA), we received seven letters from groups and individuals which provided an array of comments. We also received several hundred form letters, some of them personalized, originating from the websites of special interest groups. Based on our review of all of the public comments, we have either clarified or enhanced the analysis in the final EA, or responded to the comments below. The comments are organized according to the content of the EA.

Comments on Chapter 1 - The Purpose and Need for Action

1. Relatively few livestock are killed by predators.

Response: Chapter one, table one shows average loss of 1,563 head of livestock lost per year to predators averaging \$208,887 per year. The commenter cited Baker et al. (2008) who has been added to the EA in the EA in Section 1.1.2 as noting that not all producers will suffer losses from predation, but for those producers who do, those losses can be devastating.

One commenter stated that the EA lacks livestock inventories; however those are included in Section 1.1.2

2. How was it determined that ravens killed three cows. How do ravens kill calves?

Response: Many people are not aware that ravens prey on calves, lambs and even adult cattle and sheep. This can occur when livestock are most vulnerable such as when they are giving birth, are newly born, or when they have an open wound. In the case of the three adult cattle that were depredated by ravens, a WS supervisor arrived at the site and confirmed that ravens had depredated a bull and two cows. The bull had undergone a surgical procedure and ravens had pecked out the stitches and removed about seven pounds of flesh. The bull was then euthanized by the producer. One cow had an abscess by the eye which ravens pecked through, continuing into the brain tissue. The cow had to be euthanized. The other cow had just dropped her calf and while the placenta was discharging, ravens consumed it and then pecked through the cow's birth canal and into her uterus. The cow was euthanized. Newborn calves are often killed by ravens when ravens peck out their eyes or through their umbilical cords or anal orifices.

3. The NWSP is an important program supporting producers. WS should increase management of predation on sage grouse to prevent an ESA listing.

Response: We agree that wildlife damage management is necessary to reduce the potential for devastating losses to those who experience damages. We also agree that sage grouse should

be protected to prevent an ESA listing as discussed in Section 1.1.3. An ESA listing can have serious economic consequences.

4. Habitat enhancement is not conducted by NWSP, it is outside of the scope.

Response: The EA states specifically in Section 1.1.3 that habitat improvement for enhancing game species is outside of the scope of authority and decision making for NWSP. We felt it was important to note that activities to enhance game species survival and success such as habitat restoration and improvements or disease management are implemented by the appropriate land management agencies (e.g. USFS or BLM), in coordination with NDOW, and that these agencies do not rely solely on PDM.

5. Predators should not be removed unless they are a threat to human safety. Too many animals are removed. Predators may become endangered.

Response: The Wildlife Services program is authorized by Congress to provide assistance to the public when wildlife conflict with a variety of human interests which include human safety and health, but also economic and biological resources.

We agree that predators play a vital role in a healthy ecosystem and therefore, program planning, delivery and its effects are carefully monitored and coordinated with wildlife and land management agencies to ensure that ecosystems are not adversely affected. The effect of the program on predator populations and their ability to sustain harvest and other removals is very low, as is evaluated in Chapter 4, effects on target species. The EA used significance criteria established in USDA (1997, revised) to reach this conclusion.

6. Some people oppose the use of tax revenue to benefit livestock, and oppose grazing on public lands. One commenter stated that livestock producers in Nevada do not rely on their grazing income but are hobby ranchers. Some people felt the project would benefit few and not benefit those who value native wildlife. Finally, some of the commenters were concerned about the effects of livestock grazing on wild horses and burros.

Response: Livestock grazing on public land is managed by BLM and USFS and the effects livestock grazing has on the environment is not within the scope of analysis of this EA, nor is it within the scope of authority of NWSP.

NWSP coordinates all of its activities on public lands with the appropriate land and resource management agencies so that its actions do not conflict with multiple use missions of the land management agencies.

A number of comments appear to view grazing as taking precedence over other resources on public lands. NWSP does not manage grazing, and more information can be obtained by contacting public land management agencies. Or, to view a fact sheet on BLM's management of grazing on public lands the reader can visit <http://www.blm.gov/wo/st/en/prog/grazing.html>. The

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section in the EA entitled Authority and Compliance briefly explains the different roles of the cooperating agencies, including the BLM.

One commenter voiced an opinion that NWSP does not address the public's interests in wildlife in a balanced way. The mission and management philosophy of Wildlife Services contradicts this concern. Wildlife Services governing directive of 2001 states,

WS recognizes that wildlife is an important public resource greatly valued by the American people. WS vision is to improve the coexistence of people and wildlife while considering a wide range of public interests that can include wildlife conservation, biological diversity, and the welfare of animals as well as the management of wildlife for purposes of enjoyment, recreation and livelihood.

Although safeguarding agriculture remains a core of APHIS and WS work, the program conducts wildlife disease monitoring and aids in the management of rabies and other diseases transmissible among wildlife, humans, pets and livestock; protects wildlife and people from wildlife-aircraft collisions; reduces conflicts where wildlife have learned to live in close proximity to humans; and protects the environment, including threatened and endangered species, from invasive and from overabundant native wildlife, among other work.

The WS NEPA compliance processes and resulting environmental analyses protect the public's interest in wildlife. They help ensure that WS actions do not jeopardize native wildlife populations or their ecosystems and give the public the opportunity to review and comment on WS proposed management actions, which allows the public full consideration in management decisions.

WS does assist individuals, agencies and organizations with projects to reduce wildlife damage to agricultural resources, however, these services are used by and beneficial to agricultural producers of all sizes

7. The commenter questions the need to protect game species. The EA should include more information on why big game should be protected. What carrying capacity (e.g. how many ungulates the habitat can support) can be achieved, and how is excessive predation defined?

Response: The need to control predation on game species is discussed in the EA under Section 1.1.3. The need is ultimately determined by the agency with management authority over the given game species. As discussed in the EA, a number of factors contribute to declines including weather, habitat, disease and predation.

Variables such as carrying capacity and excessive predation are considered by the managing agency (NDOW) on a project specific basis. The EA does not set the parameters for carrying

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capacity or excessive predation because they vary on a situational basis. These factors are area and time specific. Carrying capacity as well as excessive predation can differ on the same game management unit from one year to the next depending on existing conditions. As discussed in the EA in sections 1.1.3 and 4.2.1.1; biologists with predator management expertise will evaluate possible predation on bighorn sheep and other big game animals to determine whether predation is limiting game populations. While NWSP is usually consulted and works in cooperation with the appropriate managing agency, the final decision is made by the wildlife management agency.

The commenter cites Brown (2009) for the proposition that coyote removal does not increase fawn survival. Although this particular study did not report an increase in fawn survival in mule deer in southwest WY and northeast UT, there are ongoing projects in NV that have shown an increase in fawn survival. Bowers and Spencer, Jr. (2006) show an increase in fawn survival during the first two years of an ongoing project in Eastern NV. Another ongoing project in Western NV has also shown an increase in fawn survival (unpublished data NDOW). The EA mentions in section 3.2.5, a project proposed in NV that would be a collaborative effort between NWSP, NDOW, and Utah State University. As the EA mentions previous studies of this scale are limited to a few examples and are needed in order to determine why predator control benefits mule deer recruitment and densities in some cases but not in others. NWSP welcomes such studies to take place in NV so that data can be collected from habitat within our State which often varies considerably from habitat in other areas of the west.

8. WS misapplied the Pojar and Bowden (2004) study.

Response: As stated in Pojar and Bowden (2004), “The primary objectives of (the) study were to estimate (1) neonatal fawn survival from birth (time of capture) to 14 December, and (2) cause-specific mortality to determine the contribution of summer fawn mortality to December f:d ratios on the Uncompahgre Plateau.” These authors stated “. . . of cause-specific mortality from highest to lowest coyotes were second only to sick/starve.” The study is used in our analysis because it contained habitat similar to that found in parts of NV.

Comments on Chapter 1 - Authority and Compliance

9. WS must follow laws to protect wildlife.

Response: NWSP follows all applicable federal, State and local laws for the protection of wildlife. Please refer to Chapter 1 (Authority and Compliance), and Chapter 3 (Section 3.4, Standard Operating Procedures) for lists and discussion of relevant laws and policies implemented for the protection of wildlife.

10. The EA is improved from 1999 and 2004.

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Response: Thank you for your comments. We have updated the analysis to ensure that the agency continues to make informed decisions about predator damage management in Nevada.

11. NWSP must assess its take in site-specific EAs.

Response: We have provided the take levels of individual animals by county and by land jurisdiction for the latest four years of available records. We have determined that preparation of this EA to address predator damage management statewide in Nevada is appropriate and consistent with lead and cooperating agency mandates and management guidelines. Historically, several EAs were prepared which resulted in similar conclusions, as noted in the EA in Section 1.2, Relationship to other Environmental Documents. Over time, we have determined that it facilitates cooperating agency and public input to view predator damage management from a statewide level. If a determination is made through this EA that the selected action would have a significant impact on the quality of the human environment, then an EIS may be prepared in compliance with NEPA. The NEPA document is reviewed regularly to determine if proposed site-specific actions are consistent with the findings in the EA. In terms of considering cumulative impacts, one EA covering the entire State of Nevada may provide a better analysis than multiple EAs covering smaller zones within the State. Section 1.4.5 further explains why the EA adequately addresses site specific issues and effects.

12. An EIS is needed due to the scope of the project

Response: The EA provides a thorough analysis which is adequate to determine that the effects of the program are not significant and therefore do not trigger the need to prepare an EIS.

13. An EIS is needed because of significant: impacts to predators; benefits to ungulates and other game species; effects on human safety from toxicants; uncertainty over effects of predator removal; public controversy; precedent setting to shift focus from livestock to game species.

Response: The issues raised in the comment relating to effects on predators, program benefits, effects on human safety, have been analyzed in the EA and are discussed in Chapter 4.

Regarding the comment that an EIS is needed due to uncertainty over the effects of PDM, the analysis in the EA has shown that the possible effects on the human environment are not highly uncertain, nor do they involve unique or unknown risks.

Relating to the comment on public controversy, the EA includes a discussion of varied public perceptions (Chapter 4). While some groups and individuals will be opposed to PDM, the effects of the proposed actions are not controversial among the experts.

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One commenter expressed the concern that by conducting PDM to protect game species instead of to protect agriculture, the proposed action will have a significant effect on the environment because it represents a shift in focus for NWSP and would set precedent. The proposed action does not establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration. PDM has been used to protect game animals and other wildlife in the past and fluctuations in program emphasis have been, and will continue to be a part of any PDM program. Wildlife Services is committed to reevaluating its NEPA analyses on a regular basis to ensure that the analysis reflects current, proposed or ongoing programs.

14. An EIS must be prepared to address significant cumulative and connected actions, such as how the effects of the proposed action will affect the environment when combined with the effects from domestic livestock grazing, mining, global warming, and human population expansion, including water allocations for wildlife, and offroad vehicles.

Response: The commenter points out that when the cumulative analysis of a proposed action indicates that the cumulative impact on the environment (which results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions) will be significant, then an EIS is required to analyze that significant cumulative impact. However, our analysis of the NWSP program has not indicated any significant cumulative impact on the environment. We have analyzed the effects of the NWSP program over time (USDA 1997, revised, USDA 1999, USDA 2004, and USDA 2010) and accounted for known and reasonably anticipated and foreseeable mortality of wildlife in the cumulative effects analysis of the program. We have compared these cumulative effects with the affected species population trends, or estimates where they were available. The current and projected population status is the environmental baseline upon which we compare our actions. This includes the result of past, present, and reasonably foreseeable future effects. The past, present and foreseeable future cumulative effects combined with known mortality, have not been significant, and in fact have not contributed to population declines. Thus, there is no need to prepare an EIS

One commenter expressed concerns that the proposal would negatively affect ecosystem services. NWSP's direct, indirect, and cumulative effects on predator populations are discussed in the EA. NWSP plays an important role in supporting efforts to improve ecosystem services while having no significant negative effects on the environment. Some important services that Nevada's ecosystems provides include the production of food and fiber (from supporting livestock, crops and wildlife), and recreation, aesthetics, and cultural heritage.

Global warming is addressed in the EA as an issue not considered in detail with rationale (Section 2.3). WS has followed CEQ guidance on this issue, as described in a February 18, 2010 Memorandum for Heads of Federal Departments and Agencies from Nancy Sutley, Chair, CEQ which issued draft NEPA guidance on consideration of the effects of climate change and

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greenhouse gas emissions in NEPA documents. The EA states that the proposed action would have a negligible effect on atmospheric conditions.

15. An EIS should be prepared followed by site specific EAs.

Response: NWSP has determined that an EIS is not required for the reasons outlined in the FONSI, as evaluated in the EA and as discussed above in response to comment 14. Site specificity has been addressed in the EA, including specifically in Section 1.4.5.

16. The Decision Model does not disclose the specific actions NWSP will take on the ground, therefore the proposal lacks public scrutiny.

Response: All on-the-ground decisions are explained as appropriate (see Section 1.4.5, including reference to examples), and the effects of the program; past, present and reasonably foreseen, (as accounted for in Chapter 4), are adequately evaluated in the EA.

The primary purpose for preparing a NEPA document is to inform and provide the federal agency decision maker and the public with an environmental review and analysis of any potential environmental impacts associated with the proposed federal agency action so the agency may make an informed decision. The EA was prepared to determine if NWSP effects on the quality of the human environment would be significant. Planning for the reduction of predator damage or any other wildlife damage must be viewed conceptually similar to other agencies' actions whose missions are to stop or prevent adverse consequences from future events for which the actual sites and locations could be anywhere in a defined geographic area. Examples of such agencies and programs include fire and police departments or emergency response organizations. Some of the sites where predation or threats of predation could occur can be predicted and are included in the EA to the degree that it is useful, but all specific locations or times where such damage will occur cannot be predicted.

The Decision Model (Slate et al. 1992, as cited in the final EA), and WS Directive 2.105 describe the thought process that guides WS through the analysis and development of the most appropriate individual strategy to reduce damages and detrimental environmental effects from damage management actions within the confines of the EA. As such, decisions made using the model would be in accordance with plans, goals, and objectives of WS, NDOW, USFWS and BLM, USFS and other public land management agencies. No actions will be taken that are not identified in the EA.

Regarding the use of the decision model, dynamic variables encountered in the field will provide specialists with the exacting information necessary to develop management solutions. No damage situation is exactly the same and therefore a cookbook approach is not adequate. The Decision Model (Slate et al, 1992) is still applicable as the standard for professional decision

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making. The EA refers to detailed applications of the Decision Model in UDSA 1997, revised, Appendix N, where the reader can see examples of the model in use.

Section 1.2 describes the many environmental analyses (various EAs and an EIS) that were in place prior to the analysis developed in this EA. This EA is an update of the 1999 NWSP EA and 2004 supplement, and is appropriate for an ongoing program.

17. The public is not engaged since individual agreements are not provided for public scrutiny. Site-specific details should be released to the public and include methods, locations, and environmental values compromised. The WS Decision Model is useless.

Response: WS has a mandate to protect the privacy of its cooperators. Portions of information that directly or indirectly allow third parties to deduce or obtain information leading to the identity of a cooperative agreement holder with USDA would not be publically disclosed pursuant to Section 1619 of the Food, Conservation and Energy Act of 2008 (FCEA). Available records not included in the EA may be obtained under the Freedom of Information Act. See http://www.aphis.usda.gov/footer_items/how_to_submit_a_foia_request.shtml.

Releasing private information would not add to the analysis, since all relevant issues have been addressed in the EA.

In response to the decision model's utility, please see response to comment 16.

18. The EA did not address Individual Indian Allotments.

Response: This comment discussed a failure of the EA to consider Indian land law, and pointed out that Indian Trust lands are not owned by tribes and therefore, the coordination referenced in the EA for tribal lands would be insufficient to reach the potential land users of Individual Indian Allotments which are held in Trust by the BIA. We do not currently have proposed work on Individual Indian Allotments, however, if this were to occur, NWSP would coordinate with the specific tribe, as well as the BIA and take the necessary steps to gain permission for any work on these lands. Additionally, in response to this comment, we have updated section 1.4.2 with the assistance of the BIA.

19. WS did not consult with BLM field offices.

Response: The commenter argues that annual work plans (AWP) were not created with a local BLM office. AWP's are created by NWSP. They do not require approval by BLM, but BLM is invited to participate in discussions to ensure proposed activities do not conflict with land uses. In recent years, work planning meetings have moved from the local field offices to a centralized location. BLM is always invited and may invite all or some local field offices to participate. We have added clarification to the EA in Section 3.4.1.

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20. The EA must meet BLM NEPA requirements

Response: The MOU between BLM and APHIS clearly outlines the responsibilities of both parties. While BLM is a cooperating agency, it is not required to issue a decision on this EA. The MOU states that APHIS, not BLM, is responsible for NEPA on BLM managed lands, and BLM will participate by providing information to assist with the analysis.

21. The BLM NEPA documents on PDM are old and the commenter questions their relevance and the use of BLM land use plans.

Response: NEPA documents had been prepared by the BLM prior to the transfer of NEPA responsibility to APHIS for wildlife damage management to protect livestock on BLM lands in 1995. The BLM EAs are listed for historical perspective only, because they were used as reference material in the NWSP 1999 predator damage management EA, as supplemented in 2004. These documents were superceded by the current EA, but were used as reference materials. The NEPA roles and responsibilities of both BLM and WS in wildlife damage management are outlined in the MOU between the two agencies. The BLM is responsible for cooperating with WS to ensure that wildlife damage management is consistent with FLPMA. This is achieved through BLM's cooperating in both the NEPA and subsequent work planning process as described in the EA.

22. The EA must disclose scientific uncertainty and WS must complete research if there is an absence of information.

Response: New research is only required if there is information lacking relevant to *reasonably foreseeable significant adverse impacts* and the overall costs of obtaining it are not exorbitant (40 CFR 1502.22).

Based on the analysis in the EA, no reasonably foreseeable significant adverse impacts were identified.

WS uses the best available information in its environmental analysis documents, carefully considers all information provided by the public and cooperating agencies during comment periods, or otherwise, and discusses the likelihood of impacts within the documents. In addition, WS generally uses conservative data estimates when a range of data is given, to err on the side of caution. Therefore, in general, there is no issue in WS EAs that would require anything more than consideration of new information as it became available.

23. An EA that tiers to USDA (1997, revised) is inadequate because it is outdated.

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Response: This EA is not tiered to the EIS, but incorporates relevant information by reference.

24. The program gives preference to livestock over wild horses and wildlife thus affecting biodiversity.

Response: The effects on biodiversity are discussed as an issue not analyzed in detail, with rationale, in Section 2.3. Land use and wildlife management decisions are made by other agencies with mandates to manage these resources. Please see Section 1.5 for the description of the authority and mission of our cooperating land and resource management agencies

Comments on Chapter 3 -Alternatives

25. The commenter prefers the current program to be combined with PDM to enhance game species.

Response: Thank you for your comment. We agree that there is a need to protect both livestock and game species as discussed within the Purpose and Need sections in the EA.

26. Let nature solve all wildlife predation problems.

Response: Most often, wildlife is managed to allow for natural predator prey relationships to occur. However, humans have long since altered the natural landscape and by necessity have become stewards of the environment. Many laws and policies now direct governments to balance the management of multiple resources and uses for the benefit of all. This includes resources such as wild horses, native wildlife, endangered species, grazing, recreation and other land uses. When predation and human interests are in conflict, predation management is sometimes necessary.

27. Desires translocation of problem wildlife in lieu of lethal control.

Response: Translocation is not normally advised for the reasons specified in the EA under Section 3.2.1. Problems with translocation of wildlife include low survival rates, spread of disease, effects on resident wildlife and potential transfer of the damage problem (Barnes 1995, Cunningham 1996, Craven et al. 1998).

28. All control actions and verification of predation events should be videotaped and archived and made available to the public.

Response: Trying to videotape all predation and control activities is not feasible and would create an undue burden and expense on all parties involved.

29. Are organized coyote hunts coordinated with WS actions?

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Response: NWSP does not coordinate its activities with organized coyote hunts.

30. The EA should discuss non-lethal methods in more detail, and investigate the use of non-lethal methods by producers.

Response: We have incorporated additional discussion about nonlethal methods used in Nevada in the EA in Section 3.2.1, Predator Damage Management Methods Available for Use, and included a detailed description of producer implemented non-lethal methods used in Nevada in Appendix D.

WS Policy on the use of nonlethal methods. Wildlife Service's commitment to the environment and our responsibility to assist citizens with wildlife-related problems requires that a range of management approaches and alternatives be evaluated and applied. NWSP policy is that preference will be given to nonlethal methods where practical and effective. The use of lethal methods to remove wildlife is sometimes necessary and is usually best understood and supported by those who are experiencing the conflict. The IWDM approach includes the integration and application of all practical methods of prevention and control to minimize wildlife damage. WS personnel provide services via technical assistance, direct-management assistance, or both. Technical assistance and direct-management assistance encompass the use of nonlethal and lethal management methods. Most of these nonlethal methods focus on management of the affected resource and not on the offending animal. In these instances, WS use of nonlethal methods may be limited to technical assistance recommendations which are more appropriately applied by the resource owner. These methods may include the use of livestock guarding animals, the electronic guard or other noise making device, predator-proof fencing, shed lambing, herding, and night penning. The EA contains discussion of non-lethal methods that may be recommended by NWSP, including a discussion of the potential merits and shortfalls as described in Appendix B of the EA.

Producer use of nonlethal methods in Nevada. While no law or policy requires livestock producers to employ husbandry or other predation prevention practices to protect their livestock, all Nevada livestock producers utilize at least one non lethal approach to reduce predation. If improved husbandry or other nonlethal methods is likely to reduce predation on livestock, then WS would recommend these practices. NWSP provides education and information to all new cooperators on non-lethal measures to prevent, avoid or manage predation.

The commenter references a Government Accounting Office (1995) report that investigated the extent to which the WS program's field personnel used nonlethal methods in controlling livestock predators. The results in the four western States evaluated, which included Nevada, showed that field personnel used lethal methods in essentially all instances to control livestock predators because non-lethal methods were already in use by producers. GAO confirmed that its

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inspectors did indeed observe that all livestock operators it visited either had fencing in place or had herders and/or dogs located with their livestock.

The recommendation of the report was that APHIS revise WS written guidance to clarify the role and use of nonlethal methods in controlling livestock predators. WS did this in 1995 shortly after the report was published and the WS guidance now specifies that nonlethal methods for livestock protection are more appropriately implemented by livestock producers. Also, GAO noted that at the field locations GAO visited in the four States selected for review, they observed that livestock operators either had fencing in place or had herders and/or dogs located with their livestock. Thus GAO found that nonlethal methods were in use at all of the field locations they visited.

Techniques such as fencing, frightening devices, and guard animals are traditionally the purview of the livestock producer. These methods are used widely and, when effective (Andelt 1992, 1999), there is little need for additional assistance from WS. When producer efforts fail, WS is usually called upon to resolve the conflict. This can erroneously imply that non-lethal methods are not used or considered by WS, when they in fact are implemented by the producer before any lethal methods are employed.

For more information about APHIS-WS policy on selecting management methods, please visit http://www.aphis.usda.gov/wildlife_damage/directives/directive%202.101.pdf

Specific Non-lethal tools suggested by commenters. Commenters provided literature citations and requested consideration of various methods, to which we respond in the following paragraphs. WS continues to advance the development of non-lethal methods to resolve conflicts between wildlife and humans; 75% of the WS-National Wildlife Research Center's budget is for development of non-lethal methods. WS spent a great deal of effort developing the Living With Wildlife information bulletins among other resources for producers and the general public.

Shivik (2006) reviewed the most current literature on non-lethal methods and new tools for predation management, available from all sources. He reported that 47% of all papers written were by NWRC scientists or their cooperators. NWRC is the research arm of the WS program and thus information and methods become disseminated into the program as applicable.

Lance et al. (2010) and Davidson-Nelson Gering (2010) found positive results from trials using electronic fladry to protect pastured livestock from wolves. Davidson-Nelson and Gering (2010) found that electronic fladry was not effective in deterring coyote predation, however they propose modified applications be tested to determine if there may be applicability to coyotes. Even if electronic fladry were found to be effective at protecting livestock from coyotes, the majority of PDM in Nevada occurs on open range, where fladry would not be permitted.

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The Radio Activated Guard (RAG) was developed by WS researchers and staff (Breck et al. 2002) as a non-lethal alternative to wolf predation management. Similar to electronic fladry, its use is primarily limited to livestock that are in smaller pastures. In addition, predators must be wearing a radio transmitter to activate the RAG.

The commenter proposes that non lethal methods be used prior to lethal methods in a middle ground approach (Lance et al. (2010), and questions the efficacy of lethal methods when considering diverse stakeholders and a broader definition of costs and benefits (Phillips et al. 2004; Berger 2006). Non-lethal tools can be more costly (Shivik 2004, 2006) and are already in use by producers in Nevada. Considering the full range of issues analyzed in the EA, we believe that the proposed action provides the most reasonable approach to resolving damages since it uses an integrated wildlife damage management system, and considers stakeholder perspectives, environmental factors, efficacy and cost.

31. Livestock producers should be compensated for losses rather than use aerial shooting.

Response: A compensation alternative was considered but rejected from detailed analysis. This discussion is contained in the EA at Section 3.3.1.

32. There should be a higher threshold of loss on public lands than on private lands before producers can receive PDM assistance.

Response: WS does not impose a threshold of loss for service recipients.

33. Game predators should not be removed simply to benefit hunters. Only sage grouse protection is justified.

Response: Game management decisions are made by NDOW and their Board of Commissioners, not the NWSP. However, protection of game species does benefit sportsmen, the public and tourism by increasing opportunities for people to commune with nature regardless of their approach. Regarding sage grouse, again this falls under the management and purview of the managing agency NDOW, however we agree with the commenter that protecting sage grouse is justified. The EA contains discussion of the need for predator damage management to protect big game species and sage grouse. The UNR Department of Natural Resources and Environmental Science “Research Serving Nevada” informational brochure highlights additional information for the purpose and need for this issue.

Regarding opposition to hunting on public lands, or program emphasis and benefits to hunters, please see the discussion under comment number 6 regarding land use decisions and WS mission.

34. How does the program target an offending predator?

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Response: Using an example of a mountain lion predation event, mountain lion experts with the program determine the individual offending lion from their extensive knowledge of lion behavior and other biological consideration, coupled with various observations at and around the kill site. For example, the specialist will observe the age, size and shape of tracks at the damage site, placement, size and distance of wound/bite marks on the carcass and other telling information about the kill. Combined with knowledge about territorial behavior based on the sex and age of the lion, the presence of alternate prey, and weather conditions, and a read of the habitat and terrain, NWSP wildlife specialists can usually determine precisely which lion has caused the damage. Using trailing dogs from the depredation site or other capture methods at the most proximate corridor, the specialist can target the individual offending lion.

Similarly, WS specialists apply their knowledge about behaviors, characteristics and environmental factors for other species when determining the species responsible for damages and the appropriate strategy for targeting the offending animal or animals.

35. NWSP should use border collies instead of DRC-1339.

Response: The use of dogs to protect sage grouse leks from ravens is more likely to have similar detrimental effects on sage grouse as ravens. Regarding livestock producer operations, most buckaroos and herders work with dogs and many others have dogs protecting livestock already.

36. Why does nighttime activity occur?

Response: Night time activity is often conducted for surveillance purposes.

Comments on Chapter 3 - Standard Operating Procedures

37. The Endangered Species Act compliance is dated.

Response: NWSP's ESA compliance is up-to-date, however this was not reflected in all sections of the EA. We have revised the EA accordingly.

Comments on Chapter 4 - Environmental Consequences, Target Species

38. A commenter is concerned that the program might be randomly removing large numbers of predators rather than targeting the individual offending animal.

Response: In response to historical damage situations, WS may reduce local populations in an area where livestock are most vulnerable, for example during calving or lambing. In another scenario, when livestock are killed by predators, individual offending animals can often be targeted and removed since predator specific evidence (sign) is left at the kill site which allows the WS specialist to target the individual predator(s) involved.

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The commenter cites Niemeyer (2010) which is a memoir of a former ADC employee in Montana (ADC being the former name of WS). We have reviewed his work and found that his allegations about a Montana program are not relevant to the NWSP.

39. Cougar sport hunting as a method for managing human safety conflicts is not effective. Cougar population dynamics are affected by removals. The EA did not discuss the extent of cougar related human safety conflict resolution.

Response: WS does not use sport hunting to resolve individual conflicts. The need for mountain lion damage management to protect humans is on a case by case basis as threats occur. WS removes very few mountain lions to protect human safety. The analysis in Chapter 4 shows that WS removes approximately 1 percent of the mountain lion population in Nevada, and the cumulative effects is a low magnitude impact when applying significance criteria established in USDA (1997, revised).

40. Predator species are threatened by the NWSP program.

Response: Andelt (1996) and Baker et al. (2008) do not provide evidence of this commenter's claims that PDM in Nevada has contributed to threats to carnivore populations. Baker et al. (2008) discuss predator conflict management from a global perspective and make recommendations for improvements in research. Andelt (1996) provides an overview of predation management and makes mention of historical predator control efforts which have changed much over the past century. This is not a reflection of the existing environment in which today's PDM occurs.

41. Removing mountain lions may result in unintended consequences such as an increase in migration and lion density.

Response: The commenter is concerned that removal of mountain lions from a population can result in an increase in migration from sub-adults particularly when a dominant male is removed; and that this could increase the lion density in an area. The commenter cites Lambert et al. (2006), Stoner et al. (2006), Robinson et al. (2008), and Ruth and Murphy (2010). These authors recommend only targeted removals to benefit bighorn sheep populations, and they recommend that the escape terrain be absent of ambush cover (as the site of relocation), which is in line with the proposed action.

In NV there is a healthy population of mountain lions; this was discussed in the predecision EA, under section 1.1.4 and 4.1.1.1. Due to this healthy population there is often an influx of lions from naturally occurring dispersal, therefore it is unlikely that removing selected individuals will increase migration from sub-adults any more than is already occurring.

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Most of the citations provided by this commenter relating to mountain lion/bighorn sheep interaction provide information suggesting targeted removals to benefit bighorn sheep populations. NWSP agrees with this information and with Murphy and Ruth (2010) which supports the need for action. As stated in the EA and in the response to comments, NWSP targets specific predators on a situational case by case basis. They also recommend that the escape terrain--absent of ambush cover--must be the site of relocation. NWSP agrees and as stated in the EA, relocation is one of many variables that are considered. As mentioned in the EA, while outside of the scope of authority of NWSP, there are other related and ongoing activities to enhance game species survival and success. Activities such as habitat restoration and improvements or disease management are implemented by the appropriate land management agencies (e.g. USFS or BLM), in coordination with NDOW. Predator damage management is not used as a sole tool in enhancing the success of other wildlife species, but is used where the management authority, NDOW, has determined that predation is a limiting factor in the success of the wildlife species of concern, even while other factors are being addressed. Many of the different variables included in NDOW's decision making process are discussed in its Bighorn Sheep Management Plan, 2001.

42. One commenter questions the reliability of mountain lion population estimates.

Response: NDOW is the agency which manages mountain lions in Nevada and is in the best position to provide the population estimate.

43. One commenter cited its own report to abolish the national Wildlife Services program to dispute the use of literature in the EA in discussions about coyotes, black bear, and badger, while it claimed the EA did not rely on peer reviewed literature.

Response: We were unable to respond since this particular comment did not specify which of the many authors it used in its national campaign to make these claims in Nevada. However, we have reviewed specific scientific papers when used by this commenter and have responded accordingly throughout this summary. As listed in the EA, the literature cited is primarily from peer reviewed, scientific journals.

44. A black bear hunting season was not considered in the EA.

Response: The initiation of a black bear hunting season was recently considered by NDOW. The final EA contains this new development. WS take of two black bear per year on average over the past four years is inconsequential. NWSP has evaluated the new bear hunt under the cumulative effects discussion on black bears (EA Section 4.2.1.1, black bear population impact analysis). Due to the low level of mortality of black bears from all known sources (as discussed in the EA), it is not anticipated that the addition of a hunting season will substantially affect the black bear.

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NDOW management which may now include limited hunting, will be aimed at maintenance of a stable population.

45. Why was raven take so high in the 2000s?

Response: As discussed under section 4.2.1.1 of the EA, due to a variety of factors including caching of eggs and egg consumption by ground squirrels, raven take has likely been overestimated (Stahl et al. (2008) and Coates et al. (2007) in the USDA 2011).

46. How are individual offending ravens targeted?

Response: As discussed in the EA, under section 4.2.1.1, by monitoring and pre-baiting, the specialist is able to determine which ravens are offending. As stated in the EA, “The methodology used by NWSP to place treated egg baits is described in Spencer (2002)”.

One commenter asked why ravens were taken in Henderson. The ravens in this location were targeted because they were congregating and feeding in close proximity to juvenile desert tortoise, which are most susceptible to raven predation.

47. The predator population estimates are reasonable.

Response: Thank you for your comment. We have used the best information available and will continue to consider new information as it becomes available.

48. One commenter requests analysis for take by a bounty hunter who is receiving payment for removing lions.

Response: Nevada does not have a bounty on mountain lions. All known forms or mortality are included in the analysis.

Comments on Chapter 4, Environmental Consequences, Non-target Species, Including Threatened and Endangered species

49. How are adverse effects on sage grouse prevented when WS conducts PDM?

Response: Most sage grouse hens nest within one mile of the lek so WS places egg baits for ravens where they are congregating near nests. WS does not disturb or work within the lek and in this way avoids the breeding behavior of the male sage grouse.

50. How does WS avoid negative effects on bighorn sheep?

Response: Predator control is conducted away from herds so that WS does not disturb bighorn sheep. WS has no effect on bighorn sheep habitat. The EA contains detailed discussions of the proposed action to protect bighorn sheep.

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51. The EA did not assess the effects on BLM sensitive species, Birds of Conservation Concern, and BLM's List of Game Birds Below Desired Condition. The EA should discuss rare carnivores and omnivores.

Response: One commenter cited BLM guidance and policy on their management of sensitive species. BLM is responsible for compliance with its guidance and policy. WS has evaluated the potential effects of its program on non-target species in Chapter 4 and all potential direct and indirect effects are discussed. NWSP coordinates activities with BLM and other land and resource management agencies to ensure that it does not conflict with land use plans including the management of sensitive or rare species.

52. There may be secondary effects from DRC 1339 on endangered species and eagles.

Response: The effects of DRC 1339 are largely selective to members of the Corvid family. The commenter refers to a biological opinion on a use of DRC-1339 which is not proposed in this EA and bears little resemblance. The process by which DRC 1339 is broken down in the system of Corvids further reduces the risk of secondary poisoning. Monitoring by the specialist, and the baiting procedures followed by NWSP also minimizes the risk of secondary poisoning. As stated in the EA, The methodology used to place treated egg baits is described in Spencer (2002, in USDA 2011). The potential effects on endangered species has been addressed in the EA, the 2010 ESA consultation in Nevada and in and USDA (1997, revised, in USDA 2011). DRC-1339 has gone through the extensive testing required for registration with the Environmental Protection Agency (EPA), the Federal entity responsible for protecting public health and the environment from the risks posed by pesticides. USDA scientists have conducted numerous additional studies not required by the EPA to refine baiting strategies and reduce nontarget hazards. The preponderance of evidence from dozens of field and laboratory studies supports the conclusion that hazards are minimal to nontarget birds associated with approved uses.

53. Fumigants, coyote control, ATV use and grazing affect the desert tortoise or its habitat. A cost benefit analysis should be developed for work within the range of the desert tortoise.

Response: As discussed in the EA in Chapter 4, NWSP has completed a formal consultation under ESA with the USFWS for program effects on the desert tortoise (2003, as updated in 2010). NWSP follows all required measures to protect the desert tortoise. Although NWSP has observed extreme mature and juvenile desert tortoise depredation events by coyote pups (e.g. greater than 20 decapitations over 20 acres in under a month in 2007), the NWSP does not control coyotes to protect desert tortoise, as that assistance has not been requested. Grazing management is outside of scope of NWSP's responsibilities. See EA at Sections 1.5.1 and 1.5.2. The cost benefit analysis of PDM is contained in the EA, however, a specific analysis for PDM to protect the tortoise is not required.

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54. Aerial hunting should be evaluated in more detail (areas flown, hours flown, number of animals removed) to determine the site-specific effects on wildlife.

Response: As stated in the EA: For acres under agreement where target predators were taken, the average amount of time spent on the different classes of lands was 46 min/mi² flying for private lands, 4 min/mi² for USFS lands, 3 min/mi² for BLM lands, and 396 min/mi²¹ for other lands in during FY 06-09 (USDA 2011). Thus, the average amount of time during any given year that NWSP spends on a given property is minimal. The updated discussion in the final EA at Section 4.2.1.2, effects on nontarget species, includes substantial evidence that effects of overflights on wildlife are not likely to be detrimental.

WS uses highly effective and target-specific aerial operations to protect livestock, crops, and wildlife resources from depredation in vast open and remote locations. WS aerial operations work under the Airborne Hunting Act of 1972 in accordance with applicable Federal Aviation Regulations (FAR Part 91, Part 43, etc.), Public Law, and the Code of Federal Management Regulations (FMR 102-33) that pertain to a Federal agency aviation operation.

Aerial operations are one of the most effective, selective, and environmentally sound methods of lethal management and present a minimal risk to nontarget animals. Aerial operations allow WS to selectively target animals that are preying on livestock or endangered species, are a potential danger to human health and safety, or pose a disease risk to other wildlife. Aerial operations provide effective damage management by addressing specific predation damage in a short period of time. In 2008, the Interagency Committee for Aviation Policy (ICAP) awarded WS a Certificate of Recognition for meeting the requirements of the ICAP Federal Aviation Gold Standard Program.

During FY 2008, aerial operations were conducted by WS in 16 states, and 100% of the animals taken were intentional targets. The considerable analyses of the Air National Guard (1997a, 1997b in USDA 2011)) show that, despite considerable research on numerous wildlife species, no scientific evidence exists that indicates any substantive adverse effects on wildlife populations will occur as a result of any of the types of low-level or other overflights that do or may occur.

55. NWSP did not analyze its non-target take.

Response: We do not expect nontarget effects to increase under the proposed action because of the high level of selectivity of the methods proposed, and because the program is not expected to expand, but instead would divert focus from livestock protection towards game protection. The EA concludes that non-target take would not increase under the proposed action compared with

¹ Other lands include county, tribal, city, municipal and equates to a relatively high flight time per area when compared with private, USFS and BLM lands due to the small parcel sizes.

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the current program (Section 4.2.5.2). Overall, target take is not expected to increase, therefore, nontarget exposure would not be expected to increase. The commenter assumed that target take would increase under the proposed action, and therefore, nontarget take would increase proportionately.

56. NWSP has a duty to conserve species under the Endangered Species Act.

Response: WS may, as requested, use its authority to manage wildlife damage to endangered or threatened species, but may only do so at the request of a land or resource management agency or manager. As required, NWSP does consult with USFWS on any of its activities that may affect listed species, to ensure that its actions do not jeopardize the continued existence of any federally listed T/E species.

57. NWSP must consult with the USFWS under the Endangered Species Act.

Response: NWSP has consulted with the USFWS as described in the EA, and has followed all required measures to protect endangered and threatened species. WS has not taken any endangered species that were not allowed per formal consultation with the USFWS. The comment that a federal wildlife agency must concur with NWSP's "no effect" determination is erroneous. The action agency is not required to consult on its "no effect" determinations.

58. PDM will remove the natural predators of wild horses and burros, resulting in increased horse populations and increased roundups. Allow predators to control wild horses instead of removing horses through gathers.

Response: Mountain lions can affect wild horse populations in some cases from predation on foals (Turner and Morrison 2008), where in others there is no apparent predation effect (Eberhardt and Majorowicz 1982). Predation is not an effective means of managing wild horse populations in Nevada. Nevertheless, the analysis in the EA shows that healthy native predator populations are maintained in Nevada. There is substantial discussion of the indirect effects of predator damage management in the EA, and no shortage of predators. In addition, NWSP does not conduct PDM to protect wild horses from predators.

59. Other comments on wild horse management include opposition to the use of contraceptives in wild horse herds, and effects of wild horses on natural resources. Some people expressed comments in general opposition to BLM decisions about wild horse management.

Response: BLM develops policies and makes decisions on how to manage wild horses and burros. NWSP does not manage wild horses; however, NWSP does consider the effects of its program on wild horses and burros, for example in the EA in sections 3.4.2.2 and 4.2.1.2.

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Many comment letters came from individuals supporting wild horse protection groups. These commenters may find helpful information in a December 2010 Inspection Report on the BLM's Wild Horse and Burro Program, issued by the United States Department of Interior's Office of the Inspector General. Interested readers can download or view the document at this webpage: <http://www.doioig.gov/images/stories/reports/pdf/BLM%20Wild%20Horse%20and%20Burro%20Program%20Public.pdf>

Or BLM Wild horse and burro program, myths and facts, available at: http://www.blm.gov/wo/st/en/prog/wild_horse_and_burro/national/about/myths.html

Comments on wild horse management should be directed to the appropriate land management agency.

60. The conclusions on the effects of aerial shooting on wild horse and burrow herds, and on foaling, are unsubstantiated in the EA.

Response: The EA contains ample discussions of the effects of aerial overflights on wild horses in Section 4.2.1.2. In addition, the EA notes that it is program policy to avoid wild horse and burro herds, and to maintain a distance of at least ½ mile from herds seen during the foaling season.

61. BLM has killed off wild horse predators with hunting permits. Wild horses and predators were historically in balance. Mountain lions will keep wild horse populations down.

Response: BLM activities do not include issuing hunting permits. The history and management of wild horses are not within the scope of this EA. The analysis in Chapter 4 clearly shows that predator populations are not substantially affected by the proposed activities. Mountain lions are individually targeted only when NWSP is asked to assist with alleviating lion predation on local populations of wild ungulates, threats to human safety, or predation on livestock – mountain lions are not targeted to protect wild horses. The EA shows that the programs' effect on mountain lions is well below any level that would cause a decline in the population. Therefore, even if a mountain lion(s) were affecting a local wild horse or burro population by killing foals, WS would not be involved with removing those lions.

62. NWSP should increase protections for California condors.

Response: WS implements all measures required by the USFWS to protect California Condors from program activities. WS complies with the USFWS Biological Opinion and Informal Consultation (October 2010).

63. The EA should discuss the indirect effects from using lead ammunition. Eagles and other scavengers may ingest lead fragments.

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Response: The Nevada EA includes discussions about the concerns of lead ammunition, and the measures that NWSP is taking to reduce the potential for negative consequences.

NWSP uses non-toxic shot from aircraft operations.

A WS analysis in Colorado (USDA 2005, in USDA 2011) determined the amount of lead deposited from the Colorado WS program was inconsequential (about 1 oz. of lead/5 acres of land) and it would take hundreds of thousands of years to reach a level considered hazardous by EPA. Avian scavengers are at highest risk from lead poisoning. However, the Breeding Bird Survey data (Sauer et al. 2008, in USDA 2011) indicates the raptors and corvids, found in the United States, all are increasing with the exception of a few such as the Northern Harrier and American Kestrel (species not anticipated to scavenge as much as others).

WS is unaware of any accidental take of raptors by the WS program from lead poisoning. Most concern in the literature points to recreational shooting of prairie dogs and ground squirrels, and gut offal from deer and elk hunting as having the greatest potential to impact scavenging birds. WS consults with USFWS on listed species and considers the use of lead ammunition in these consultations, and follows measures to reduce impacts.

64. How will adverse effects on wolves be prevented?

The EA discusses that NWSP has consulted with the USFWS. Measures would be taken as disclosed the 2010 consultation with the USFWS to minimize the potential for harming any wolves. The FWS determined that the NWSP would not be likely to adversely affect wolves in Nevada.

65. Hunters cannot control prey species in the absence of sufficient predators.

Response: Predator populations in Nevada are, and are expected to remain healthy.

66. Predators remove sick individuals where hunters remove trophy game. Therefore, disease would spread among prey species and prey species would die out.

Response: The notion that predators only remove weak individuals is not valid. Hunting is closely monitored by NDOW. Disease is managed by NDOW.

67. Social disruption of carnivores increases damage opportunities when new offenders move into an area.

Response: Generally, the dominant breeding coyotes are involved in predation on livestock and wild ungulates when reproduction increases energy demands. Younger coyotes are not generally involved in attacks on large ungulates (Gese and Grothe 1995). NWSP implements most of its PDM to protect livestock and wild ungulates when it is most effective; after the dominant and

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territorial patterns of coyotes have been established, but before whelping, to reduce the predation effect, but late enough in the season to prevent new breeding coyotes from establishing and producing offspring in that season (Knowlton 1972 in USDA 2011; Connolly 1978 in USDA 2011; Knowlton et al. 1999).

NV has a healthy population of mountain lions; this is discussed in the EA under sections 1.1.4 and 4.2.1.1. Due to this healthy population there is often an influx of lions from naturally occurring dispersal. It is unlikely that removing selected individuals will increase migration from sub-adults any more than is already occurring.

68. Removal of coyotes causes mesopredator release and a decline in biodiversity.

Response: Mesopredator release is the theory that the removal of larger predators such as the coyote in an area will allow smaller predator populations such as skunk and fox to increase which, therefore, impacts many of the small mammal and bird populations. While the phenomenon of mesopredator release has been documented in the absence of larger predators, this phenomenon would not likely result from APHIS WS PDM efforts. As evaluated in Chapter 4, under the section on impacts to target species, NWSP removes only a minor portion of the coyote population during programs to reduce predation on livestock and natural resources. Given the capabilities for rapid coyote repopulation of areas following localized control and sport harvest actions, we do not anticipate substantial impacts on other predator/omnivore populations (e.g. skunk, raccoon, and fox). Studies suggest coyote territories would not remain vacant for very long after the coyotes are removed. Gese (1998) noted that adjacent coyote packs adjusted territorial boundaries following social disruption in a neighboring pack, thus allowing for complete occupancy of the area despite removal of breeding coyotes. Blejwas et al. (2002) noted that a replacement pair of coyotes occupied a territory in approximately 43 days following the removal of the territorial pair. Williams et al. (2003) noted that temporal genetic variation in coyote populations experiencing high turnover (due to control) indicated that "...localized removal did not negatively impact population size..." Therefore, we believe it would be unlikely for APHIS WS coyote removal actions to lead to indirect increases in mesopredators.

The commenter provided a number of literature citations to support the claim that coyote removal would cause mesopredator release and result in a decline in biodiversity Mezquida (2006), Crooks and Soule (1999), Henke and Bryant (1999) and Berger et al. (2008). We have reviewed the literature and found that most of the study results and discussions were not highly relevant to the environment in Nevada, or to the project scope and intensity.

69. Coyotes provide indirect benefit to sage grouse.

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Response: There are studies suggesting removal of coyotes may increase red fox populations (which would imply mesopredator release). This may be detrimental to sage grouse as red fox are efficient sage grouse predators. However, aside from an occasional individual coming in from other States, NV does not have a substantial red fox population. Therefore, coyote predation would not affect the red fox population in NV and would not, therefore, indirectly increase red fox predation on sage grouse. In addition, NWSP primarily removes ravens to protect sage grouse in NV, not coyotes.

Comments on Chapter 4, Environmental Consequences, Humaneness of Methods used by NWSP

70. NWSP indiscriminately kills as many animals as possible (e.g. coyotes) while ignoring their welfare. The EA must evaluate good death (euthanasia), not just rely on AVMA guidelines.

Response: When implementing management activities, WS evaluates all potential tools for their humaneness, effectiveness, ability to target specific individuals as well as species, and potential impacts on human safety. The American Veterinary Medical Association (AVMA 2007, as cited in the final EA) also recognizes that “for wild and feral animals, many recommended means of euthanasia for captive animals are not feasible. The panel recognized there are situations involving free-ranging wildlife when euthanasia is not possible from the animal or human safety standpoint, and killing may be necessary.” AVMA states that in these cases, the only practical means of animal collection may be gunshot and lethal trapping, and that personnel should be proficient, and use the proper firearm and ammunition. WS policy and operating procedures conform to these guidelines, and the WS program recognizes the importance of careful decision-making regarding use of lethal methods.

The 2007 AVMA report is considered to be the best available since the AVMA convened a panel of scientists to periodically review all literature that scientifically evaluates methods and potential methods of euthanasia for the purpose of producing the AVMA Guidelines on Euthanasia. The guidelines are based on a thorough evaluation of the available science and require Executive Board approval.

Because of concerns for the welfare of individual animals and limitations of field application of the AVMA (2007, as cited in the final EA) recommendations, the National Wildlife Control Operators Association (NWCOA) initiated a review to identify the most humane and practical forms of euthanasia (Julien et al. 2010). Based on their review of the scientific literature and input from a panel of professional wildlife damage management experts and representatives from the animal rights community, euthanasia methods were ranked based on a number of criteria

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including the time required to induce consciousness and safety to the operator. Of eight methods of euthanasia evaluated, ranking most preferred to least were: carbon dioxide, cervical dislocation, decapitation, carbon monoxide, gunshot, barbituric acids, and finally penetrating captive bolt and acetone which scored the same for lowest preference. All methods have advantages, disadvantages and limitations in field application. Wildlife specialists use the Decision Model (Slade et al. 1992, in USDA 2011) to select for the most humane form of control, and when euthanasia is feasible, select the most appropriate method based on applicability to field conditions. Typically, gunshot is the most commonly used method, and every attempt is made to ensure a rapid death occurs to minimize suffering.

WS has played an important role in the development of improved methods for humane wildlife capture, including support for the testing and establishment of trap standards and development of Best Management Practices for trapping. Furthermore, in the last decade the majority of studies on traps and new capture techniques were carried out by WS NWRC scientists. The American Association of Wildlife Veterinarians (AAWV) and The Wildlife Society (TWS) consider trapping an acceptable tool in wildlife management, stating “The capture and handling of wildlife is necessary for wildlife conservation, research, disease surveillance, and management, as well as to protect property and human and domestic animal health. Foot-hold traps are important tools for achieving these objectives and, when used properly, are humane, safe and practical.” Further, TWS asserts the following in its Position Statement on Traps, Trapping, and Furbearer Management; “Trapping is a primary tool of most animal damage control programs and an important technique in wildlife research. In some situations, trapping is important in furbearer management and the management of other species and can be effective in reducing or suppressing wildlife diseases.”

Regarding the comment that WS kills as many animals as possible, see response to comment 3-4.

As authorized by the Airborne Hunting Act and state laws permitting these activities under the Act, WS conducts aerial hunting for those species allowed by state laws. Virtually all animals taken by WS with aerial operations are intentionally taken target species. The take of animals with aerial operations, a tool in wildlife damage management to resolve predation and other problems, has been an effective means to resolve damage issues. As noted in the EA, Connolly and O’Gara (1987, in USDA 2011) documented the efficacy of aerial operations in taking confirmed sheep-killing coyotes and Wagner (1997, as cited in the final EA) found that aerial hunting may be an especially appropriate tool as it reduces risks to nontarget animals and minimizes contact between damage management operations and recreationists. WS may use aerial hunting to reduce predation losses in areas where predation of livestock and wildlife, especially lambing, calving, and fawning areas, has historically been high.

71. Wild horse and burro roundups are not humane.

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Response: Many of the form letter comments were directed to the management of wild horses, which is outside of the scope of this EA. The commenters primary assumption appears to be that there is a strong relationship between PDM to protect wildlife and livestock, and hunting and grazing on public lands as major contributors towards the need for horse and burro roundups. PDM has little effect on wild horses as is analyzed in the EA. Land use decisions such as grazing and hunting are not within the scope of WS authority.

72. Predators have rights and the program is not humane.

Response: Ethical considerations including animal rights and humaneness are discussed in detail in the EA in Section 4.2.1.3.

73. A graphic photograph of a stack of mountain lion heads was used in some form letters.

Response: This photograph was not taken by WS. It was taken by a former employee of another State's wildlife management agency, against the agency's policy. The State agency's policy at the time required that mountain lion heads be removed from all hunting and depredation take, to be turned in to the agency for record keeping purposes. The photograph has no bearing on the attitudes, policies, or practices of NWSP.

We believe that the groups posting the photograph used it to make a connection between issues involving PDM and the need for wild horse and burro roundups. Understandably, many individuals were outraged with the image and believed the websites to be reliable sources of information. Please see other comments relating to the effects of the program on Nevada's wild horses and burros.

Comments on Chapter 4 Environmental Consequences, Public Safety and the Environment

74. M-44 and Compound 1080 have negative effects on human safety.

Response. Sodium fluoroacetate (used in Compound 1080) is not proposed for use in Nevada.

In a January 16, 2009 letter from EPA's -Office of Pesticides Programs Director (hereby incorporated by reference), EPA stated that it found that M-44 and 1044 did not show unreasonable adverse effects on the environment or human safety. Furthermore, EPA found the M-44 would be more selective for target animals than lethal alternatives, which would be necessary in the absence of M-44s since non-lethal methods were likely to either already in use or were deemed to be ineffective. The EA describes that under the current program, non-lethal measures are always considered first and lethal methods are only used when professional

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judgment indicates that they are necessary to stop or prevent damage. M-44 devices pose a minimal risk to nontarget species and the environment.

75. Ground fires and fuel/oil pollution will result from aviation accidents.

Response: WS use of aircraft is highly effective, selective, and environmentally sound.

WS use of aircraft is quite different from general aviation (GAV) use. The environment in which WS conducts aerial operations is inherently a higher risk environment than that for GAV. Low-level flights introduce hazards such as power lines and trees, and the safety margin for error during maneuvers is diminished. WS has implemented an Aviation Safety Program to support aerial operations and recognizes that an aggressive overall safety and training program is the best way to prevent accidents. While the goal of the aviation program is to have no accidents, accidents may still occur, especially those involving mechanical failure. WS agency pilots and contractors are highly skilled with commercial pilot ratings and have passed proficiency tests in the flight environment encountered by WS. WS pilots, gunners, and ground crews are trained in hazard recognition and shooting is only conducted in safe environments. Federal aviation regulations require pilots to fly a minimum distance of 500 feet from structures and people, and all employees involved in these operations are mindful of this. Because of the remote locations in which WS conducts aerial operations, the risk to the public from aviation operations or accidents is extremely minimal. WS will continue to strive to further reduce these, thereby minimizing potential risks.

Comments on Chapter 4, Environmental Consequences, Cost Effectiveness

76. Nevada's socioeconomic issues were not considered.

Response: The EA evaluates those social and economic issues which are relevant to the analysis, as identified in section 2.2, and analyzed in Chapter 4.

77. PDM is necessary to help support Nevada's long term economic viability and contributions of ranching, farming, hunting, and recreation. EA adequately analyzes impacts in a balanced way that benefits multiple use perspectives.

Response: Thank you for your comment.

78. The NWSP is not cost effective. NWSP spends more to kill predators than the value of the damage caused.

Response: These statements are not correct. A discussion of the need for the program which shows that verified and reported losses to the WS are not representative of total losses is

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contained in Chapter 2. Analysis of the costs and benefits of the program are provided in Chapter 4.

In 2001, the Government Accounting Office submitted a report entitled, “Wildlife Services Program, Information on Activities to Manage Wildlife Damage,” to the Senate and House of Representatives. The report, based on a review of the program, visits to regional, state and research offices, and meetings with employees and partners, provides insight into the issue of development of a cost benefit analysis for a wildlife damage management program that is designed to prevent future damage as well as react to it. The U.S. General Accounting Office further reported that, “*Some groups that take issue with WS activities suggest that its programs are not cost-effective because the money spent on livestock protection exceeds the value of the losses*” that occurred prior to APHIS WS activities. Correct economic analysis considers prior and prevented losses. Regarding APHIS WS analyses, the report stated, “*The most comprehensive study, issued in 1994, concluded that the WS current program, which uses all practical methods (both lethal and nonlethal) of control and prevention, was the most cost effective of the program alternatives evaluated.*” The GAO recognized that inherent difficulties bedevil any attempt to quantify the costs and benefits of a program designed to prevent damage. Key among these difficulties are (1) projecting the degree of losses that would have occurred absent the program, (2) valuing those losses, and (3) valuing the program benefits. The report states that it may be misleading to focus only on the value of losses that occur with a control program in place and to disregard the value of the damage that is prevented by the program.

Additional and more recent studies are included in the EA in Chapter 4 and show that benefits exceed costs.

79. The cost/benefit analysis should include the cost or value of lost predators.

Response: The commenter provides an example of a lion hunt valued at up to \$ 10,000 per lion (based on trophy hunt cost) should be used per lion removed. Another example suggested was to place a value of \$100 per coyote (or pelt price) for coyotes removed, multiplied by the number of coyotes removed, to show value lost to balance benefits provided.

Hunting is an important tool used by NDOW to manage populations of some species. However, hunting is often not a practical tool that can replace PDM since hunters do not generally target predators when and where assistance is needed to manage damage. Therefore, the value of a hunting tag does not necessarily diminish the value of the services provided by NWSP.

80. One commenter proposed a formula to determine the program’s cost:benefit ratio.

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Response: All environmental issues relevant to proposal have been evaluated. The formula provided by this commenter brings in environmental factors that are not affected. See response to comment on cost benefit analysis.

81. The cost:benefit analysis should include the costs of grazing.

Response: Decisions and analysis relating to whether or not grazing should occur are outside of the scope of NWSP's authority.

82. Cost to benefit discussion should include program operating costs and disclose the amount spent on private vs. public lands.

Response: There is substantial discussion of the benefits from predation damage management provided in the EA. Since the majority of lands in Nevada are public, the majority of expenditures occur on public lands.

83. The NWSP is not effective because the sheep industry has declined over time. The commenter cites Berger (2006) to dispute the efficacy of the national WS program and claims other authors found there was no correlation between the number of coyotes killed and the number of lambs lost.

Response: The commenter cites Berger (2006) who stated that "If predation losses are the primary cause of the sheep industry's decline, then control, as practiced, has not been successful at reducing predation losses to the level necessary to make sheep ranching economically viable." The EA does not claim that predation is the primary cause of the industry's decline. As noted by this author, a number of factors have contributed to declines in the industry, most importantly, market factors. The goal of the WS predation management program is to influence or reduce the number of sheep and lambs killed by predators. This commenter alleges that there is "No correlation between number of coyotes killed and number of lambs lost" citing (Knowlton et al. 1999, and Mitchell et al. 2004). We found the commenter erred in its conclusions. Contrary to the commenter's allegation, Berger (2006) did report a beneficial correlation between the number of coyotes removed and the number of lambs lost. Bekoff and Gese (2003) include conclusions from various studies which have shown that sheep losses to coyotes were substantially lower where there was predator control. The commenter also incorrectly cited Mitchell et al. (2004) and Knowlton (1999). These authors do question some studies but neither draws the conclusion cited by the commenter. Knowlton et al. (1999) acknowledge that preventive control has merits and can be used as a temporary measure to benefit operations where other approaches to PDM are infeasible.

84. WS program benefits are short lived due to coyote immigration into unoccupied territory.

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Response: PDM is intended to solve immediate damages to the current year's calving or lambing seasons, or when wildlife are most vulnerable to predation. Due to the coyote's ability to rebound after exploitation, effects on local coyote populations are indeed short lived. When predation is chronic, PDM assistance may be required in subsequent years. However, in many instances, predation is relieved with control actions and benefits are not "short lived".

85. EPA failed to show benefits of M-44 and Compound 1080 to the livestock industry.

Response Based on a petition filed to ban these toxicants, EPA evaluated the registrations and denied the petition. Compound 1080 is not proposed for use by the NWSP.

Comments on Chapter 4, Environmental Consequences -Special Management Areas

86. The program will negatively affect wilderness.

Response: The effects of the proposed project on recreation (including hunting and non-consumptive uses) are discussed in Chapter 4, including under Section 4.2.1.4. The effect on wilderness is discussed in the EA in Chapter 4, including Section 4.2.1.7. Users of wilderness areas are unlikely to encounter PDM activities. Predator populations in Nevada remain healthy and the magnitude of impact on populations, as discussed in Chapter 4, including Section 4.2.1.1, is low.

87. It is illegal to use PDM tools in Wilderness Areas.

Response: One commenter alleges NWSP violates the Wilderness Act by conducting prohibited activities in designated Wilderness. There is no basis for this claim. NWSP does not conduct prohibited activities in Wilderness Areas, such as the use of ATVs or landing aircraft. See Section 1.5.2, compliance with Federal Laws, Section 3.4.2.7 and issue and analysis throughout Chapter 4, Special Management Areas. See also response to comment 87.

88. Motorized activity may disturb sensitive areas and introduce weeds, cause erosion.

As discussed in the EA, NWSP coordinates its activities with land management agencies to identify any areas where special precautions should be taken. In addition, WS uses existing roadways in Special Management Areas as noted in Section 3.4.2.7.

Comments on Chapter 4, Cumulative Impacts

89. The EA must evaluate the cumulative effects of aerial overflights.

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Response: The EA contains substantial discussion of the cumulative effects of aerial overflights. See response to comment 54.

90. The scope is too narrow for a cumulative effects analysis of each species.

Response: This commenter requested an assessment of cumulative impacts from geothermal development, and recreational vehicle road creation and habitat fragmentation effects on kit fox habitat. Another example was provided to discuss the cumulative impacts of prescribed burns, wildfire, vegetation treatments, and habitat fragmentation in the pinyon juniper habitat on gray fox. The cumulative effects analysis looked at available population information and known sources of mortality. Habitat management is outside of the scope of analysis. See also response to comment number 14.

91. Cumulative impacts must include indirect effects of mountain lion removal (prey, habitat and non-target species).

Response: EA section 3.4.2.1 describes methodology for cumulative impact analysis. Chapter 4 contains cumulative effects analysis. See also section 2.3, Issues not evaluated in detail, with rationale.

92. Large carnivores are threatened in North America and the world.

Response: The EA presents substantial evidence that the NWSP does not threaten the viability of any large carnivores in Nevada. We did not include Burdett et al., (2010), as requested by the commenter because this is a study of the effects of human development in Southern California on mountain lion habitat because although habitat and land use management agencies may find useful information in this paper, the human population densities in Southern California and Nevada are vastly different. Additionally, California mountain lions are un hunted; California and Nevada are separated by a wilderness corridor that by law cannot be developed. So immigration from CA to NV will continue; Oregon has a mountain lion population, that despite the banning of hunting with hounds or trapping, is large enough (abundant) that wild ungulate sport hunters in Oregon commonly harvest lions during their hunts, so immigration from Oregon is likely to continue; additionally, NV has a very high ratio of federal (BLM and FS) public land to private land which does not resemble the Burdett et al. 2010's study area.

Berger et al. (2001) focused on a chain of ecological interactions that occurred when humans decided to eliminate wolves and grizzly bears in the Greater Yellowstone ecosystem and is not highly relevant to the analysis in Nevada. However, it may support the need for action in its discussions that large carnivores can limit populations of ungulates in some cases. As stated in previous responses, NV does not have adequate habitat or prey base for grizzly bears or wolves. Furthermore, NWSP does not intend to, nor does it, negatively affect predator populations.

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Furthermore, Berger et al. (2001) point out that their data is specific to a system in the Rocky Mountains, and offers a basis for conservation planning. The specific study is not highly applicable to the environmental conditions (differing species, habitats and management approaches), and program effects in Nevada.

As discussed in the EA in Chapter 1, WS is responsive to agencies with management responsibilities for wildlife. The management decisions made by the agencies requesting WS assistance include prey composition, distribution, abundance and other variables. These factors are all considered by the managing agency as well as NWSP before initiating protection efforts. However, it does make a strong argument for the use of hunting as a sound management tool to be used by managing agencies to balance ecosystems.

Currently in NV, the damage being caused to riparian areas is the result of feral horses and feral pigs. Both of which are not native to NV.

Ritchie and Johnson (2009) is an overview of literature related to predator interactions, mesopredator release and biodiversity conservation. The authors conclude that more research needs to be conducted to fully understand these different variables. As stated above, NWSP agrees that research is important. Research for Wildlife Services is conducted at the national level through the National Wildlife Research Center Field Stations. This overview of literature looked at 61 studies, of which only 20 were from America. From the 20 studies from America, only 12 of which involved species interactions which could possibly resemble interactions occurring in NV. When possible, NWSP uses data from species and habitats that at least resemble NV in some form or another.

93. The EA should discuss the cumulative effects on sage grouse.

Response: The EA notes various reasons for the decline of sage grouse over its range. Further, it notes that habitat improvement is outside of the scope of analysis of the EA, but those and other important efforts are mentioned to show how other efforts that provide long term benefits to sage-grouse populations are a high priority for multiple land management agencies (EA at Section 1.1.3, sage grouse). NWSP is expected to benefit sage grouse by removing ravens, but is not expected to contribute to any decline. The commenter claims that WS kills coyotes and other carnivores to protect grouse which is not the case. The commenter provided a number of citations which primarily focus on sage grouse habitat and the historical or current effects of grazing management on that habitat (Aldridge et al. 2003, Barnett and Crawford 1994, Beck and Mitchell. 2000, Coggins 1998, Connelly and Braun 1997, Connelly et al. 2011, Hagen 2011, Knick et al. 2003, Mack and Thompson 1982, Miller et al. 2011, Rich et al. 2005, van Kooten et al. 2007, Weaver et al.1996, and Wisdom et al. 2005). The commenter in some cases misrepresented the findings of these authors. In others, we have considered but not included the

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literature in the analysis since it was not relevant to conditions in Nevada, and we had better available information in the EA. Finally, some of the studies may be appropriate for aiding wildlife and natural resource agency managers with making management decisions, however habitat improvements, grazing and other land uses are not within the management authority of NWSP.

94. How can the proposed action and the current program, with lethal control of wildlife, be less harmful than not killing predators?

Response: We acknowledge that NWSP would have less of an effect on individual target animals if it took less of them, however, effects on target species are still expected if NWSP were not involved. The State of Nevada would remove target predators to protect game species (as clearly stated in the EA at Appendix C), and private individuals would have a need and incentive to protect their livestock. Non-lethal methods that are effective in preventing or minimizing predation are already in use by Nevada's livestock producers (EA at Appendix B and newly added appendix D). Many of these individuals would lack expertise. Therefore, overall, this would be likely to result in an increased negative environmental consequence on target and non-target species as discussed in detail in USDA (1997, revised) as well as in Allen et al. (1996), and Berny (2007).

Other Comments

95. Wild geese were not included in the analysis.

Response: Geese are not affected by actions proposed in the predator damage management EA.

96. Several comments focused on effects on wolves in the northern Rockies.

Response: These comments are not relevant to the NWSP proposed action since NWSP is not proposing to take wolves. WS has consulted with the USFWS regarding potential program effects on wolves if at some future time they were to enter Nevada.

97. The literature used in EA is outdated.

Response: Many studies used in the EA are landmark studies. However, based on suggestions made by the public, the EA has been further updated and relevant new information has been added. Responses to the suggested literature are contained herein.

98. Discuss the effects of beaver removal on watersheds.

Response: Beavers are not targeted under the proposed action or alternative. The EA shows that almost no beaver were taken as nontarget animals (0.25 per year on average).

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99. One comment concerned the use of alpha chloralose.

Response: Alpha chloralose has been removed from the list of potential methods in the EA (Appendix B) - it is not method used to manage predator damage.

100. One commenter disputed the long term benefits of predator control.

Response: A commenter cites Mosnier et al. (2008), stating that intensive control measures failed to help an endangered caribou population in the long term because the effects of control actions were short lived. This study evaluated the mobility of coyotes and bears and determined that mobility combined with alternative food sources were factors in causing the predators to repopulate the control area. The authors recommended that control operations continue, and that other measures such as increased hunting and reduction in predator food sources be considered in the control strategy to enhance the success of the predator control actions.

NWSP is not providing PDM to benefit endangered ungulates at this time. The goal of NWSP's activities is to provide benefit when it is most needed, most often only on a short term basis, for example to enhance fawn or calf survival until young are less vulnerable to predation. Similarly, livestock protection is most needed to protect birthing females and young livestock when they are most vulnerable to predators. NWSP does not strive to remove predators from any area on a long term basis. This author's findings provides support to the conclusion that the program does not generally affect localized predator populations beyond a temporary basis, and therefore this commenter's claim that the program causes mesopredator release and trophic cascades, are unfounded.

101. A commenter alleged that NWSP kills mountain lions with aerial shooting.

Response: This claim was investigated and proved to be false. NWSP has not, and will not shoot mountain lions from aircraft.

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