State of Washington
Department of Fish and Wildlife

Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

July 28, 2011

Dear Interested Parties:

The Washington Department of Fish and Wildlife (WDFW) has published a Final Environmental Impact Statement (FEIS) titled: Final Environmental Impact Statement (EIS) for the Wolf Conservation and Management Plan for Washington. The plan has been developed to guide recovery and management of gray wolves as they naturally disperse into the state and reestablish a breeding population.

The Recommended Wolf Conservation and Management Plan will be provided to the Washington Fish and Wildlife Commission for consideration at their August 4, 2011 meeting in Olympia, Washington. The Agenda for that meeting is found on the following link: http://wdfw.wa.gov/commission/meetings/2011/08/agenda_aug0411.html.
The Commission has scheduled three more special meetings to discuss the recommended Wolf Conservation and Management Plan and take public comment. Those meetings are tentatively scheduled for Aug. 29 in Ellensburg, and Oct. 6 and Nov. 3 in Olympia. Final action on the plan is expected to occur at the December 2011 Commission meeting.

The Draft EIS underwent public review from October 5, 2009 to January 8, 2010. Nearly 65,000 people provided comments on the plan. With consideration of all comments received, WDFW has prepared this Final Environmental Impact Statement in compliance with the State Environmental Policy Act (SEPA) and other relevant state laws and regulations.

MAJOR CONCLUSIONS

This is a phased non-project review proposal. Phased review allows agencies and the public to focus on issues that are ready for decision and excludes from consideration issues that are already decided or are not yet ready.

The wolf is listed as an endangered species by the State of Washington, and the Wolf Conservation and Management Plan serves as the state recovery plan for the species. The goals of the plan are to: (1) restore the wolf population in Washington to a self-sustaining size and geographic distribution that will result in wolves having a high probability of persisting in the state through the foreseeable future, (2) manage wolf-livestock conflicts in a way that minimizes livestock losses, while at the same time not negatively impacting the recovery or long-term perpetuation of a sustainable wolf population, (3)

maintain healthy and robust ungulate populations in the state that provide abundant prey for wolves and other predators as well as ample harvest opportunities for hunters, and (4) develop public understanding of the conservation and management needs of wolves in Washington, thereby promoting the public's coexistence with the species.

AREAS OF CONTROVERSY AND UNCERTAINTY

Recovery Objectives – the plan establishes recovery objectives to achieve a self-sustaining population, distributed throughout a significant portion of the historic range in the state, per WAC 232-12-297 (Endangered, threatened, and sensitive wildlife species classification). Fifteen breeding pairs, which represent an estimated 97-361 wolves, are considered minimal to achieve recovery. Several components of the delisting objectives serve to reduce the risk to long-term viability of a wolf population in Washington, including: the geographic distribution requirements across three recovery regions, the use of successful breeding pairs as a measurement standard, and a three-year requirement for maintaining population robustness on the landscape. The WDFW also conducted a modeling analysis of the delisting objective to test persistence on the landscape. Results indicated that the population would persist, as long as it was allowed to grow and was not limited at that number.

Wolf-livestock conflict management – addressing and reducing wolf-livestock conflicts is an important part of the plan. The plan includes both proactive, non-lethal (e.g., modified husbandry methods and non-lethal deterrents) and lethal management options to address wolf-livestock conflicts. The plan emphasizes prompt response to reported depredations and includes a program to compensate livestock producers for livestock killed or injured by wolves.

Wolf-ungulate conflict management – ungulates are the natural prey of wolves. The plan includes management options to address localized impacts to ungulate populations, if they occur. If WDFW determines that wolf predation is a primary limiting factor for an "at-risk" ungulate population, and the wolf population in that wolf recovery region is healthy, WDFW may consider reducing wolf abundance in the localized area occupied by the ungulate population. Management options would include both non-lethal and lethal measures; with non-lethal options prioritized while the species is listed.

WDFW believes this FEIS will assist decision makers to identify the key environmental issues and options associated with this action. Comments received from agencies and interested parties during public review of the draft document have been considered and incorporated into this final EIS. WDFW thanks all of those who comments and input into this process.

Sincerely,

Bob Zeigler
SEPA/NEPA Coordinator
Agency Responsible Official
Protection Division
Habitat Program

FINAL
Environmental Impact Statement (EIS)
for the
Wolf Conservation and Management Plan
for Washington

LEAD AGENCY

Washington Department of Fish and Wildlife
Wildlife Program
600 Capitol Way N
Olympia, Washington

July 28, 2011

Fact Sheet

Title: Final Environmental Impact Statement (EIS) for the Wolf Conservation and Management Plan for Washington

Description: This is a non-project review proposal. Wolves were classified as endangered in Washington under federal law in 1973 and under state law in 1980. They were federally delisted in the eastern third of Washington in 2011; and remain federally listed in the western two-thirds of the state and state listed throughout Washington. As of July 2011, Washington had five confirmed wolf packs. Continued population growth in Washington is expected as a result of dispersal of wolves from existing packs and from wolf populations in Idaho, Montana, Oregon, and British Columbia.

The Washington Department of Fish and Wildlife (WDFW) initiated development of a state wolf conservation and management plan in 2007 in response to: increasing wolf dispersal and pack establishment in the state; requirements under WAC 232-12-297 to develop recovery plans for listed species; and the anticipated eventual return of all wolf management to the state. A determination of significance and request for comments on the scope of an environmental impact statement (EIS) was issued August 1, 2007 and seven public scoping meetings were held around the state. Also in 2007, WDFW appointed an advisory Wolf Working Group comprised of 17 citizens to provide recommendations on the plan to the Department. The Draft EIS/Wolf Conservation and Management Plan for Washington was completed in 2009.

Following the requirements of the State Environmental Policy Act (SEPA), the Draft EIS was made available for public review on October 5, 2009 for a 95-day public comment period. During the review period, WDFW held 12 public meetings across the state in October and November 2009. These meetings were attended by 1,157 people with 229 people providing comments on the plan. Nearly 65,000 people provided email and written comments on the Draft EIS. A blind peer review was also conducted during that time and WDFW received comments from 3 scientific peer reviewers. WDFW addressed the public input and met with the Working Group in June 2011 for review and comment on the proposed changes, and then produced the Final EIS/Recommended Plan. Responses to the comments received are included in the Final EIS.

The Final EIS incorporates recommendations and suggestions from public comments, peer review comments, WDFW reviews and the Wolf Working Group recommendations. The Preferred Alternative Final Recommended Wolf Conservation and Management Plan was developed as a result of the alternatives studied. The plan will serve as the state recovery plan for the wolf in Washington. As such, it establishes recovery objectives for downlisting and delisting the wolf in the state, per WAC 232-12-297, and identifies strategies to address conflicts and achieve recovery.

A decision on adoption of the Wolf Conservation and Management Plan by the Washington Fish and Wildlife Commission is expected at the December 2011 meeting. Prior to that, the Commission will hold workshops and discussions on the plan in August, October, and November 2011.

Location: Statewide

Proponent and Lead Agency:
Washington Department of Fish and Wildlife (WDFW)
Wildlife Management Program
600 Capitol Way North
Olympia, WA 98501-1091

EIS Project Manager: Harriet Allen
Phone: (360) 902-2694

WDFW Responsible Official:
Bob Zeigler, SEPA Responsible Official
Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, WA 98501-1091
Natural Resources Building, 5th Floor
Phone: (360) 902-2578
Email: SEPAdesk2@dfw.wa.gov

Permits and Licenses Required: None required

Authors and Principle Contributors: WDFW : Gary Wiles, Harriet Allen, Gerald Hayes, John Pierce, Rocky Beach, Dave Ware, Jerry Nelson, Donny Martorello, Nathan Pamplin, Madonna Luers, Steve Pozzanghera, Dave Brittell, Jeff Lewis; Washington State University: Ben Maletzke, Rob Wielgus.

Wolf Working Group:
In 2007, former WDFW Director Koenings appointed a group of 17 citizens to provide recommendations to the Department to assist in development of the plan. The names and affiliations of members are shown in Appendix B of this document.

Date Draft Environmental Impact Statement (DEIS) was issued: October 5, 2009. Comments were taken through January 8, 2010.

Date Final Environmental Impact Statement (FEIS) is issued: July 28, 2011

Public meetings on the Draft EIS : Public meetings were held during October – November 2009 at the following locations: Clarkston, Richland, Yakima, Colville, Spokane, Vancouver, Aberdeen, Seattle, Mount Vernon, Sequim, Omak, and Wenatchee, Washington.

Date Final Action is Planned: The Final EIS/Recommended Wolf Conservation and Management Plan for Washington will be presented to the Washington Fish and Wildlife Commission on August 4, 2011. Commission review will occur during August-November, and decision-making will occur at the December 2011 meeting.

Date of Next Action and Subsequent Environmental Reviews: The Final Environmental Impact Statement (FEIS) is a phased non-project action. The Recommended Wolf Conservation and Management Plan will be provided to the Washington Fish and Wildlife Commission for consideration at their August 4, 2011 meeting in Olympia, Washington.

The Agenda for that meeting is found on the following link: http://wdfw.wa.gov/commission/meetings/2011/08/agenda_aug0411.html. The Commission has scheduled three more special meetings to discuss the recommended Wolf Conservation and Management Plan and take public comment. Those meetings are tentatively scheduled for Aug. 29 in Ellensburg, and Oct. 6 and Nov. 3 in Olympia. Final action on the plan is expected to occur at the December 2011 Commission meeting.

Notice of Availability: The Final EIS is available for download on WDFW's website at: **http://wdfw.wa.gov/licensing/sepa/sepa_final_docs_2011.html .**

The complete public comments on the Draft EIS can be viewed at: **http://wdfw.wa.gov/conservation/gray_wolf/comments.html**

Distribution List: Notice of the availability of this FEIS is posted on the WDFW SEPA website at: **http://wdfw.wa.gov/licensing/sepa/sepa_final_docs_2011.html .** Copies have been sent to local government planning departments (city and county); affected Tribes; all state and federal agencies with jurisdiction and interested parties.

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Executive Summary

A Final Environmental Impact Statement (EIS), with a Preferred Alternative Recommended Wolf Conservation and Management Plan for Washington has been developed. The purpose of the plan is to ensure the reestablishment of a self-sustaining population of gray wolves in Washington and to encourage social tolerance for the species by addressing and reducing conflicts. The plan serves as the state recovery plan for the species per WAC 232-12-297. Pursuant to the State Environmental Policy Act (SEPA) process, a Draft EIS was prepared in 2007-2009 which evaluated four alternatives, including a no action alternative. Other alternatives were considered but not studied in detail because they did not meet the purpose and need of the plan. The Draft EIS for the wolf plan established recovery objectives for downlisting and delisting the species, and identified strategies to address conflicts and achieve recovery.

The Draft EIS was made available for a 95-day review period. WDFW received written and email comments on the Draft EIS/ Plan from nearly 65,000 people. A scientific peer review was also conducted during this period, with 3 anonymous peer reviewers submitting comments. The Final EIS/Recommended Plan was modified as a result of the comments received on the Draft EIS/Plan, scientific peer review, WDFW review, and WDFW Wolf Working Group review.

The Final EIS evaluates the four alternatives, including the revised Preferred Alternative. The alternatives vary in how conservation of wolves in Washington could be accomplished and how conservation and management would be balanced. These included differences in the geographic distribution of recovery objectives, numbers of recovery areas, management options to address conflicts, and compensation for livestock depredation. Alternative 3 placed the greatest emphasis on protection and restoration of wolves in Washington, but had fewer management options for addressing wolf-livestock conflicts. Alternative 1 had a lower standard for protection and restoration of wolves in the state and a more aggressive lethal control strategy. Alternative 4 (the No Action Alternative) emphasized protection and restoration of wolves using existing programs, but did not develop a conservation and management plan. As a result, wolves would continue to be listed as endangered until a state recovery plan was completed that established recovery objectives.

Alternative 2, the wolf conservation and management plan, is the Preferred Alternative because it meets the goals and objectives for establishing a long-term viable wolf population in Washington while at the same time addressing wolf-livestock conflicts and interactions between wolves and wild ungulates. The Final Preferred Alternative was modified from its previous version in the Draft EIS based on the public, scientific, and agency reviews and input.

Changes to the Preferred Alternative include:

- The distribution of breeding pairs among recovery regions was changed from the Draft to the Final EIS Preferred Alternative. Pairs that could have occurred anywhere in the state

for downlisting to Sensitive Status and delisting were assigned to specific recovery regions. For downlisting to sensitive status, 3 breeding pairs that could have occurred anywhere in the state were assigned to the Eastern Washington and Northern Cascades recovery regions. For delisting, 6 breeding pairs that could have occurred anywhere in the state were assigned among the three recovery regions.

- Lethal take by livestock owners of wolves caught in the act of attacking livestock on private lands they own or lease was changed to allow it to occur at all listed statuses, rather than only after reaching threatened status, with a permit from WDFW and after documented depredation had occurred in the area and measures to resolve the problem had been deemed ineffective.

- Lethal take by private citizens of wolves in the act of attacking pet dogs was previously allowed when wolves reached Sensitive status; in the revised Preferred Alternative, it is not allowed while wolves are listed.

- Management of wolf-ungulate conflicts was changed. In the Draft Preferred Alternative, the WDFW could consider moving, lethal control, or other control techniques for wolves in localized areas after wolves were delisted, if research determined that wolf predation was a limiting factor for an at-risk ungulate population. In the Final Preferred Alternative, the WDFW could consider control of wolves at all listing statuses if it determines that wolf predation is a primary limiting factor for an at-risk ungulate population, and the wolf population exceeds delisting objectives within that recovery region. WDFW would consider the status of wolves statewide as well as within a specific recovery region where ungulate impacts were occurring in decision-making. The definition of an "at risk ungulate population" was revised from the Draft EIS to the Final EIS.

The Final EIS includes an analysis of the possible environmental effects of the four alternatives, including the revised Preferred Alternative 2.

Translocation (moving animals from one recovery region in Washington to another for the purpose of establishing a new population) is a conservation tool in the plan that may be used to establish a wolf population in a recovery region that wolves have not colonized through natural dispersal.

To build public tolerance for wolves, the wolf conservation and management plan outlines a range of proactive, non-lethal options and lethal management options for addressing wolf-livestock conflicts. Implementation of these would be based on the status of wolves to ensure that recovery objectives are met. Non-lethal management will be emphasized while the species is recovering and will transition to a broader range of approaches as wolves progress toward a delisted status.

The plan also includes a program to compensate livestock producers for livestock losses due to wolves. Compensation will be paid for confirmed and probable wolf losses using a two-tiered system, which also factors in the size of the land parcel being grazed.

The effects that wolves will have on elk, deer, and other ungulate populations and hunter harvest are difficult to predict, but observations from neighboring states suggest that statewide effects will be low, especially during recovery phases. As wolf numbers increase in Washington, there may be localized impacts on ungulate abundance or habitat use. Improved habitat management, flexibility in harvest strategies, and greater prevention of illegal hunting are recommended as measures for sustaining healthy ungulate populations that will support wolves and maintain harvest opportunities. Management options are included to address wolf predation on ungulates if they are found to be a primary limiting factor for an at- risk ungulate population.

Implementation of a public outreach and education program is a high priority for aiding wolf recovery. The Final Preferred Alternative includes strategies for outreach, including the distribution of information about wolves, living with wolves, preventing and addressing conflicts with livestock and dogs, and wolf-ungulate interactions. It also identifies a task to conduct public attitude and knowledge surveys to determine information needs and develop an outreach plan.

1. Introduction

Wolves were classified as endangered in Washington under federal law in 1973 and under state law in 1980. They were federally delisted in the eastern third of Washington in 2011; and remain federally listed in the western two-thirds of the state and state listed throughout Washington. As of July 2011, Washington had five confirmed wolf packs. Continued population growth in Washington is expected as a result of dispersal of wolves from existing packs and from wolf populations in Idaho, Montana, Oregon, and British Columbia.

The Washington Department of Fish and Wildlife (WDFW) initiated development of a state wolf conservation and management plan in 2007 in response to: increasing wolf dispersal and pack establishment in the state; requirements under WAC 232-12-297 (Appendix A) to develop recovery plans for listed species; and the anticipated eventual return of all wolf management to the state. A determination of significance and request for comments on the scope of an environmental impact statement (EIS) was issued August 1, 2007; and seven public scoping meetings were held around the state. Also in 2007, WDFW appointed an advisory Wolf Working Group comprised of 17 citizens (Appendix B) who provided recommendations on the plan to the Department. The Draft EIS/Wolf Conservation and Management Plan for Washington was completed in 2009; and the Final EIS/Plan was completed in 2011.

2. Background

2.1. State Environmental Policy Act Process Overview

The Washington Department of Fish and Wildlife (WDFW) recognizes the importance of the State Environmental Policy Act (SEPA) in the process of developing a wolf conservation and management plan for the state. The environmental impact statement (EIS) process provides opportunities for other agencies, stakeholders, tribal governments, and the public to participate in analyzing information and alternatives. This process, as detailed in WAC 197-11-440, helps ensure that WDFW understands the environmental consequences of its decisions and considers mitigation of probable significant adverse environmental impacts when making decisions. A checklist of subjects, detailed in WAC 197-11-444, must be addressed in the analysis (Appendix C). The SEPA process is being used for the development of a wolf conservation and management plan for Washington to ensure public input into the plan. Key steps in the EIS process include:

1. Scoping
2. Preparing a draft EIS, which analyzes the probable impacts of a proposal and reasonable alternatives
3. Issuing a draft EIS for review and public comment
4. Preparing a final EIS, which includes analyzing and responding to comments received on the draft EIS
5. Issuing a final EIS
6. Using the final EIS in decision-making.

Steps 1-3 were completed during 2007-2010. This document continues the process with steps 4-6: analysis of the comments for inclusion in the final EIS, preparation and release of the final EIS, and use of the final EIS in decision-making regarding adoption of the plan for Washington.

2.2. Scoping

Scoping initiates public involvement in the SEPA process. Its three purposes are to:

- Narrow the focus of the EIS to significant environmental issues;
- Eliminate insignificant impact issues or those not directly related to the proposal; and
- Help identify reasonable alternatives, consistent with the purpose and need of the proposed action, to be analyzed in the EIS.

The scoping process alerts the public, the project proponent, and the lead agency to areas of concern and potential controversy early in the process. Here, WDFW is both the project proponent and the lead agency. The SEPA process for the wolf conservation and management plan was formally initiated in August 2007. A 30-day scoping notice was sent on August 1, 2007 via mailings

to state resource agencies, federal agencies, counties, cities, and tribes; a news release; and posting on the WDFW website to solicit input on issues and alternatives that should be considered in development of the plan. In addition, seven public scoping meetings were held between August 14-23, 2007 in Spokane, Clarkston, Yakima, Twisp, Sequim, Bellingham, and Vancouver, Washington, to solicit input. A total of 311 people attended the meetings and provided comments on wolf conservation, wolf population objectives, wolf-livestock conflicts, wolf-game species interactions, wolf-human interactions, and a variety of related issues (Appendix D).

In addition to the formal scoping process, the WDFW Director appointed a Wolf Working Group in early 2007 to advise and provide recommendations to WDFW on the preparation of the draft wolf conservation and management plan. The group was comprised of 18 members (later reduced to 17) that represented both a broad range of perspectives and values on wolf conservation and management in Washington and the geographic scope of the state. The group met eight times over a 15-month period from February 2007 to May 2008 to develop recommendations that balanced wolf conservation and management. WDFW considered these recommendations as it developed the draft plan for scientific peer review. Following scientific peer review, WDFW met with the group again for a ninth meeting in September 2009 to solicit additional input on how the scientific peer review and WDFW comments were addressed in the revised draft plan.

2.3 Preparation and Issuing the Final EIS

Nearly 65,000 people provided comments on the Draft EIS/Wolf Conservation and Management Plan for Washington. WDFW hosted 12 public meetings across the state in October and November, 2009 that were attended by 1,157 people with 229 people providing comments on the plan. Three anonymous scientific peer reviewers provided comments to WDFW on the draft plan (Appendix E). In addition, WDFW staff analyzed and responded to public and peer review comments (Appendix F). After making modifications to the plan, WDFW held a tenth meeting with the Wolf Working Group in June 2011 for their review and comments on the proposed changes. The Working Group provided additional comments on the proposed changes to the plan.

Consideration of the public comments, scientific peer reviews, Wolf Working Group comments, and WDFW reviews resulted in modifications or additions to the Draft EIS Preferred Alternative 2. After reviewing and responding to public comments, WDFW produced the Final EIS/Recommended Plan for consideration by the Washington Fish and Wildlife Commission.

The Final EIS provides decision-makers with the information needed to make an informed decision on adoption of a final wolf conservation and management plan for the state of Washington that meets the requirements of WAC 232-12-297 for a recovery plan (Appendix A). The Final EIS/ Recommended Plan will be presented to the Washington Fish and Wildlife Commission on August 4, 2011 for consideration. Commission review will occur from August through November 2011. Final action on the plan is expected at the December 2011 meeting. Upon approval of the final plan, WDFW will adopt it as the state recovery plan for the species (per WAC 232-12-297) and use

it to guide the implementation of conservation and management measures to achieve the eventual recovery and delisting of the gray wolf in Washington.

2.4. Non-Project Proposal

The wolf conservation and management plan (hereafter referred to as "the plan" or Preferred Alternative 2) is considered to be a "non-project action" under SEPA (WAC 197-11-442). Non-project actions include the adoption of plans, policies, programs, or regulations containing standards that will guide future actions. The probable significant adverse environmental impacts analyzed in a non-project EIS are those impacts foreseeable at this stage, before specific project actions are planned. If more specific actions are needed in the future, management decisions will be guided by the policies developed during this process.

2.5. Purpose and Need for the Non-Project Action

2.5.1. Purpose

The purpose of the wolf conservation and management plan is to ensure the reestablishment of a self-sustaining population of gray wolves in Washington and to encourage social tolerance for the species by reducing and addressing conflicts.

2.5.2. Need

Gray wolves were formerly common throughout most of Washington, but they declined rapidly between 1850 and 1900. The primary cause of this decline was the killing of wolves by Euro-American settlers as ranching and farming activities expanded. They were essentially eliminated as a breeding species from the state by the 1930s. Wolves were classified as endangered in Washington at the federal level in 1973 and at the state level in 1980. They were delisted under federal law in 2011 in the eastern third of Washington, and remain federally listed in the western two-thirds of the state, and state-listed throughout Washington.

The first fully documented breeding pack in the state was confirmed in 2008. As of July 2011, there were five confirmed packs in Washington: two in Pend Oreille County; one in Stevens/Pend Oreille counties; one in Kittitas County; and one in Okanogan/Chelan counties. Only one of these, in Pend Oreille County, was a successful breeding pair in 2010. There were also indications of single additional packs in the Blue Mountains and North Cascades National Park; and at least a few solitary wolves are also likely to occur in other scattered locations of Washington. Human-related mortality, particularly illegal killing and legal control actions to resolve conflicts, is the largest source of mortality for the species in the northwestern United States and illegal killing has already been documented in Washington. In response to the return of wolves to Washington, there was a need for a state recovery plan per WAC 232-12-297, and in anticipation of the eventual return of all wolf

management to the state, the WDFW initiated development of a state wolf conservation and management plan under the State Environmental Policy Act (SEPA) in 2007. The plan will serve as the state recovery plan for the species. Washington's procedures for listing and delisting endangered, threatened and sensitive species are found in WAC 232-12-297. The procedures include requirements to set target recovery objectives for downlisting and delisting, and to identify management and recovery strategies to protect and restore listed species. The wolf conservation and management plan is the outline for state management and is designed to restore and protect a self-sustaining wolf population in Washington.

2.5.3. Plan Goals

The goals of the wolf conservation and management plan are to:

1. Restore the wolf population in Washington to a self-sustaining size and geographic distribution that will result in wolves having a high probability of persisting in the state through the foreseeable future (>50-100 years).

2. Manage wolf-livestock conflicts in a way that minimizes livestock losses, while not hindering the recovery or long-term perpetuation of a sustainable wolf population.

3. Maintain healthy and robust ungulate populations in the state that provide abundant prey for wolves and other predators as well as ample harvest opportunities for hunters.

4. Provide public outreach and promote public understanding of the conservation and management needs of wolves in Washington, thereby promoting the public's coexistence with the species.

2.6. Alternatives

Alternative strategies are one of the required components of an EIS, including a no-action alternative. They present meaningful options for WDFW to consider in managing gray wolves in Washington. Table 1 summarizes the four alternatives that were considered in the Draft EIS (WDFW 2009) and the revised Preferred Alternative 2. The four alternatives incorporate information gathered and issues raised through the SEPA scoping process, the public comments received on the Draft EIS, Wolf Working Group discussions and recommendations, and the results of scientific peer review. These alternatives present choices consistent with the purpose and need of the plan as described in Section 2.5.

2.7. Affected Environment, Significant Impacts, and Mitigation Measures

The wolf conservation and management plan consists of a set of strategies that strive to balance WDFW's mandate to conserve and recover endangered gray wolf populations, while addressing wolf-livestock, wolf-ungulate, and wolf-human conflicts. The potential environmental impacts that

might result from the approval and implementation of this non-project action are evaluated in Chapter 4, which describes the existing environment that might be affected by the proposal and analyzes significant impacts of alternatives, including the revised Preferred Alternative 2.

The Final EIS analyzes the environmental impacts of the four alternatives to assess their risk of possible significant adverse impacts to elements of the environment and to identify mitigation measures that would avoid or minimize related adverse environmental impacts. Although this is a non-project proposal, to the degree possible, the analysis of impacts in the Final EIS considers the current and anticipated factors that may affect gray wolf recovery and other elements of the natural and built environment that could result from implementation of proposed management strategies in each alternative. Specific actions that may be proposed in the future relating to gray wolf management in Washington would be evaluated under a supplemental environmental impact statement process.

Each of the four alternatives is evaluated for both positive and negative potential impacts to elements of the environment. The "elements of the environment" that were evaluated came from the list in WAC 197-11-444 (Appendix C). Those selected for evaluation were ones that had a possible impact related to implementation of the draft plan alternatives. The elements were associated with both the (1) natural environment and (2) built environment (WAC 197-11-444, elements of the environment).

3. Alternatives

This chapter describes and compares the four alternatives for the wolf conservation and management plan for Washington, including a "no action" alternative, that were included in the Draft EIS released on October 5, 2009. Table 1 provides a comparison of the alternatives presented in the Draft EIS, including the revised Preferred Alternative for the wolf conservation and management plan. It also includes alternatives considered, but not studied in detail because they did not meet the purpose and need of the plan.

This chapter describes the following:

- Alternatives considered but eliminated from detailed analysis
- Descriptions of alternatives considered in detail, with comparisons to the preferred alternative
- Selection of the preferred alternative

3.1. Alternatives Considered, but Eliminated from Detailed Analysis

Under SEPA, a "reasonable alternative" is defined as "an action that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation." Reasonable alternatives may be those over which an agency with jurisdiction has authority to control impacts, either directly or indirectly (WAC 197-11-786). Suggestions for various alternatives were made to WDFW during the scoping, public review of the Draft EIS, and Wolf Working Group stakeholder discussions. The following alternatives were considered, but were excluded from detailed analysis because they did not meet the stated purpose and need of the plan and were not considered to be "reasonable." These included:

1) Not setting any recovery objectives at this time.
2) Setting targets for delisting at fewer than 15 successful breeding pairs.
3) Restoring wolves to historical populations in the state.
4) Reducing the number of years to sustain recovery objectives to less than 3 years.
5) Reducing the geographic extent that wolves would need to occupy to achieve recovery objectives.
6) Reintroduction of wolves from outside the state.
7) Not allowing wolves to recover in Washington.

The alternative of not setting any recovery objectives at this time is similar to the "no action" Alternative 4 that is described in detail. Wolves would remain listed as endangered until a recovery plan was developed that established recovery objectives for downlisting and delisting. The option of not establishing conservation/recovery objectives until some wolf packs had established in the state

was initially discussed with the Wolf Working Group. Modeling of habitat use, demographics, and genetic considerations could then be used to derive scientifically-based estimates of the wolf numbers needed for recovery, which would then be placed in a future version of the plan. All Working Group members rejected this approach and recommended the inclusion of specific recovery objectives in the plan. It was determined that measureable objectives needed to be established to: meet state law (WAC 232-12-297); develop and implement management and conservation strategies that would recover a self-sustaining population in the state; and determine when downlisting and delisting could occur. The alternative of having no recovery objectives does not meet the purpose and need of the plan.

Setting recovery objectives at fewer than 15 successful breeding pairs would not meet the goal of the wolf conservation and management plan to "restore the wolf population in Washington to a self-sustaining size and geographic distribution that will result in wolves having a high probability of persisting in the state through the foreseeable future (>50-100 years)." Based on scientific information about wolf population viability, scientific peer review of the recovery objectives proposed in the Draft EIS, the target of 15 successful breeding pairs for delisting t is considered minimal or barely adequate to achieve population viability and recovery; and some reviewers believe it to be too low to achieve viability and recovery.

Restoring wolves to historical population levels was also excluded from consideration by WDFW at the beginning of the process because it is an attainable goal given the many changes to Washington's landscape during the past 150 years.

The three-year criteria and distribution requirements in three recovery regions are factors that contribute to the 15 breeding pairs being considered adequate to achieve recovery. For these reasons, proposals incorporating smaller numbers of successful breeding pairs, reduced geographic distribution, or shorter time requirements for the targets for downlisting and delisting wolves in Washington carry a high risk of not achieving the conservation purpose of the plan. Such proposals do not allow for robustness of the population on the landscape over time in light of fluctuations in numbers between years, genetic issues, and other considerations.

Another alternative identified in the public scoping and considered, but not analyzed in detail, was the reintroduction of wolves into Washington from outside the state. One of the policy sideboards for the plan that was established by the WDFW director was that wolves would not be reintroduced into Washington from outside of the state to assist recovery. Instead, recovery would depend on wolves naturally dispersing back into the state on their own. It was determined that reintroduction would be an expensive, highly controversial, and unnecessary step because wolves were already dispersing into the state on their own and would continue to do so.

Lastly, the alternative of "no wolves", or not allowing wolves to recover in Washington, was not deemed reasonable and was specifically identified by the WDFW director as one of the "sideboards"

at the beginning of the planning process. Having no wolves was not an option, and clearly did not meet the stated purpose and need of the plan.

3.2. Descriptions of Alternatives Considered in Detail, with Comparisons to the Preferred Alternative

The four alternatives developed in the Draft EIS represented a range of options for balancing the conservation and management of wolves in Washington (Table 1). Alternatives 1-3 were consistent with the purpose and need of the plan (Chapter 2, Section 2.5). Alternative 4, the "no action" alternative, was presented and analyzed because it is required for SEPA; however, it does not meet the purpose and need of the plan.

The recovery objectives of 6, 12, and 15 successful breeding pairs for downlisting and delisting were constant within all of the alternatives, except Alternative 4, where there would be no conservation/recovery objectives developed. These recovery objectives are considered minimal for recovery in Washington and to meet the purpose and need of the plan to achieve a viable population of wolves in the state that would persist over the long term. Alternatives 1-3 varied in how the numbers of successful breeding pairs were distributed among recovery regions for downlisting and delisting criteria. Alternatives 1 and 2 each had three recovery regions (Figure 1); whereas Alternative 3 had four recovery regions (Figure 2).

The four alternatives considered in developing the plan are described with respect to the primary elements of conservation and management strategies (Table 1). Human-caused mortality is the single most important factor influencing recovery of wolves. As such, conserving wolves in Washington and meeting the delisting criteria will necessitate social tolerance for wolves on both public and private lands. It is unusual to include lethal management strategies in a plan for recovery of a listed species. However, to build public tolerance for wolves, a range of proactive, non-lethal, and lethal management options, as well as compensation, were outlined in the four alternatives to address wolf-livestock conflicts. Programs to compensate livestock producers for wolf-caused losses of livestock assist wolf recovery efforts by shifting some of the economic burden associated with wolf restoration away from producers, thereby minimizing further erosion of social tolerance for the species by affected citizens. Lethal control of wolves may be necessary to resolve repeated wolf-livestock conflicts and would be performed to remove problem animals that jeopardize public tolerance for overall wolf recovery. Implementation of management options that include lethal control would be based on the status of wolves to ensure that conservation/recovery objectives are met; and the four alternatives vary on when these management options become available.

3.2.1. Brief Summary of Alternatives

Alternative 1: This alternative has a lower standard for protection and restoration of wolves in the state and a more aggressive lethal control strategy (Table 1). It implements lethal control options at

earlier phases of recovery than the other alternatives. It sets a lower standard for geographic distribution of recovery objectives, such that state downlisting and delisting of the species could occur with the majority of animals present in one or two recovery regions. It allows earlier implementation of management tools for addressing livestock conflicts, and it also offers a less generous compensation package for documented incidents of depredation.

Alternative 2 (Preferred Alternative; Wolf Conservation and Management Plan): This alternative meets the goals and objectives for establishing a long-term viable wolf population while addressing wolf-livestock conflicts and interactions between wolves and ungulates. It sets a moderate geographic distribution of recovery objectives for downlisting and delisting, with an emphasis on adequate numbers being present in the Southern Cascades/Northwest Coast recovery region, but does not require the establishment of wolves in a fourth Pacific Coast recovery region to achieve delisting. This alternative includes a range of proactive, non-lethal and lethal control options for addressing livestock conflicts, and generous compensation for confirmed and probable depredations on livestock.

This alternative was modified following public review of the Draft EIS, based on comments received from the public, peer review (Appendices E, F), and WDFW review. These modifications are reflected in the revised Preferred Alternative 2 and Final Recommended Wolf Conservation and Management Plan for Washington.

Alternative 3: This alternative places the greatest emphasis on protection and restoration of wolves in Washington. It has a higher standard for the geographic distribution of recovery objectives for downlisting and delisting wolves, including a requirement that they be present in a fourth recovery region, the Pacific Coast Recovery Region (Figure 2), before the species could be downlisted and delisted. This alternative is the most conservative on when management tools for addressing livestock conflicts could be implemented, and also includes the most generous compensation package for documented cases of confirmed and probable depredation.

Alternative 4 – No Action (Current Management): Under this alternative, no wolf conservation and management plan would be prepared for Washington. Protection and restoration of wolves would use existing programs. As a result, there would be no state recovery plan for the species and wolves would continue to be listed as endangered until a recovery plan was completed, with recovery objectives, and the species achieves the recovery objectives. Limited management options would be available for addressing conflicts. It is unknown whether compensation would be available for livestock losses, which would depend on whether any state or private fund sources existed for that purpose.

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Table 1. Four alternatives for a wolf conservation and management plan for Washington. Alternative 2, the Preferred Alternative, was revised in the Final EIS/Plan following public, scientific peer, Wolf Working Group, and WDFW review of the October 2009 Draft EIS/Plan.

Element	**Alternative 1**	**Alternative 2** Draft Preferred October 2009	***Revised* Alternative 2** Final Preferred July 28, 2011	**Alternative 3**	**Alternative 4** No Action – Current Management
Number of recovery regions	1. Eastern Washington 2. Northern Cascades 3. Southern Cascades/ Northwest Coast	1. Eastern Washington 2. Northern Cascades 3. Southern Cascades/ Northwest Coast	Same as October 2009 Draft Preferred Alternative 2	1. Eastern Washington 2. Northern Cascades 3. Southern Cascades 4. Pacific Coast	None designated
Number and distribution of successful breeding pairs in each recovery region to downlist and delist					
Downlist to Threatened (6 successful breeding pairs)	2 in Eastern Washington 2 in Northern Cascades 2 anywhere in state	2 in Eastern Washington 2 in Northern Cascades 2 in Southern Cascades/ Northwest Coast	Same as October 2009 Draft Preferred Alternative 2	2 in Eastern Washington 2 in Northern Cascades 2 in Southern Cascades or Pacific Coast	No recovery objectives established. Wolves would remain listed as Endangered.
Downlist to Sensitive (12 successful breeding pairs)	2 in Eastern Washington 2 in Northern Cascades 2 in Southern Cascades/ Northwest Coast 6 anywhere in state	2 in Eastern Washington 2 in Northern Cascades 5 in Southern Cascades/ Northwest Coast 3 anywhere in state	4 in Eastern Washington 3 in Northern Cascades 5 in Southern Cascades/ Northwest Coast	3 in Eastern Washington 3 in Northern Cascades 3 in Southern Cascades 3 in Pacific Coast	No recovery objectives established. Wolves would remain listed as Endangered.
Delist (15 successful breeding pairs)	2 in Eastern Washington 2 in Northern Cascades 2 in Southern Cascades/ Northwest Coast 9 anywhere in state	2 in Eastern Washington 2 in Northern Cascades 5 in Southern Cascades/ Northwest Coast 6 anywhere in state	5 in Eastern Washington 4 in Northern Cascades 6 in Southern Cascades/ Northwest Coast	3 in Eastern Washington 3 in Northern Cascades 3 in Southern Cascades 3 in Pacific Coast 3 anywhere in state	No recovery objectives established. Wolves would remain listed as Endangered.
Translocation of wolves from one area of Washington to another to establish a new population	Available as a tool	Available as a tool	Same as October 2009 Draft Preferred Alternative 2	Available as a tool	Available as a tool
Manage for landscape connectivity	Continue existing efforts to maintain and restore habitat connectivity for wolves and other large-ranging carnivores.	Expand existing efforts to maintain and restore habitat connectivity for wolves.	Same as October 2009 Draft Preferred Alternative 2	Expand existing efforts to maintain and restore habitat connectivity for wolves.	Continue existing efforts to maintain and restore habitat connectivity for wolves and other large-ranging carnivores.

Table 1. Four alternatives for a wolf conservation and management plan for Washington. Alternative 2, the Preferred Alternative, was revised in the Final EIS/Plan following public, scientific peer, Wolf Working Group, and WDFW review of the October 2009 Draft EIS/Plan.

Element	**Alternative 1**	**Alternative 2** Draft Preferred October 2009	***Revised* Alternative 2** Final Preferred July 28, 2011	**Alternative 3**	**Alternative 4** No Action – Current Management
Use of non-lethal injurious harassment	Allowed with a permit and training from WDFW during all listed statuses; will be reconsidered during Endangered status if used inappropriately or a mortality occurs under this provision.	Allowed with a permit and training from WDFW during all listed statuses; will be reconsidered during Endangered status if used inappropriately or a mortality occurs under this provision.	Same as October 2009 Draft Preferred Alternative 2	Allowed with a permit and training from WDFW upon reaching Sensitive status; will be reconsidered if used inappropriately or a mortality occurs under this provision.	Possibly allowed, consistent with state and federal law.
Lethal control by state/federal agents of wolves involved in repeated livestock depredations	Allowed, consistent with state and federal law.	Allowed, consistent with state and federal law.	Allowed, consistent with state and federal law. WDFW may consider issuing a permit to a livestock owner to conduct lethal control on private land they own or lease if WDFW does not have the resources to address control.	Allowed, consistent with state and federal law.	Allowed, consistent with state and federal law.
Lethal control by livestock owners (including family members and authorized employees) of wolves involved in repeated livestock depredations	Allowed with an issued permit on private lands and public grazing allotments they own or lease when wolves reach Threatened status.	Allowed with an issued permit on private lands and public grazing allotments they own or lease when wolves reach Sensitive status.	Same as October 2009 Draft Preferred Alternative 2	Allowed with an issued permit on private lands they own or lease when wolves reach Sensitive status.	Per consistency and allowances of federal and state law.

Table 1. Four alternatives for a wolf conservation and management plan for Washington. Alternative 2, the Preferred Alternative, was revised in the Final EIS/Plan following public, scientific peer, Wolf Working Group, and WDFW review of the October 2009 Draft EIS/Plan.

Element	**Alternative 1**	**Alternative 2** Draft Preferred October 2009	***Revised* Alternative 2** Final Preferred July 28, 2011	**Alternative 3**	**Alternative 4** No Action – Current Management
Lethal take of wolves in the act of attacking (biting, wounding, or killing) livestock	Allowed by livestock owners (including family members and authorized employees) on private land they own or lease during all listed statuses. Would be reconsidered if used inappropriately or more than 2 mortalities occur under this provision in a year.	Allowed by livestock owners (including family members and authorized employees) on private land they own or lease when wolves reach Threatened status. Would be reconsidered if used inappropriately or more than 2 mortalities occur under this provision in a year.	Allowed by livestock owners, (including family members and authorized employees) on private land they own or lease at all listed statuses, with an issued permit, after documented depredation (injury or killing) in the area and efforts to resolve the problem have been deemed ineffective. Would trigger a review by WDFW if used inappropriately or if 2 mortalities occur under this provision in a year. WDFW would evaluate the circumstances of the mortalities and determine if it would continue issuing permits.	Allowed by livestock owners (including family members and authorized employees) on private land they own or lease when wolves reach Sensitive status. Would be reconsidered if used inappropriately or more than 2 mortalities occur under this provision in a year.	Per consistency and allowances of federal and state law.

Table 1. Four alternatives for a wolf conservation and management plan for Washington. Alternative 2, the Preferred Alternative, was revised in the Final EIS/Plan following public, scientific peer, Wolf Working Group, and WDFW review of the October 2009 Draft EIS/Plan.

Element	**Alternative 1**	**Alternative 2** Draft Preferred October 2009	***Revised* Alternative 2** Final Preferred July 28, 2011	**Alternative 3**	**Alternative 4** No Action – Current Management
Lethal take of wolves in the act of attacking (biting, wounding, or killing) pet dogs	Allowed by private citizens on private lands when wolves reach Threatened status, and on private and public land when wolves are delisted. Would be reconsidered if used inappropriately or more than 2 mortalities occur under this provision in a year.	Allowed by private citizens on private lands when wolves reach Sensitive status, and on private and public land when wolves are delisted. Would be reconsidered if used inappropriately or more than 2 mortalities occur under this provision in a year.	Not allowed.	Allowed by private citizens on private and public land when wolves are delisted.	Per consistency and allowances of federal and state law.
Payment for confirmed livestock depredation	Full value for each confirmed depredation on all parcel sizes. Losses covered on private lands only.	Twice the full value for each confirmed depredation on grazing sites of 100 or more acres. Full value for each confirmed depredation on sites of less than 100 acres. Losses covered on both private and public lands.	On grazing sites of 100 or more acres, and where the agency determines that it would be difficult to survey the entire acreage, full current market value for two animals for each confirmed depredation. It would not include double payment if all other animals are accounted for. On sites of less than 100 acres, full current market value for each confirmed depredation. Losses covered on both private and public lands.	Twice the full value for each confirmed depredation on all parcel sizes. Losses covered on both private and public lands.	Unknown. Depending on availability of funds, compensation for losses may be possible from state or private sources. Amounts and types of livestock covered could vary depending on restrictions of fund sources.

Table 1. Four alternatives for a wolf conservation and management plan for Washington. Alternative 2, the Preferred Alternative, was revised in the Final EIS/Plan following public, scientific peer, Wolf Working Group, and WDFW review of the October 2009 Draft EIS/Plan.

Element	**Alternative 1**	**Alternative 2** Draft Preferred October 2009	***Revised* Alternative 2** Final Preferred July 28, 2011	**Alternative 3**	**Alternative 4** No Action – Current Management
Payment for probable livestock depredation	Half the full value for each probable depredation on all parcel sizes. Losses covered on private lands only.	Full value for each probable depredation on grazing sites of 100 or more acres. Half the value for each probable depredation on sites of less than 100 acres. Losses covered on private and public lands.	On grazing sites of 100 or more acres, and where the agency determines that it would be difficult to survey the entire acreage, half the current market value for two animals for each confirmed depredation. It would not include double payment if all other animals are accounted for. On sites of less than 100 acres, half the current market value for each confirmed depredation. Losses covered on both private and public lands.	Full value for each probable depredation on grazing sites of all sizes. Losses covered on private and public lands.	Unknown. Depending on availability of funds, compensation for losses may be possible from state or private sources. Amounts and types of livestock covered could vary depending on restrictions of fund sources.

Table 1. Four alternatives for a wolf conservation and management plan for Washington. Alternative 2, the Preferred Alternative, was revised in the Final EIS/Plan following public, scientific peer, Wolf Working Group, and WDFW review of the October 2009 Draft EIS/Plan.

Element	**Alternative 1**	**Alternative 2** Draft Preferred October 2009	***Revised* Alternative 2** Final Preferred July 28, 2011	**Alternative 3**	**Alternative 4** No Action – Current Management
Proactive measures to reduce depredation	WDFW would work with livestock operators to provide technical assistance to implement proactive measures to reduce conflicts. Assistance with some costs may be paid by Defenders of Wildlife on a limited basis.	WDFW would hire wolf specialists, whose duties would include working with livestock operators to provide technical assistance to implement proactive measures to reduce conflicts. Assistance with some costs may be paid by Defenders of Wildlife on a limited basis.	WDFW will provide technical assistance to livestock operators to implement proactive measures to reduce conflicts. Assistance with some costs may be paid by non-profit organizations or other entities on a limited basis	WDFW would hire wolf specialists, whose duties would include working with livestock operators to provide technical assistance to implement proactive measures to reduce conflicts. Assistance with some costs may be paid by Defenders of Wildlife on a limited basis.	Unknown. Currently, some costs of proactive measures may be paid by private sources, and some limited state funding may be available to help defray costs, or to provide technical assistance.
Ungulate management	Manage for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting using existing WDFW game management plans.	Manage for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting. Manage harvest to benefit wolves only in localized areas if research has determined wolves are not meeting recovery objectives and prey availability is a limiting factor.	Manage for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting, consistent with game management plans.	Manage for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting. Manage harvest of ungulates to benefit wolves in each recovery region until recovery objectives for the region are met.	Manage for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting using existing WDFW game management plans.

Table 1. Four alternatives for a wolf conservation and management plan for Washington. Alternative 2, the Preferred Alternative, was revised in the Final EIS/Plan following public, scientific peer, Wolf Working Group, and WDFW review of the October 2009 Draft EIS/Plan.

Element	**Alternative 1**	**Alternative 2** Draft Preferred October 2009	***Revised* Alternative 2** Final Preferred July 28, 2011	**Alternative 3**	**Alternative 4** No Action – Current Management
Wolf-ungulate conflict management	After wolves reach Sensitive status, if research determines that wolf predation is a limiting factor for ungulate populations that are below herd objectives, could consider moving, lethal control and other control techniques in localized areas.	After wolves are delisted, if research determines that wolf predation is a limiting factor for at-risk ungulate populations, could consider moving of wolves, lethal control, or other control techniques in localized areas.	If the Department determines that wolf predation is a primary limiting factor for at-risk ungulate populations and the wolf population in that recovery region is healthy, it could consider moving of wolves, lethal control, or other control techniques in localized areas. The status of wolves statewide as well as within a specific wolf recovery region where ungulate impacts are occurring would be considered in decision-making relative to wolf control. Decisions will be based on scientific principles and evaluated by WDFW.	After wolves are delisted, if research determines that wolf predation is a limiting factor for at-risk ungulate populations, could consider moving of wolves, or other non-lethal control techniques in localized areas.	Wolves would remain listed. Measures to address conflicts of this type would be contingent on consistency with state and federal law.
Outreach and education	Use existing WDFW staff to continue outreach and education at current levels.	Use WDFW wolf specialists to conduct outreach and education programs.	Use WDFW staff to conduct outreach and education programs.	Use WDFW wolf specialists and staff to conduct outreach and education programs. Would be a high priority activity.	Use existing WDFW staff to conduct outreach and education at current levels.

1
2

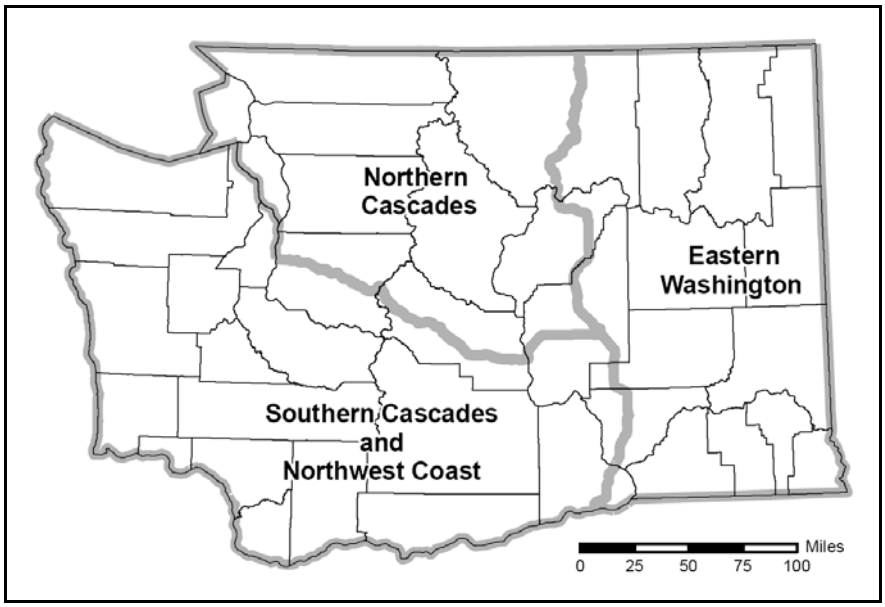

Figure 1. Three gray wolf recovery regions proposed for Washington in Alternatives 1, 2.

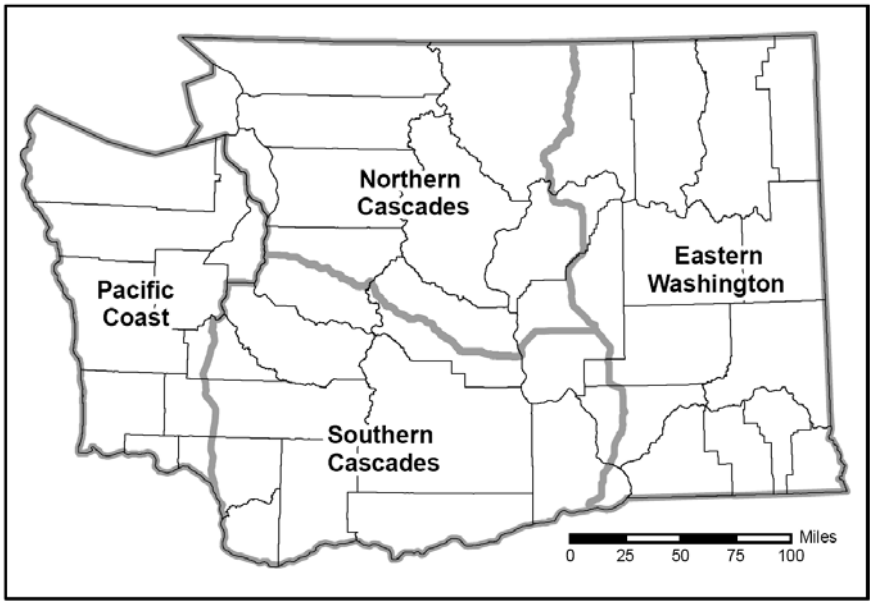

Figure 2. Four gray wolf recovery regions proposed for Washington in Alternative 3.

3.2.2. Revised Preferred Alternative 2 (Final Recommended Wolf Conservation and Management Plan)

The revised Preferred Alternative 2 is the WDFW Final Recommended Wolf Conservation and Management Plan for Washington. Changes made to the Preferred Alternative 2 from the Draft EIS to the Final EIS reflect input from the public (Appendix F), 3 anonymous scientific peer reviewers (Appendix E), comments from the Wolf Working Group, and WDFW review. The elements of the preferred alternative are intended to meet the scientific standard to accomplish recovery and long-term persistence of wolves in Washington, and to provide methods and strategies to address livestock conflicts and ungulate interactions. The recommended plan requires a recovered population (15 successful breeding pairs for 3years) distributed in three recovery regions, but does not require establishment of a wolf population in a fourth recovery region (the Pacific Coast, Figure 2) to achieve delisting.

The plan sets moderate conservation objectives while addressing conflicts with livestock through implementation of non-lethal proactive methods, use of lethal control, and generous compensation for wolf depredation. It provides for managing healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting, consistent with game management plans. The plan also addresses wolf-ungulate conflict management for at-risk ungulate populations if certain conditions are met. If WDFW determines that wolf predation is a primary limiting factor for an at-risk ungulate population and the wolf population in that recovery region is healthy (exceeding recovery objectives for that region), it could consider moving of wolves, lethal control, or other control techniques in localized areas prior to statewide delisting, as long as management actions did not push the wolf population below delisting objectives. The plan includes translocation (moving animals from one area of Washington to another to establish a new population) as a tool that could be used to establish a wolf population in a recovery region that wolves have not colonized through natural dispersal. This would require an extensive separate environmental impact analysis if proposed in the future. Other elements of the plan include maintaining and restoring landscape connectivity; outreach and education efforts; and research. The objectives and strategies to achieve delisting in the plan are to:

1. Develop and implement a program to monitor the population status, trends, and conservation and management needs of wolves in Washington.
2. Protect wolves from sources of mortality and disturbance at den sites.
3. Translocate wolves, if needed, to help achieve recovery objectives.
4. Develop and implement a comprehensive program to manage wolf-livestock conflicts in cooperation with livestock producers.
5. Maintain healthy and robust ungulate populations in the state that provide abundant prey for wolves and other predators as well as ample harvest opportunities for hunters.

6. Manage wolf-human interactions to reduce human safety concerns, prevent habituation of wild wolves, decrease the risk of conflicts between domestic dogs and wolves, and to build awareness of the risks posed by wolf hybrids and pet wolves.
7. Maintain and restore habitat connectivity for wolves in Washington.
8. Manage conflicts between wolves and state and federal listed/candidate species.
9. Develop and implement a comprehensive outreach and education program.
10. Coordinate and cooperate with public agencies, landowners, tribes, and non-governmental organizations to help achieve wolf conservation and management objectives.
11. Conduct research on wolf biology, conservation, and management in Washington.
12. Report on and evaluate implementation of the plan.

Key elements of the Final Preferred Alternative 2 are described below, including specific changes from the Draft Preferred Alternative (Table 1):

Number of Recovery Regions: Alternative 2 establishes 3 recovery regions in the state: Eastern Washington, Northern Cascades, and a combined Southern Cascades/Northwest Coast (Figure 1, Table 1). This element did not change in the Final EIS. Although there was strong public support (Appendix F) for four recovery regions (Alternative 3), with separate recovery objectives for a Pacific Coast Recovery region (Figure 1), this alternative was not selected. WDFW believes it is possible to recover wolf populations in the three recovery regions established in Alternative 2. Any wolves that become established in the Pacific Coast area would be counted toward the recovery objectives for the Southern Cascades/Northwest Coast recovery region in the Preferred Alternative; but wolf establishment in the Pacific Coast area would not be required in order to achieve the delisting objective.

One of the criteria for removing a species from state listed status in Washington is that it must occupy a significant portion of its original geographic range. A "significant portion of the species' historical range" is defined under WAC 232-12-297, section 2.9, as that portion of a species' range likely to be essential to the long-term survival of the population in Washington. Although wolves historically occurred throughout Washington, they do not need to reoccupy all of their former range to meet the recovery objectives of this plan. The northern and southern Cascade Mountains comprise much of the "significant portion of the historical range" that would ensure the long-term survival of the population.

Despite the presence of considerable high quality habitat for wolves on the Olympic Peninsula and in southwestern Washington, wolves would not need to occupy these areas to achieve recovery. Wolf occupancy in the northern Cascades, southern Cascades and eastern Washington recovery areas would meet the recovery objectives for each of the three recovery regions. Eastern

Washington is currently being recolonized from adjacent populations in neighboring states and British Columbia, whereas the Olympic Peninsula and southwestern Washington are distant from colonizing sources and separated by additional impediments or barriers to natural dispersal (e.g. Interstate 5, developed areas of the Puget Sound lowlands). Recovery is therefore likely to happen more quickly through the reoccupation of eastern Washington and the Cascade mountains than waiting for wolves to reach the far western regions of Washington.

Numbers and Distribution Requirements for Downlisting and Delisting: The Final EIS Preferred Alternative 2 maintained the number of successful breeding pairs of wolves required for statewide downlisting and delisting as in the Draft EIS: from endangered to threatened (6 breeding pairs), sensitive (12 breeding pairs), and delisting (15 breeding pairs).

WDFW received a significant number of public and peer review comments regarding the inadequacy of the Draft EIS recovery objectives (15 breeding pairs). In the blind peer review process, two of the three reviewers stated that the recovery objectives in the draft WDFW wolf plan were inadequate. One further stated that they were not based on sound science, but rather on a compromise of science and public acceptance. Both reviewers believed that the number of successful breeding pairs needed to achieve delisting should be higher and that the plan fell below current scientific standards for sustainability and genetic viability. Both recommended that WDFW conduct a population viability analysis to determine appropriate recovery criteria for wolves in Washington.

Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether the establishment of 15 breeding pairs was an adequate goal for delisting criteria. If not, WDFW would determine if higher numbers of breeding pairs may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (i.e., an estimated range of 97-365 wolves), the population could persist for 50 years, and did not fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historical range. If the population model assumptions are correct, WDFW believes that meeting these criteria would likely result in a self-sustaining wolf population. If the demographic characteristics of the established wolf population differ from those of the population model (as stated in the wolf plan), WDFW would reevaluate the delisting criteria to determine if they were sufficient.

The regional distribution of recovery objectives for downlisting to threatened status stayed the same as in the Draft EIS, but the regional distribution for downlisting from threatened to sensitive and for delisting changed (Table 1). The regional distribution of recovery objectives for downlisting and delisting are as follows:

- To reclassify from state endangered to state threatened status: 6 successful breeding pairs present for 3 consecutive years, with 2 successful breeding pairs in each of the three recovery regions.

- To reclassify from state threatened to state sensitive status: 12 successful breeding pairs present for 3 consecutive years, with 4 successful breeding pairs in the Eastern Washington recovery region, 3 in the Northern Cascades recovery region, and 5 in the Southern Cascades and Northwest Coast recovery region.

- To delist from state sensitive status: 15 successful breeding pairs present for 3 consecutive years, with 5 successful breeding pairs in the Eastern Washington recovery region, 4 in the Northern Cascades recovery region, and 6 in the Southern Cascades and Northwest Coast recovery region.

Previously unassigned breeding pairs ("that could occur anywhere in the state") in the Draft EIS were assigned to specific recovery regions in the Final EIS for sensitive and delisting statuses (Table 1). Two of three unassigned pairs in the downlisting objective for threatened to sensitive were assigned to the Eastern Washington region and one was assigned to the Northern Cascades region. Of the six unassigned breeding pairs in the delisting objective, 3 were assigned to Eastern Washington, 2 to the Northern Cascades, and one to the Southern Cascades and Northwest Coast. The revised allocation of breeding pairs strengthens regional recovery objectives by bringing them more in line with statewide availability of suitable wolf habitat and prey and reflecting the natural colonization of wolves from source populations in adjacent states and provinces.

Greater numbers of breeding pairs in the Southern Cascades/Northwest Coast region reflects the greater availability of suitable wolf habitat and prey in this region. Greater numbers of breeding pairs in the Eastern Washington region reflects the importance of this region in its proximity to source populations of wolves in adjacent states. It is also anticipated that at least one breeding pair will eventually establish in the Blue Mountains, which is likely to be isolated from other wolves that become established in the northern part of the Eastern Washington recovery region. As a result, it would have a low likelihood of contributing to the viability of the Eastern Washington population.

All breeding pairs were assigned to a recovery region to eliminate uncertainty regarding when objectives would be met within a particular recovery region, to be consistent with other recovery plan objectives for listed species, and to be able to monitor breeding success from year to year. Allocating previously unassigned breeding pairs was also necessary to conduct population modeling and to consider management within a recovery region before statewide delisting was achieved. Monitoring to determine consecutive years of successful breeding could also be difficult unless breeding pair numbers were assigned to specific recovery regions. The number of successful pair counts could shift among regions from year to year, which would lead to an inability to determine when recovery had been reached.

Having unassigned breeding pairs also does not allow management approaches to differ within one region prior to achieving delisting goals statewide (e.g. wolf-ungulate interactions) because it would

never be known when recovery objectives were achieved within a region until all 15 breeding pairs were established for three consecutive years among all three recovery regions. For these reasons, WDFW designated the unassigned pairs to specific recovery regions in the Final EIS Preferred Alternative.

Translocation: No changes were made to this provision in the revised Preferred Alternative 2 (Table 1). Translocation, which is defined as moving animals from one recovery area of Washington to another to establish a new population, is available as a tool if wolves fail to reach one or more recovery regions through natural dispersal. Potential benefits from translocation are that 1) it could speed the process of establishing wolves in unoccupied recovery regions, thereby leading to greater management flexibility in addressing conflicts, 2) it could be used to reduce wolf numbers in recovery regions where the species has already exceeded recovery objectives, and 3) by speeding recovery, it could help lower the overall costs associated with recovery. It would, however, require a separate environmental analysis process if it were proposed to be used.

Manage for landscape connectivity: No changes were made to this provision in the revised Preferred Alternative 2 (Table 1). Washington's objective of 15 successful breeding pairs distributed across three recovery regions and maintained for 3 consecutive years is believed to be sufficient to result in the reestablishment of self-sustaining wolf population in the state as long as connectivity is maintained with populations in Idaho, Montana, British Columbia, and Oregon. Within Washington, safe passage within and between habitat areas is vital for allowing wolves to disperse and recolonize unoccupied habitat and for promoting genetic and demographic exchange between subpopulations. On a regional scale, maintaining cross-border habitat linkages between Washington and Idaho, British Columbia, and Oregon is vital to the reestablishment and long-term viability of a wolf population in Washington. This alternative would expand existing efforts to maintain and restore habitat connectivity for wolves.

Use of non-lethal injurious harassment: No changes were made to this provision in the revised Preferred Alternative 2 (Table 1). Non-lethal forms of harassment can make wolves more fearful of people and livestock, making it less likely that they would frequent areas occupied by people and livestock. Non-lethal injurious harassment involves striking wolves with rubber bullets or other non-lethal projectiles. Under this alternative, livestock owners and grazing allotment holders (or their designated agents) may be issued a permit to use this form of harassment on their own land or their legally designated allotment, respectively, regardless of wolf listing status. This would require authorization from WDFW and training in the use of the above listed projectiles. While wolves are state listed as endangered, the use of non-lethal injurious harassment would be reconsidered if used inappropriately or if a mortality occurred under this provision.

Lethal control by state/federal agents of wolves involved in repeated livestock depredations: In Alternative 2, lethal control of wolves would be conducted by WDFW or federal agents and would be available regardless of wolf listing status, consistent with federal law. A minor revision to this element in the revised Preferred Alternative 2 (Table 1) is that WDFW may consider issuing a

permit to a livestock owner to conduct lethal control on private land they own or lease if WDFW does not have the resources to address control.

Lethal removal may be used to stop repeated depredation if it is documented that livestock have clearly been killed by wolves, non-lethal methods have been tried but failed to resolve the conflict, depredations are likely to continue, and there is no evidence of intentional feeding or unnatural attraction of wolves by the livestock owner. Situations would have to be evaluated on a case-specific basis, with management decisions based on pack history and size, pattern of depredations, number of livestock killed, state listed status of wolves, extent of proactive management measures being used on the property, and other considerations. If it is determined that lethal removal is necessary, it would likely be used incrementally, as has been done in other states, with one or two offending animals removed initially. If depredations continue, additional animals may be removed.

Lethal control by livestock owners of wolves involved in repeated livestock depredations: Under this alternative, WDFW may permit livestock owners (including their family members and authorized employees) to lethally control a limited number of wolves during a specific time period on private lands and public grazing allotments they own or lease after wolves reach state sensitive status. No changes were made to this provision in the revised Preferred Alternative 2 (Table 1).

Lethal take of wolves in the act of attacking (biting, wounding, or killing) livestock: This provision was modified in the revised Preferred Alternative 2 to include: 1) the issuing of a permit by WDFW, 2) changes to the listing statuses at which this provision is allowed, and 3) the requirement that documented depredation in the area must have already occurred and efforts to resolve the problem were tried but deemed ineffective (Table 1).

Under Alternative 2 in the Draft EIS, livestock owners, family members, and authorized employees would have been allowed to lethally take wolves "in the act" of attacking livestock (defined as biting, wounding, or killing; not chasing or pursuing) on private land they own or lease, after wolves reach state threatened status. In the revised Preferred Alternative 2, this provision is allowed by livestock owners (including family members and authorized employees) on private land they own or lease regardless of wolf listing status, with an issued permit, after documented depredation (injury or killing) in the area and efforts to resolve the problem have been deemed ineffective.

Efforts to resolve the problem may either be preventative measures (i.e., documented non-lethal actions implemented specifically to minimize or avoid wolf-livestock conflict before the initial depredation), or non-lethal control efforts (i.e., non-lethal actions implemented specifically to minimize or avoid wolf-livestock conflict after the initial depredation). The permit holder is required to continue implementing non-lethal actions to minimize or avoid wolf-livestock conflicts during the life of the permit, with issuance of future permits being contingent upon this effort. "In the area" means the area known to be used by the depredating wolves. In some cases, the area may be specifically delineated by data (i.e., radio telemetry). Permits for this activity may be issued for protection of all types of livestock covered under this plan and to both commercial and non-commercial livestock operators.

WDFW will provide training to permit holders to ensure the appropriate use of this provision. Wolves stalking, looking at, or passing near livestock, present in a field with livestock, or present on private property are not considered to be in the act of attacking. Wolves may not be intentionally baited, fed, or deliberately attracted for any purpose, including killing under this provision. Wolves killed under this provision must be reported to WDFW within 24 hours, with additional reasonable time allowed if there is limited access to the kill site. The wolf carcass must be surrendered to WDFW and preservation of physical evidence from the scene of the attack on livestock for inspection by WDFW is required.

Review of this management tool by WDFW would be triggered if it were used inappropriately or if two wolves were killed under it in a year. A review of this type would evaluate the circumstances of the mortalities or other problems, and would result in a determination of whether WDFW should stop issuing new permits or withdraw existing permits.

Lethal take of wolves in the act of attacking (biting, wounding, or killing) pet dogs: Under Alternative 2 in the Draft EIS, private citizens would have been allowed to kill a wolf that is "in the act" of attacking (defined as biting, wounding, or killing; not chasing or pursuing) domestic dogs on private land after wolves were downlisted to state sensitive status and on private or public land after they were delisted. During sensitive status, this provision would have reconsidered if used inappropriately or more than 2 mortalities occur in a year.

Under the revised Preferred Alternative 2, this provision has been eliminated (Table 1). It will remain illegal to kill a wolf in the act of attacking a pet dog while state-listed. Attacks on dogs are usually related to defense of pups at dens or rendezvous sites or defense of territories rather than acts of predation. As wolves expand their range in Washington, dog owners will need to be aware of the potential risks to their animals if they are within wolf pack territories. Some wolves will occupy areas near human habitation and areas used recreationally (e.g., national forests), which could put hunting or pet dogs at risk of depredation, especially if they are running at large. Outreach and education will be necessary to inform homeowners and hikers with dogs who visit sites where wolves may occur about preventative measures that can be taken to avoid wolf-dog encounters.

Compensation payment for confirmed and probable livestock depredation: The only change to this provision in the revised Preferred Alternative 2 (Table 1) was clarification of wording to explain payments for livestock losses on different sized grazing sites, and the addition of some caveats for when higher payments would be made.

This alternative provides for a two-tiered compensation system for confirmed and probable wolf-killed livestock on private and public lands. Under Alternative 2 in the Draft EIS, higher compensation payments would have been paid on grazing sites of 100 or more acres because it is harder to find livestock carcasses on larger acreages. For each documented loss on sites of this size, a two-to-one ratio for payment would have been used to account for a possible carcass that couldn't be located. Payments for claims on smaller areas did not include compensation for unknown

animals because livestock owners are typically able to supervise their stock more closely and can find nearly all carcasses.

Under the revised Preferred Alternative 2, for each animal confirmed as a wolf kill on grazing sites of 100 or more acres, and where the agency determines it would be difficult to survey the entire acreage or that not all animals are accounted for, owners would receive the full current market value for two animals. For each animal documented as a probable wolf kill, owners would receive half the current market value for two animals. On grazing sites not meeting the above criteria, owners would receive the full current market value of each animal confirmed as a wolf kill and half the current market value of each animal documented as a probable wolf kill. Current market value is the value of an animal at the time it would have normally gone to market. The wolf conservation and management plan defines livestock as cattle, calves, pigs, horses, mules, sheep, lambs, llamas, goats, guarding animals, and herding dogs. This differs from a state statutory definition of livestock under RCW 77.36, which is limited to horses, cows and sheep. Payment of compensation will be contingent on availability of funding and, where applicable, the restrictions of state or private funding sources.

Proactive measures to reduce depredation: Implementation of proactive non-lethal measures such as modified husbandry techniques and non-lethal deterrents, can reduce (1) livestock depredations by wolves, (2) the need to conduct lethal control, and (3) the costs of compensation programs. Thus, use of such measures can build social tolerance for wolves and aid conservation of the species. However, implementation of these measures can result in higher costs for livestock producers.

In the revised Preferred Alternative 2, changes were made on the hiring of additional personnel to provide technical assistance to livestock operators and modifications to potential sources of non-profit funding for proactive measures to reduce depredation (Table 1). In the Draft EIS Preferred Alternative 2, WDFW would hire wolf specialists whose duties would have included working with livestock producers to provide technical assistance on non-lethal management methods and technologies to minimize wolf-livestock conflicts and depredations. Instead, in the revised Preferred Alternative 2, WDFW staff will provide technical assistance to livestock operators to implement proactive measures to reduce conflicts. WDFW could seek funding for assistance with implementing proactive measures and would work with other organizations and agencies that are interested in providing livestock producers with funding, additional training, and other resources needed to implement this type of assistance.

Ungulate management: The modification to this provision in the revised Preferred Alternative 2 was the removal of the sentence regarding "managing ungulate harvest to benefit wolves if research determines wolves are below recovery objectives and prey is limiting" (Table 1). The Draft EIS Alternative 2 directed managing for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting to improve abundance in areas occupied or likely to be occupied by wolves. It also included a provision that if research determined that wolves

were not meeting recovery objectives in localized areas and prey availability was a key limiting factor, WDFW would have considered adjusting recreational harvest levels to provide adequate prey for wolves. This provision was removed in the revised Preferred Alternative 2.

Maintaining robust prey populations will benefit wolf conservation in Washington by providing adequate prey for wolves, supplying hunters and recreational viewers of wildlife with continued opportunities for hunting and seeing game, and reducing the potential for livestock depredation by providing an alternative food to domestic animals. In the revised Preferred Alternative 2, WDFW would manage for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting, consistent with game management plans.

Wolf-ungulate conflict management: This provision was changed in the Final EIS in the following ways: 1) wolf-ungulate conflict management could occur at all listed statuses, rather than only after delisting, 2) wolf-ungulate conflict management could occur within a recovery region after taking into consideration the status of wolves statewide and within the specific wolf recovery region (the regional wolf population is healthy) where ungulate impacts were occurring, 3) the term "at-risk ungulate population" was redefined, 4) the determination and importance of wolf predation as a limiting factor was changed from "*if research determines that wolf predation is a limiting factor…"* to "*if the Department determines that wolf predation is a primary limiting factor…*" for at-risk ungulate populations, and 5) decisions would be based on scientific principles and evaluated by WDFW (Table 1).

Wolves are expected to inhabit areas of Washington with abundant prey that already support multiple species of predators and recreational hunters. The effect on ungulate populations from adding wolves to existing predation levels and hunter harvest is difficult to predict for Washington, but information from Idaho, Montana, and Wyoming, each of which currently supports about 340-700 wolves, suggests that wolves will have little or no effect on elk and deer abundance or hunter harvest across large areas of Washington. Nevertheless, wolves have been linked to declining elk herds in some areas, although wolves were often just one of several contributing factors affecting the herds (e.g., changes in habitat, severe winter weather, and increasing populations of other predators).

In the Draft EIS Alternative 2, after wolves were delisted, WDFW could have considerd moving wolves, or using lethal control or other control techniques to reduce wolf abundance in localized areas with an at-risk ungulate population if research had determined that wolf predation was a key limiting factor for the ungulate population. In the revised Final EIS Preferred Alternative 2, this element was changed to: If the Department determines that wolf predation is a primary limiting factor for at-risk ungulate populations and the wolf population in that recovery region is healthy (exceeding delisting objectives within the region), it could consider moving of wolves, lethal control, or other control techniques in localized areas. The status of wolves statewide as well as within a specific wolf recovery region where ungulate impacts were occurring would be considered in decision-making. Decisions will be based on scientific principles and evaluated by WDFW.

The definition of an "at-risk" ungulate population in the Draft EIS Alternative 2 was:

> "any federal or state listed ungulate population (population (e.g., Selkirk Mountain woodland caribou, Columbian white-tailed deer). It may also include a game species' population that has experienced a dramatic decline from historical levels and has stayed at low levels for a significant period of time."

This was changed in the revised Preferred Alternative 2 to:

> "any federal or state listed ungulate population (e.g., Selkirk Mountain woodland caribou, Columbian white-tailed deer), or any ungulate population for which it is determined to have declined 25% or more below management objectives for three or more years and population trend analysis predicts a continued decline. For populations for which numeric estimates and/or management objectives are not currently available, it will not be possible to use a specific threshold to assess a need for management action. Instead WDFW will use other sources of information related to the population, such as harvest trends, hunter effort trends, sex and age ratios, and others."

Outreach and education: Outreach and education efforts are essential to wolf conservation. It is crucial that wolves and wolf management issues be portrayed in an objective and unbiased manner, and that the public receives accurate information about the species. One change was made to this provision in the revised Preferred Alternative 2 of the Final EIS (Table 1). In the Draft EIS, WDFW would have used wolf specialists to conduct outreach and education programs. In the Final EIS, this was changed to WDFW staff would conduct outreach and education programs.

3.2.3. Alternative 1

Alternative 1 has a lower standard for protection and restoration of wolves in the state and a more aggressive lethal control strategy. The alternative sets the lowest objectives for achieving geographic distribution, has a reduced emphasis on reestablishing wolves in the Southern Cascades/Northwest Coast Recovery Region, and does not require the establishment of a wolf population in a fourth recovery region (the Pacific Coast) to achieve recovery. This alternative would allow lethal control of wolves by livestock owners to occur sooner than that allowed in Alternative 2 (Preferred Alternative), but offers lower levels of compensation payments for wolf-caused depredation of livestock. It proposes managing ungulate prey populations through standard practices, does not recommend adjusting recreational harvest levels to benefit wolf conservation in certain limited situations, and proposes that removal of wolves could be considered for management of ungulate populations that were below herd objectives (not limited to at-risk ungulate populations) under certain limited circumstances after wolves reach sensitive status. This alternative allows translocation of wolves within the state if needed, but allows for limited efforts to protect landscape connectivity and to conduct public outreach and education regarding wolves.

Key elements of Alternative 1 are:

Number of Recovery Regions: This alternative has the same 3 recovery regions as in Alternative 2 (Preferred Alternative) (Table 1).

Distribution Requirements for Downlisting and Delisting: For Alternative 1, the conservation/recovery objectives for downlisting and delisting are:

- From endangered to threatened: 6 successful breeding pairs are present for 3 consecutive years, with at least 2 successful breeding pairs in both the Eastern Washington and Northern Cascades recovery regions and 2 other successful breeding pairs in any of the three recovery regions.

- From threatened to sensitive: 12 successful breeding pairs are present for 3 consecutive years, with at least 2 successful breeding pairs each in the Eastern Washington, Northern Cascades, and Southern Cascades/Northwest Coast recovery regions, and 6 successful breeding pairs that can be distributed in any of the three recovery regions.

- Delisting: 15 successful breeding pairs for 3 consecutive years, with at least 2 successful breeding pairs each in the Eastern Washington, Northern Cascades, and Southern Cascades/Northwest Coast recovery regions, and 9 successful breeding pairs that can be distributed in any of the three recovery regions.

Translocation: Translocation is available as a tool under Alternative 1.

Manage for landscape connectivity: Maintaining connectivity with wolf populations in Idaho, Montana, British Columbia, and Oregon is needed to ensure the establishment of a self-sustaining recovered wolf population in Washington. Under Alternative 1, WDFW would continue to work with other agencies and organizations to maintain and restore habitat connectivity for wolves and other wide-ranging carnivores, but less emphasis would be placed on these efforts than under the revised Preferred Alternative 2.

Use of non-lethal injurious harassment: Use of this tool by livestock owners and grazing allotment holders (or their designated agents) and oversight by WDFW would be the same under Alternative 1 and the revised Preferred Alternative 2, with use allowed regardless of wolf listing status. While wolves are listed as endangered, this would be reconsidered if harassment was used inappropriately or a mortality occurred under this provision.

Lethal control by state/federal agents of wolves involved in repeated livestock depredations: Use of this tool by state/federal agents is allowed regardless of wolf listing status, consistent with federal and state law.

Lethal control by livestock owners of wolves involved in repeated livestock depredations: Use of this measure would be allowed by livestock owners (including family members and authorized employees) with a permit from WDFW after wolves reach state threatened status under Alternative 1, rather than state sensitive status as called for in the revised Preferred Alternative 2.

Lethal take of wolves in the act of attacking (biting, wounding, or killing) livestock: Under Alternative 1, use of this provision would be allowed by livestock owners (including family members and authorized employees) on private land they own or lease regardless of the wolf listing status. While wolves are state listed as endangered, this management tool will be reconsidered if used inappropriately or if more than two wolves are killed under this provision in a year. The revised Preferred Alternative 2 allows this action to be taken after a permit has been issued and only after depredation has been documented in the area and efforts to resolve the problem have been deemed ineffective.

Lethal take of wolves in the act of attacking (biting, wounding, or killing) domestic dogs: Under Alternative 1, use of this provision would be allowed by private citizens on private land after wolves are downlisted to state threatened status. While wolves are state listed, this provision will be reconsidered if used inappropriately or more than 2 mortalities occur in a year. This contrasts with the revised Preferred Alternative 2, which does not allow this measure.

Compensation payment for confirmed and probable livestock depredation: Alternative 1 provides a less generous compensation package without consideration of size of grazing site for confirmed and probable wolf-killed livestock on private and public lands than that provided in the revised Preferred Alternative 2. Under Alternative 1, livestock producers would receive the full current market value for each confirmed livestock depredation and half the current market value for each probable livestock depredation.

Proactive measures to reduce depredation: Under Alternative 1, WDFW would use existing staff (with limited time availability) to provide livestock producers with technical assistance on non-lethal management methods and technologies to minimize wolf-livestock conflicts and depredations. This is the same as the revised Preferred Alternative 2. Under both alternatives, WDFW could seek funding for assistance with implementing proactive measures and would work with other organizations and agencies that are interested in providing livestock producers with funding, additional training, and other resources needed to implement this type of assistance.

Ungulate management: Alternative 1 and the revised Preferred Alternative 2 both recommend managing for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting to improve abundance in areas occupied or likely to be occupied by wolves, through implementation of existing game management plans

Wolf-ungulate conflict management: Under Alternative 1, after wolves reach sensitive status, WDFW could consider reducing wolf abundance in localized areas where ungulate populations were below herd objectives by moving wolves, or using lethal control or other control techniques if research determines that wolf predation is a limiting factor for ungulate populations that are below herd objectives. In the revised Preferred Alternative 2, if the Department determines that wolf predation is a primary limiting factor for at-risk ungulate populations and the wolf population in that recovery region is healthy (exceeding delisting objectives within the region), it could consider moving of wolves, lethal control, or other control techniques in localized areas. The status of

wolves statewide as well as within a specific wolf recovery region where ungulate impacts were occurring would be considered in decision-making. Decisions will be based on scientific principles and evaluated by WDFW.

Outreach and education: Under Alternative 1, as in the revised Preferred Alternative 2, WDFW would use existing staff to develop and conduct public outreach and education programs. In Alternative 1, program efforts would remain the same as currently provided by WDFW. Under the revised Preferred Alternative 2, outreach and education efforts would be expanded.

3.2.4. Alternative 3

Alternative 3 is predicted to have a higher probability of achieving and maintaining a long-term viable wolf population in Washington compared to the other alternatives. It has the most stringent distribution requirements, and places increased emphasis on reestablishing wolves in far western Washington by requiring a wolf population to be present on the Olympic Peninsula or in the Willapa Hills to achieve recovery. This alternative would place somewhat greater limitations on the use of lethal control of wolves by livestock owners than the revised Preferred Alternative 2, but would offer higher levels of compensation payments for wolf-caused depredation of livestock. It provides for continued management of ungulate prey populations through standard practices, but would also adjust levels of recreational harvest to benefit wolf conservation in each wolf recovery region until recovery objectives for the region were met. It acknowledges that management of at-risk ungulate populations may require removal of wolves after delisting under certain limited circumstances, but limits wolf removals to non-lethal methods. This alternative allows translocating wolves within the state if needed, expanding efforts to maintain and restore landscape connectivity, and making wolf conservation outreach and education a high priority.

Key elements of Alternative 3 are:

Number of Recovery Regions: This alternative would create a fourth recovery region known as the Pacific Coast Recovery Region (Figure 2). It would retain the Eastern Washington and Northern Cascades recovery regions, but would separate the Southern Cascades/Northwest Coast region into two separate recovery regions (Southern Cascades and Pacific Coast). In comparison, the revised Preferred Alternative 2 and Alternative 1 would have only 3 recovery regions: Eastern Washington, Northern Cascades, and the Southern Cascades/Northwest Coast.

Distribution Requirements for Downlisting and Delisting: For Alternative 3, the conservation/recovery objectives for downlisting and delisting are:

- From endangered to threatened: 6 successful breeding pairs are present for 3 consecutive years, with at least 2 successful breeding pairs in both the Eastern Washington and Northern Cascades Recovery Regions, and at least 2 successful breeding pairs distributed in either the Southern Cascades or Pacific Coast Recovery Regions, or one in each of these two regions.

- From threatened to sensitive: 12 successful breeding pairs are present for 3 consecutive years, with at least 3 successful breeding pairs in each of the four recovery regions.

- Delisting: 15 successful breeding pairs for 3 consecutive years, with at least 3 successful breeding pairs each of the four recovery regions, and 3 successful breeding pairs that could be distributed in any of the four recovery regions.

Translocation: Translocation goals and implementation would be the same under Alternative 3 and the revised Preferred Alternative 2.

Manage for landscape connectivity: Maintaining connectivity with wolf populations in Idaho, Montana, British Columbia, and Oregon is needed to ensure the establishment of a self-sustaining wolf population in Washington. Under Alternative 3, the need to expand existing efforts to maintain and restore habitat connectivity for wolves would be emphasized the same as in the revised Preferred Alternative 2.

Use of non-lethal injurious harassment: In Alternative 3, use of this tool by livestock owners and grazing allotment holders (or their designated agents) and oversight by WDFW would be delayed until wolves were downlisted to state sensitive status. In contrast, the revised Preferred Alternative 2 allows it to be used in all listed phases, with a permit and training.

Lethal control by state/federal agents of wolves involved in repeated livestock depredations: Use of this tool by state/federal agents would be the same under Alternative 3 and the revised Preferred Alternative 2, with use allowed during all state listed statuses, consistent with state and federal law.

Lethal control by livestock owners of wolves involved in repeated livestock depredations: Use of this measure would be allowed by livestock owners (including family members and authorized employees) with a permit from WDFW after wolves reach state sensitive status under both Alternative 3 and the revised Preferred Alternative 2. However, while wolves are state-listed as Sensitive, Alternative 3 would restrict the use of lethal control to private lands that the livestock owner or family members/authorized employees own or lease; the revised Preferred Alternative 2 allows use of lethal control on both private and public lands that a livestock owner (including family members and authorized employees) owns or leases after wolves are downlisted to state sensitive status.

Lethal take of wolves in the act of attacking (biting, wounding, or killing) livestock: Under Alternative 3, use of this provision would be allowed by livestock owners (including family members and authorized employees) on private land they own or lease after wolves were downlisted to state sensitive status. While wolves are state listed as sensitive, this management tool would be reconsidered if used inappropriately or if more than two wolves were killed under this provision in a year. This contrasts with the revised Preferred Alternative 2, which allows this with an issued

permit, after documented depredation in the area and efforts to resolve the problem have been deemed ineffective.

Lethal take of wolves in the act of attacking (biting, wounding, or killing) domestic dogs: Neither Alternative 3 or the revised Preferred Alternative 2 allows use of this provision while wolves are listed.

Compensation payment for confirmed and probable livestock depredation: Among the four alternatives, Alternative 3 has the most generous compensation package for confirmed and probable wolf depredations of livestock. Under this alternative, a livestock owner would receive payment at twice the value for each confirmed depredation on grazing areas of all sizes. For each probable depredation, the owner would receive the full value of the animal. In contrast to the revised Preferred Alternative 2, which uses a two-tiered payment system with higher payments offered for losses on grazing areas of 100 or more acres, Alternative 3 would not take size of the grazing area into consideration when determining compensation amounts. Both Alternative 3 and the revised Preferred Alternative 2 recommend compensation for losses occurring on both private and public lands.

Proactive measures to reduce depredation: The goals and implementation of proactive measures would be the same under Alternative 3 and the revised Preferred Alternative 2.

Ungulate management: Alternative 3 and the revised Preferred Alternative 2 both recommend managing for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting to improve abundance in areas occupied or likely to be occupied by wolves. However, under Alternative 3, consideration would be given to adjusting recreational harvest levels to benefit wolves in each recovery region until recovery objectives for the region were met. By comparison, the revised Preferred Alternative 2 does not address adjusting harvest levels to benefit wolves in localized areas if research determined that wolves were not meeting recovery objectives and prey availability was an important limiting factor.

Wolf-ungulate conflict management: Under Alternative 3, WDFW could consider moving wolves or using other non-lethal control measures to reduce wolf abundance in localized areas with at-risk ungulate populations after wolves were delisted and research had demonstrated that wolf predation was a key limiting factor for the ungulate population. This differs from the revised Preferred Alternative 2 by restricting control measures to non-lethal techniques only.

Outreach and education: Under Alternative 3, WDFW would use wolf specialists and existing staff to conduct develop and conduct outreach and education programs for wolves. These efforts would be a higher priority than under the revised Preferred Alternative 2 and would rely on both WDFW wolf specialists and other staff (as available).

3.2.5. Alternative 4: No Action (Current Management)

Analysis of a No Action (Current Management or Status Quo) Alternative (Alternative 4) is required by SEPA. This alternative would maintain WDFW's current management approach toward wolves and would not result in the development of a wolf conservation and management plan. The lack of a recovery plan means that there would be no conservation objectives established for downlisting and delisting the species in Washington. Thus, wolves would remain a state endangered species into the foreseeable future until such a plan was developed with objectives for downlisting and delisting, and the species achieved recovery objectives. Under this alternative, wolf conservation and management activities by WDFW would continue as currently performed. Livestock owners would be able to implement proactive non-lethal approaches for resolving conflicts with wolves, and state or federal agents would perform lethal removals of wolves, if consistent with federal and state law.

Without a state plan, it is unknown what state or private funding programs might be available to compensate for wolf depredation of livestock. Under Alternative 4, WDFW would continue to manage ungulate prey populations through standard practices, but would not adjust recreational harvest levels to benefit wolf conservation, or manage ungulate populations through removal of wolves. Translocation of wolves could occur within the state, if needed, but without recovery objectives, there would be a lack of incentive or justification. Efforts to protect landscape connectivity and conduct outreach and education about wolf conservation and management would continue at current levels as provided by existing WDFW staff. Because Alternative 4 would not result in the eventual state delisting of wolves in Washington, it does not meet the stated purpose and need of a wolf conservation and management plan.

Key elements of Alternative 4 are:

Number of Recovery Regions: There would be no recovery regions designated under this alternative.

Distribution Requirements for Downlisting and Delisting: There would be no conservation/recovery objectives designated for achieving state downlisting and delisting of wolves in Washington under this alternative. Wolves would remain listed as endangered until a state recovery plan was developed, with objectives for downlisting and delisting established.

Translocation: Translocation would be available as a tool; however, without recovery regions established or recovery objectives, there would be no incentive or justification for translocation.

Manage for landscape connectivity: Under this alternative, WDFW would continue existing efforts to work with other agencies and organizations to maintain and restore habitat connectivity for wolves and other wide-ranging carnivores. However, these efforts would be less expansive than under the revised Preferred Alternative 2.

Use of non-lethal injurious harassment: Under Alternative 4, use of this tool by livestock owners and grazing allotment holders (or their designated agents) would possibly be allowed, with a permit and training, consistent with state and federal law.

Lethal control by state/federal agents of wolves involved in repeated livestock depredations: Use of this measure by state/federal agents would be the same under Alternative 4 and the revised Preferred Alternative 2, with use allowed, consistent with state and federal law.

Lethal control by livestock owners of wolves involved in repeated livestock depredations: Under Alternative 4, this tool would be subject to the conditions and limitations of state law. In the revised Preferred Alternative 2, this measure would be available on both private land and public grazing allotments after wolves reached state Sensitive status.

Lethal take of wolves in the act of attacking (biting, wounding, or killing) livestock: Under this alternative, this measure would be subject to the conditions and limitations of state and federal law. By comparison, the revised Preferred Alternative 2 allows this measure regardless of wolf listing status, with an issued permit, after documented depredation in the area and efforts to resolve the problem have been deemed ineffective.

Lethal take of wolves in the act of attacking (biting, wounding, or killing) domestic dogs: Under Alternative 4, this provision would be subject to the conditions and limitations of state and federal law. Under the revised Preferred Alternative 2, this measure is not allowed.

Compensation payment for confirmed and probable livestock depredation: In contrast to the revised Preferred Alternative 2, which pays compensation at a 2:1 ratio on grazing sites greater than or equal to 100 acres, and at a 1:1 ratio on smaller acreages, compensation in Alternative 4 would be limited to that currently paid by any existing state or private programs to compensate livestock operators for losses.

Proactive measures to reduce depredation: Under Alternative 4, reimbursement for implementing proactive measures to reduce wolf depredation of livestock would be limited to that paid by any existing private or state programs. By comparison, under the revised Preferred Alternative 2, WDFW would actively work with livestock producers to provide technical assistance on non-lethal management methods and technologies to minimize wolf-livestock conflicts and depredations. WDFW could seek funding for assistance with implementing proactive measures and would work with other organizations and agencies that are interested in providing livestock producers with funding, additional training, and other resources needed to implement this type of assistance.

Ungulate management: Alternative 4 and the revised Preferred Alternative 2 both recommend managing for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting to improve abundance in areas occupied or likely to be occupied by wolves, through implementation of existing game management plans

Wolf-ungulate conflict management: Under Alternative 4, measures to resolve conflicts between wolves and ungulate populations would be delayed until wolves were delisted. Wolves would remain listed until a state recovery plan was developed and outlined recovery goals (downlisting and delisting) were met.

Outreach and education: Under Alternative 4, WDFW would use existing staff to develop and conduct outreach and education programs about wolf conservation and management. Program efforts would remain the same as currently expended at WDFW.

3.3. Selection of the Preferred Alternative

Alternative 3 places the greatest emphasis on protection and restoration of wolves in Washington, but has less emphasis on management options for addressing wolf-livestock conflicts. Alternative 1 has the least emphasis on protection and restoration of wolves in the state and wolf populations could continue to be at risk under this alternative because of more aggressive lethal control and a more limited geographic distribution in the state. Alternative 4 emphasizes protection and restoration of wolves using existing programs, but does not develop a conservation and management plan. As a result, wolves would continue to be listed as endangered and the purpose and need of a plan would not be met. The Revised Alternative 2 is the Final Preferred Alternative because it more fully addresses and balances the purpose and need of the plan, as described in Chapter 1, Purpose and Need. It best meets the goals and objectives for establishing a long-term viable wolf population in Washington while at the same time addressing wolf-livestock conflicts and interactions between wolves and wild ungulates.

4. Affected Environment and Environmental Consequences

WAC 197-11-444 (Appendix C) provides a comprehensive list of subjects that must be considered in this analysis with the caveat that the EIS must only study the elements that apply to this proposal. The alternatives described in detail in Chapter 2 of the Draft EIS for the Wolf Conservation and Management Plan (WDFW 2009) have been examined in the context of WAC 197-11-144. The following elements are evaluated with respect to consideration of possible environmental effects of implementing conservation and management strategies in the revised Preferred Alternative 2:

(1) Natural Environment (Plants and Animals)

a. Habitat for and numbers or diversity of species of plants, fish, or other wildlife (wolves, other carnivores, ungulates, ecosystem effects)

b. Unique species (listed species, candidate species, and species of concern)

(2) Built Environment (Land and Shorelines Use)

a. Recreation (hunting, wildlife watching, other types of backcountry recreation)

b. Agricultural crops (livestock)

c. Land use

4.1. Natural Environment – Plants and Animals

There are several elements of the natural environment that might be expected to experience direct and indirect impacts resulting from implementation of conservation and management strategies in the revised Preferred Alternative 2. They include: wolves, other carnivores, ungulates, ecosystems, and other listed wildlife species. Impacts of the various alternatives to wolves are primarily direct, whereas impacts to most of the other elements of the natural environment are indirect. Both types of impacts can be anticipated as wolves recolonize and re-establish populations in Washington based on documented impacts in other western states where wolf recovery has occurred. Recovery level, geographic distribution of a recovered wolf population, and management actions to resolve conflicts under the different alternatives may determine the possible impacts to these elements of the environment. Predicting indirect environmental impacts of the revised Preferred Alternative 2 is speculative because the conservation and management plan alternatives are non-project proposals, which lack very specific actions. The likely adverse or beneficial impacts to the natural environment of the revised Preferred Alternative 2 are discussed below.

4.1.1. Wolves

Gray wolves were formerly common throughout most of Washington, but they declined rapidly between 1850 and 1900. The primary cause of this decline was the killing of wolves by Euro-American settlers as ranching and farming activities expanded. Wolves were essentially eliminated as

a breeding species from the state by the 1930s, although infrequent reports of animals continued in the following decades, suggesting that small numbers of individuals continued to disperse into Washington from neighboring states and British Columbia.

Reliable reports of wolves have been increasing in Washington since 2005. The first fully documented breeding pack was confirmed in 2008. As of July 2011, there were five confirmed packs in the state: two in Pend Oreille County; one in Pend Oreille/Stevens counties; one in Kittitas County; and one in Okanogan/Chelan counties. Only one of these, in Pend Oreille County, met the definition of a successful breeding pair in 2010. There were also indications of an additional pack in the Blue Mountains and another pack in North Cascades National Park; and at least a few solitary wolves are likely to occur in other scattered locations of Washington.

Wolves are highly social and live in packs typically averaging five to ten individuals. Packs normally produce a single litter annually that averages four to six pups. Diet consists mainly of ungulates, with elk, deer and moose expected to be the main prey in Washington. Some food is obtained through scavenging. Packs establish territories and defend them from trespassing wolves. Territory sizes usually average about 200 to 400 square miles in the western United States. From late April until September, pack activity is centered at or near den or rendezvous sites, as adults hunt and bring food back to the pups. One or more rendezvous sites are used after pups emerge from the den. Upon reaching sexual maturity, most wolves disperse from their natal pack to search for a mate and start a new pack of their own. Individuals may disperse be to unoccupied habitat near their natal pack's territory or they travel much longer distances before locating vacant habitat, a mate, or another pack to join. Wolves are habitat generalists, but most populations in western North America occur predominantly in forests and nearby open habitats with adequate prey. Human-caused mortality is the largest source of wolf mortality in the western United States (Mitchell et al. 2008) and is the only factor that can significantly affect the recovery of populations. On average, an estimated 10% of the wolves in the northern Rocky Mountain states die annually from control actions, 10% from illegal killing, 3% from human-related accidents, and 3% from natural causes (USFWS 2009). Once established, wolf populations can withstand high mortality rates as long as that reproductive rates are also high and immigration continues. In most locations, sustainable mortality rates range from about 22-24% (Creel and Rotella 2010).

The Recommended Plan (revised Preferred Alternative 2) identifies strategies to reestablish a naturally reproducing and viable population of wolves distributed in a significant portion of the species' former range in Washington. Conservation/recovery objectives for downlisting and delisting are set at sufficient numbers of individuals and geographic extent to ensure that a viable population is reestablished. For the purposes of the Recommended Plan, a "viable" population is one that is able to sustain its size, distribution, and genetic variation for the long term (50-100 years) without requiring human intervention and conservation actions. Such populations must also be able to withstand fluctuations in abundance and recruitment associated with variation in food supplies, predation, disease, and habitat quality. For wolves, long-term persistence of a population in

Washington will depend on other factors as well, including proximity and connectivity to source populations (outside and potentially within the state), competing carnivore populations (e.g., bears, cougars, and coyotes), the extent of conflicts with livestock production, and overall social tolerance by people.

- **Alternative 1.** The downlisting and delisting objectives in Alternative 1 could result in a more limited geographic distribution of wolves in Washington. Alternative 1 has a lower recovery objective for reestablishing wolves in the Southern Cascades/Northwest Coast Recovery Region and does not require the establishment of a wolf population in a fourth recovery region (Pacific Coast) to achieve delisting. This could result in most wolves being concentrated in the Eastern Washington and Northern Cascades recovery regions upon delisting. Translocation could be used to expand distribution, but under this alternative, there would be limited efforts to protect landscape connectivity to promote movement and genetic exchange among populations.

  This alternative would likely result in higher levels of human-caused mortality of wolves. Lethal control of wolves by livestock owners would be allowed to occur during Threatened status. Lethal and non-lethal control of wolves determined to be limiting ungulate populations would be allowed if those herds were below herd objectives when wolves were at Sensitive status. Non-lethal removal of wolves to protect these herds could be detrimental to wolf populations by disrupting pack dynamics, therefore reducing pack productivity. This alternative would not involve reductions in recreational harvest levels in certain limited situations to benefit wolf populations that were not achieving recovery objectives and were constrained by prey availability. This alternative would be less likely to increase public tolerance for wolves because both compensation for wolf-caused depredation of livestock and outreach and education efforts would be maintained at current levels.

  Alternative 1 is predicted to have potentially adverse impacts on achieving the long-term persistence of a wolf population in Washington as it would likely result in higher mortality rates, slower population growth among wolves, and a more limited geographic distribution.

- **Revised Preferred Alternative 2 –** The recovery objectives in the revised Preferred Alternative 2 would require that wolves have a fairly extensive geographic distribution in Washington at the time of delisting. The requirement for at least five successful breeding pairs in the Southern Cascades/Northwest Coast Recovery Region for reaching sensitive status and six breeding pairs to meet the delisting objective achieves a stronger presence in this portion of the state. However, establishment of a wolf population in a Northwest Coast portion of the recovery region is not required to achieve recovery, thus this alternative does not seek to reestablish wolves statewide. Under this alternative, translocation would be available to expand distribution if needed and efforts would be continued or expanded to

maintain and restore landscape connectivity to promote movement and genetic exchange among populations.

The conservation and management strategies of this alternative would likely result in intermediate levels of human-caused mortality in wolves. These include allowing the use of lethal control of wolves by livestock owners with a permit (to be issued by WDFW under certain limited circumstances) and lethal control for addressing conflicts with at-risk ungulate populations; both would be allowed regardless of listing status. The generous livestock compensation system under this alternative and expansion of outreach and education would likely increase public tolerance for wolves, thereby helping to reduce human-caused mortalities. This alternative manages for healthy ungulate populations through implementation of game management plans (including habitat improvement, harvest management, and reduction of illegal hunting). This could benefit some wolf populations by retaining adequate prey availability.

The revised Preferred Alternative 2 sets intermediate goals for numbers and distribution of wolves in Washington by using recovery objectives that attempt to be both demographically sustainable and socially acceptable. The objectives are expected to result in establishment of a population that can demonstrate long-term persistence and is distributed across a significant portion of the state, while ensuring that livestock and some ungulate conflicts are addressed. The revised Preferred Alternative 2 is expected to result in recovery of a self-sustaining population because it will result in reduced mortality, can use translocation to speed recovery, and does not require wolves become established in a Pacific Coast region.

- **Alternative 3.** Alternative 3 is predicted to have the most beneficial impact for wolves and the highest probability of achieving and maintaining a self-sustaining wolf population in Washington. The management strategies in Alternative 3 would likely result in lower levels of human-caused mortality of wolves, which could allow larger numbers of wolves to be present in the state when delisting occurs. Alternative 3 would place more limitations on the use of lethal control of wolves by livestock owners and would not consider lethal control of wolves to enhance ungulate populations. Use of non-lethal removal of wolves to protect ungulate populations would be limited to herds considered "at-risk," thus removals of this type would be unlikely to disrupt pack dynamics and productivity. This alternative would allow reductions in recreational harvest levels of ungulates in each recovery region until wolf recovery objectives for the region were met, thereby ensuring sufficient prey for expanding wolf populations. The most generous livestock compensation system and expanded outreach and education efforts under this alternative would be more likely to increase public tolerance for wolves than under other alternatives.

  The recovery objectives in Alternative 3 would ensure the broadest geographic distribution of wolves in Washington at the time of delisting by requiring the establishment of a wolf population with at least three successful breeding pairs in the Pacific Coast recovery region.

Under this alternative, translocation could be used to expand distribution and there would be stronger efforts to protect landscape connectivity for wolves to promote movement and genetic exchange among populations.

Alternative 3 is highly likely to result in a wolf population with larger numbers and a broader distribution, and hence greater viability at the time of delisting. However, because of the requirement for wolves to be established in the Pacific Coast region, it would likely take longer to achieve recovery, unless translocation was used in recovery regions where wolves were not establishing breeding pairs on their own.

- **Alternative 4 – No Action (Current Management).** This alternative would continue wolf conservation and management activities as currently performed, without development of a wolf conservation and management plan, and with no recovery objectives established. Wolves would remain listed as endangered until a recovery plan was developed. As such, human-caused mortality would probably remain relatively low because of restrictions on lethal control by livestock owners and for the purpose of managing ungulate populations. Non-lethal removal of wolves to protect ungulates would not be expected. This alternative would continue current management for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal hunting using existing WDFW game management plans. It is unknown whether there would be adjustments to recreational harvest levels to benefit wolf populations that were determined to be prey-limited. This alternative would continue current programs for compensation for wolf-caused depredation of livestock and existing outreach and education efforts, thus it would be less likely to increase public tolerance for wolves.

  Under the current management practices of Alternative 4, it is unknown how rapidly wolves might expand their geographic distribution to meet the requirement that it be a significant portion of their former range in Washington, but it would probably occur more slowly than if proactive recovery efforts were underway. Translocation of wolves would be possible under Alternative 4, but it is doubtful that it would be conducted without the guidance of a conservation and management plan with recovery objectives. This alternative would continue ongoing limited efforts to protect landscape connectivity to promote movement and genetic exchange among wolf populations.

  The potentially adverse impact of Alternative 4 is that it would be unlikely to result in achieving a wolf population with long-term viability in Washington. Wolves would be managed cautiously to avoid mortality; but without proactive conservation measures as outlined in a wolf conservation and management plan, it is unlikely that they would sufficiently expand in numbers and geographic distribution to establish a viable population and re-occupy a significant portion of their former range in the state.

4.1.2. Other Carnivores

Gray wolves in North America have long co-existed with a variety of other carnivores. How these species interact with wolves varies depending on the extent of dietary overlap, habitat, environmental conditions, and other factors. To date, no definitive research exists on the effects that wolves have on carnivore community structure or populations (USFWS 1994, Ballard et al. 2003). In Washington, wolves will share habitats occupied by a number of other carnivores, including cougars, coyotes, black bears, grizzly bears, bobcats, lynx, red foxes, river otters, mink, martens, weasels, skunks, wolverines, badgers, raccoons, and fishers. Direct interactions almost certainly will occur as wolves begin to reoccupy portions of their historical range in Washington and reestablish packs.

Information regarding the interactions between other carnivores and wolves is primarily observational and largely speculative when attempting to make predictions at the population or community level. Because wolves are wide-ranging and many carnivores are secretive in nature, collecting data on interactions is difficult. Observations to date suggest that wolves can reduce, or in rare cases eliminate, certain carnivores (such as coyotes) locally, but no evidence of long-term spatial partitioning of resources within an area has yet been detected (Ballard et al. 2003).

Interactions between wolves and coyotes have been discussed in the scientific literature more often than for other carnivores. Reestablishment of wolves has led to reductions in coyotes in some areas (e.g., Yellowstone and Grand Teton National Parks), but not at others (Ballard et al. 2003). Extirpation of coyotes by wolves can occur rarely (e.g., at Isle Royale National Park), but probably only under limited ecological circumstances, such as where immigration is prevented. Recent studies at Grand Teton and Yellowstone National Parks have detected declines in coyote densities of 33% and 39%, respectively, in areas reoccupied by wolves and are reflective of competition between the two species (Berger and Gese 2007). Localized or short-term decreases in coyote abundance can be even higher, such as a 50% loss in the Lamar Valley population of Yellowstone from 1996 to 1998 (Crabtree and Sheldon 1999). Resident coyote home ranges often overlap extensively with those of wolves, suggesting that coyotes may in fact derive some benefit from wolves by having a year-round source of ungulate carcasses on which to scavenge (Switalski 2003, Berger and Gese 2007, Merkle et al. 2009). Carrera et al. (2008) hypothesized that competition between the two species may be especially high where their diets substantially overlap. Berger and Gese (2007) hypothesized that wolves may have little or no effect on coyote densities outside of protected areas (where overall wolf densities are likely to be lower because of conflicts with humans), although this observation was based on few data.

Most wolf-grizzly bear interactions also involve fighting and chasing, which often take place at kill sites (Ballard et al. 2003). Encounters at kill sites usually appear to be won by grizzlies, whereas wolves usually win those at wolf dens. Each species is occasionally recorded killing the other (e.g., Jimenez et al. 2008, Hebblewhite and Smith 2010). Because grizzlies readily usurp ungulate kills made by wolves (e.g., Hebblewhite and Smith 2010), Servheen and Knight (1993) speculated that the

presence of wolves might be beneficial to threatened populations of grizzlies by supplementing their diet with greater amounts of protein through increased availability of ungulate carcasses. This may be especially true following mild winters, when ungulate carrion is normally far less available. Most reported encounters between wolves and black bears involved fighting or chasing one another, or wolves killing black bears. In a smaller number of interactions, wolves displaced black bears from kills. Wolves will seek out and kill black bears in their dens but often do not consume them, suggesting that interference competition exists between the two species.

Few observations of direct wolf-cougar interactions have been reported, but the two species do occasionally kill each other. However, cougars have been noted moving away from kills to avoid wolf contact (Akenson et al. 2005) and in general may avoid areas recently used by wolves (Kortello et al. 2007). Wolves also seek out and take over cougar kills, which may force cougars to increase their kill rates to replace lost prey (Hornocker and Ruth 1997, Murphy 1998, Kunkel et al. 1999, Kortello et al. 2007). In one area of central Idaho, cougars showed lower recruitment, fewer adults, and a disrupted social structure several years after recolonization by wolves, but other factors (declining prey populations, high hunter harvest, and a large forest fire) occurring simultaneously probably contributed to these effects (Akenson et al. 2005). In Banff National Park, Alberta, a largely wolf-related decline in the elk population resulted in cougars shifting their diets mainly toward deer and bighorn sheep (Kortello et al. 2007). Cougars also exhibited low annual survival and poor body condition during the period of wolf reestablishment, indicating that cougars were negatively affected by wolf recolonization (Hebblewhite and Smith 2010).

Wolves can affect some other carnivores, such as wolverines, red foxes (including Cascades red foxes), and fishers, in the same ways described above for bears and coyotes (Ballard et al. 2003). Increased availability of wolf-killed carcasses may benefit these species by providing more food for scavenging, particularly during the winter months. However, wolves sometimes kill some of these species during direct interactions. In areas where coyote abundance is reduced by wolves, predators such as red foxes, lynx, and bobcats may benefit from reduced competition with coyotes (Mech and Boitani 2003b). Additionally, some prey species of coyotes may increase, which has the potential to enhance populations of other medium-sized and small carnivores (Buskirk 1999).

- **Common to All Alternatives:** It is doubtful that wolves would affect the overall abundance or distribution of other carnivore species in Washington under the revised Preferred Alternative 2. The presence of wolves could alter the local distributions and behaviors of some carnivores as they attempt to avoid direct interactions with wolves or as they respond to changes in food availability as influenced by wolves. Such changes could favor some carnivore species over others. Wolves would also be likely to occasionally kill individuals of some species. Wolves could reduce coyote abundance in some locations, although the extent that this would occur outside of national parks is unknown. In some locations, grizzly and black bears, red foxes, fishers, and wolverines might benefit from the increased availability of carrion resulting from wolf kills of ungulates.

4.1.3. Ungulates

*Wolf Predation of Ungulates***.** Ungulates are the primary food of wolves throughout their geographic range. Wolves tend to concentrate on species that are easier to capture or offer greater reward for the amount of capture effort expended, rather than on species that are most common. Diet can vary greatly among locations in the same region or even among packs living in the same vicinity (e.g., Kunkel et al. 2004, Smith et al. 2004) in response to differences in prey populations, seasonality, weather conditions, the presence of other predators, levels of human harvest, and other factors (Smith et al. 2004). In the central and northern Rocky Mountains of the United States and Canada, wolves commonly rely on elk as their primary prey, but deer and moose are more important in some areas. Moose are the major prey in much of British Columbia, including southern areas (G. Mowat, pers. comm.). Bighorn sheep and mountain goats are not regularly taken, probably because of little habitat overlap with wolves (Huggard 1993). Wolf diets in Washington are expected to be similar to those elsewhere in the region, with elk, deer, and moose being the primary prey species.

Wolves are selective hunters and usually choose more vulnerable and less fit prey. Young-of-the-year (especially in larger prey like elk and moose; Kunkel and Pletscher 1999, Boertje et al. 2009), older animals, and diseased and injured animals are taken in greater proportion than healthy, prime-aged individuals (Mech 1970, 2007, Kunkel et al. 1999, Mech and Peterson 2003, Smith et al. 2004, Sand et al. 2008, Hamlin and Cunningham 2009). Hunting success of wolves can be influenced by many factors, including pack size, terrain, habitat features, snow and other weather conditions, time of day, prey species, age and condition of prey, season, and experience (Mech and Peterson 2003, Hebblewhite 2005, Kauffman et al. 2007).

The impacts of wolves on prey abundance have been, and continue to be, widely debated (see Boutin 1992). Some common conclusions on this topic have been drawn. A number of studies indicate that wolf predation can limit ungulate prey populations (see citations in Chapter 5, Section A, of the recommended wolf conservation and management plan). Population-level effects result primarily through predation on young-of-the-year and are frequently enhanced when occurring in combination with other predators (e.g., bears) (Larsen et al. 1989, Barber-Meyer et al. 2008, Boertje et al. 2009). Elk declines in the greater Yellowstone ecosystem may result partially from the threat of wolf predation rather than actual wolf predation (Creel et al. 2009; but see White et al. 2011). In this case, female elk may respond to the presence of wolves by spending less time feeding and moving to safer habitats of poorer nutritional quality, resulting in reduced nutrition and lowered calf production that pushed the population downward.

As pointed out in many studies, numerous other factors (e.g. , human harvest, severe winters, variable forage quality, fluctuating abundance of other predators and prey, disease, human disturbance/development, and vehicle collisions) also influence prey populations and complicate the conclusions that can be drawn about wolf-related impacts. Several studies have detected little or no effect from wolves on ungulate populations (Thompson and Peterson 1988, Bangs et al. 1989, Peterson et al. 1998; see Mech and Peterson 2003). Several reasons exist for why researchers have

failed to reach agreement regarding the significance of wolf predation on the dynamics of prey populations: (1) each predator-prey system has unique ecological conditions, (2) wolf-prey systems are inherently complex, and (3) population data for wolves and their prey are imprecise and predation rates are variable. Whether a prey population exists at or below its ecological carrying capacity is another important element in assessing the results of such studies (D. W. Smith, pers. comm.). In summary, wolf-prey interactions are probably best characterized as being exceedingly complex and constantly changing, as seen at Isle Royale National Park, Michigan, where wolf-moose relationships still cannot be predicted with confidence despite 50 years of detailed research on this subject (Vucetich and Peterson 2009).

A recent finding by Eberhardt et al. (2007) is that predation by wolves has a much lower overall impact on ungulate populations than does antlerless harvest by hunters. Wolves primarily prey on young of the year and older individuals beyond their prime, both of which have lower reproductive value, whereas antlerless removals by hunters are concentrated on adult females of prime age. Thus, wolf predation has considerably less effect on reproductive rates and growth of populations. Eberhardt et al. (2007) also remarked that conservative harvests of females are needed to maintain ungulate populations exposed to hunting and predation by multiple species of large carnivores at or near carrying capacity.

As with other predators, wolf predation has the potential to threaten some small populations of prey, which often have a limited capacity to increase. In Washington, examples of such populations potentially include mountain caribou and certain herds of bighorn sheep.

Broad predictions of the effect on ungulate populations from adding wolves to existing predation levels and hunter harvest are difficult to make because of localized differences in predator and ungulate abundance and harvest management practices within geographic areas. However, information from Idaho, Montana, and Wyoming, each of which currently supports about 340-700 wolves, provides useful insight on impacts that can be expected in Washington as wolves become reestablished. In general, wolves have had little or no effect on elk and deer abundance or hunter harvest across large areas of these states, where most populations remain stable or are above population objectives (see Chapter 5, Section B, of the recommended wolf conservation and management plan). Wolves have been linked to declining elk herds in several areas, but often they are one of several factors affecting the herds (e.g., changes in habitat, severe winter weather, and increasing populations of other predators). In some wolf-occupied areas, hunter success rates may have been reduced because of changes in elk behavior and habitat use rather than by actual declines in elk abundance.

Ungulate Populations in Washington. Overviews of ungulate species (elk, deer, moose, bighorn sheep, mountain goats, and mountain caribou) and populations occurring in Washington are presented in Chapter 5, Section B, of the recommended wolf conservation and management plan.

- **Common to All Alternatives.** Wolves are expected to have little or no effect on the abundance of elk, deer, and moose across most of Washington while wolves remain a state

listed species, as suggested by findings in neighboring states. However, abundance of elk, deer, and moose could decline in localized areas where wolves become numerous. In all cases, a number of other contributing factors will affect the extent of wolf impacts to ungulate populations. These include levels of human harvest, habitat quality, winter severity, fluctuating abundance of other predators and prey, human disturbance/development, and the amount of mortality from other sources such as disease and vehicle collisions. The presence of wolves could alter the habitat use, and hence local distributions, of elk, deer, and moose in some areas as they attempt to avoid direct interactions with wolves. Predation on bighorn and mountain goats is expected to be minor. Potential impacts to mountain caribou are discussed in Section 4.1.5.

- **Alternative 1.** Under this alternative, WDFW could consider reducing wolf abundance in localized areas where ungulate populations were below herd objectives, but not until wolves were downlisted to sensitive status and research had demonstrated that wolf predation was a key limiting factor for the ungulate population. This action could potentially benefit the ungulate population by reducing predation on it, but could have an adverse impact on the wolf population. Because this alternative would be less likely to result in the establishment of wolf populations in far western Washington, any effects to ungulates from wolf recovery would more likely occur in the Cascades and other areas of eastern Washington.

- **Revised Preferred Alternative 2.** Under this alternative, if WDFW determined that wolf predation was a primary limiting factor for an "at-risk" ungulate population, and the wolf population in that wolf recovery region was healthy (i.e., it exceeds the delisting objectives for that recovery region), WDFW could consider reducing wolf abundance in the localized area occupied by the ungulate population before state delisting occurs. This could potentially benefit the population by reducing predation levels on it.

- **Alternative 3.** Under this alternative, WDFW could consider reducing wolf abundance in localized areas with ungulate populations determined to be severely depressed and in danger of eventual extirpation, if research had determined that wolf predation was a key limiting factor for the ungulate population. This could potentially benefit the population by reducing predation levels on it. This alternative would require the establishment of a wolf population in the Pacific Coast recovery region, meaning that effects to ungulates from wolf recovery could occur to some extent in all regions of the state, in contrast to the other alternatives.

- **Alternative 4.** This alternative would continue wolf conservation and management activities as currently performed, without development of a wolf conservation and management plan. Wolves would remain listed as endangered until a recovery plan was developed. Human-caused mortality would probably remain relatively low because of protections for endangered species which would limit use of lethal control measures. Non-lethal removal of wolves to protect ungulates would not be expected. This alternative would continue current management for healthy ungulate populations through habitat improvement, harvest

management, and reduction of illegal hunting using existing WDFW game management plans. It is unknown what wolf numbers and their impacts on localized ungulate populations would be. Because Alternative 4 would be less likely to result in the establishment of a wolf population in a Pacific Coast recovery region, wolf-related impacts to ungulates in this area would not be expected.

4.1.4. Ecosystem Effects

This element assesses the potential impacts that implementing the revised Preferred Alternative 2 could have on ecosystems, including plant communities, scavengers, and other wildlife, in Washington. Gray wolves affect ecosystem components through a variety of direct and indirect processes, including: (1) limitation of herbivore prey abundance and changes in prey behavior, (2) removal of inferior prey individuals and stimulation of prey productivity, (3) increasing food availability for scavengers and small carnivores, and (4) enhancement or limitation of some non-prey abundance (Mech and Boitani 2003b). However, the ecological affects of wolf predation on food webs are complex and interact with other biotic and abiotic factors, especially at lower trophic levels, and therefore generally remain poorly understood and difficult to predict (Berger and Smith 2005, Hebblewhite and Smith 2010).

Regulation of large herbivore abundance and behavior by wolves can result in alterations to vegetation patterns (structure, succession, productivity, species composition, and species diversity), thereby potentially affecting many wildlife species residing in an ecosystem (Berger and Smith 2005). Research at Yellowstone and Banff national parks has linked wolf predation on elk and associated changes in elk density and behavior to the localized resurgence of woody browse species such as willows and aspen (Smith et al. 2003, Ripple and Beschta 2004, 2007, Beschta 2005, Beschta and Ripple 2010, Hebblewhite and Smith 2010). (However, note that two recent studies [Kauffman et al. 2010, Tercek et al. 2010] dispute some of these findings.) This in turn has allowed beaver numbers to increase and will probably result in greater amounts of foraging and nesting habitat for various birds and other species. At Grand Teton National Park, Berger et al. (2001) hypothesized that overbrowsing of riparian zones by moose following the eradication of wolves and grizzly bears had produced changes in vegetation structure resulting in pronounced reductions or elimination of a number of neotropical migrant songbird species. Reduced tree and shrub coverage in riparian areas may also increase stream temperatures and erosion, thereby potentially harming numerous aquatic species.

Eradication of wolves has possibly produced a number of important ecological changes in Olympic National Park in northwestern Washington. Initial research by Beschta and Ripple (2008) suggests that overbrowsing by elk during the past century or so has caused substantial changes in riparian plant communities, including severe declines in the recruitment of black cottonwood and bigleaf maple. This in turn may have caused increased riverbank erosion and channel widening. Probable reductions in the amount of large woody debris in river channels during this period have likely reduced rearing habitat for salmon, steelhead, and resident fish. These changes in river ecology have

probably also lowered the abundance of aquatic invertebrate prey (including emerging adult insects) available for fish, birds, and bats. Confirmation of these cause and effect relationships is needed through additional research (P. Happe, pers. comm.).

Wolf-related reductions in coyote abundance (Section 4.1.2) may result in population changes among other medium-sized and small carnivores, either directly through reduced predation by coyotes or indirectly through adjustments in prey availability. For example, reduced interference competition with coyotes may increase the abundance of red foxes (Mech and Boitani 2003b). Similarly, wolf-related reductions in coyotes may result in increased survival for some prey species consumed by coyotes (e.g., pronghorn; Berger et al. 2008, Berger and Conner 2008). Increased availability of wolf-killed carcasses can benefit a number of scavenging species, such as ravens, magpies, jays, golden eagles, and bald eagles, especially during winter when other foods become more scarce (Smith et al. 2003). At Yellowstone National Park, at least 12 vertebrate species scavenge at wolf-killed carcasses, with five (bald and golden eagles, coyotes, ravens, and magpies) visiting nearly every wolf kill (Wilmers et al. 2003a, 2003b). At Banff National Park, at least 20 vertebrate species fed off wolf kills, with ravens, coyotes, magpies, martens, wolverines, and bald eagles visiting most often (Hebblewhite and Smith 2010). Increased availability of wolf-killed carcasses in Washington may be particularly beneficial for golden eagles, which may currently be food limited because of declines in jackrabbits and perhaps other prey (J. Watson, pers. comm.).

Most research on wolf-carnivore community interactions has been conducted in national parks or other protected areas. It remains unclear whether the ecological impacts of wolves are as perceptible in less pristine landscapes that have been influenced by livestock grazing or other human activities, or in areas with lower wolf densities (L. D. Mech, pers. comm.). Climate and habitat productivity are other factors that also may affect the strength of ecological changes resulting from the reestablishment of wolves (Rooney and Anderson 2009). Predictions about wolf-driven ecosystem changes and benefits in Washington (i.e., where effects occur, species affected, magnitude of changes, etc.) are difficult to make because of the uncertainty regarding the ultimate population size, density, and distribution of wolves in the state. These types of changes and benefits would be expected in areas where wolves achieve stable populations at relatively high density, but it is unknown whether Washington will support high-density populations under contemporary landscape conditions.

- **Alternative 1.** The more aggressive use of lethal control at earlier stages of recovery to resolve wolf-related conflicts in Alternative 1 would likely result in smaller numbers of wolves and greater instability of packs. This, in turn, would limit opportunities for ecosystem effects of the types described in this section. Because this alternative would be less likely to result in the establishment of wolf populations in far western Washington, any ecosystem effects accompanying wolf recovery would be more likely to occur in areas of eastern Washington and in the Cascades.

- **Revised Preferred Alternative 2.** The recovery objectives and management of wolf-related conflicts of the revised Preferred Alternative 2 would likely result in moderate numbers of wolves and moderate pack stability in Washington, thus allowing some opportunities for wolf-related ecosystem effects to develop. Because this alternative would be less likely to result in the establishment of wolf populations in far western Washington, any ecosystem effects accompanying wolf recovery would be more likely to occur in areas of eastern Washington and in the Cascades.

- **Alternative 3.** Management of wolf-related conflicts would be less aggressive under Alternative 3, with most types of lethal control delayed until the later stages of recovery or delisting. This would likely result in larger numbers of wolves and greater pack stability, which would increase opportunities for ecosystem effects of the types described in this section. This alternative would require the establishment of a wolf population in the Pacific Coast recovery region, making it more likely that wolf-related ecosystem effects would occur to some extent in all regions of the state.

- **Alternative 4 – No Action (Current Management).** It is unknown how wolf recovery would progress under this alternative, but human-caused mortality resulting from control actions would be expected to remain relatively low under this alternative because of restrictions on lethal control by livestock owners and for the purpose of managing ungulate populations. This could result in somewhat larger numbers of wolves and greater pack stability, which would increase opportunities for ecosystem effects of the types described in this section. Because this alternative would be much less likely to result in the establishment of wolf populations in far western Washington, any ecosystem effects accompanying wolf reestablishment would likely be limited to areas of eastern Washington and the Cascades.

4.1.5. Unique Species

Washington contains a number of state and federal listed species (endangered, threatened, sensitive), candidate species, and species of concern, with some of these occurring in areas likely to be eventually occupied by wolves. Interactions between wolves and these species are discussed in this section. Additional discussion for listed or candidate carnivores and birds of prey (i.e., grizzly bears, lynx, wolverines, fishers, bald eagles, and golden eagles) appears in Sections 4.1.2 and 4.1.4.

Washington's only population of mountain caribou, the Selkirk Mountains herd, spends most of its time in the British Columbia portion of its range, with members infrequently entering Washington. The herd increased from 33 caribou in 2004 to 46 caribou in 2009. Caribou distribution in Washington is restricted primarily to the Salmo-Priest Wilderness Area in northeastern Pend Oreille County. The area is characterized by high elevations and extensive closed-canopy forests, and therefore supports relatively low densities of other ungulate species. Hence, few wolves are expected to reside in the Salmo-Priest, meaning that predation on caribou would probably occur infrequently. Nevertheless, any wolf-related losses to the herd would have a significant impact on

the population. In British Columbia, recent declines of woodland caribou populations have been linked to the expansion of moose populations and the subsequent increase of wolves, which has resulted in greater wolf predation on caribou (Wittmer et al. 2005, Stotyn et al. 2007). Loss of mature forests and fragmentation of winter habitat may also make woodland caribou more vulnerable to wolves.

In Washington, Columbian white-tailed deer occur along the lower Columbia River in Wahkiakum and Cowlitz counties (Figure 10). The population in Washington numbered about 235 animals in 2009 (Meyers 2009) and is generally located near human habitation. Predation levels on this subspecies by wolves are difficult to predict, but could potentially harm this deer's recovery in the state.

Wolves feed on many different small prey species (e.g., mice, tree squirrels, muskrats, woodchucks, grouse, songbirds; van Ballenberghe et al. 1975, Fritts and Mech 1981, Boyd et al. 1994, Arjo et al. 2002), especially in the summer when ungulates become less available, but small prey never comprises a significant portion of the diet. A number of listed and candidate species in Washington fall into this size category and might be rarely caught and eaten by wolves. These include Merriam's shrew, pygmy rabbit, white-tailed jackrabbit, black-tailed jackrabbit, western gray squirrel, Washington ground squirrel, Townsend's ground squirrel, Mazama pocket gopher, gray-tailed vole, greater sage-grouse, and sharp-tailed grouse. Many of these species occur in open habitats (i.e., shrub-steppe, grasslands, prairies, farmland) that are unlikely to be recolonized to any significant extent by wolves in Washington. Although not state or federally listed, Olympic marmots have been declining in recent years and are now estimated to total fewer than 1,000 animals (Griffin et al. 2008). Coyote predation is probably the main threat to the species (S. C. Griffin, pers. comm.). Coyotes were historically rare or absent from the Olympic Peninsula when wolves were widespread in western Washington (Taylor and Shaw 1929, Scheffer 1995). Although recolonization of the Olympic Mountains by wolves might result in additional predation pressure on Olympic marmots, it more likely could benefit marmots by reducing coyote abundance.

Impacts of wolves on listed species or other species of concern would probably have few significant adverse impacts on any of these species in Washington in the foreseeable future, with the possible exception of mountain caribou. Recovery of wolves could benefit some species through the ecosystem processes described in Section 4.1.4, although this is difficult to predict and would depend on where wolves become reestablished and in what numbers.

- **Common to All Alternatives.** Under all alternatives, research would be used to identify and determine the extent of conflicts between wolves and federal or state listed or candidate species or other species of concern. Where conflicts exist, response plans would be developed to resolve conflicts. Consultation and coordination with the U.S. Fish and Wildlife Service would be necessary in planning and implementing appropriate responses if wolves remained federally listed or if conflicts involved federally listed species.

- **Alternative 1.** In this alternative, potential response options for addressing conflicts could include non-lethal measures (e.g., moving of wolves) while wolves were listed as endangered and threatened, and both non-lethal and lethal methods after wolves reached sensitive status. Alternative 1 would continue existing efforts to maintain and restore landscape connectivity for wolves and other large-ranging carnivores, including listed species such as grizzly bears, lynx, wolverines, and fishers. This activity would be limited to existing efforts, and as such, populations of listed carnivores would not be as likely to benefit from increased gene flow among populations, increased immigration into existing populations with demographic concerns (e.g., low survival or productivity), and increased dispersal into unoccupied areas with suitable habitat. Because this alternative would be less likely to result in the establishment of wolf populations in far western Washington, any effects to federal or state listed or candidate species or other species of concern from wolf recovery would more likely occur in eastern Washington and the Cascades.

- **Revised Preferred Alternative 2.** Under this alternative, if WDFW determined that wolf predation was a primary limiting factor for an "at-risk" ungulate population (e.g., mountain caribou), and the wolf population in that wolf recovery region was healthy (i.e., it exceeds the delisting objectives for that recovery region), WDFW could consider reducing wolf abundance in the localized area occupied by the ungulate population before state delisting occurs. This could potentially benefit the population by reducing predation levels on it. The revised Preferred Alternative 2 would expand efforts to maintain and restore landscape connectivity for wolves. This might benefit a number of listed species such as grizzly bears, lynx, wolverine, and fishers, which would likely use the same corridors for travel. It could also benefit population viability in these species by increasing gene flow among populations, increasing immigration into existing populations with demographic concerns (e.g., low survival or productivity), and increasing dispersal into unoccupied areas with suitable habitat. Because this alternative would be less likely to result in the establishment of wolf populations in far western Washington, any effects to listed or candidate species or other species of concern from wolf recovery would more likely occur in eastern Washington and the Cascades.

- **Alternative 3.** Alternative 3 would expand efforts to maintain and restore landscape connectivity for wolves. Other listed species, such as grizzly bears, lynx, wolverine, and fishers, would likely use the same corridors for travel. This would benefit population viability in these species by increasing gene flow among populations, increasing immigration into existing populations with demographic concerns (e.g., low survival or productivity), and increasing dispersal into unoccupied areas with suitable habitat. This alternative would require the establishment of wolves in a Pacific Coast recovery region, which could bring wolves into greater contact with Olympic marmots in the Olympic Mountains and Columbia white-tailed deer along the lower Columbia River. Olympic marmots and Columbia white-tailed deer might benefit from wolf recovery, which could lead to reduced coyote abundance and predation, or might experience additional predation pressure from wolves.

- **Alternative 4 – No Action (Current Management).** Most types of lethal control of wolves would be not be used until after delisting under the no action alternative. It is unknown what wolf numbers and their impacts on other listed species might be under this alternative. Alternative 4 would continue existing efforts to maintain and restore landscape connectivity for wolves and other large-ranging carnivores, including listed species such as grizzly bears, lynx, wolverines, and fishers. Because this activity would be limited to ongoing efforts, populations of listed carnivores would not be as likely to benefit from increased gene flow among populations, increased immigration into existing populations with demographic concerns (e.g., low survival or productivity), and increased dispersal into unoccupied areas with suitable habitat. Because this alternative would be unlikely to result in the establishment of wolf populations in far western Washington, any effects to federal or state listed or candidate species or other species of concern from wolf recovery would more likely occur in areas of eastern Washington or the Cascades.

4.2. Built Environment

The "built environment" elements in WAC 197-444 address environmental impacts to (a) environmental health, (b) land and shoreline use, and (c) transportation. Related to the alternatives considered for the recommended wolf conservation and management plan and for this analysis, these include: human safety, land use, recreation such as hunting, wildlife watching and other backcountry recreation, and agricultural crops (livestock). Because this is a non-project action, the analysis of environmental impacts resulting from development of the wolf conservation and management plan is broad and most effects are indirect. Possible indirect environmental impacts of the alternatives are speculative because the non-project aspects of these four plan alternatives lack very specific actions. The likely adverse or beneficial impacts to the built environment of Alternatives 1-4 are discussed below.

4.2.1. Human Safety

Although wolves are large carnivores capable of inflicting serious injury to people, wild wolves generally fear people and rarely pose a threat to human safety in North America. Attacks on humans by wolves are quite rare compared to those by other species, such as dogs, bears, and cougars (see Chapter 7 of the recommended wolf conservation and management plan). Wolves can gradually lose their fear of people through increasingly frequent contact and access to human foods. Habituated wolves of this type are involved in the majority of cases of aggression toward people (Linnell et al. 2002, McNay 2002).

Because of the long absence of gray wolves from Washington, most people in the state are unfamiliar with wolves and wolf behavior. Hence, addressing public safety concerns and providing information on wolf behavior are important steps in achieving conservation and tolerance of wolves by citizens. Various groups of people with a higher likelihood of coming in contact with wolves in

the wild include, but are not limited to, hunters, trappers, rural residents, recreationists, outfitters and guides, forest workers/contractors, other natural resource workers, and utility workers. Some members of these groups may welcome seeing wolves and may seek them out, while others may consider wolves as problematic to their activities. Regardless, user groups should be informed about wolves. To reduce concerns over safety, efforts should be made to inform rural residents, rural workers, and backcountry users of ways for reducing the likelihood of encounters with wolves and methods for preventing habituation toward people.

- **Common to All Alternatives:** Under all alternatives, wolves would pose a very low risk to human safety. In each alternative, if wolves were to pose a threat to human safety, WDFW or cooperating agencies would take immediate action to resolve the situation. Outreach and education will be used to inform people about ways to avoid or respond to interactions with wolves, as well as actions that can be taken to prevent habituation of wolves. Alternatives 1 and 4 would continue outreach and education at existing levels, whereas the revised Preferred Alternative 2 and Alternative 3 would expand these efforts using wolf specialists. It is anticipated that increased outreach and education efforts would help reduce wolf-human conflicts.

4.2.2. Land Use

Wolves are habitat generalists, but in the western United States occur most frequently in forests (USFWS 2009). Wolves are also fairly tolerant of moderate amounts of human disturbance, even in the vicinity of active wolf dens (Thiel et al. 1998, Frame et al. 2007). Hence, restrictions on land use practices have not been necessary to achieve wolf conservation in Idaho, Montana, and Wyoming (USFWS 2009). For these reasons, wolf reestablishment in Washington is not expected to result in the imposition of any land use restrictions to protect and conserve wolves other than those that occasionally may be needed to temporarily protect den sites from malicious or careless destruction during the denning period.

In neighboring states with wolves, no restrictions have been placed on the forest products industry with regard to timber management and logging to protect wolves. On private forestlands in Washington, no restrictions are anticipated with the possible exception of delaying timber harvests near occupied den sites until after the completion of the denning season. The Washington Department of Natural Resources currently has a provision under the Washington State Forest Practices Act, Critical Habitats Rule for threatened and endangered species (WAC 222-16-080) for gray wolves. Forest practices on state and private land where harvesting, road construction, or site preparation is proposed within 1 mile of a known active wolf den, documented by WDFW, between the dates of March 15 and July 30, or 0.25 mile from the den at other times of the year, are designated as a Class IV-Special and require an extra 14 days of review, and are subject to State Environmental Policy Act (SEPA) review. The rule was established in 1992, but much has been learned since then about habitat issues involving wolves in neighboring states. The revised Preferred

Alternative 2 recommends that this newer information be reviewed to determine if the rule should be modified to reflect current knowledge.

WDFW has no legal authority to implement land use restrictions on public land it does not manage or on private land (with the exception of hydraulic permits). Land management agencies can and may adopt seasonal or area restrictions independently from WDFW. However, experience in Idaho, Montana, and Wyoming has shown that no restrictions, other than those occasionally needed to temporarily prevent excessive disturbance of occupied den sites, have been necessary to conserve wolves on public and private lands. If wolves were denning on private property, WDFW would advise the landowner of the presence of the den and work with the landowner regarding planned activities near the den site during the denning period. Under certain circumstances, a landowner might be asked to temporarily delay an activity near a den during the denning period, especially while wolves remain state-listed.

- **Common to All Alternatives:** Wolf recovery and management activities in Washington would not affect land use under any of the four alternatives. As described above, no restrictions, other than those occasionally needed to temporarily prevent excessive disturbance of occupied den sites, have been necessary to conserve wolves on public and private lands in other western states. No such restrictions should be needed in Washington.

4.2.3. Recreation

Three types of recreation are analyzed with respect to possible indirect effects of the four alternatives for a wolf conservation and management plan in Washington: hunting, wildlife watching, and other types of backcountry recreation.

4.2.3.1. Hunting

Healthy and abundant prey populations are important for maintaining hunting opportunities that contribute to many local economies in Washington, especially in more rural regions. The challenge for wildlife managers is to manage for healthy ungulate population levels that also sustain wolves, other carnivores, harvest opportunities for the public, and subsistence and ceremonial needs of treaty tribes.

Big Game Hunting in Washington. Hunting, especially for big game (ungulates, cougars, black bears), is an important recreational activity in Washington. The 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, which is based on household interviews nationwide, estimated that 187,000 residents of Washington, or 3.8% of the state's population aged 16 years old and older, were hunters (for either big or small game, or both; USFWS and USCB 2008). This is below the national average of 5.5% of the population aged 16 years and older. An estimated 182,000 hunters hunted in Washington in 2006, with an estimated 179,000 residents and 3,000 non-residents participating. Hunters spent nearly 2.13 million days hunting for all species in the state in 2006. Big

game hunting represents some of the most highly valued hunting in Washington, with an estimated 90% of hunters hunting ungulates in 2006 (USFWS and USCB 2008). By comparison, only an estimated 23% and 11% of hunters sought small game and migratory birds, respectively. Seventy-nine percent of total hunter days involved big game hunting, 14% small game hunting, and 7% migratory birds in 2006.

Deer and elk hunting are the predominant forms of big game hunting in Washington, both in terms of the number of hunters participating and total days spent hunting. Numbers of deer hunters and deer hunting days averaged about 141,500 and 845,000 per year, respectively, during the decade from 1997 to 2006 (WDFW 1997-2006). Despite some sizeable yearly increases and decreases, deer hunter numbers remained almost stable (increase of 0.7%) during this period, whereas hunting days decreased 18.8%. Deer harvest remained robust, averaging 38,100 deer annually during 1997 to 2006. For elk, numbers of hunters and hunting days averaged about 74,400 and 412,400 per year, respectively, during these years in Washington. Both figures showed net increases of 15.4% and 19.0%, respectively, from 1997 to 2006, although both showed gradual decline after 2000. Despite these declines, elk harvest has remained strong, averaging 7,390 animals annually from 1997 to 2006. Hunting opportunities for moose, bighorn sheep, and mountain goats in Washington are far more limited than for deer and elk. All three species are hunted only through special permit drawings, with fewer than 100 permits issued annually for each.

Recent Impacts of Wolves on Big Game Hunting in Neighboring States. To date, wolves have not resulted in any sizable losses of hunter opportunity in Montana, although seasons for antlerless elk in some locations (e.g., north Yellowstone, Gallatin, West Fork of the Bitterroot) have been reduced or eliminated to compensate for mortality from multiple sources including wolves and other factors causing lowered herd productivity (MFWP 2007; C. Sime, pers. comm.). Many parts of the state offer liberal opportunities for elk harvest, including two-thirds of the hunting districts in southwestern Montana, all of which support wolves (J. Gude, pers. comm.). However, lethal wolf control in many of these areas to reduce conflicts with livestock may keep local wolf densities low enough to minimize impacts on elk herds. Wolf impacts on deer and other ungulates have not been well documented to date (C. Sime, pers. comm.). Montana Fish, Wildlife & Parks has not experienced any declines in hunting generated revenue, license sales, or hunter success on a statewide level because of wolf presence (C. Sime, pers. comm.).

Wolf impacts on big game hunting in Idaho have not been well quantified. IDFG (2010a) recently reported that 23 of 29 elk management zones in Idaho were within or above management goals for female elk, suggesting that harvestable surpluses of elk remain in most areas of the state. At least two elk management units (e.g., Lolo, Sawtooth) where wolves were the primary cause of death of female elk (IDFG 2010a) have experienced reductions in hunter harvest and participation since 2005 (Rachael 2010). IDFG (2008) speculated that wolf predation may be causing reductions in elk harvest in some parts of the state, even where elk populations are not declining, by changing the behavior and habitat use of elk during the hunting season. As observed elsewhere (Creel and

Winnie 2005, Mao et al. 2005), Idaho's elk may now be spending more time in forested areas, on steeper slopes, and at higher elevations than before wolf reintroductions, making it more difficult for hunters to find animals. Changes in herding behavior and movement rates (Proffitt et al. 2009) may also affect hunting success. Wolves are believed to be a main factor in the recent decline of moose in the Lolo zone, but their impact on moose abundance in other parts of Idaho is not well known (J. Rachael, pers. comm.). Moose populations in some areas may be more directly affected by habitat changes, harvest levels, or other causes (S. Nadeau, pers. comm.). The impact of wolves on deer and other ungulates in the state appears negligible (J. Rachael, pers. comm.; S. Nadeau, pers. comm.). Big game revenue and tag sales to resident and non-resident hunters have remained stable in recent years for the Idaho Department of Fish and Game (B. Compton, pers. comm.; S. Nadeau, pers. comm.). Some hunters have indicated that they would not return to their hunting areas because of real or perceived impacts of wolves, but whether this has produced significant changes in hunter activity has been difficult to assess.

In Wyoming, at present, there are no definitive data showing decreased hunter harvest or opportunity due to wolf predation on elk or moose (WGFC 2008).

Impacts of Wolves on Hunting in Washington. The effect on ungulate populations from adding wolves to existing predation levels and hunter harvest is difficult to predict in the state because of localized differences in predator abundance, ungulate abundance, and harvest management practices within each geographic area. However, information from Idaho, Montana, and Wyoming, each of which currently supports about 340-700 wolves, provides useful insight on impacts that can be expected in Washington as wolves reestablish. In general, wolves have had little or no effect on elk and deer abundance or hunter harvest across large areas of Idaho, Montana, and Wyoming, where most populations remain stable or are above population objectives. Wolves have been linked to declining elk herds in several areas, but often they are one of several factors affecting the herds (e.g., changes in habitat, severe winter weather, and increasing populations of other predators). In some wolf-occupied areas, hunter success rates may have been reduced because of changes in elk behavior and habitat use rather than by actual declines in elk abundance.

- **Alternative 1.** Under Alternative 1, ungulates would be managed to maintain healthy population levels through standard practices (as described in game management plans), adjustments to recreational harvest levels to benefit wolf conservation would not occur, and management of ungulate populations that are below herd objectives could involve removal of wolves under certain limited circumstances after wolves reached sensitive status. Together, these actions would likely result in smaller numbers of wolves, which would probably result in fewer localized impacts to ungulate populations from wolves, and few adjustments of harvest levels (e.g., reductions in antlerless take, reduced availability of special permits, and shortened hunting seasons) to benefit wolves. Because Alternative 1 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region, few if any wolf-related impacts to hunting would occur in that part of the state.

- **Revised Preferred Alternative 2.** This alternative would manage for healthy ungulate prey populations through habitat improvement, harvest management and reduction of illegal hunting, consistent with game management plans. This could result in some management restrictions being placed on harvest levels (e.g., reductions in antlerless take, reduced availability of special permits, and shortened hunting seasons) in localized areas with wolves. Under this alternative, management of at-risk ungulate populations could consider removal of wolves regardless of wolf status if WDFW determines that wolf predation is a primary limiting factor of the populations and the wolf population in that recovery region is healthy (i.e., it exceeds the delisting objectives for that recovery region). Although hunting of at-risk populations would likely already be prohibited or tightly restricted, removal of wolves could enhance future hunting opportunities. Because revised Preferred Alternative 2 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region, few if any wolf-related impacts to hunting would occur in that part of the state.

- **Alternative 3.** Under this alternative, WDFW would continue to manage for healthy ungulate populations through standard practices, but would also consider reductions in levels of recreational harvest (possibly through reductions in antlerless take, reduced availability of special permits, or shortened hunting seasons) to benefit wolf conservation in wolf recovery regions until recovery objectives for the region were met. Combined, these actions would likely result in larger numbers of wolves, which would possibly result in greater localized impacts to ungulate populations from wolves. Under this alternative, management of at-risk ungulate populations could involve removal of wolves under certain limited circumstances after delisting occurs. Although hunting of at-risk populations would likely already be prohibited or tightly restricted, removal of wolves could enhance future hunting opportunities. Under Alternative 3, wolf-related impacts to hunting could occur in the Pacific Coast area of Washington as well as in other regions of the state because of recovery objectives for wolves in that region.

- **Alternative 4 – No Action (Current Management).** Under this alternative, WDFW would continue to manage for healthy ungulate populations through standard practices per game management plans. Most types of lethal control of wolves would be not be used until after delisting under this alternative. Under this alternative, it is difficult to predict wolf abundance or what resulting impacts wolves might have on hunting. Game management plans could be adjusted to modify harvest levels if localized ungulate populations were declining below herd objectives. Because Alternative 4 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region, wolf-related impacts to hunting in this area would also be less likely.

4.2.3.2. Wildlife Watching

Wildlife viewing is hugely popular in the United States. According to the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, more than 71 million Americans 16 years old

and older (31% of the U.S residents in this age bracket) participated in wildlife watching activities (i.e., observing, feeding, photographing, etc.; includes fish viewing) in 2006 (USFWS and USCB 2007). Of these, almost 23 million people took trips more than one mile from their homes specifically to see wildlife. Participation in wildlife viewing increased 8% nationally from 2001 to 2006, in contrast to fishing and hunting, which fell 12% and 4%, respectively. Seventy percent (16.2 million people) of the wildlife watchers traveling away from home observed, fed, or photographed land mammals, with 56% (12.8 million people) specifically interested in large mammals such as deer, bears, and coyotes.

In Washington during 2006, an estimated 2.33 million people 16 years old and older participated in some form of wildlife watching, which ranked the state 11th in the nation for participation (USFWS and USCB 2007, 2008). About 2 million participants were state residents (40% of the state's total population in this age group), with the remainder being non-residents. An estimated 628,000 Washington residents and 331,000 non-residents in this age group traveled more than one mile away from home to view wildlife in Washington during the year. Residents spent an estimated 8.0 million days (88% of the total; average of 12.7 days per person) and non-residents spent an estimated 1.1 million days (12%; average of 3.4 days per person) away from home watching wildlife in Washington during the year. Overall, wildlife watchers outnumbered hunters and anglers combined by nearly three times in Washington.

In addition to the wildlife watching opportunities that already exist in the state, Washington has potential to develop viewing opportunities for wolves (defined here as seeing, hearing, or otherwise experiencing wolves), depending on where and how many wolves eventually become reestablished in the state, their behavior, and human behavior in response to them (see Chapter 14, Section D, of the recommended wolf conservation and management plan). Viewing potential could eventually exist at several locations, such as Mt. St. Helens National Volcanic Monument and in the Methow Valley. Wolf-based tourism also has some potential in other areas of the state (e.g., some national forest lands) where wolves might not be frequently seen, but would be regularly present and relatively safe from harassment. Modest numbers of visitors might be attracted to such areas in hopes of possibly seeing or hearing a wolf or finding wolf sign.

In contrast to the scenario presented above, any substantial wolf-related declines in the public's ability to view elk, deer, and other ungulates caused by changes in behavior or abundance could reduce overall wildlife viewing opportunities in some localized areas. However, this problem has not been reported from other localities with wolves in the lower 48 states and is not expected to occur over large areas of Washington.

- **Alternative 1.** The more aggressive management of wolf-related conflicts with livestock and ungulates with lethal control implemented at earlier stages of recovery is likely to result in smaller numbers of wolves and greater instability of packs, which could in turn limit opportunities to see or hear wolves. However, it might retain recreational viewing opportunities for some ungulate populations. Because Alternative 1 would be less likely to

result in the establishment of wolf populations in a Pacific Coast recovery region, any opportunities for wolf watching would most likely occur in eastern Washington and the Cascades. This alternative would also retain wolf-related education and outreach at current levels, which might limit public interest in watching or hearing wolves.

- **Revised Preferred Alternative 2.** This alternative would result in moderate numbers of wolves and moderate pack stability in Washington, which could allow the development of opportunities to see or hear wolves in some areas. Because the revised Preferred Alternative 2 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region, any wildlife watching opportunities for wolves would most likely occur in eastern Washington and the Cascades. This alternative would expand wolf-related education and outreach, which could increase public interest in watching or hearing wolves.

- **Alternative 3.** Delays in lethal control until the later stages of recovery or delisting under this alternative would likely result in larger numbers of wolves and greater pack stability, which could increase opportunities to watch and hear wolves over larger portions of their range in Washington. This alternative would require the establishment of wolves in a Pacific Coast recovery region, which could bring wolf watching opportunities to this region, including Olympic National Park. This alternative would expand wolf-related education and outreach, which could increase public interest in watching or hearing wolves.

- **Alternative 4 – No Action (Current Management).** Most types of lethal control of wolves would not be used until after delisting under the no action alternative. Management of wolf-related conflicts involving livestock and ungulates would be less aggressive under Alternative 4, with most types of lethal control delayed until after delisting. This could result in somewhat larger numbers of wolves and greater pack stability, which could allow opportunities for wolf watching to develop in some areas. Because this alternative would be unlikely to result in the establishment of wolf populations in a Pacific Coast recovery region, any wolf watching opportunities would most likely occur in eastern Washington and the Cascades (as in Alternative 3). This alternative would also retain wolf-related education and outreach at current levels, which might not increase public interest in watching or hearing wolves.

4.2.3.3. Other Types of Backcountry Recreation

In addition to hunting and wildlife watching, wolves could potentially affect other forms of backcountry recreation, such as hiking, camping, horse use, and cross country skiing. Some members of these groups may welcome seeing wolves and may seek them out, while others may consider wolves as problematic to their activities because of perceived concerns over personal safety. Thus, wolf presence could possibly attract some visitors to national forests and other wildland areas, while preventing others from visiting. Reduced visitation to backcountry areas because of wolves

has not been reported in other localities occupied by wolves in the lower 48 states and is therefore unlikely to occur in Washington.

Backcountry recreationists should be informed about wolves to alleviate perceived concerns over personal safety and to inform them of methods for reacting to wolves during encounters, reducing the likelihood of encounters, and preventing wolf habituation toward people. Outreach and education strategies for accomplishing these goals are essential to achieving the conservation and management goals for wolves and are presented in greater detail in Chapter 12, Task 9, of the draft wolf conservation and management plan.

- **Alternative 1.** Management actions under this alternative that would result in smaller numbers of wolves could in turn result in the public experiencing fewer backcountry encounters with wolves. Alternative 1 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region, so backcountry encounters with wolves would most likely occur in eastern Washington and the Cascades. Wolf-related outreach and education would continue at current levels under this alternative, which would limit the amount of information on wolves that backcountry users would receive.

- **Revised Preferred Alternative 2.** This alternative would result in moderate numbers of wolves in Washington, which could result in the public experiencing some backcountry encounters with wolves. Because the revised Preferred Alternative 2 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region, backcountry encounters with wolves would most likely occur in eastern Washington and the Cascades. This alternative would increase the amount of wolf-related education and outreach provided to the public, which would expand the amount of information on wolves that backcountry users would receive.

- **Alternative 3.** Management of wolf-related conflicts under Alternative 3 would likely result in the establishment of larger numbers of wolves in Washington, which would result in the public experiencing greater numbers of backcountry encounters with wolves. Because Alternative 3 would be more likely to result in the establishment of wolf populations in a Pacific Coast recovery region, backcountry encounters with wolves would likely occur in this region as well as in eastern Washington and the Cascades. This alternative would increase the amount of wolf-related education and outreach provided to the public, which would greatly expand the amount of information on wolves that backcountry users would receive.

- **Alternative 4** – No Action (Current Management). Most types of lethal control of wolves would not be used until after delisting under the no action alternative. It is unknown how numerous wolves would be, but this could result in somewhat larger numbers of wolves, which could result in the public experiencing greater numbers of backcountry encounters with wolves. Because Alternative 4 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region, backcountry encounters with wolves would most likely occur in eastern Washington and the Cascades. This alternative would maintain

outreach and education efforts at current levels, which would limit the amount of information on wolves that backcountry users would receive.

4.2.4. Agricultural Crops - Livestock

Wolf reestablishment in Washington is a concern to livestock producers because of the potential for wolves to kill, injure, or stress cattle, sheep, and other domestic animals. Financial losses may result directly from wolf depredation whether confirmed or not, and indirect financial losses may accumulate because of increased management activities or changes to ranching and farming operations. While impacts might not occur statewide, financial losses could accrue to individual producers and may be significant to them.

Livestock in Washington. Estimated inventories of cattle and calves in Washington have remained relatively stable at about 1.1-1.2 million head (including beef and dairy cattle, and cattle confined to feedlots) during the past decade (NASS 2004, 2007a). Surveys from 2002, the most recent year for which full data are available, reveal that cattle inventories per county are generally largest in counties along the Cascade Mountains and in the Columbia Basin. Washington's sheep industry is far smaller than its cattle industry, with estimated sheep numbers fluctuating annually between 46,000 and 58,000 head during the past decade (NASS 2007). Sheep inventories were largest in Yakima, Okanogan, Grant, and Whitman counties in 2002. Other livestock vulnerable to wolf predation include goats, llamas, and horses, but incidents involving these species are infrequent in other western states.

Many livestock producers in Washington rely entirely on private land for their annual operations, whereas some depend on a combination of private land and public land grazing leases. In these latter cases, animals are typically kept on private land during the winter, with most calving and lambing occurring in late winter or early spring. During the warmer months, livestock are taken to grazing allotments on public lands, many of which occur in more remote locations with rougher topography and natural vegetative cover. Livestock are then gathered in the fall, with young shipped to market and breeding stock returned to private land for the winter.

About 3.36 million acres in 1,333 active grazing leases currently exist on public lands in Washington. The majority of leased acreage occurs on national forest lands, with smaller amounts on lands owned or managed by the Washington Department of Natural Resources, U.S. Bureau of Land Management, and WDFW. Overall, grazing occurs on about 24.9% of the lands owned or managed by these four agencies combined. By far the most leases occur in eastern Washington and are used by cattle. Average lease size is considerably larger on Forest Service lands (14,109 acres per lease) than on other agency lands (WDNR, 967 acres per lease or permit range; BLM, 986 acres per lease; WDFW, 1,761 acres per lease). On Forest Service lands, considerable variation exists in the percent of land designated as grazing leases within each national forest, ranging from a high of 52.7% in Colville National Forest to 0% in Mt. Baker-Snolqualmie and Olympic National Forests. Numbers of active leases on national forests have declined substantially over the past 15 years primarily because of economic and social reasons (W. Gaines, pers. comm.).

Wolf Depredation on Livestock. The recovery of wolves in other states has resulted in depredations on cattle, sheep, and other livestock. However, despite significant increases in wolf populations, confirmed losses to wolves have remained infrequent to date relative to total livestock numbers (Bangs et al. 2005b, USFWS 2008a). Bangs et al. (2006) noted that while wolf depredations on livestock were unimportant to the regional livestock industry, they could affect the economic viability of some ranchers. Many factors influence depredation rates on livestock, including the proximity of livestock to wolf home ranges, dens, and rendezvous sites; pack size; abundance of natural prey and livestock; amount and type of vegetative cover; time of year; livestock husbandry methods in both the area of concern and adjacent areas; the use of harassment tools and lethal take; pasture size; and proximity to roads, dwellings, and other human presence (Mech et al. 2000, Fritts et al. 2003, Treves et al. 2004, Bradley and Pletscher 2005). These factors make it difficult to predict where and when depredations by wolves will occur.

Wolves don't necessarily attack livestock whenever livestock are encountered, but most wolf packs that regularly encounter livestock are likely to depredate at some point (Bangs and Shivik 2001). Some packs show increasingly frequent depredation behavior, while others may do so once or twice a year, every other year, or even less frequently (USFWS et al. 2011). USFWS et al. (2011) reported that on average 10-38% of all wolf packs in Montana were confirmed to have killed livestock in any given year from 1999 to 2010. In comparison, 33-85% of the packs in Wyoming outside of Yellowstone National Park were involved in depredations annually from 2005 to 2010 (USFWS et al. 2011).

In the northern United States, wolf depredation on livestock occurs more frequently from March to October when livestock spend more time under open-grazing conditions, calving is taking place, and wolf litters are being raised (Fritts et al. 2003, Musiani et al. 2005, Sime et al. 2007, Edge et al. 2011). Untended livestock, particularly young calves, appear to be more vulnerable, and the presence of livestock carcasses on a property may increase risk as well (Fritts et al. 2003, Edge et al. 2011). Depredations occur on both open grazing sites and inside fenced pastures. Sime et al. (2007) reported that among the 162 livestock producers suffering confirmed wolf depredation in Montana between 1987 and 2006, 62% experienced a single incident, 20% experienced two incidents, and 17% experienced three or more incidents.

In the northern Rocky Mountain states, calves are more commonly killed than other age groups of cattle because of their greater vulnerability (Fritts et al. 2003; Bangs et al. 2005a; Unsworth et al. 2005; Sime et al. 2007; Stone et al. 2008; J. Timberlake, pers. comm.). Oakleaf et al. (2003) found that wolves tend to choose the smallest calves and there is evidence that some depredated calves are in poorer physical condition (Bradley and Pletscher 2005). In parts of Canada, wolves sometimes kill yearling cattle more often than calves (Stone et al. 2008). In contrast, adult sheep appear to be taken more frequently than lambs (Fritts et al. 2003). Depredations on sheep commonly involve multiple individuals, whereas those on cattle usually involve single animals.

In Idaho, Montana, and Wyoming, significant variation in the number of cattle and sheep killed by wolves occurs among states and sometimes between years. While the numbers of livestock killed by wolves in these states have generally increased over time as wolf numbers have grown, these are small compared to losses caused by coyotes, cougars, bobcats, dogs, bears, foxes, eagles, and other predators (NASS 2005, 2006). Wolf depredations are also far fewer than the number of losses for the combined non-predator losses (e.g., sickness, disease, weather, and birthing problems) in Idaho, Montana, and Wyoming.

Figures for confirmed depredations caused by wolves represent minimum estimates of the livestock actually killed by wolves. Probable losses, in which officials are unable to verify the cause of death, are not included. Additionally, ranchers sometimes fail to locate carcasses or are unable to notify authorities soon enough to obtain confirmation because of the rugged and vast terrain where livestock graze, the extent of carcass consumption by predators and scavengers, or carcass decomposition. In some instances, ranchers may choose not to report their losses.

Methods for Resolving Wolf-Livestock Conflicts. Managing wolf-livestock conflicts and wolf recovery requires an integrated approach using a variety of non-lethal and lethal methods. Non-lethal measures, especially when used in combination, often temporarily succeed in reducing the vulnerability of livestock to wolf depredation, but are usually not considered permanent solutions by themselves. These approaches offer a partial alternative to lethal control of wolves and can be especially important when wolf numbers and distribution are small and recovery objectives have not yet been achieved. These measures comprise a number of husbandry methods and non-lethal deterrents to reduce the vulnerability of livestock, including: 1) using range riders to help keep cattle more concentrated on grazing sites; 2) having herders with dogs present with sheep at night when most sheep depredation occurs; 3) burying livestock carcasses rather than dumping them in traditional bone yards to reduce scavenging opportunities for wolves; 4) moving sick or injured livestock; 5) delaying turnout of cattle onto grazing sites until calving is finished or until young wild ungulates are born; 6) allowing calves to reach at least 200 pounds before turning them out to grazing sites (Oakleaf et al. 2003); 7) avoiding grazing livestock near the core areas of wolf territories, especially dens and rendezvous sites, during the earlier portion of the grazing season; 8) using guarding animals (primarily dogs) with livestock to alert herders when wolves are nearby; 9) using light and noise scare devices to frighten wolves away from confined livestock and to alert ranchers and herders to the presence of wolves; 10) hazing wolves with non-lethal munitions (e.g., cracker shells, rubber bullets) to frighten them away and teach them to avoid livestock; 11) using permanent or temporary predator-resistant or electric fencing to confine livestock; and 12) using fladry, which consists of numerous strips of flagging hung along a fence or rope, to keep wolves out of an area occupied by livestock. Implementation of these methods can result in higher costs to livestock producers.

Lethal control of wolves may be necessary to resolve repeated wolf-livestock conflicts and is performed to remove problem animals that jeopardize public tolerance for overall wolf recovery. More than 1,500 wolves were killed in control actions in Idaho, Montana, and Wyoming from 1987

to 2010, with 7-16% of the population removed annually since 2002. While federally listed, most lethal control of wolves in these states was performed by wildlife agency staff. As wolves became more common, the U.S. Fish and Wildlife Service gradually loosened restrictions on lethal control to allow increased take by agency staff and private citizens with a federal permit (Bangs et al. 2006). In Idaho, Montana and Wyoming, agency decisions to lethally remove wolves are made on a case-by-case basis, taking into account specific factors such as a pack's size and conflict history, status and distribution of natural prey in the area, season, age and class of livestock, success or failure of non-lethal tools, and potential for future losses (Sime et al. 2007). Where lethal removal is deemed necessary, incremental control is usually attempted, with one or two offending animals removed initially. If depredations continue, additional animals may be killed and eventual elimination of an entire pack may occur (Sime et al. 2007).

Lethal control of wolves by agency staff can have the advantages of being swift, effective, and tightly regulated. The benefits of allowing lethal removal by livestock producers are that 1) offending wolves are more likely to be targeted, 2) it can eliminate the need for agency control, 3) shooting at wolves may teach them and other pack members to be more wary of humans and to avoid areas of high human activity, 4) it allows producers to address their own problems, and 5) it may reduce animosity toward government management of wolves (Bangs et al. 2006). Drawbacks of lethal control are that 1) it is controversial among much of the public, 2) depredation may recur, 3) wolves may respond by becoming more active at night, 4) it can be costly when performed by agencies, 5) it is open to abuse when conducted by the public, thereby requiring law enforcement follow-up, and 6) excessive use can preclude the recovery of wolf populations (Musiani et al. 2005, USFWS 2005, Bangs et al. 2006).

Compensation for Wolf Depredation on Livestock. Compensation programs have been developed in the western U.S. and Great Lakes region to help livestock producers recover some of the costs associated with wolf predation, with the intention that this will build greater tolerance for wolf recovery. Defenders of Wildlife devised and operated the first compensation program for wolf depredation in the western United States (Stone 2009). Known as the Bailey Wildlife Foundation Wolf Compensation Trust, it paid about $1.5 million to livestock operators in Idaho, Montana, and Wyoming from 1987 to August 2010 (S. Stone, pers. comm.), with all funding obtained from private sources. Under this fund, confirmed losses of livestock and herding/guarding dogs were reimbursed at 100% of their current or projected market value up to $3,000 per animal, whereas probable losses were reimbursed at 50% of their current or projected market value up to $1,500 per animal. This program ended in all states except Oregon in 2010.

Idaho, Montana, and Wyoming have implemented their own state programs to cover standard losses. Programs in Idaho and Wyoming also cover other types of losses. Idaho compensates for above-normal mortality as well as lower-than-expected weight gains by livestock. This program also provides partial reimbursement for proactive efforts. Wyoming uses a multiplier for each confirmed depredation on calves and sheep to account for undocumented wolf-caused losses. Calves and

sheep are compensated up to seven times the number confirmed but only up to the total number reported missing by a producer.

Impacts of Wolves on Livestock Production in Washington. The reestablishment of wolves in Washington will affect some livestock producers through wolf-related depredation and/or changes in husbandry and management methods needed for adapting to the presence of wolves. Projections of wolf-caused losses of livestock in the state are described more fully in Chapter 14, Section B, of the recommended wolf conservation and management plan. During the endangered and threatened phases of recovery, wolves should pose little detriment to the state's livestock industry as a whole. At the wolf population levels associated with the early stages of recovery, the vast majority of producers will probably experience few if any annual costs, whereas a few individual producers could be more affected. Some of these costs would be offset by compensation from WDFW or private organizations. As wolf populations become larger and more widely distributed, financial impacts are likely to accrue to more producers. Where and when depredations occur will depend on different factors, including the abundance and distribution of wolves and the husbandry methods and locations of livestock in areas occupied by wolves.

- **Alternative 1.** Under this alternative, management of wolf-related conflicts involving livestock and ungulates would be more aggressive. Non-lethal injurious harassment and many forms of lethal control by livestock producers would be allowed during earlier stages of recovery. Some of these actions would likely result in smaller numbers of wolves, which could result in fewer localized wolf-livestock conflicts. Producers would receive lower compensation payments for wolf-related livestock depredation under this alternative. WDFW would also be less available to work with livestock producers in implementing proactive measures to avoid depredation, which could increase depredation levels and costs for producers. Wolf-related outreach and education directed at producers would continue at current levels under this alternative, which would limit the amount of information they receive about addressing impacts from wolves. Because Alternative 1 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region (as outlined in Alternative 3), wolf-related impacts to livestock production would be unlikely to occur in this part of the state.

- **Revised Preferred Alternative 2.** Under this alternative, use of lethal control by livestock owners with a WDFW-issued permit would be allowed on both private and public land for controlling repeated depredations beginning at sensitive status. "In the act" lethal control of wolves by livestock owners would be allowed regardless of wolf status, but would require users to have a WDFW-issued permit, which would be tightly restricted when wolves are listed as endangered or threatened. Together, these measures would likely result in somewhat lower levels of wolf mortality related to wolf-livestock conflicts than under Alternative 1, but perhaps similar or slightly higher levels compared to Alternatives 3 and 4. Under the revised Preferred Alternative 2, livestock producers would receive generous compensation for wolf-related livestock depredation, which would be more likely to cover

the actual costs of their losses. WDFW would provide technical assistance to livestock operators to implement proactive measures to reduce conflicts, which would help lower depredation levels and costs for some producers. Wolf-related outreach and education directed at livestock producers would be a high priority and would give producers greater access to information for addressing impacts from wolves. Because the revised Preferred Alternative 2 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region (as outlined in Alternative 3), wolf-related impacts to livestock production would be unlikely to occur in this part of the state.

- **Alternative 3.** Management of wolf-related conflicts involving livestock would be less aggressive under Alternative 3. Non-lethal injurious harassment and several types of lethal control by livestock producers would be delayed until later into wolf recovery. This would likely allow larger numbers of wolves to occur in Washington, which could result in greater localized wolf-livestock conflicts. Under Alternative 3, producers would receive the most generous compensation for wolf-related livestock depredation, which would be more likely to cover the actual costs of their losses. WDFW would hire wolf specialists whose duties would include working with livestock producers to implement proactive measures to avoid depredation, which would help lower depredation levels and costs for producers. Wolf-related outreach and education directed at producers would be a high priority under this alternative, which would give producers greater access to information for addressing impacts from wolves. Because Alternative 3 would be more likely to result in the establishment of wolf populations in a Pacific Coast recovery region, wolf-related impacts to livestock producers could occur in that part of the state as well as in other regions.

- **Alternative 4 – No Action (Current Management).** Livestock conflicts would be addressed (as allowed under current federal and state law), but lethal control of wolves would be expected to be less aggressive under this alternative, with all or most lethal control by livestock owners delayed until after delisting. This would likely result in somewhat lower levels of wolf mortality related to wolf-livestock conflicts than under Alternative 1, but perhaps similar or slightly higher levels compared to Alternatives 2 and 3. Livestock producers would receive compensation for wolf-related livestock depredation under this alternative, but it would be under Washington's current program, which would be less than that allowed in Alternatives 2 and 3. Wolf-related outreach and education directed at livestock producers would continue at current levels, which would limit the amount of information that producers receive on addressing impacts from wolves. Under this alternative, WDFW would have fewer staff available to work with livestock producers in implementing proactive measures to avoid depredation, which could increase depredation levels and costs for some producers. Because Alternative 4 would be less likely to result in the establishment of wolf populations in a Pacific Coast recovery region, few if any wolf-related impacts to livestock production would occur in this part of the state.

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6. Personal Communications

Brad Compton
State Big Game Manager
Idaho Department of Fish and Game
Boise, Idaho

Bill Gaines
Wildlife Biologist
U.S. Forest Service
Wenatchee, Washington

Suzanne Griffin
Ph.D. candidate
University of Montana
Missoula, Montana

Justin Gude
Wildlife Research and Technical Services
Section Manager
Montana Fish, Wildlife and Parks
Helena, Montana

Patti Happe
Wildlife Branch Chief
Olympic National Park
Port Angeles, Washington

David Mech
Senior Research Scientist
U.S. Geological Survey
University of Minnesota
St. Paul, Minnesota

Garth Mowat
Senior Wildlife Biologist
B.C. Ministry of Environment,
Kootenay, Region
Nelson, British Columbia

Steve Nadeau
Wolf Coordinator (former)
Idaho Department of Fish and Game
Boise, Idaho

Jon Rachael
Wolf Coordinator
Idaho Department of Fish and Game
Boise, Idaho

Carolyn Sime
Wolf Coordinator
Montana Fish, Wildlife and Parks
Helena, Montana

Douglas W. Smith
Leader, Yellowstone Wolf Project
Yellowstone National Park, Wyoming

Suzanne A. Stone
Northern Rockies Representative
Defenders of Wildlife
Boise, Idaho

Jesse Timberlake
Northern Rockies Associate
Defenders of Wildlife
Boise, Idaho

Jim Watson
Raptor Research Scientist
Washington Department of Fish and Wildlife
Concrete, Washington

7. Glossary of Terms

For the purposes of this Draft Environmental Impact Statement, the following definitions apply:

At-risk ungulate population – any federal or state listed ungulate population (e.g., Selkirk Mountain woodland caribou, Columbian white-tailed deer), or any ungulate population for which it is determined to have declined 25% or more below management objectives for three or more years and population trend analysis predicts a continued decline. For populations for which numeric estimates and/or management objectives are not currently available, it will not be possible to use a specific threshold to assess a need for management action. Instead WDFW will use other sources of information related to the population, such as harvest trends, hunter effort trends, sex and age ratios, and others.

Breeding pair – see Successful Breeding Pair.

Classify – to list or delist wildlife species to or from endangered, or to or from the protected wildlife subcategories threatened or sensitive.

Compensation – monetary payment to offset or replace the economic loss for a death or injury to livestock or guarding animals due to wolf activity.

Confirmed wolf depredation – any depredation where there is reasonable physical evidence that the dead or injured livestock was actually attacked or killed by a wolf. Primary confirmation would ordinarily be the presence of bite marks and associated subcutaneous hemorrhaging and tissue damage, indicating that the attack occurred while the victim was alive, as opposed to simply feeding on an already dead animal. Spacing between canine tooth punctures, feeding pattern on the carcass, fresh tracks, scat, hairs rubbed off on fences or brush, and/or eyewitness accounts of the attack may help identify the specific species or individual responsible for the depredation. Predation might also be confirmed in the absence of bite marks and associated hemorrhaging (i.e., if much of the carcass has already been consumed by the predator or scavengers) if there is other physical evidence to confirm predation on the live animal. This might include blood spilled or sprayed at a nearby attack site or other evidence of an attack or struggle. There may also be nearby remains of other victims for which there is still sufficient evidence to confirm predation, allowing reasonable inference of confirmed predation on an animal that has been largely consumed. Determination will be made by WDFW or other authorized personnel.

Delist – to change the classification of endangered, threatened, or sensitive species to a classification other than endangered, threatened, or sensitive.

Depredation – any death or injury of livestock, as defined in this plan, caused by a predator.

Downlist – to change the classification of an endangered or threatened species to a lower classification (e.g., from endangered to threatened, or from threatened to sensitive).

Endangered – as defined by Washington law, any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.

Extinct – a wildlife species that no longer exists anywhere; it has died out entirely, leaving no living representatives.

Fladry – a method of non-lethal wolf deterrent that involves attaching numerous strips of flagging material along a fence or other device for the purpose of keeping wolves out of an area occupied by livestock.

Guarding animals - any dog, llama, or other species actively used to defend livestock from predators.

Guarding dog – any dog actively used to defend livestock from predators.

Habituation – for wolves, this refers to individuals that have lost their natural fear of humans and human activities, which allows them to live in proximity to humans. This often occurs through repeated exposure to humans in non-threatening situations, especially where food has been made available.

Herding dog – any dog actively used to herd livestock.

Hybrid – the offspring of a mating between a wolf and a dog, a wolf and a hybrid, a dog and a hybrid, or two hybrids.

In the act of attacking – actively biting, wounding, or killing.

Lethal control – management actions that result in the death of a wolf.

List – to change the classification status of a wildlife species to endangered, threatened, or sensitive.

Livestock – cattle, calves, pigs, horses, mules, sheep, lambs, llamas, goats, guarding animals, and herding dogs.

Non-lethal control – management actions designed to frighten or threaten wolves, but that do not result in the death of a wolf.

Pack of wolves – a group of wolves, usually consisting of a male, female, and their offspring from one or more generations. For purposes of monitoring, a pack is defined as a group of two or more wolves traveling together in winter.

Proactive management – non-lethal husbandry methods implemented to minimize the potential for wolf-livestock conflicts. These may include, for example, modified husbandry methods, light and noise scare devices, non-lethal munitions, fencing, fladry, guarding animals, and greater use of herders/riders.

Probable wolf depredation – there is sufficient evidence to suggest that the cause of death was depredation, but not enough to clearly confirm that the depredation was caused by a wolf. A number of other factors will help in reaching a conclusion, such as (1) any recently confirmed predation by wolves in the same or nearby area, and (2) any evidence (e.g., telemetry monitoring data, sightings, howling, fresh tracks, etc.) to suggest that wolves may have been in the area when the depredation occurred. All of these factors and possibly others would be considered in the investigator's best professional judgment. Determination will be made by WDFW or other authorized personnel.

Reintroduction – capturing and moving animals from one area to another, usually for the purpose of reestablishing a new population in an area that was formerly occupied. For this plan, reintroduction implies moving wolves from locations outside of Washington to a site(s) inside Washington.

Rendezvous site – a specific resting and gathering area occupied by wolf packs during summer and early fall after the natal den has been abandoned. A wolf pack will usually move from the natal den site to the first rendezvous site when the pups are 6-10 weeks of age (late May-early July). The first rendezvous site is usually within 1-6 miles of the natal den site. A succession of rendezvous sites are used by the pack until the pups are mature enough to travel with the adults (usually September or early October).

Sensitive – as defined by Washington law, any wildlife species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened in a significant portion of its range within the state without cooperative management or removal of threats.

Significant portion of its range – that portion of a species' range likely to be essential to the long-term survival of the population in Washington.

Source population – a subpopulation whose reproductive success exceeds mortality and therefore produces young that emigrate to other subpopulations and unoccupied areas. Source populations are generally found in better quality habitats known as source habitats.

Species – as defined by Washington law, any group of animals classified as a species or subspecies as commonly accepted by the scientific community.

Successful breeding pair – an adult male and an adult female wolf with at least two pups surviving to December 31 of a given year, as documented under WDFW's established protocols.

Threatened – as defined by Washington law, any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.

Translocation – moving animals from one area to another for the purpose of establishing a new population.

Unknown loss – with respect to compensation, the loss of livestock from an area with known wolf activity without a carcass as evidence. This would be based on historical records of livestock return rates prior to wolf presence/wolf depredation in the area.

Ungulate – any wild species of hoofed mammal, including deer, elk, moose, bighorn sheep, mountain goat, and caribou. Cattle, sheep, pigs, horses, and llamas are also ungulates, but are referred to as domestic livestock in this plan.

Viable population – one that is able to maintain its size, distribution, and genetic variation over time without significant intervention requiring human conservation actions.

Wolf recovery/conservation region – any of three or four broad designated regions in Washington where wolves need to become reestablished to meet the conservation goals of this plan. The regions are illustrated in Figures 1 and 2.

Appendix A. WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.

WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.

PURPOSE

1.1 The purpose of this rule is to identify and classify native wildlife species that have need of protection and/or management to ensure their survival as free-ranging populations in Washington and to define the process by which listing, management, recovery, and delisting of a species can be achieved. These rules are established to ensure that consistent procedures and criteria are followed when classifying wildlife as endangered, or the protected wildlife subcategories threatened or sensitive.

DEFINITIONS

For purposes of this rule, the following definitions apply:

2.1 "Classify" and all derivatives means to list or delist wildlife species to or from endangered, or to or from the protected wildlife subcategories threatened or sensitive.

2.2 "List" and all derivatives means to change the classification status of a wildlife species to endangered, threatened, or sensitive.

2.3 "Delist" and its derivatives means to change the classification of endangered, threatened, or sensitive species to a classification other than endangered, threatened, or sensitive.

2.4 "Endangered" means any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.

2.5 "Threatened" means any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.

2.6 "Sensitive" means any wildlife species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened in a significant portion of its range within the state without cooperative management or removal of threats.

2.7 "Species" means any group of animals classified as a species or subspecies as commonly accepted by the scientific community.

2.8 "Native" means any wildlife species naturally occurring in Washington for purposes of breeding, resting, or foraging, excluding introduced species not found historically in this state.

2.9 "Significant portion of its range" means that portion of a species' range likely to be essential to the long term survival of the population in Washington.

LISTING CRITERIA

3.1 The commission shall list a wildlife species as endangered, threatened, or sensitive solely on the basis of the biological status of the species being considered, based on the preponderance of scientific data available, except as noted in section.

Appendix A Continued.

WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.

3.2 If a species is listed as endangered or threatened under the federal Endangered Species Act, the agency will recommend to the commission that it be listed as endangered or threatened as specified in section 9.1. If listed, the agency will proceed with development of a recovery plan pursuant to section 11.1.

3.3 Species may be listed as endangered, threatened, or sensitive only when populations are in danger of failing, declining, or are vulnerable, due to factors including but not restricted to limited numbers, disease, predation, exploitation, or habitat loss or change, pursuant to section 7.1.

3.4 Where a species of the class Insecta, based on substantial evidence, is determined to present an unreasonable risk to public health, the commission may make the determination that the species need not be listed as endangered, threatened, or sensitive.

DELISTING CRITERIA

4.1 The commission shall delist a wildlife species from endangered, threatened, or sensitive solely on the basis of the biological status of the species being considered, based on the preponderance of scientific data available.

4.2 A species may be delisted from endangered, threatened, or sensitive only when populations are no longer in danger of failing, declining, are no longer vulnerable, pursuant to section 3.3, or meet recovery plan goals, and when it no longer meets the definitions in sections 2.4, 2.5, or 2.6.

INITIATION OF LISTING PROCESS

5.1 Any one of the following events may initiate the listing process.

5.1.1 The agency determines that a species population may be in danger of failing, declining, or vulnerable, pursuant to section 3.3.

5.1.2 A petition is received at the agency from an interested person. The petition should be addressed to the director. It should set forth specific evidence and scientific data which shows that the species may be failing, declining, or vulnerable, pursuant to section 3.3. Within 60 days, the agency shall either deny the petition, stating the reasons, or initiate the classification process.

5.1.3 An emergency, as defined by the Administrative Procedure Act, chapter 34.05 RCW. The listing of any species previously classified under emergency rule shall be governed by the provisions of this section.

5.1.4 The commission requests the agency review a species of concern.

5.2 Upon initiation of the listing process the agency shall publish a public notice in the Washington Register, and notify those parties who have expressed their interest to the department, announcing the initiation of the classification process and calling for scientific information relevant to the species status report under consideration pursuant to section 7.1.

INITIATION OF DELISTING PROCESS

6.1 Any one of the following events may initiate the delisting process:

Appendix A Continued.

WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.

6.1.1 The agency determines that a species population may no longer be in danger of failing, declining, or vulnerable, pursuant to section 3.3.

6.1.2 The agency receives a petition from an interested person. The petition should be addressed to the director. It should set forth specific evidence and scientific data which shows that the species may no longer be failing, declining, or vulnerable, pursuant to section 3.3. Within 60 days, the agency shall either deny the petition, stating the reasons, or initiate the delisting process.

6.1.3 The commission requests the agency review a species of concern.

6.2 Upon initiation of the delisting process the agency shall publish a public notice in the Washington Register, and notify those parties who have expressed their interest to the department, announcing the initiation of the delisting process and calling for scientific information relevant to the species status report under consideration pursuant to section 7.1.

SPECIES STATUS REVIEW AND AGENCY RECOMMENDATIONS

7.1 Except in an emergency under 5.1.3 above, prior to making a classification recommendation to the commission, the agency shall prepare a preliminary species status report. The report will include a review of information relevant to the species' status in Washington and address factors affecting its status, including those given under section 3.3. The status report shall be reviewed by the public and scientific community. The status report will include, but not be limited to an analysis of:

7.1.1 Historic, current, and future species population trends.

7.1.2 Natural history, including ecological relationships (e.g., food habits, home range, habitat selection patterns).

7.1.3 Historic and current habitat trends.

7.1.4 Population demographics (e.g., survival and mortality rates, reproductive success) and their relationship to long term sustainability.

7.1.5 Historic and current species management activities.

7.2 Except in an emergency under 5.1.3 above, the agency shall prepare recommendations for species classification, based upon scientific data contained in the status report. Documents shall be prepared to determine the environmental consequences of adopting the recommendations pursuant to requirements of the State Environmental Policy Act (SEPA).

7.3 For the purpose of delisting, the status report will include a review of recovery plan goals.

PUBLIC REVIEW

8.1 Except in an emergency under 5.1.3 above, prior to making a recommendation to the commission, the agency shall provide an opportunity for interested parties to submit new scientific data relevant to the status report, classification recommendation, and any SEPA findings.

8.1.1 The agency shall allow at least 90 days for public comment.

Appendix A Continued.

WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.

8.1.2 The agency will hold at least one public meeting in each of its administrative regions during the public review period.

FINAL RECOMMENDATIONS AND COMMISSION ACTION

9.1 After the close of the public comment period, the agency shall complete a final status report and classification recommendation. SEPA documents will be prepared, as necessary, for the final agency recommendation for classification. The classification recommendation will be presented to the commission for action. The final species status report, agency classification recommendation, and SEPA documents will be made available to the public at least 30 days prior to the commission meeting.

9.2 Notice of the proposed commission action will be published at least 30 days prior to the commission meeting.

PERIODIC SPECIES STATUS REVIEW

10.1 The agency shall conduct a review of each endangered, threatened, or sensitive wildlife species at least every five years after the date of its listing. This review shall include an update of the species status report to determine whether the status of the species warrants its current listing status or deserves reclassification.

10.1.1 The agency shall notify any parties who have expressed their interest to the department of the periodic status review. This notice shall occur at least one year prior to end of the five year period required by section 10.1.

10.2 The status of all delisted species shall be reviewed at least once, five years following the date of delisting.

10.3 The department shall evaluate the necessity of changing the classification of the species being reviewed. The agency shall report its findings to the commission at a commission meeting. The agency shall notify the public of its findings at least 30 days prior to presenting the findings to the commission.

10.3.1 If the agency determines that new information suggests that classification of a species should be changed from its present state, the agency shall initiate classification procedures provided for in these rules starting with section 5.1.

10.3.2 If the agency determines that conditions have not changed significantly and that the classification of the species should remain unchanged, the agency shall recommend to the commission that the species being reviewed shall retain its present classification status.

10.4 Nothing in these rules shall be construed to automatically delist a species without formal commission action.

RECOVERY AND MANAGEMENT OF LISTED SPECIES

11.1 The agency shall write a recovery plan for species listed as endangered or threatened. The agency will write a management plan for species listed as sensitive. Recovery and management plans shall address the listing criteria described in sections 3.1 and 3.3, and shall include, but are not limited to:

11.1.1 Target population objectives.

11.1.2 Criteria for reclassification.

Appendix A Continued.

WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.

11.1.3 An implementation plan for reaching population objectives which will promote cooperative management and be sensitive to landowner needs and property rights. The plan will specify resources needed from and impacts to the department, other agencies (including federal, state, and local), tribes, landowners, and other interest groups. The plan shall consider various approaches to meeting recovery objectives including, but not limited to regulation, mitigation, acquisition, incentive, and compensation mechanisms.

11.1.4 Public education needs.

11.1.5 A species monitoring plan, which requires periodic review to allow the incorporation of new information into the status report.

11.2 Preparation of recovery and management plans will be initiated by the agency within one year after the date of listing.

11.2.1 Recovery and management plans for species listed prior to 1990 or during the five years following the adoption of these rules shall be completed within five years after the date of listing or adoption of these rules, whichever comes later. Development of recovery plans for endangered species will receive higher priority than threatened or sensitive species.

11.2.2 Recovery and management plans for species listed after five years following the adoption of these rules shall be completed within three years after the date of listing.

11.2.3 The agency will publish a notice in the Washington Register and notify any parties who have expressed interest to the department interested parties of the initiation of recovery plan development.

11.2.4 If the deadlines defined in sections 11.2.1 and 11.2.2 are not met the department shall notify the public and report the reasons for missing the deadline and the strategy for completing the plan at a commission meeting. The intent of this section is to recognize current department personnel resources are limiting and that development of recovery plans for some of the species may require significant involvement by interests outside of the department, and therefore take longer to complete.

11.3 The agency shall provide an opportunity for interested public to comment on the recovery plan and any SEPA documents.

CLASSIFICATION PROCEDURES REVIEW

12.1 The agency and an ad hoc public group with members representing a broad spectrum of interests, shall meet as needed to accomplish the following:

12.1.1 Monitor the progress of the development of recovery and management plans and status reviews, highlight problems, and make recommendations to the department and other interested parties to improve the effectiveness of these processes.

12.1.2 Review these classification procedures six years after the adoption of these rules and report its findings to the commission.

Appendix A Continued.

WAC 232-12-297 Endangered, threatened, and sensitive wildlife species classification.

AUTHORITY

13.1 The commission has the authority to classify wildlife as endangered under RCW 77.12.020. Species classified as endangered are listed under WAC 232-12-014, as amended.

13.2 Threatened and sensitive species shall be classified as subcategories of protected wildlife. The commission has the authority to classify wildlife as protected under RCW 77.12.020. Species classified as protected are listed under WAC 232-12-011, as amended. [Statutory Authority: RCW 77.12.020. 90-11-066 (Order 442), § 232-12-297, filed 5/15/90, effective 6/15/90.]

Appendix B. WDFW Wolf Working Group members.

Daryl Asmussen
Cattle Rancher
PO Box 417
Tonasket, WA 98855

John Blankenship (replaced by Linda Saunders at the June 2011 meting)
Executive Director
Wolf Haven International
3111 Offut Lake Rd
Tenino, WA 98589

Duane Cocking
Board of Directors
Inland Empire Chapter
Safari Club International
8322 N Glenarvon Ln
Newman Lake, WA 99025

Jeff Dawson
Director
Stevens County Cattleman
Cattle Producers of Washington
449 Douglas Falls Rd
Colville, WA 99114

Jack Field
Executive Vice President
Washington Cattlemen's Association
PO Box 96
Ellensburg, WA 98926

George Halekas
Wildlife Biologist
Raven Wildlife Services
24918 N Monroe Rd
Deer Park, WA 99006

Kim Holt
Secretary/Treasurer
Wolf Recovery Foundation
18632 Broadway Ave
Snohomish, WA 98296

Derrick Knowles
Outreach Coordinator
Conservation Northwest
35 W Main, Suite 220
Spokane, WA 99201

Colleen McShane
Wildlife Ecologist
Seattle City Light
1132 North 76th St
Seattle, WA 98103

Ken Oliver
Former County Commissioner
Pend Oreille County
32371 Le Clerc Rd N
Ione, WA 99139

Tommy Petrie, Jr.
President
Pend Oreille County Sportsmens Club
10152 LeClerc Rd
Newport, WA 99156

Gerry Ring Erickson
Consulting Scientist
PO Box 1896
Shelton, Wa 98584

John Stuhlmiller
Director of State Affairs
Washington Farm Bureau
PO Box 8690
Lacey, WA 98509

Arthur Swannack
President
Washington State Sheep Producers
1201 Cree Rd
Lamont, WA 99017

Appendix B. Continued.

Bob Tuck
Principal
Eco-Northwest
270 Westridge Rd
Selah, WA 98942

Greta M. Wiegand
Outdoor Recreationist
2142 N 192nd St
Shoreline, WA 98133

Georg Ziegltrum
Supervisor
Washington Forest Protection Association
724 Columbia St NW, Suite 250
Olympia, WA 98501

Appendix C. Washington Administrative Code 197-11-444 - Elements of the environment.

(1) Natural environment
- (a) Earth
  - (i) Geology
  - (ii) Soils
  - (iii) Topography
  - (iv) Unique physical features
  - (v) Erosion/enlargement of land area (accretion)
- (b) Air
  - (i) Air quality
  - (ii) Odor
  - (iii) Climate
- (c) Water
  - (i) Surface water movement/quantity/quality
  - (ii) Runoff/absorption
  - (iii) Floods
  - (iv) Ground water movement/quantity/quality
  - (v) Public water supplies
- (d) Plants and animals
  - (i) Habitat for and numbers or diversity of species of plants, fish, or other wildlife
  - (ii) Unique species
  - (iii) Fish or wildlife migration routes
- (e) Energy and natural resources
  - (i) Amount required/rate of use/efficiency
  - (ii) Source/availability
  - (iii) Nonrenewable resources
  - (iv) Conservation and renewable resources
  - (v) Scenic resources

(2) Built environment
- (a) Environmental health
  - (i) Noise
  - (ii) Risk of explosion
  - (iii) Releases or potential releases to the environment affecting public health, such as toxic or hazardous materials
- (b) Land and shoreline use
  - (i) Relationship to existing land use plans and to estimated population
  - (ii) Housing
  - (iii) Light and glare
  - (iv) Aesthetics
  - (v) Recreation
  - (vi) Historic and cultural preservation
  - (vii) Agricultural crops
- (c) Transportation
  - (i) Transportation systems
  - (ii) Vehicular traffic
  - (iii) Waterborne, rail, and air traffic
  - (iv) Parking
  - (v) Movement/circulation of people or goods
  - (vi) Traffic hazards
- (d) Public services and utilities
  - (i) Fire
  - (ii) Police
  - (iii) Schools
  - (iv) Parks or other recreational facilities
  - (v) Maintenance
  - (vi) Communications
  - (vii) Water/storm water
  - (viii) Sewer/solid waste
  - (ix) Other governmental services or utilities

(3) To simplify the EIS format, reduce paperwork and duplication, improve readability, and focus on the significant issues, some or all of the elements of the environment in WAC 197-11-444 may be combined.

[Statutory Authority: RCW 43.21C.110. 84-05-020 (Order DE 83-39), § 197-11-444, filed 2/10/84, effective 4/4/84.

Appendix D. Summary of comments made during seven public scoping meetings in August 2007 and whether they were considered in developing the wolf conservation and management plan alternatives (√) or were outside the scope of the plan.

Comment	Considered in developing the plan alternatives
Conservation	
Establish wolf recovery objectives based on a minimum viable population	√
Ensure viable wolf populations prior to state delisting	√
Establish wolf recovery objectives using best available science	√
Establish wolf recovery objectives based on habitat capacity	√
Establish wolf recovery objectives based on ecosystem health, while protecting livestock	√
Establish recovery objectives based on ecological principles and the restoration of ecosystem function	√
Use the same wolf population numbers for delisting and relisting	√
Include distribution criteria in wolf recovery	√
Recover wolves to historical population numbers	Outside scope of the plan
Return wolves to restore ecosystem function	√
Consider the needs of the Okanogan region when setting wolf recovery objectives	√
Consider breeding pairs, but also consider packs or individuals, in establishing recovery objectives	√
Consider influence of high human population in setting wolf recovery objectives	√
Identify recovery areas based on potential habitat and minimal human conflict	√
Identify suitable wolf habitat statewide in wolf planning process	√
Recognize societal value of wolves in conservation planning	√
Include occupancy of ecoregions in down-listing and delisting criteria; e.g., 50% occupancy of ecoregions for down-listing to threatened and 80% occupancy of ecoregions for delisting	√
Include social and political factors, landownership patterns, and ecoregional targets in establishing recovery objectives	√
Maintain seasonal habitats for wolves in lowland areas	√
Consider ecological benefits of wolves to wildlife when developing recovery objectives	√
Develop wolf management units with population objectives that reflect habitat capacity within units	√
Establish wolf population recovery objectives by ecoregion or region	√
Include an objective for a viable population on the Olympic Peninsula	√
Address limiting factors that have prevented wolves from re-establishing in the state to optimize potential for recovery	√
Address why wolves were originally extirpated from the state	√
Assess the potential for impacts of wolves on other state species of concern and wildlife	√
Address criteria for translocation of wolves within the state	√
Don't allow translocations to occur	√
Translocate depredating wolves	√

Appendix D. Summary of comments made during seven public scoping meetings in August 2007 and whether they were considered in developing the wolf conservation and management plan alternatives (√) or were outside the scope of the plan.

Comment	Considered in developing the plan alternatives
Maintain genetic diversity in the wolf population	√
Address the wolf plan's development guideline of prohibiting translocation in national parks	√
Translocation should be an option in the southern Cascades and Olympic Peninsula due to barriers to natural dispersal	√
Identify geographic areas where wolves would be protected and areas for translocation, such as Olympic National Park and Gifford Pinchot National Forest	√
Report the wolf plan "sideboards" and who established them	√
Reintroduction should be an option at this time	Outside scope of the plan
Address any differences between the current wolf plan and past feasibility study to reintroduce wolves to Olympic National Park	√
Allow wolves to recover on their own with as little human involvement as possible	√
If hunting of wolves in Idaho prevents suitable dispersal in Washington, consider the need for reintroductions	√
Identify and maintain dispersal habitat that would allow movement among wolf occupied areas	√
Focus on dispersal of wolves for recovery until established	√
In recovery planning, recognize the long time frame involved in recovery	√
Hunting	
Manage wolves as a game species	√
Recover wolf populations so that they may be hunted	√
If wolves become a game species, do not allow aerial hunting, trapping, use of motorized vehicles, or poisons	√
When wolves are delisted, designate them as a game species for hunting and allow ranchers to kill wolves depredating livestock	√
When wolves are delisted, do not designate the wolf as a game species for hunting	√
Designating the wolf as a game species may result in poaching and other excessive mortality	√
Control problem wolves with hunting	√
Ungulate Conflicts	
Evaluate the impacts of wolves on game populations (elk, deer, and caribou). Include increased scientific monitoring to evaluate wolf-related impacts	√
Evaluate elk-wolf management objectives in game management plans, including triggers to address a wolf management action	√
Do not allow shortcomings in game management goals and objectives to drive wolf management objectives and goals.	√
Determine the effect of wolves on hunting opportunity of ungulates	√
Reduce hunting opportunity in areas where wolves have reduced deer/elk populations to compensate for reduced ungulate numbers	√
Manage hunting of wolf prey species around livestock areas to minimize potential wolf depredations on local livestock	√

Appendix D. Summary of comments made during seven public scoping meetings in August 2007 and whether they were considered in developing the wolf conservation and management plan alternatives (√) or were outside the scope of the plan.

Comment	Considered in developing the plan alternatives
Evaluate whether enhancement of wolf prey populations could reduce wolf depredations on livestock	√
Evaluate influence and role of big game populations in wolf recovery objectives	√
Manage wolves so that they do not negatively impact game populations	√
Recognize the many factors that may affect game populations (e.g. habitat changes) in addition to wolf predation, and recognize the ecological effects of not having wolves in Washington	√
Recognize the beneficial role of wolves in maintaining healthy deer and elk herds	√
Identify wolf management actions if wolves occur at elk winter feeding sites or other ungulate concentration areas	√
Conduct studies to evaluate predator-prey dynamics before and after wolf establishment, including cougar and black bear	√
Limit hunting of wolf prey species until wolf populations meet recovery objectives	√
Livestock Conflicts	
Include measures for protection of livestock and pets while wolves are state-listed	√
Develop guidelines for livestock owners on their response to wolf depredations and evaluate wolf control models from adjacent states	√
Consider compensation for wolf depredation occurring on private lands, but on public lands, livestock owners should be required to use best management practices to protect livestock, such as use of guard dogs	√
Given that grazing on public lands is already subsidized, should livestock producers receive additional compensation from the government for wolf depredations?	√
Identify best management practices for ranchers to prevent/minimize wolf depredations, such as requiring ranchers to properly dispose of livestock carcasses and not locating calving areas near wolf dens	√
Develop a process for reporting suspected depredations of livestock that is simple and includes a local response involving WDFW	√
Address public concern of game populations attracting wolves to nearby livestock	√
Train ranchers in the use of wolf deterrents, subsidize wolf deterrent process, and identify who ranchers contact for wolf deterrents	√
Provide ranchers with incentives to give up their grazing allotments, such as a buy-out program	√
Prohibit grazing on public lands if it leads to wolf-livestock conflicts	√
Federal agencies should identify which federal lands should not allow grazing	√
Limit livestock grazing on state lands to enhance foraging habitat for wolf prey (e.g., deer and elk)	√
Manage grazing and vegetation to enhance foraging habitat for wolf prey and identify funding source	√

Appendix D. Summary of comments made during seven public scoping meetings in August 2007 and whether they were considered in developing the wolf conservation and management plan alternatives (√) or were outside the scope of the plan.

Comment	Considered in developing the plan alternatives
Compensation	
Consider basing compensation for wolf depredations on degree of active management of livestock to prevent wolf depredations	√
Consider different compensation levels for livestock depredation on public vs. private lands	√
Explain why compensation is justified for losses of livestock	√
Livestock loss on public land needs to be verifiable; also need to consider how to address non-verifiable kills and compare to baseline loss rate	√
Establish a fund to compensate livestock owners for losses due to depredation, and determine whether compensation is based on current market value or projected market value	√
Compensation to ranchers should include losses associated with stress, disturbance, weight loss, change in distribution for livestock	√
Monitoring	
Provide up-to-date information on geographic distribution of wolves for access by the public	√
Use citizen science volunteers to help monitor wolves	√
Develop a mechanism for the public to report wolf sightings to WDFW; identify verification criteria, address landowner concerns regarding potential land use restrictions if they report wolf sightings on their property	√
Management	
Only individual problem wolves should be removed	√
Address alternatives to lethal control of problem wolves	√
Identify roles and responsibilities of state and federal agencies in wolf recovery	√
After delisting, establish criteria for allowing lethal control of wolves if homes, livestock or pets are threatened	√
Management of human/wolf conflict should only allow lethal control as a last resort	√
Do not allow bounties on wolves	√
Lethal control of depredating wolves needs to be acceptable	√
Only nonlethal control should be used to address livestock depredation, such as use of anti-wolf odors, noises, and fencing	√
Identify nonlethal incentives for ranchers to address wolf conflicts, including "biological fencing" that uses chemicals to stimulate scent marking to keep wolves away from designated areas	√
Address the potential for habituation resulting from feeding of wolves	√
Identify management actions for "nuisance" wolves	√
Establish guidelines/laws for shooting wolves if personal safety is at risk	√
Determine if people recreating in the backcountry will be excluded from wolf areas	√
Education and Outreach	
Engage the public in education and outreach about wolf ecology and behavior	√
Education outreach to ranchers and farmers is needed; consider using WSU extension agents	√

Appendix D. Summary of comments made during seven public scoping meetings in August 2007 and whether they were considered in developing the wolf conservation and management plan alternatives (√) or were outside the scope of the plan.

Comment	Considered in developing the plan alternatives
Education and outreach is needed for the general public on the role of predators in ecosystems, how the public values wolves, and how the public can distinguish a coyote from a wolf	√
Educate the public on how people should react to a wolf encounter when recreating in wolf areas, include incidence of wolf attacks on humans and pets, and address impacts of wolf viewing	√
Interagency Cooperation	
Work with other government agencies and tribes to reduce road densities In key wolf areas	√
Encourage tribal involvement	√
Establish and maintain cooperation and agreements between natural resource agencies in Washington and British Columbia that promote wolf recovery in Washington, including the issue of trapping and hunting on the border.	√
Economics	
Develop a market for "wolf friendly" beef	√
Develop ecotourism and 'watchable wildlife" opportunities for wolves to promote economic benefits to communities	√
Consider the negative influence of wolves on property values	√
Funding	
Identify funding sources for wolf management, including enforcement, monitoring, wolf depredation, and post-delisting activities	√
Identify a funding source for non-lethal control measures, such as fencing	√
When wolves are delisted, consider trophy hunting of wolves as a funding source for wolf monitoring	√
Secure funding for wolf depredation compensation based on the public sector that benefits from wolves (e.g., tourists)	√
Evaluate potential funding from tribes	√
Develop a wolf license plate to provide a funding source for wolf management	√
Implement a statewide tax to fund nongame wildlife species to help fund wolf management activities	Outside scope of the plan
General	
Update the wolf plan to include best and most recent available science	√
Consider requiring wolf-dog hybrid breeders to register animals in a DNA database	√
Evaluate the potential for poaching of wolves	√
Integrate NGOs into the wolf management process	√
Evaluate sterilization of wolves to control their population	√
Evaluate potential for transmission of disease from wolves	√
Build on the knowledge and experience gained from other states	√

Appendix E. Comments submitted by three anonymous scientific peer reviewers. More detailed comments by the reviewers are available at: http://wdfw.wa.gov/conservation/gray_wolf/

UNIVERSITY OF MASSACHUSETTS
AMHERST

Holdsworth Hall
160 Holdsworth Way
Amherst, MA 01003-9285

NATURAL RESOURCES CONSERVATION

voice: 413.545.2665
fax: 413.545.4358
http://www.umass.edu/nrc

Date: 26 January 2010

To: Daniel Vogt, SRC Managing Editor, University of Washington

From: Todd K. Fuller, Associate Editor, University of Massachusetts, Amherst

Subject: Synthesis of expert comments on the "Draft Wolf Conservation and Management Plan for Washington"

The following is a synthesis of the Independent Science Panel review of the Draft Wolf Conservation and Management Plan for Washington; also attached are the individual reviews of the experts on which the synthesis is mostly based. Like the individual reviews, this synthesis addresses the basic and focus questions identified by the Washington Department of Fish and Wildlife (WDFW). In doing so, it touches on the summary chapters of the plan, the step-down outline of the various tasks required to conserve and manage wolves in Washington, as well as the two major issues that were identified by the WDFW: (1) conservation/recovery objectives for down-listing and delisting wolves at the state level, and (2) management strategies to reduce and address wolf-livestock conflicts.

Overall, the reviewers and I find the plan to be a thoughtful, wide-ranging document that, in order to lay the groundwork for wolf management in Washington State, anticipates the looming controversies, provides a comprehensive review of the literature, and comes to a compromise recommendation that reflects interpretations, opinions, and values of the advisory group authors. There are many forward-thinking recommendations in the plan, yet there appears to be a good number of shortcomings that need to be addressed. All of us agree that the recommendations of the minority report concerning wolf numbers are insufficient for wolf recovery in the State, but at least 3 of us also believe that the population recommendations in the Draft plan are not biologically defensible and will not ensure the "reestablishment of a self-sustaining population of gray wolves in Washington". This is due largely to the compromise that has been made between biological data with social reality, an assumption that connectivity with viable wolf populations in other jurisdictions will always be maintained, and a lack of a population viability analysis that would more clearly demonstrate the biologically necessities involved in such an undertaking. Additionally, there are ambiguously defined terms, assumptions that will need to be verified (and a plan to do so), and perhaps an underestimation of the human resources needed in the future to make wolf recovery and management successful. I believe that these points can be addressed and resulting plan revised such that the chances for success are high.

Appendix E. Continued.

Basic Questions

B1. Are rigorous, transparent and sound research and statistical methods followed?

Although not original research, the plan is thorough and comprehensive in its coverage of important topic areas, and the syntheses of various data sets and their presentation are sound. Reviewer #1 rightly points out that there are very important concepts, terms, and ideas that are not fully clarified or defined, but should be. These include for example, "self-sustaining population", "high probability of persistence", "significant portion of the species' range", and "adequate prey for wolves". In particular, Reviewer #1 notes that it is not clear how assessments of such terms will be accomplished. Providing clarification will certainly help conservation efforts. Reviewer #2 importantly notes that a major analytical method, Population Viability Analysis (PVA), although recognized by the advisory group as a potential tool, was not employed; as a result, biological justification of proposed recovery numbers is inadequate. I agree that these and other identified terms need to be explicitly defined so that results can be measured. Plans to address the acquisition and assessment of these measurements also need to be identified specifically. With respect to the need for a better biological justification of minimum numbers, I agree that a PVA, as speculative as it might be, is worthwhile exercise. More importantly, a reorientation of approach seems necessary here; once a biologically derived minimum is established (by whatever acceptable scientific means), by definition it cannot be compromised by social considerations with a subsequent expectation of success.

B2. Is there sufficient detail in the document to reproduce the study?

The structure of the plan, and in particular the topics identified as important to wolf recovery, could certainly be reproduced. Some ambiguities are noted, but in any such endeavor, even with the review the document has received so far, these are to be expected.

B3. Were data reasonably interpreted?

All reviewers agree that the data used were reasonably interpreted. Reviewer #3 notes that additional information from outside of the western wolf range, if included, may have influenced some interpretations. I agree that there are insights to be gained from other areas where wolf recovery has occurred or is well along, despite some circumstantial differences. For some places, summaries and retrospectives on their recovery processes, management techniques, and solutions to social problems are available; these can provide alternative views and insights that may be worthwhile to consider.

B4. Do the stated conclusions logically flow from the results?

In general, the conclusions do logically flow from the results presented. However, Reviewer #2 points out that by not including a PVA, a major biological perspective was not included or considered, and thus conclusions about population adequacy may not be appropriate. I agree that having this additional analysis would be useful and help make a more complete plan.

Appendix E. Continued.

B5. Do the literature citations include the latest applicable information and represent the current state of scientific understanding on this topic?

The literature, though sometimes focused on western wolf recovery efforts and not including use of PVAs or some additional perspectives on wolf management and conservation, is thorough and very useful.

B6. Are uncertainties and limitations of the work stated and described adequately?

Many of the uncertainties and limitations of the work, particular where conclusions go beyond existing data, are well presented. Reviewers, however, each identified important areas of uncertainty that should be more clearly addressed. Reviewer #1 sees the issue of maintaining corridors and connectively, both within the State and with other states or Provinces, is not adequately addressed. In addition, the stated recovery goal of 15 successful breeding pairs is poorly justified biologically because it is a socially accepted compromise. Reviewer #2 rightly believes that "the specific and crucially important context that this plan is a compromise between what wolves need and what people desire is not explicit", but should be. The concern of Reviewer #3 is that large core habitat, such as is available for wolves in adjacent western states where recovery is occurring, is not available to the same extent and the consequences of this difference perhaps could use more scrutiny. Each of these concerns is well-founded and should be more completely addressed in the plan.

B7. Are assumptions stated and described adequately?

All of us agree that many assumptions are well-stated and adequately described, and that many of these are based on models of wolf recovery in other western states. Some assumptions may not be fully justified because they don't take into account auxiliary data from other areas (Reviewer #3). Some assumptions are adequately described, but plans needed to confirm them have not been made and should be (Reviewer #1). Finally, Reviewer #2 sees a seemingly unstated assumption that the advisory group was "a representative sounding board for crafting a conservation and management plan." Though there may appear to be some bias with regard to proportional stakeholder participation, I would be as concerned that the group was thought to have provided maximum expert scientific consideration with regard to the biological needs of recovery.

B8. Is the information presented in an accurate, clear, complete, and unbiased manner and in a proper context?

All of us agree that the information is presented in an openly honest, clear, and sincere manner. The report is well organized, clearly written, and unbiased, and was a major task that was well done.

Appendix E. Continued.

Focus Questions

F1. The conservation/recovery objectives to achieve a recovered, self-sustaining wolf population "...in a significant portion of its range" in Washington (state law, WAC 232.12.297), including numbers, duration and geographic extent.

Reviewer #3 believes that the objectives seem reasonable, but suggests an alternative to counting "successful breeding packs", mainly for logistical reasons. I, along with Reviewers # 1 and # 2, believe that the compromise minimum numbers proposed are inadequate to assure success, especially in light of the lack of a scientific, quantitative assessment of this number and their proposed distribution, an assumption of internal connectivity that may be tenuous, and an assumption on reliance of jurisdictions outside of the state for sustainability (and thus, not "self-sustaining"). Reviewer #1 identifies a number of terms and processes that need definition and clearer delineation of assignment, respectively. These relate to sustainability, distribution aspirations, balancing conservation needs and public desires, negative impacts on recovery or long-term perpetuation, connectivity and genetic diversity, pack sizes, wolf ranges and density, future management, and proposed translocations. Reviewer #2 emphasizes that the biological justification of minimum numbers is not well-justified or documented (e.g., no PVA), and that a justified biological minimum should not be reduced for social/public acceptance reasons; otherwise, the purpose of the conservation action is compromised and its chances of success minimized. Clearly, minimum population sizes required for delisting have been at the heart of many wolf recovery controversies, and it is key that the most thorough analysis for Washington be conducted and vetted ahead of time to avoid costly problems in the future.

F2. Assessments and recommendations regarding risks to wolf recovery associated with planned management strategies to address livestock conflicts.

All agree that this section is well-researched and clearly presented. Additional considerations and options that should be discussed include: Reviewer #1 – additional compensation revenue options, reproduction interference as a non-lethal control action, and timing of depredation response and education; Reviewer #2 – alternatives to federal agency responsibility for lethal control; and Reviewer #3 – regulatory limitations on lethal control.

F3. An evaluation or assessment of the recovery and management strategies proposed in the minority report (Appendix D) and the preferred alternative draft plan as they relate to the likelihood of achieving recovery.

None of us believe that the recovery numbers proposed in Appendix D have much likelihood of achieving recovery.

F4. The discussion on potential effects of wolves on ungulate populations in Washington and anticipated depredation levels of domestic livestock.

This section of the plan is also well researched and clearly presented. It recognizes realistic scenarios regarding wolf effects on ungulates and domestic livestock. Reviewer

Appendix E. Continued.

#1 emphasizes, as do I, the need to judiciously assess sources-specific changes ungulate populations, to address many stakeholder concerns in some circumstances, and to consider the research opportunities/needs with regards to such interactions. Reviewer #2 has concerns about the role of artificial winter feeding of elk, seemingly in the context of recovering populations of wolves that will interact "naturally" in intact ecosystems. If some circumstances are not very natural (like winter feeding of ungulates), then any expectation by the public that wolf-ungulate interactions might not need as much hands-on management should be lowered.

Additional comments/other issues

Within the appended reports of the expert reviewers, a variety of additional useful questions, thoughts and recommendations are outlined. These are all respectful, helpful, and worthy of consideration. In particular, ongoing, accelerated interactions with the growing wolf population in Washington will require an emphasis on public education. More technical assistance in actually carrying out the recovery objectives should be beneficial. Having available the services of a scientific review panel (including biologists, economists, and social scientists) could greatly help public and managerial confidence. The management of wolves after delisting will benefit from ongoing initiation of such activities on adjacent states, but can also benefit from reviews of post-recovery management elsewhere.

Appendix E. Continued.

Date: 1 March 2010

To: Daniel Vogt, SRC Managing Editor, University of Washington

From: Todd K. Fuller, Associate Editor, University of Massachusetts, Amherst

Subject: Clarification of reviews of the "Draft Wolf Conservation and Management Plan for Washington" for WDFW.

Original questions for reviewers and Associate Editor are listed at the end of this document.

I have received responses back from all reviewers and these, along with my own response to the five questions submitted by WDFW, are as follows:

1. *Regarding the adequacy of the minority report (Appendix D), the Associate Editor states on page 4 of the summary comments that none of the reviewers or the editor believes that the recovery numbers proposed in Appendix D "have much likelihood of achieving recovery". However, in the comments of each of the reviewers, they indicated that the numbers recommended in Appendix D would not lead to a recovered wolf population as defined under Washington law. We are wondering if the editor might reevaluate his summary of the reviewer statements or explain the difference between his summary and the reviewer statements.*

   In response to original question F3, the Reviewers wrote as follows:
   R1 – "….the recovery objective and strategy outlined in the minority report will not achieve recovery in the state of WA."
   R2 - "No. This appendix is a plan for continued persecution of the wolf. It has no biological basis……"
   R3 – "The levels of wolves recommended in the minority report does not appear to be a wolf population level that would produce a self-sustaining, viable population of wolves and not likely to spread geographically across major portions of the state…."

   I initially stated in the overview that "all of us agree that the recommendations of the minority report concerning wolf numbers are insufficient for wolf recovery in the State….", as well as stating that "None of us believe that the …..numbers…have much likelihood of achieving recovery." Two of the three reviewers state definitively that the Appendix D plan will not result in recovery of wolves in Washington, and the other hedges a bit by using the phrases "does not appear" and "not likely". I believe that the recovery and management strategies outlined in Appendix D will not achieve wolf recovery in Washington.

2. *Reviewer 1 states on page 10 that sterilization has been shown to reduce coyote predation on domestic sheep and pronghorn fawns and to reduce wolf predation on native ungulates in the Yukon. Could Reviewer 1 provide us the citations for this documentation?*

Appendix E. Continued.

Below are the requested references:

Bromley, C., and E. M. Gese. 2001. Effects of sterilization on territory fidelity and maintenance, pair bonds, and survival rates of free-ranging coyotes. Canadian Journal of Zoology 79:386-392.

Bromley, C., and E. M. Gese. 2001. Surgical sterilization as a method of reducing coyote predation on domestic sheep. Journal of Wildlife Management 65:510-519.

Seidler, R. 2009. Surgical sterilization of coyotes to reduce predation on pronghorn fawns. M.S. degree, Utah State University, Logan, Utah.

Spence, C. E., J. E. Kenyon, D. R. Smith, R. D. Hayes, and A. M. Baer.
1999. Surgical sterilization of free-ranging wolves. Canadian Veterinary Journal 40:118-121.

Hayes, R. D., R. Farnell, R. M. P. Ward, J. Carey, M. Dehn, G. W. Kuzyk, Al. M. Baer, C. L. Gardner and M. O'Donoghue. 2003. Experimental reduction of wolves in the Yukon: ungulate responses and management implications. Wildlife Monographs 152:1-35.

Apparently publications on the reduced rate of predation on caribou by sterile wolves are not out yet, but are implied in the Hayes monograph.
They were quoted in a newspaper article that they did have reduced predation by sterile wolves, but no scientific publications could be found in my search. They may wish to contact Bob Hayes and see if a report is available.

3. *Reviewer 2 states on page 6 that "safe habitat" for ungulates can perhaps be developed to reduce the hunting success of wolves. We are not familiar with this type of management for wolf-ungulate interactions and are wondering if the reviewer could expand on this topic for us. Has this been done successfully or even attempted elsewhere? Are there any documents that we could refer to or other people to contact for more information on this subject?*

I based that comment loosely on the work in the recent Foraging Ecology book (Foraging : Behavior and Ecology; edited by Stephens, Brown, and Ydenberg, 2007, U. Chicago Press) that provides several chapters on the direct, and especially indirect effects of predators on their prey. Safe habitat could be places where ungulates have high visibility, abundant browse/graze so they need to forage less, or easy access to escape terrain/cover. I don't know if the sort of places on the landscape where wolves are less efficient hunters is generally available, but given the extensive studies of wolves I would be surprised if Mech or Smith haven't characterized the landscapes of kill sites and compared them with places where kills are not made. In fact I am heading to Yellowstone in a few weeks to make some of those measurements around wolf kills there just as a class project.

I would suggest that the managers in Washington contact other wolf researchers to determine if there are characteristics of the landscape that appear to be difficult for wolves to hunt

Appendix E. Continued.

within, and then perhaps these areas could be identified in Washington and given special consideration as places to build ungulate populations.

4. *Reviewer 3 provides an alternative scenario for the objectives of the draft plan on page 6. We would like to have this clarified so that we are completely sure of the reviewer's intent. Under state downlisting from endangered to threatened, for example, is the reviewer saying that a population of 100+ wolves for 3 years AND 2 breeding pairs of 4+ wolves in each of the three recovery regions are needed for this downlisting target?*

The number was intended to be a statewide numerical goal, and the breeding pack distribution was intended to be a distributional goal.
Thus in the below scenario the statewide count would be at least 100 wolves that consisted of 2 or > breeding packs in each of the 3 listed regions.

For 1. state downlisting from endangered to threatened, 100+ wolves for 3 yrs.

* 2 breeding packs of 4+ wolves in E. Wash.
* 2 breeding packs of 4+ wolves in N. Casc.
* 2 breeding packs of 4+ wolves in S. Casc./ NW Coast

5. *Reviewer 3 provides comments about fisher-wolf interactions in Minnesota, Wisconsin, and Michigan on page 6. Could the reviewer provide us with sources (either published accounts or people to contact) for (1) the killing of a fisher by a wolf in Wisconsin, and (2) the decline in fisher numbers in the portions of these states occupied by wolves but not elsewhere?*

Distribution maps and population trends in fisher & wolves in WI.

Dhuey, B. and J. Olson. 2009. Fisher harvest. Wisconsin Wildlife Surveys. 19(5): 83-89
http://www.dnr.state.wi.us/org/land/wildlife/harvest/reports/08fisherharv.pdf
Rolley, R.E. and M. L. Worland. 2009. Fisher population analysis. Wisconsin Wildlife Surveys. 19(5): 100-103
http://www.dnr.state.wi.us/org/land/wildlife/harvest/reports/09fisherpop.pdf
Wydeven, A.P. and J.E. Wiedenhoeft. 2009. Gray wolf population 2008-2009. Wisconsin Wildlife Surveys. 19(5): 141-160
http://www.dnr.state.wi.us/org/land/wildlife/harvest/reports/09graywolfpop.pdf

Report of fisher killed by wolves from a colleague:
"I can't remember if I told you previously about my observations or not so will relay them here in case they are of interest. In 1993 I found a coyote and (later that same summer) a fisher that apparently were killed by wolves in the Truck Trail Pack territory. In both cases the carcasses were left in the middle of gravel roads and were surrounded by many wolf tracks. They had been bitten several times but were not consumed at all.
These were the only such occurrences I observed during the 8 years I worked on the US Hwy 53 project."

Appendix E. Continued.

Let me know of additional information is requested. Many thanks for your help.

Best regards,

Todd

--
Todd K. Fuller, Professor
Department of Natural Resources Conservation University of Massachusetts 160 Holdsworth Way Amherst, MA 01003-9285 USA

Phone 413/545-4723
Fax 413/545-4358
http://nrc.umass.edu/index.php/people/faculty/fuller-todd-k

Appendix E. Continued.

Original Questions for Review

Basic Questions

B1. Are rigorous, transparent and sound research and statistical methods followed?

B2. Is there sufficient detail in the document to reproduce the study?

B3. Were data reasonably interpreted?

B4. Do the stated conclusions logically flow from the results?

B5. Do the literature citations include the latest applicable information and represent the current state of scientific understanding on this topic?

B6. Are uncertainties and limitations of the work stated and described adequately?

B7. Are assumptions stated and described adequately?

B8. Is the information presented in an accurate, clear, complete, and unbiased manner and in a proper context?

Focus Questions

F1. The conservation/recovery objectives to achieve a recovered, self-sustaining wolf population "...in a significant portion of its range" in Washington (state law, WAC 232.12.297), including numbers, duration and geographic extent.

F2. Assessments and recommendations regarding risks to wolf recovery associated with planned management strategies to address livestock conflicts.

F3. An evaluation or assessment of the recovery and management strategies proposed in the minority report (Appendix D) and the preferred alternative draft plan as they relate to the likelihood of achieving recovery.

F4. The discussion on potential effects of wolves on ungulate populations in Washington and anticipated depredation levels of domestic livestock.

Appendix F. WDFW responses to public and scientific peer review comments on the Draft EIS/Wolf Conservation and Management Plan for Washington. The complete public comments on the Draft EIS can be viewed at: http://wdfw.wa.gov/conservation/gray_wolf/comments.html.

Comment	Response
General – support/oppose recovery	
I oppose recovery of any wolves in the state.	Comment noted.
I oppose recovery of wolves in western Washington, including the Olympic Peninsula.	Comment noted.
I oppose wolf recovery because compensation of depredation will never be fully funded.	Comment noted. The Final Recommended Plan notes that WDFW will seek funding for the compensation program.
I support/strongly support wolf recovery in WA.	Comment noted.
I support wolf recovery and value wolves being present in the ecosystem. Wolves are an important symbol of wildness in the west..	Comment noted.
Based on Chapter 2, Section E, of the plan, it is clear that the majority of people in Washington support wolf recovery. Please listen to them.	Comment noted.
I can tolerate the presence of some wolves in Washington as long as they disperse here naturally.	Comment noted.
I believe that all wolves in the state should be eliminated or captured and returned to Canada, Idaho, or Alaska.	Comment noted.
We live in a nation of laws and WDFW is mandated to recover listed species, including wolves, to viable populations.	Comment noted.
Washington is a richer place to live by having wolves present.	Comment noted.
All life forms should be preserved. Wolf recovery will restore a predator that's been missing from our ecosystem for decades.	Comment noted.
As a species native to Washington, wolves deserve to be recovered in this state.	Comment noted.
I want to see wolf recovery occur for the benefit of my children and grandchildren.	Comment noted.
Wolves are one of God's creatures too, just like cattle, sheep, deer, and elk.	Comment noted.
Wolves have a right to survive and should be left alone.	Comment noted.
People should learn to live with wolves in their native habitat.	Comment noted.
Species have been going extinct forever and will continue to do so.	Comment noted.
Wolf recovery will result in pain and suffering to wolves because they will to be killed to minimize conflicts with livestock, ungulates, and humans.	Comment noted.
I never want to see wolves removed from the endangered species list.	Comment noted. The purpose of the wolf conservation and management plan is to develop recovery objectives and strategies that, when implemented, result in eventual recovery of healthy, self-sustaining populations so they can be removed from the state's list of endangered and threatened species.

Comment	Response
Bounties should be reinstituted so that no wolves are able to resettle in Washington.	Comment noted.
Many people I know (including many hunters) are advocating "Shoot, shovel, and shut up."	Comment noted.
Oppose recovery of any wolves in the state until a plan can be devised to keep wolf numbers in check with sustainable game populations.	The plan seeks to balance wolf recovery with maintaining healthy ungulate populations. Goals of the plan are to restore a self-sustaining wolf population while maintaining healthy ungulate populations and hunter opportunities. The Final Recommended Plan added additional provisions for addressing "at risk" ungulate populations if wolf predation were determined to be a primary limiting factor.
Although I support wolves, I oppose recovering them in Washington if it means that large numbers will be controlled to reduce conflicts.	Comment noted. It is not possible to predict the number of wolves that might become involved in conflicts and where lethal control would be used to address the conflict. However, the plan notes that control should not jeopardize recovery. It prioritizes that non-lethal means be used first, especially in the early stages of recovery, and that lethal control be used as a last resort if all other efforts to reduce conflicts have not been effective.
WDFW should look at the problems created by wolves in Idaho, Montana, and Wyoming. I do not want to see these same problems in Washington.	The plan presents data from other states, including Idaho, Montana, Wyoming, Wisconsin, Minnesota, and Michigan, in several chapters.
We do not need another large predator of wild ungulates and livestock in Washington. Washington already has too many predators. We don't need wolves added to the mix.	Comment noted.
People who support wolf recovery either live in cities or are environmentalists, and none of them will be affected by wolves. They would not be so supportive of wolf recovery if they had wolves living near their homes and ranches like rural residents will.	Information on levels of public support for and opposition to wolf recovery is included in Chapter 2, Section E. This information indicates that even the majority of rural residents in Washington surveyed in 2008 and 2009 supported wolf recovery.
Concern that wolves will turn to livestock, pets, or people after reducing or eliminating wild game populations.	There is no evidence from Idaho, Montana, and Wyoming of increased wolf attacks on livestock, pets, or people in areas of known ungulate decline, thus this scenario would very likely never occur in Washington. Wolves would instead be expected to decline in number (through territorial disputes or emigration) in areas without adequate wild prey rather than switch to alternative food sources. Wolves can be a contributing factor in the decline of some ungulate populations in combination with other factors such as loss and deterioration of ungulate habitat, adverse weather, overharvest, and increases in other predators (see Chapter 5, Sections A and B), but have never been shown to eliminate a wild game population. Under the wolf plan, wolves that prey on livestock and pets will be managed immediately using both non-lethal and lethal methods to reduce the occurrence of further conflict. Managers will examine possible non-lethal solutions first for resolving wolf threats to human safety, however, any serious wolf threat to public safety will be managed with lethal control.
I do not believe WDFW will be able to manage the wolf population or damage caused by wolves in the state any better than the agency manages declining salmon and game populations. Does the agency think it can properly manage an additional	Management activities are prioritized using existing resources and efforts are made to secure additional funding for new activities as they arise. The wolf is returning to Washington on its own and will be a part of ongoing management activities for WDFW. The plan outlines strategies for securing additional funding and a

Comment	Response
species, in this case wolves, given the current management load?	prioritization of the most important activities in the plan for implementation in the first six years of the plan.
The wolves that the U.S. Fish and Wildlife Service reintroduced to Yellowstone and Idaho originated from Canada. This subspecies is not native to Washington and should not be allowed to recover in this state. We do not need another non-native species in Washington.	The belief that the wolves reintroduced in the mid-1990s to Idaho and Yellowstone National Park from west-central Alberta and east-central British Columbia differed (being larger and more aggressive) from the wolves that originally occurred in the northern Rocky Mountain states is erroneous for several reasons. First, wolves from the Canadian and northern U.S. Rockies, interior British Columbia, Northwest Territories, and nearly all of Alaska are closely related and belong to a single subspecies known as *Canis lupus occidentalis*. This conclusion is based on the examination of historical and recent wolf specimens collected throughout North America. Those originating from the region described above have proven to be genetically and morphologically similar. Examples of this are seen in the wolves harvested during the 2009 hunting seasons in Montana and Idaho. Adults from Montana weighed an average of 97 lbs with a maximum of 117 lbs, whereas adults from Idaho weighed an average of 101 lbs with a maximum of about 130 lbs. These weights are similar to the sizes of the wolves that occurred in these states in the 1800s and early 1900s. Second, wolves are well known for their ability to disperse long distances from their birth sites. Radio-tracking data show that wolves from southeastern British Columbia and southwestern Alberta mix both with wolves from Idaho and Montana, and with wolves from farther north near the source locations of the animals used in the Idaho and Yellowstone reintroductions. When combined with recent genetic research that reveals considerable genetic mixing among wolf populations in Idaho, Montana, and Wyoming, this information shows that wolves form a single population across the Rocky Mountains of the northern U.S. and southern Canada. Third, recent genetic research involving hundreds of wolves sampled from Idaho, Montana, and Wyoming in the 1990s and 2000s found no evidence of a remnant native population of wolves that differed from the reintroduced wolves. Thus, the wolves present in these states before wolf recovery began were genetically similar to those used in the reintroductions.
I will not stand by and watch wolves kill my livestock and pets.	Comment noted.
It seems that WDFW and its wolf plan are forcing the recovery of wolves onto the citizens of Washington.	Wolves are native to Washington, and are naturally dispersing back into Washington and establishing resident packs. The purpose of the plan is to fulfill the legal requirement to develop a recovery plan for the species, and to have a plan in place for managing the species as it returns to the state on its own.
The public (and WDFW) does not have a responsibility to recover wolves in the state.	WDFW has a mandate to preserve, protect, and perpetuate the native wildlife species of the state.
We have more to lose than gain by wolf recovery.	Comment noted.
Ninety percent of the people living in Ferry, Stevens, and Pend Oreille counties oppose wolf recovery.	There is a wide range of values regarding wolf recovery among Washington citizens. Surveys conducted in 2008 and 2009 found moderate to strong support for wolf recovery among the majority of Washington residents, including rural residents (see Chapter 2, Section E).
The plan is WDFW's response to an unfunded mandate of the federal Endangered Species Act to translocate wolves to most parts of Washington.	There is no federal recovery plan for wolves in Washington and no federal proposal to move wolves into the state. The development of a state wolf plan is not related to the federal ESA;

Comment	Response
	it is in response to state recognition that wolves are returning to Washington on their own and that we need a plan for how the state will manage them. Because they are a state listed species, a recovery plan is needed. There are no reintroductions planned for Washington, and one of the sideboards of the plan was that there would be no reintroductions of wolves into Washington from other states or provinces. It is unnecessary because wolves are dispersing into Washington on their own from populations in adjacent states and provinces. WDFW is required by state law to develop a recovery plan for state- listed species (WAC 232-12-297). With regard to funding, the majority of wolf work being done by WDFW is funded by federal grants.
People wishing to have wolves in Washington should move to another state where they already exist.	Comment noted.
WDFW is the most hated state agency in Stevens County. WDFW should leave wolf management in Stevens County up to county residents only.	Comment noted.
I am convinced that wolf recovery is the primary objective of anti-hunters, liberals, bureaucrats, and the anti-gun crowd, whose goal is to balance nature without hunting and to breakdown the livestock industry.	The livestock industry and hunting are vital components of Washington's economy. Ranching also provides important open space and habitats that support a wide variety of wildlife, including deer and elk. WDFW receives a significant amount of its revenue through the sale of hunting licenses, thus it is illogical to think that the agency is to trying end hunting. The main reason that WDFW convened a Wolf Working Group was to solicit advice from ranchers, hunters, conservationists, and others on writing a balanced wolf plan that achieves recovery while limiting conflicts.
Wolf recovery will result in many adverse effects. It is naive to believe that wolves can be recovered in the state without causing hardship to people.	The plan acknowledges that some people will experience adverse effects as a result of wolf recovery in the state. The plan identifies actions to minimize these impacts using a variety of tools, including compensation for livestock depredations, use of methods to minimize and prevent livestock-wolf conflicts (both non-lethal and lethal measures), and methods to address wolf-ungulate interactions.
Wolves only belong in a zoo.	Comment noted.
Support protecting wolves in Washington's national parks, managing them as a big game species on national forest lands, and considering them a predator/varmint on private lands where they can be shot on sight. This is similar to Wyoming's treatment of wolves.	Wolves are listed as an endangered species throughout Washington, and would be managed consistently. The approach described (similar to Wyoming) would not be expected to result in recovery of wolves in Washington.
The mission of WDFW is to protect wildlife and to maximize hunting opportunity (see RCW77.04.12). Wolf recovery compromises both of these goals.	The mission of WDFW is to preserve, protect, and perpetuate all wildlife species (RCW 77.04.020). The agency's mission statement reads as follows "The Washington Department of Fish and Wildlife serves Washington's citizens by protecting, restoring and enhancing fish and wildlife and their habitats, while providing sustainable fish and wildlife-related recreational and commercial opportunities." Wolf conservation and management fits as part of this mission.
The proposed plan is not realistic and should be redone with better options to limit wolves and wolf-caused damage.	The preferred alternative plan is believed to be the best balance to accomplish the dual conservation and management needs of the plan.

Comment	Response
Wolf supporters need to realize that wolves were extirpated because of the problems they once caused. Supporters should not pretend that we can now have wolves back without some of these problems returning.	Many supporters of wolf recovery acknowledge that wolves cause conflicts, which explains their willingness to fund compensation programs for livestock depredation and other programs to reduce conflicts through non-lethal management. Many supporters also recognize that lethal control is a necessary part of wolf management. The importance of conflict management was recognized by all of the conservation representatives serving on the Wolf Working Group convened by WDFW.
Washington needs to avoid the old-style wolf management practices of Idaho, Montana, and Wyoming, which result in large numbers of wolves being slaughtered.	During the wolf recovery period, especially during the endangered and threatened phases, the plan prioritizes non-lethal methods over lethal control measures as much as possible. Nevertheless, lethal control may be necessary to resolve some wolf conflicts.
Commend WDFW for developing a wolf management plan based on science. I like the science presented in the plan.	Comment noted.
Thank you for creating a plan that supports wolf recovery.	Comment noted.
The plan needs to be strengthened to ensure wolf recovery.	Your comment was noted, but did not include specifics to respond to. The WDFW believes that implementation of the preferred alternative in the Final EIS/Recommended Plan would result in a recovered, self-sustaining wolf population.
I support a management plan that seeks long-term recovery of wolves in the state.	Comment noted. The WDFW believes that implementation of the preferred alternative in the Final EIS/Recommended Plan would result in a recovered, self-sustaining wolf population.
The plan needs to be more wolf-friendly. Washington is not Idaho, Montana, Wyoming, or Alaska.	Comment noted.
The plan states that its purpose is to establish a self-sustaining population of wolves in the state, but at a public meeting that I attended, it was stated that delisting was the purpose. This represents a conflict between a biologically established goal and a politically established goal.	Under state WAC 232-12-297, delisting can only occur when a population is no longer failing, declining, or vulnerable, and meets recovery plan objectives. WDFW believes that the wolf recovery goals in the recommended plan would result in a self-sustaining wolf population.
Science, species needs, and common sense should guide the WDFW's response to recovering and managing wolves, not compromising wolf recovery due to public opinion, politics, and fear. Science especially needs to be the top priority of the plan.	Comment noted. The wolf plan underwent scientific peer review, and scientific credibility is an important aspect of the conservation objectives and management strategies in the plan.
I support an actively managed wolf recovery plan for Washington.	Comment noted.
Wildlife managers should attempt to develop personal relationships with the ranching and sportsmen's communities to build support for wolf recovery.	Working with individual ranchers and outreach to sportsmen are critical components of the plan. Much of the work done by WDFW to recover wolves will be performed by wolf specialists, local biologists, and enforcement officers, who will engage individual ranchers and sportsmen as well as ranching and hunting groups and others on wolf-related issues.
Compromise over wolf management is needed between conservation groups and ranchers and hunters. This requires balance in the wolf plan.	A balanced approach is the best means to achieve wolf recovery. One of the important ways of reaching this balance during development of the wolf plan was to convene the Wolf Working Group, which provided input to WDFW on key elements of the plan and critically reviewed its contents in light of biological and social considerations.
Wolves should be managed through efforts to	The plan addresses the need for creating greater social tolerance

Comment	Response
increase social tolerance.	for wolves by 1) providing a generous compensation package for confirmed and probable livestock depredations by wolves, 2) providing ranchers with access to non-lethal deterrence measures, and 3) providing various options for lethal control of depredating wolves. Outreach and education is also an important part of the plan.
The plan strives to "establish a wolf conservation program that is achievable, realistic, fair, flexible….for meeting conservation goals." This is commendable, but how will WDFW balance priorities when they are in conflict? WDFW should have some plan of action to address these conflicts.	The plan is the means to identify actions to address conflicts. While wolves are listed, actions will be prioritized to ensure recovery; approaches become more flexible as the species' numbers and distribution reach recovery. Chapter 12 includes strategies and tasks; Chapter 13 includes high priority tasks for implementation in the first six years.
Wolf management options need to be more flexible in addressing problems that develop and to maintain public confidence that wolf recovery will occur without significant adverse impacts to other resources (i.e., wildlife, livestock) and public safety.	Your comment was noted, but did not include specifics to respond to. There is flexibility in the plan for WDFW to review and resolve specific conflict situations on a case-by-case basis for a number of management issues. These include wolf-livestock and wolf-human conflicts (including when to use of lethal control), conflicts involving wild ungulates (including at winter feeding sites), conflicts between wolves and listed species, and implementation of protective measures at wolf den sites.
WDFW should not manage wolves. It should leave wolves alone and let nature determine the proper balance.	WDFW is responsible for preserving, protecting and perpetuating native wildlife species in Washington. While sometimes this can mean no direct management, there are times that may require management in order to recover the species within the state and to resolve conflicts if they occur. Listed species typically require conservation measures in order to recover populations. In the case of wolves, addressing and reducing conflicts is an important part of conservation.
WDFW has a reputation for being heavy handed with landowners. A new attitude would greatly help secure cooperation for projects like the proposed wolf plan.	Comment noted.
A new wolf plan should be created that is coordinated with local governments. The state plan should also be compatible with the federal plan that has delisted wolves in eastern Washington.	WDFW values its relationships with local government and recognizes the need for coordination. All of the public, including local governments, were provided opportunities to comment on the recommended wolf plan. The statewide scope of the plan limited WDFW's ability to reach out to local governments in a detailed way, but regional WDFW staff were (and still are) available to discuss wolf issues and the plan with local governments. The recommended wolf plan addresses wolf conservation and management needs in Washington. Its downlisting and delisting objectives are largely independent of the federal delisting criteria that were applied to the Northern Rocky Mountains Distinct Population Segment. However, other parameters of the recommended plan are consistent with the federal recovery plan.
WDFW should have consulted with Okanogan County during the preparation of the wolf plan. Okanogan County has a local ordinance that requires WDFW to participate in coordination efforts.	WDFW values its relationships with local government and recognizes the need for coordination. All of the public, including local governments, were provided opportunities to comment on the recommended wolf plan. The Okanogan County Commission was one of several county administrations that submitted comments on the plan. The statewide scope of the plan limited WDFW's ability to reach out to local governments in a detailed

Comment	Response
	way, but regional WDFW staff were (and still are) available to discuss wolf issues and the plan with local governments.
WDFW's actions to overstep state constitutional laws and ignore local governments are an act of sedition.	Comment noted.
The plan states that there will be "a fair balance between conservation needs and the needs of the public" but how will this balance be determined and by whom? What process or procedures will be used to determine imbalances when conservation needs and public desires are in conflict?	The draft environmental impact analysis proposed a range of alternatives that addressed the balance between wolf conservation and management needed to ensure wolf recovery, while addressing potential conflicts. WDFW believes the Final EIS/Recommended Plan, with the revised preferred alternative, best addresses this balance.
The management plan has objectives that also state that management will "not negatively impact the recovery or long-term perpetuation" of a sustainable wolf population. How will these negative impacts be measured or determined and who will participate in that decision-making?	Monitoring of the recovering wolf population will be an important part of assessing the effects of management actions on the state's wolf population during different phases of recovery (i.e., endangered, threatened, and sensitive status). WDFW and the U.S. Fish and Wildlife Service (in areas where wolves are federally listed) will coordinate on decision-making on wolf-recovery.
How will WDFW take into consideration the beneficial role of ecosystems versus hunter concerns with reductions in game numbers?	The ecosystem role of wolves is described and recognized in the wolf plan. The revised plan includes an approach for addressing wolf-ungulate conflicts if there were an "at risk" ungulate population where it was determined that wolf predation was a primary factor limiting the population. In these situations, WDFW would assess methods for resolving such conflicts on a case-by-case basis. Management decisions would be based on scientific principles and would not jeopardize the health of a recovering wolf population, either statewide, or within a recovery region.
The plan relies too much on wolf recovery information from the Northern Rocky Mountain States. Washington has a higher human population, higher percent forest cover, lower sheep abundance, and lower levels of rangeland grazing than most western states. Data from the Great Lakes states may be more appropriate for Washington.	More information from the Great Lakes States was included in the revised plan.
Greater detail is needed in the plan about how WDFW will document reproductive success through December, partners that will assist WDFW in wolf recovery, survey techniques, budget considerations, and how wolf recovery goals will be met without adequate staffing.	Many of these details were in the draft plan, and others have been added to the Final EIS/Recommended Plan. One way to realize cost savings is to partner with other agencies and entities on shared goals; this is emphasized in the plan.
Getting different federal and state agencies, the private sector, and the tribes to agree on this plan will never happen.	Final approval of the plan is by the Washington Fish and Wildlife Commission. The plan recognizes the wide range of public values and opinions about wolf management in Washington, and has addressed this in the plan. While almost no one may be totally happy with the plan, it is recognized as a compromise that hopefully, most can live with. There is no goal to have complete agreement on the plan, and it is hoped that it is a balance that can be supported for implementation. Other entities have participated in reviews of the plan, and WDFW currently collaborates with other federal and state agencies on wolf conservation and management issues in Washington. Individual tribes are not required to agree to the wolf plan and may choose to develop their own wolf management plans. WDFW also hopes that the

Comment	Response
	involvement of the member stakeholder groups in the Wolf Working Group will result in broader acceptance of the final wolf plan by different agencies, groups, and private individuals.
Information gaps exist in the plan and need to be addressed with sound science before a comprehensive plan is approved. This will allow better wolf management decisions to be made. More detail is needed on the following: assessment of genetic viability, control of poaching, and historical prey population estimates.	Additional information on genetic viability was added to the plan and a population persistence modeling was conducted for the plan objectives. Additional information was added on genetics, and strategies to address and reduce illegal killing of wolves. Reliable estimates of historical prey populations are not available for the state.
The only discussion should be why it has taken so long to recover wolves. They are a natural predator, like us. What are people afraid of?	Wolf recovery in Washington has only recently become possible due to recovery of populations in adjacent states and provinces, which provide a source of animals dispersing naturally into Washington.
Without a state management plan, wolf protection in Washington defaults to the U.S. Fish and Wildlife Service not WDFW. Opportunities were missed to address wolf recovery sooner, especially in the Methow Valley where wolves have occurred for some time.	Wolves are protected under both state and federal law in Washington, regardless of whether there is a state management plan. Wolves have only recently been re-establishing in Washington, and it is in recognition of that, and the need for a state recovery plan for the species, that the state wolf conservation and management plan was initiated in 2007.
More time is needed to consider whether recovery of wolves in Washington is a good idea.	Wolves are already dispersing into the state and establishing resident packs. The Draft EIS included a "no action" alternative, but this was not selected as the preferred because it would not result in addressing how the WDFW would manage wolves as they naturally disperse into the state. The diversity of values about whether recovery is a good idea was explored during the Draft EIS process.
The draft plan is an obvious attempt by WDFW to appease the needs of livestock owners at the expense of recovering wolves at a scientifically sustainable population size.	The conservation objectives of the plan are believed to be scientifically credible when combined with the distribution and 3-year criteria. In the Final EIS/Recommended Plan, a modeling exercise was conducted to predict whether 15 breeding pairs would persist on the landscape. It was determined that they would, as long as they were allowed to increase and were not held at that number. Regional recovery objectives were also fixed, rather than having unassigned breeding pair distribution.
Wolf recovery, including the preparation of this plan, is a waste of money.	Comment noted.
Who exactly made the decision to manage wolves and allow them to recover? Where does the mandate to develop this plan come from?	Wolves are a state endangered species, and are naturally dispersing back into the state on their own from populations in adjacent states and provinces. WDFW is legally required to develop recovery plans for listed species in the state under WAC 232-12-297. The Draft EIS included a "no action" alternative, under which no plan would be developed. This was not selected as the preferred alternative because it would not result in addressing how the WDFW would manage wolves as they naturally disperse into the state.
I appreciate the effort by WDFW and the Wolf Working Group on a plan meant to reestablish wolves in the state and to minimize impacts to livestock owners and others in a way that will not impact the recovery of wolves. Obviously much time and thought has been put into the plan.	Comment noted.

Comment	Response
I like WDFW's proactive and collaborative approach to managing wolves and planning for their recovery, including using a citizen working group to advise the preparation of the wolf plan.	Comment noted. The stakeholder process involving the Wolf Working Group helped in the development of a balanced draft wolf conservation and management plan for the state.
One of public attitude surveys indicates that 75% of the public in Washington support wolf recovery. Therefore, special interest groups (i.e., livestock owners, hunters, grazing allotment owners) should not have undue influence on management of wolves in the state, especially on public lands. Additionally, the Wolf Working Group appears to be evenly split between wolf supporters and wolf detractors rather than reflecting the strong support for wolves. This discrepancy may reflect a bias against wolf recovery.	Conservation and management of listed species, including wolves, in the state is based on the need to reestablish viable and self-sustaining populations of those species. WDFW believed that a citizen group comprised evenly of wolf advocates and stakeholders affected by wolf recovery would be more successful in advising the agency on developing a balanced conservation and management plan for wolves than a group dominated by either conservationists or affected stakeholders.
Hunters pay for the budget of WDFW and its wildlife management program, therefore, the department should be more accountable to the needs of hunters. Furthermore, hunters should have greater influence in management decisions, including wolf restoration.	Fishing and hunting license revenues currently exceed one-third of WDFW's funding. However, nearly all of WDFW's wolf management activities are funded through federal grants and state nongame revenues. Hunter license revenues are not being used for wolf management activities. Conservation and management of wildlife, including wolves, benefits all citizens of the state. Therefore, everyone has had an opportunity to participate in and comment on development of the recommended wolf plan. Adequate funding for wildlife (and wolves) will rely on support from all citizens.
Wolf Working Group	
The Wolf Working Group is biased towards hunting organizations, ranchers, and private forestland owners, and these groups have an openly professed animosity toward wolves.	The Wolf Working Group was comprised of citizens representing a broad range of views about wolves and wolf management (member representatives are listed in Appendix B of the Final EIS/Recommended Plan). These included conservation groups, hunting, livestock operators, outdoor recreationists, biologists, timber industry, etc. Broad representation of values was needed to identify issues and develop recommendations for a balanced wolf conservation and management plan.
Development of the plan was biased towards the opinions of hunting groups. I am shocked that a member of Safari Club International served on the Wolf Working Group, which is obviously a one-sided group. Who were your animal advocates on the working group? Why didn't you have representatives on the Working Group to defend wolves.	The Wolf Working Group was comprised of citizens representing a broad range of views about wolves and wolf management (member representatives are listed in Appendix B of the Final EIS/Recommended Plan). These included conservation groups, hunting, livestock operators, outdoor recreationists, biologists, timber industry, etc. Broad representation of values was needed to identify issues and develop recommendations for a balanced wolf conservation and management plan.
The plan appears to have been developed to satisfy a minority of individuals (i.e., cattle industry, hunters) who oppose wolf recovery. This agency has historically been run by hunters for the benefit of hunters, thus the plan has a pro-hunting bias.	The Wolf Working Group was comprised of citizens representing a broad range of views about wolves and wolf management (member representatives are listed in Appendix B of the Final EIS/Recommended Plan). These included conservation groups, hunting, livestock operators, outdoor recreationists, biologists, timber industry, etc. Broad representation of values was needed to identify issues and develop recommendations for a balanced wolf conservation and management plan.
The Wolf Working Group is biased towards wolf	The Wolf Working Group was comprised of citizens representing

Comment	Response
lovers and conservation groups.	a broad range of views about wolves and wolf management (member representatives are listed in Appendix B of the Final EIS/Recommended Plan). These included conservation groups, hunting, livestock operators, outdoor recreationists, biologists, timber industry, etc. Broad representation of values was needed to identify issues and develop recommendations for a balanced wolf conservation and management plan.
The plan appears to have been developed to satisfy a minority of individuals (i.e., wolf lovers, the rich, anti-hunters, animal rights groups) who support wolf recovery.	The Wolf Working Group was comprised of citizens representing a broad range of views about wolves and wolf management (member representatives are listed in Appendix B of the Final EIS/Recommended Plan). These included conservation groups, hunting, livestock operators, outdoor recreationists, biologists, timber industry, etc. Broad representation of values was needed to identify issues and develop recommendations for a balanced wolf conservation and management plan.
WDFW is working too closely with anti-hunting interests, such as Wolf Haven International and Defenders of Wildlife. This shows WDFW does not have the best interests of the hunting community at heart.	WDFW works with a broad range of citizen stakeholder groups, including conservation and hunting groups.
The plan suggests that all parties of the Wolf Working Group were in agreement on many topics, but downplays the concerns and objections of many of the group's members (i.e., see Appendix D of the public review draft). The Minority Opinion should have received greater consideration when the plan's goals were formulated.	The Wolf Working Group reached consensus on nearly all aspects of the 2008 draft wolf conservation and management plan except the numbers of wolf breeding pairs needed for achieving downlisting and delisting (see Appendices C and J) in the recommended plan). The Minority Opinion proposed a delisting goal of 8 breeding pairs. The plan's recovery objective of 15 breeding pairs is considered barely adequate for a self-sustaining population. The delisting objectives must be scientifically supportable. Because 8 breeding pairs would not constitute a self-sustaining population, it was not included as an alternative in the Draft EIS. The proposal of 8 breeding pairs was reviewed by the 3 blind peer reviewers. Two of the three said it would not result in a viable, self-sustaining population of wolves. Both believed that the number of successful breeding pairs needed to achieve delisting should be higher and that the plan fell below current scientific standards for sustainability and genetic viability. The third reviewer considered the plan's recovery objectives of 15 successful breeding pairs for 3 consecutive years to be reasonable for achieving a recovered and self-sustaining wolf population. Because the breeding pair number proposed in the Minority Opinion is not scientifically supportable, it was not considered as a viable alternative to examine in the Draft EIS.
The plan is a political compromise between conflicting stakeholder groups. Actual recovery has nothing to do with political compromise, and should be based on biological factors.	Comment noted. The plan must be scientifically supported to ensure self-sustaining wolf populations. Biological factors, including scientific peer review, were very important in developing the conservation aspect of the plan, as well as determining risk. For the Final EIS/Recommended Plan, the WDFW conducted a modeling analysis of the proposed recovery delisting objective of 15 breeding pairs to test persistence on the landscape. Results indicated that it would, as long as the population was allowed to grow and it was not held at that number.
This plan does not ensure the "reestablishment of a self-sustaining population of gray wolves in Washington", but I believe it does "encourage	The Wolf Working Group recommendations were only one element in the development of the Draft EIS/plan . Other elements included public scoping, scientific and blind peer review,

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social tolerance for the species by addressing and reducing conflicts." The inability to meet these twin goals is a reflection of the diverse nature of the Wolf Working Group and the stipulation that consensus drive decision-making. I believe a better approach would have been to task a scientific group to devise a plan to reestablish a self-sustaining population of wolves and simultaneously charge a different group to devise a plan to foster social tolerance and reduce conflicts between that biologically defensible number of wolves and people. By mixing these charges in the present Wolf Working Group, a compromised plan has been produced that may not meet the full needs of wolves. WDFW still needs a plan to guide wolf recovery from a purely biological perspective.	internal WDFW review, broad public review, and public meetings held around the state. The wolf plan must be scientifically supported to ensure self-sustaining wolf populations. For the Final EIS/Recommended Plan, the WDFW ran additional modeling analyses of the proposed recovery delisting objective of 15 breeding pairs to determine if it would result in a self-sustaining population that would persist on the landscape. The results indicated that it would, as long as the population was allowed to grow and it was not held at that number.
When WDFW convened the Wolf Working Group to draft the plan, the group was tasked with attempting to provide input on a management plan, not selecting a target number for wolves that will maintain long-term viability, including adequate genetic diversity. WDFW should not be concerned with this at this time. Achieving long-term viability and genetic diversity were pushed by WDFW and were not considered by the Working Group, and therefore should not be considered in the wolf plan.	The Wolf Working Group was convened to advise WDFW on all aspects of the wolf conservation and management plan, including target numbers for downlisting and delisting. As described in Appendix I of the plan, WDFW originally suggested to the Working Group that specific numbers of wolf breeding pairs not be included in the plan until better information was gathered on wolf demographics and habitat use in Washington to better inform the development of state recovery targets. All Working Group members rejected this approach and preferred the inclusion of objectives with specific numbers in the plan, as in wolf recovery plans for other states. WDFW has a mandate to preserve, protect, and perpetuate the native wildlife species of the state.
Why was the U.S. Fish and Wildlife Service not a participant in the Wolf Working Group?	The Wolf Working Group was intended to be a citizen stakeholder advisory group. For that reason, agencies were not invited participants. However, federal and state agencies did review the draft plan and provide input for the plan.
WDFW made very little effort to include tribal participation in developing the plan. The only involvement the tribes had was through the Wolf Interagency Committee, which has only had 2 meetings over the past 2.5 years, and little participation in developing the plan. It would have been appropriate for the tribes to participate in developing the plan given their co-manager role.	The Wolf Working Group is a citizen advisory group, whereas Washington state government, including WDFW, works with tribes on a government to government basis. Tribes were asked to provide peer review and to comment on the draft plan, and some did so. Tribes can also develop their own wolf management plans for tribal lands.
Peer Review	
Commend WDFW for seeking outside scientific peer-review of the plan.	Comment noted. WDFW conducts outside scientific review of all of its recovery plans and status reviews.
Blind scientific peer review of the plan is very important but it should have been conducted prior to public review.	WDFW conducted an extensive peer review process in 2008, prior to completion of the Draft EIS/Plan. A total of 43 reviewers provided comments. The Department undertook the blind peer review at the request of the Washington Fish and Wildlife Commission at the time of the public review.
Results from the blind peer review should be incorporated into the final plan.	They were.

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General	
How much did it cost to prepare this plan? It must have been a lot.	Approximately $250,000.
A vote should be held on whether or not to recover wolves, with every license buying person in Washington being allowed to vote.	Comment noted. The Department is entrusted by all citizens of the state to preserve, protect, and perpetuate native wildlife species in Washington.
Only comments from Washington residents should be considered in public review of the plan.	Under the State Environmental Policy Act, comments must be taken from all sources, including those from outside Washington.
Why is it that a state (Washington) with 6 million residents and a planet with 6.8 billion people refuses to limit its own human population while claiming to be able to manage the number of wolves?	Comment noted, but was beyond the scope of the plan.
Information on historical numbers of wolves and prey population sizes should be presented in the Executive Summary.	While too detailed for inclusion in the Executive Summary, this information is presented in Chapters 2 and 5.
The Executive Summary is deceptive.	This comment was noted, but was not specific enough to respond to. The Executive Summary is a brief summary of the material contained in the other chapters of the plan.
My solution to the wolf controversy is that all wolves be interbred with chihuahuas to create "chihuawolves." These would be small enough that they would feed on rabbits instead of deer, elk, and livestock.	Comment noted.
Draft EIS	
The EIS should state more clearly that the state wolf plan only pertains to federally delisted regions of the state. The U.S. Fish and Wildlife Service has management authority over wolves in areas where they are federally-listed and the state wolf plan does not currently apply to this region.	The state plan, when approved, will apply state-wide. Where wolves remain federally listed in Washington, actions proposed for implementation under the plan will have to be consistent with federal law. If inconsistent, they would not be implemented. WDFW and USFWS will work together in managing wolves anywhere they remain federally listed. Clarification has been added to the Final EIS/Recommended Plan.
The draft environmental impact analysis should include a discussion of the potentially different federal and state downlisting and delisting criteria, and the ramifications for wolf management. If these criteria differ significantly, will wolves remain listed under only one set of laws?	There are no federal downlisting or delisting criteria for wolves in Washington. Clarification has been added to the Final EIS/Recommended Plan on state and federal laws pertaining to wolves.
National Environmental Policy Act (NEPA) is required due to federal involvement in the establishment of wolves in Washington and the creation of WDFW's wolf plan. NEPA requires federal agencies to coordinate with local governments during project assessments.	There is no federal involvement in the development of the state's wolf plan and there is no plan to reintroduce wolves to Washington. As a result, there is no requirement for a NEPA assessment. WDFW is developing its wolf conservation and management plan under the state's Environmental Policy Act.
The draft environmental impact analysis proposes 4 alternatives but 3 of them are extremely similar. By failing to propose a reasonable range of viable alternatives in the draft environmental impact analysis, WDFW violates State Environmental Policy Act regulations. First, WDFW fails to consider recovery targets greater or less than 15 breeding pairs in any of its alternatives.	Alternatives with fewer than 15 breeding pairs for achieving delisting were considered but eliminated from detailed analysis because they did not meet the purpose and need of the plan, which is to reestablish a viable and self-sustaining wolf population in Washington (see Section 3.1 of the Draft EIS); as were alternatives to restore wolf populations to historic levels. As noted in the comment, the Draft EIS did not include an alternative with greater than 15 breeding pairs because 15 were believed to provide for a

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Second, WDFW fails to consider prohibiting all lethal management activities until wolves have recovered in any of its alternatives.	self-sustaining population, and it also represented the recommendations of the WDFW Wolf Working Group. For the Final EIS/Recommended Plan, the WDFW conducted a modeling analysis of the proposed recovery delisting objective of 15 breeding pairs to test persistence on the landscape. Results indicated that it would, as long as the population was allowed to grow and it was not held at that number. Alternative 3 in the Draft EIS placed the greatest emphasis on nonlethal control measures and limited use of lethal control. While lethal control is considered a necessary tool for reducing wolf depredation on livestock, WDFW will take steps to limit it use during endangered and threatened status through non-lethal deterrents and modified husbandry practices.
The draft environmental impact analysis needs to give a better accounting of the future costs of recovering wolves in the state.	Cost estimates are presented in the Final EIS/Recommended Plan for 3 state biennia, or 6 years – through 2017 (Chapter 13). Projections of costs beyond 2017 are too uncertain to present.
The draft EIS states that it evaluates the draft wolf plan based on environmental issues. This conflicts with the plan's stated goal to achieve delisting, which is a political goal.	The State Environmental Policy Act examines potential environmental impacts of proposed projects, whereas the purpose of the wolf plan is to meet the state requirements for a recovery plan for listed species, while managing conflicts.
State Environmental Policy Act (SEPA) documents require that the economic costs of proposed projects be explained. This draft environmental impact analysis does not do this.	This comment is incorrect. The State Environmental Policy Act (SEPA) only requires potential environmental impacts to be reviewed, thus potential economic impacts were not assessed in the Draft EIS.
Why is WDFW conducting an environmental impact analysis when it says it does not intend to reintroduce wolves to the state?	Typically, a State Environmental Policy Act (SEPA) analysis is not conducted on recovery plans for listed species. Because the wolf plan includes management as well as conservation, it has the potential to have an adverse impact on the environment (wolf recovery). For that reason, the plan was developed under the SEPA process. There are no reintroductions of wolves planned for the state; the SEPA analysis addresses management of wolves that have dispersed into Washington on their own.
WDFW's public meeting process is nothing but a formality. You have already made up your mind - it's all about money.	The 12 public meetings provided an opportunity for WDFW staff to receive verbal comments from the public on the draft EIS/plan. Written and electronic comments were also considered in producing the final EIS/plan. The public meetings also allowed WDFW to answer questions from the audience about wolves.
WDFW did not provide enough public hearings on the wolf plan, including in less populated areas of the state, or schedule them at more convenient times to encourage greater attendance by working people. Also, meetings should not have been held during the hunting season.	Public meetings were but one component of opportunity for the public to provide comments to WDFW on the draft EIS/plan. It's never easy to meet everyone's needs regarding public meeting dates and locations. WDFW believes the 12 public meetings held around the state were sufficient to meet the public's need on this topic. Meeting dates were scheduled to be early in the 3-month public review period (October – January), and not conflict with holidays and times of inclement weather.
Some public meetings should have been located in rural areas near potential wolf habitat, which would make it easier for residents to attend public meetings rather than drive 100 miles to attend the meetings that did occur.	Public meetings were but one component of opportunity for the public to provide comments to WDFW on the draft EIS/plan. It's never easy to meet everyone's needs re: public meeting dates and locations. The 12 public meetings were held in both rural and urban locations around the state; and tried to balance access for the largest number of people. Rural areas included Colville, Okanogan, and Clarkston.
The draft EIS lacks an analysis regarding	The Draft EIS discusses various aspects of human impacts on

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Washington's ongoing human population impact on wolf recovery. This analysis should also examine impacts for a 100-year period.	wolves (see background sections of the various elements covered in Chapter 4), with more extensive discussion presented in the recommended wolf plan SEPA does not require a 100-year analysis of impacts.
The Executive Summary doesn't explain the purpose of the proposed plan and the reasons for the numbers of breeding pairs being proposed.	While the Executive Summary of the DEIS only briefly described the purpose of the plan, more detailed information on the proposed numbers of breeding pairs appears elsewhere in the DEIS and plan (Chapter 3).
The Executive Summary is balanced but does not clearly indicate the differences between Alternatives 2 & 3.	The main body of the DEIS gave greater detail on the differences between Alternatives 2 and 3.
Support Alternative 4.	Comment noted.
Support Alternative 4 because of opposition to using the small number of 15 breeding pairs in Alternatives 1, 2, and 3 as an appropriate delisting criterion.	Comment noted.
Support Alternative 4 if delisting numbers are increased to 30 breeding pairs.	Comment noted.
Support Alternative 3.	Comment noted.
Support Alternative 3, but with greater wolf numbers so that a viable population is established.	Comment noted.
Support Alternative 2, which provides a reasonable and balanced approach to meeting the needs of wolf recovery, ranchers, and others.	Comment noted.
Support Alternative 2, but with greater wolf numbers.	Comment noted.
Support many aspects of the draft plan.	Comment noted.
Support Alternative 1	Comment noted.
Support Alternative 1, but would prefer 0 wolves.	Comment noted.
Do not support any of the alternatives in the draft environmental impact analysis.	Comment noted.
Support the Minority Report (see Appendix D of the draft wolf plan), which should have been included as an alternative.	Comment noted. The Minority Report was an alternative considered, but eliminated from detailed analysis in the DEIS because it did not meet the goal of the plan to restore a self-sustaining not included as an alternative in the DEIS because proposed a delisting objective of 8 breeding pairs. This number of wolves is too small to represent a viable, self-sustaining wolf population, and it did not meet the purpose of the plan. The delisting objectives must be scientifically supportable. The plan's recovery objective of 15 breeding pairs is considered barely adequate for a self-sustaining population. The proposal of 8 breeding pairs was also reviewed by the 3 blind peer reviewers, who also believed that 8 breeding pairs would not support recovery in Washington and fell below current scientific standards for sustainability and genetic viability. Because the breeding pair number proposed in the Minority Report is not scientifically supportable, it was not considered as a viable alternative to examine in the Draft EIS.
Support "Alternative 1A". This proposal has a trigger of 3 breeding pairs to re-classify wolves to threatened status and 6 breeding pairs to re-classify wolves to sensitive status. Upon reaching sensitive status, WDFW would immediately	WDFW believes that any process recommending fewer than 15 wolf breeding pairs would not result in the reestablishment of a viable and self-sustaining wolf population in Washington at the time of delisting. The breeding pair numbers suggested in this comment are too small to support downlisting from endangered to

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convene a diverse group at the Ruckelshaus Center that would determine a final number of breeding pairs for achieving delisting. Under this proposal, wolves could be distributed anywhere in the state, including the Olympic Peninsula.	threatened status and from threatened to sensitive status. In addition, convening a group through the Ruckelshaus Center to establish the delisting objective would delay completion of a final wolf plan and introduce a new decision-making process. WDFW has a mandate to preserve, protect, and perpetuate the native wildlife species of the state. In addition, WAC 232-12-297 requires WDFW to develop recovery plans for state listed species.
Support "Alternative 1A", but would prefer 0 wolves.	Comment noted.
The Minority Report will not achieve wolf recovery.	Blind peer reviewers agreed that the Minority Report goal of 8 breeding pairs would not result in a self-sustaining, recovered wolf population in Washington.
Keeping wolf numbers at very low levels, as proposed under the Minority Report, would more likely restrict wolves to extreme eastern Washington in areas devoted to livestock production and might not allow wolves to spread more broadly across the state to areas away from livestock production. A smaller wolf population restricted to eastern Washington might be more of a problem than a larger population that is well distributed across the state.	Commented noted. These numbers proposed under the Minority Report were not evaluated in the Draft EIS because they would not result in a self-sustaining population distributed across a significant portion of the species' historical range in Washington.
The 4 alternatives of the draft environmental impact analysis are too restricted, with 3 of them set at 15 breeding pairs. Why isn't an alternative with smaller numbers of breeding pairs considered?	Fifteen breeding pairs are considered the minimum number that would represent a self-sustaining wolf population in Washington at the time of delisting. WDFW and blind peer reviewers believe that delisting targets of fewer than 15 breeding pairs would not result in a viable and self-sustaining wolf population for the state. Therefore the recommendation for fewer than 15 breeding pairs does not meet WDFW's legal mandate with respect to recovering listed species under state law (WAC 232-12-297). WDFW does not believe that 8 breeding pairs represents a genetically viable wolf population. Therefore, alternatives with fewer than 15 breeding pairs would not meet WDFW's legal requirement for recovering listed species and were not considered in the DEIS.
There should be an alternative that replaces the stakeholder developed conservation goals with language that outlines a research strategy required for obtaining the necessary scientific information to set biologically viable wolf conservation goals.	Delaying the establishment of downlisting and delisting objectives until adequate information from Washington could be obtained for setting biologically determined numbers of breeding pairs was considered early in the development of the wolf plan (see Appendix I of the recommended plan). The Wolf Working Group, and WDFW believed that public understanding and acceptance of the final wolf plan would be greatly enhanced by having recovery objectives established for downlisting and delisting in the plan.
There should be an alternative that provides for a minimum genetically viable population, prevents harassment of wolves on public lands by livestock owners and agencies, that limits compensation for wolf depredations to private lands only, and prevents livestock from grazing near existing wolf denning and rendezvous sites.	Comment noted. Among the alternatives considered in the Draft EIS, Alternative 3 was used as the alternative having the greatest emphasis on protection and restoration of wolves in Washington. It had the highest standard for recovery objectives and was the most conservative in its use of management tools for addressing conflicts. As such, some of the conservation and management approaches of Alternative 3 were similar to those proposed in this comment.
There should be an alternative for hunting wolves now in order to control their numbers and prevent damage to livestock operators and game herds.	The wolf is listed as endangered in Washington under both state and, in the western two-thirds of the state, federal law. Wolves would not be proposed for hunting until after they are delisted

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	from both state and federal law. The plan addresses how conflicts will be addressed while wolves remain listed.
"No wolves" should have been included as an alternative.	The wolf is a native species to Washington and listed as endangered. The WDFW has a mandate to preserve, protect, and perpetuate the native wildlife species of the state. Two sideboards of the plan were no wolves would be reintroduced, and "no wolves" was not an option. Wolves are dispersing on their own into the state; the plan will provide for how the state will manage them.
Alternative 2 is the preferred alternative, yet according to the Draft EIS, Alternative 3 is predicted to have a higher probability of achieving long-term recovery. Why was Alternative 2 preferred over Alternative 3 in the Draft EIS?	Alternative 3 is the conservation alternative and does provide a higher probability of recovering wolves. It is more restrictive of when lethal control would be used. Alternative 2 was selected as the preferred alternative in the Draft EIS because it meets the biological requirements for recovering wolves in Washington, but takes a more balanced approach in addressing conflicts with livestock and wild ungulates.
All of the alternatives are too complicated. The wolf plan should be shorter and kept simple.	The Draft EIS/plan are complex and long because of the many issues involved in wolf conservation and management and because of the public's strong concerns that an adequate plan be developed.
The hiring of wolf specialists is mentioned only in Alternatives 2 and 3. It is inconceivable that WDFW would not also hire wolf specialists under Alternative 1. Therefore, the EIS analysis provides alternatives with false choices that don't truly exist.	Wolf specialists would be hired under Alternatives 1, 2, and 3. However, under Alternative 1, they would not participate in public outreach and education efforts, and would only conduct monitoring and conflict management. Under Alternative 1, outreach and education would be conducted at a reduced level by other WDFW staff as time allowed.
Support the increased education and outreach efforts called for in Alternative 3.	Comment noted.
Agree with Alternative 3 that lethal take of wolves in the act of attacking a dog should only be allowed by private citizens on private and public land only after wolves are delisted.	Comment noted.
Discussion of translocation is buried in the Draft EIS. This is a controversial topic and needs stronger coverage in the final EIS.	Translocation was one of a number of conservation and management tools for wolves evaluated in the Draft EIS. Any proposal to conduct wolf translocation in the future would go through a separate and much more detailed EIS process. Further information summarizing translocation appears in Chapter 3, Section B, and Chapter 12, Task 3, of the recommended wolf plan.
WDFW downplayed the likelihood of translocation to the Olympic Peninsula at the Aberdeen public meeting, but the draft environmental impact analysis and plan makes it sound very likely that it will happen. I feel misled.	Translocation was one of a number of conservation and management tools for wolves evaluated in the Draft EIS. Any proposal to conduct wolf translocation in the future would go through a separate and much more detailed EIS process. Further information summarizing translocation appears in Chapter 3, Section B, and Chapter 12, Task 3, of the recommended wolf plan.
Each alternative should describe how attacks on people, no matter how unlikely, will be handled.	Any attacks on people would be handled the same in each of the 4 alternatives. Chapter 12, Task 6.1, of the recommended plan, has detailed information on how wolf attacks on humans and other potential safety concerns involving wolves would be handled. Depending on the situation, non-lethal methods would be used first, unless the situation dictates a more aggressive response, including immediate lethal control.
The Draft EIS does not discuss human safety.	This was discussed in Section 4.2.1 of the Draft EIS, and in Chapter 7 and Chapter 12, Task 6, of the Final EIS/Recommended Plan.

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Is WDFW suggesting in the Draft EIS that more forest practice rules will result from wolf recovery?	No. The Draft EIS states in Section 4.2.2 that no additional restrictions on private forestlands are anticipated in Washington due to wolf recovery. The Draft EIS further states that existing forest practice rules pertaining to wolves should be reviewed and possibly modified. Modification of the rules would likely reduce restrictions rather than increase them.
The Draft EIS indicates that wolf den sites will be protected during the time they are active, using limited time restrictions for a small area around the site. This approach seems reasonable while wolves are state protected but may not be needed after delisting.	Wolf management after delisting will be addressed in future management plans to be written after delisting occurs.
If Alternative 3 is supposed to provide more protection for wolves, why wait until sensitive status to use non-lethal injurious harassment? It seems like this makes Alternative 3 less attractive than the Preferred Alternative.	Non-lethal injurious harassment (i.e., rubber bullets, beanbags, etc.) have the potential to seriously injure a wolf if used wrong. Thus, Alternative 3 proposed scaling back this tool to sensitive status. This would have meant greater use of non-injurious harassment instead.
The Draft EIS doesn't define "generous compensation" or "full value." It also doesn't state who will pay for compensation.	The recommended plan discusses compensation for wolf depredation on livestock in Chapter 4, Section G. The program described in the plan is one of the most generous in the nation because it pays livestock owners twice the current market value of their animal (for a confirmed wolf depredation) if it was killed on grazing sites of 100 or more acres, where the agency determines it would be difficult to survey the entire acreage. Most other compensation programs in the country pay only the full current market value for confirmed wolf depredation (see Chapter 4, Section C). Payment for probable wolf depredation is also higher under Washington's plan than in most other states. The higher payment ratio in Washington is based on the thought that if the grazing area is large and difficult to survey, there may be more livestock kills present that could not be found. The recommended plan also calls for development of a compensation program for unknown losses. This type of compensation is not paid under the programs of most states. "Full value" refers to the current market value of livestock, which is defined in the recommended plan as "the value of livestock at the time it would have normally gone to market." Funding for the proposed compensation program would be dependent upon funding from the Washington State Legislature or other sources.
Alternative 2 calls for reducing wolf abundance in localized areas with at-risk ungulate populations if research has determined that wolf predation is a key limiting factor. A more detailed analysis should be provided for when reduction of wolves would be appropriate. For example, would alternate management methods be introduced prior to lethal reduction of wolves in an area? What would constitute a severely depressed elk population? WDFW should consider holding public meetings to discuss lethal take of wolves	This portion of the Preferred Alternative in the Final EIS/ Recommended Plan has been changed to state that if WDFW determined that wolf predation was a primary limiting factor for an "at-risk" ungulate population, and the wolf population in that wolf recovery region was healthy (i.e., it exceeds the delisting objectives for that recovery region), WDFW could consider reducing wolf abundance in the localized area occupied by the ungulate population before state delisting occurs. For the plan, an at-risk ungulate population is any federal or state listed ungulate population (e.g., Selkirk Mountain woodland caribou, Columbian white-tailed deer), or any ungulate population for which it is

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before authorizing wolf removals to protect wild ungulates.	determined to have declined 25% or more below management objectives for three or more years and population trend analysis predicts a continued decline. For populations for which numeric estimates and/or management objectives are not currently available, it will not be possible to use a specific threshold to assess a need for management action. Instead WDFW will use other sources of information related to the population, such as harvest trends, hunter effort trends, sex and age ratios, and others. Under this form of management, wolves would be controlled by moving them to other areas, through lethal control, and/or with other control techniques. While wolves are recovering, non-lethal solutions will be prioritized to be used first. Before deciding to proceed with this type of management, WDFW would consider the status of wolves statewide as well as within the specific wolf recovery region where the ungulate impact was occurring. The extent of wolf control undertaken would not be sufficient to push the region's overall wolf population below delisting objectives and put it at risk. Management decisions of this type would be based on scientific principles and evaluated by WDFW. WDFW has made note of the last sentence in this comment suggesting that public meetings be held prior to authorizing wolf removals to protect at-risk ungulates.
Alternatives 1, 2, and 3 call for lethal control or non-lethal control of wolves to manage game herds that are at-risk or below management objectives. WDFW should instead address the main threats to those herds, such as human development, habitat decline, and illegal hunting, rather than blaming wolves.	This portion of the Preferred Alternative in the Final EIS/ recommended plan has been changed to state that if WDFW determined that wolf predation was a primary limiting factor for an "at-risk" ungulate population, and the wolf population in that wolf recovery region was healthy (i.e., it exceeds the delisting objectives for that recovery region), WDFW could consider reducing wolf abundance in the localized area occupied by the ungulate population before state delisting occurs. This statement implies that WDFW would consider other factors involved in the decline of an at-risk ungulate population, but nevertheless might move forward with wolf control if it was determined that it would help recover the ungulate population. For more discussion on management of wolves in relation to at-risk ungulate populations, see Chapter 5, Section F, of the recommended wolf plan.
The draft plan makes recreational hunting an accepted casualty of wolf conservation. The Draft EIS mentions the possibility of wolf reduction to respond to significant ungulate population declines but such strategies won't be implemented until ungulate populations are found to be "at risk" and only after hunting opportunities have declined. The final plan needs to identify measures that WDFW will take to prevent significant declines in ungulate populations before they become "at-risk" from wolf predation.	The plan calls for managing ungulate populations and their habitats to provide both an adequate prey base for wolves and to maintain harvest opportunities for hunters. It does this through continued implementation of WDFW game management plans for elk, deer, and other ungulates, which should result in achieving healthy population objectives for these species.
Oppose killing wolves to maintain or increase ungulate populations and hunter harvest of ungulates.	Comment noted.
Oppose lethal control of wolves on public lands to reduce predation of ungulates.	Comment noted.

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Support placing greater restrictions, including reducing the length of hunting seasons, on hunter harvest of deer and elk to benefit wolf recovery, as described in Alternative 3.	Comment noted.
Support placing greater restrictions on hunter harvest of deer and elk to benefit wolf recovery, but would accept limited use of lethal control of wolves as a last resort to protect declining ungulate populations.	Comment noted.
Some wolf control will probably be necessary to assure adequate numbers of ungulates, but the viability of the wolf population must be assured.	Chapter 5, Section F, of the recommended plan has been changed to state that if WDFW determined that wolf predation was a primary limiting factor for an "at-risk" ungulate population, and the wolf population in that wolf recovery region was healthy (i.e., it exceeds the delisting objectives for that recovery region), WDFW could consider reducing wolf abundance in the localized area occupied by the ungulate population before state delisting occurs. Further, it states that under this form of management, the extent of wolf control undertaken would not be sufficient to push the region's overall wolf population below delisting objectives and put it at risk. This provides assurance that the viability of the wolf population would be maintained. For more discussion on management of wolves in relation to at-risk ungulate populations, see Chapter 5, Section F, of the recommended wolf plan.
Oppose reducing the length of hunting seasons or reducing harvest levels to benefit wolf recovery.	Comment noted.
Support the proposal in Alternative 1 to consider moving, or using lethal control, or other control methods on wolves to protect ungulate populations that are below herd objectives after wolves reach sensitive status.	Comment noted.
Support the control of wolves during all listed statuses to protect ungulate populations that may be declining due to wolves.	Comment noted.
Support reducing wolf numbers before ungulate populations in the state experience severe declines.	Wolves are expected to have little or no overall effect on the abundance of elk and deer across most of Washington, but could cause them to decline in a few localized areas. The Final EIS/Recommended Plan provides for consideration of controlling wolves if they are found to be a primary limiting factor for "at risk" ungulate herds, which are defined as having declined 25% or more below management objectives for three or more years and population trend analysis predicts a continued decline. A management option to reduce wolf numbers when ungulate populations are healthy would likely prevent recovery of wolves in the state, and would not be consistent with the purpose of the recommended wolf plan.
The terms "at-risk" and "limiting factor", as they pertain to ungulate populations, need to be better defined. The document states that it is those populations that are severely depressed and in danger of eventual extirpation. These terms also need to be better defined. The size of the area (i.e., watershed unit, GMU, etc.) pertaining to "at-risk" ungulate populations also needs to be more	The definition of an "at risk" ungulate population was clarified to be more specific in the Final EIS/Recommended Plan.

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clearly defined.	
Alternatives 2 and 3, which plan to manage deer and elk herds to benefit wolf recovery, will produce anger and resentment among hunters.	Comment noted. However, as described in the background sections of the plan (Chapters 5, 14), observations from Idaho, Montana, and Wyoming, where most elk and deer populations remain at or above management objectives, suggest that as wolf populations increase in Washington, they will have some localized impacts on ungulate abundance and habitat use, but they will have a relatively small impact at a statewide level. Thus, WDFW does not expect wolves to interfere with the harvest of deer and elk in most areas of the state.
The desire to adjust harvest levels of game to benefit wolves is greatly compromised by not having a requirement that tribal hunters must also reduce their harvest.	WDFW cannot regulate tribal harvest, which is reserved by federal treaties. WDFW works with many tribes in Washington to coordinate harvest strategies and will continue to do so after wolves recolonize the state.
The Draft EIS should have distinguished between the terms "opportunity to hunt" and "opportunity to harvest." I want to harvest game, not just hunt them.	WDFW provides opportunities to hunt, but cannot guarantee that a hunter will harvest an animal. Chapter 14, Section C, of the recommended plan shows that about 10% of elk hunters and 25-35% of deer hunters are successful annually, depending on location and year. As discussed in this chapter, wolves are expected to have limited effect on statewide harvest levels of deer and elk.
The term "improved habitat management", as used in the Draft EIS, is too vague regarding it use to improve ungulate numbers. The document needs to include specifics on how WDFW will accomplish this.	The recommended wolf plan states that ungulate populations and their habitat will be managed through the implementation of WDFW's game management plans (see Chapter 5, Section F; Chapter 12, Task 5.2.1). These plans contain more detailed information on desired habitat management for ungulates, thus inclusion of this type of information into the wolf plan is not necessary.
The term "flexibility in harvest strategies" simply means that WDFW will reduce the length of the hunting season and the number of hunting permits.	This comment is correct that "flexibility in harvest strategies" would most likely refer to increased restrictions on hunting. Most of the restrictions that might result from wolves would likely be to antlerless harvest and, where necessary, to reductions in permits. Reductions in season length would be one of the changes implemented.
The Draft EIS seems deliberately vague in describing the population effects of wolves on ungulates. The Draft EIS should provide an estimate of the amount of meat consumed per wolf per day to help readers assess the impacts of wolves on wild ungulates.	More detailed information on this topic is provided in Chapter 5 of the recommended plan. Predicted levels of wolf predation on ungulates in Washington now appear in this chapter (previously it was part of Chapter 14).
Any lethal control of wolves to benefit ungulate populations needs to be closely coordinated with other state and federal agencies whose lands are affected.	WDFW would closely coordinate any lethal control actions with appropriate state and federal agencies.
The Draft EIS is remiss in not mentioning the use of hunting as a tool for controlling wolves after delisting.	The recommended plan does address that hunting could occur in the future after wolves are delisted, and that this would go through a separate Commission process. This is described in Chapter 3, Section C.
Support treating wolf-related threats to other species through non-lethal control methods before resorting to lethal control.	The Final EIS/Recommended Plan prioritizes the use of non-lethal control methods when dealing with conflicts between wolves and species, especially in the early stages of recovery (e.g., Chapter 5, Section F).
Chapter 1 – Introduction	

Comment	Response
Why does the plan use the name "gray wolf" instead of "timber wolf"?	Gray wolf is the accepted common name used for wolves by wildlife biologists in the western United States and most areas of the world.
Wolf packs should be reintroduced into Washington from outside the state.	As stated in Chapter 1 of the wolf plan, WDFW has ruled out any reintroductions of wolves into Washington from other states or provinces. Reintroduction is unnecessary because wolves are already dispersing naturally into the state.
Reintroduction should be considered in the future as a means to improve the genetic heterogeneity of Washington's recovering wolf population.	As stated in Chapter 1 of the wolf plan, WDFW has ruled out any reintroductions of wolves into Washington from other states or provinces. Reintroductions would be highly controversial and divisive, and would detract from more important wolf conservation activities. If genetic research (Chapter 12, Task 11.2) determines that an isolated wolf population in Washington has reduced genetic diversity, an individual wolf from another population or pack in Washington may be moved into the population to increase genetic diversity in an effort to increase population viability (Chapter 12, Task 1.5).
Wolves should be reintroduced to the Olympic Peninsula from Vancouver Island or coastal British Columbia. The wolves from these locations are biologically most similar to those wolves extirpated from the Olympic Peninsula.	Comment noted; however, there are no plans to reintroduce wolves to the Olympic Peninsula.
Reintroduction should be considered in the future as a means to reestablish wolves on the Olympic peninsula and in the southern Cascades. This should be done rather than translocating Washington wolves out of other recovery regions in the state, which could potentially impact the populations in those recovery regions. Use of reintroduction in this way would speed recovery and increase genetic diversity.	Comment noted; however, there are no plans to reintroduce wolves to the Olympic Peninsula.
Oppose reintroduction of wolves from outside the state.	Comment noted. There are no plans to reintroduce wolves into Washington from outside the state.
I believe wolves have already been reintroduced to parts of the state and oppose this action by WDFW.	WDFW has no knowledge of any wolves ever being reintroduced to any part of Washington by anyone.
This is supposed to be a science-based plan, thus I am puzzled why reintroduction is not being considered. Reintroductions are conducted for many recovery programs for other wildlife species.	While reintroduction is a tool used to help recover a number of listed species, it is unnecessary for Washington because wolves are already dispersing naturally into the state.
I have learned that WDFW proposes to reintroduce 55 pairs of wolves into Washington.	There are many rumors about supposed reintroductions that have occurred or are rumored to be planned. These rumors are false. As stated in Chapter 1 of the plan, WDFW has no intention of reintroducing wolves to the state. Reintroduction is unnecessary because wolves are already dispersing naturally into the state.
The WDFW director made the ruling that wolves would be reintroduced to Washington. He has since been forced to resign.	This statement is false. On the contrary, as stated in Chapter 1 of the wolf plan, it was the former WDFW Director Jeff Koenings who made the decision that wolves would <u>not</u> be reintroduced into the state.
WDFW press releases indicate there are no plans to reintroduce wolves into Washington, but this is contradicted by the agency's large Draft EIS and wolf plan. This seems like trickery.	The Draft EIS and draft wolf plan both stated that wolves will not be reintroduced into Washington from other states or provinces. However, both indicated that wolves could be translocated from one recovery region of Washington to another if this is needed to accomplish wolf recovery. It is hoped that translocation will never

Comment	Response
	be needed and that wolf recovery will be achieved through natural dispersal to most areas of suitable habitat in the state.
Legislation and regulations are needed to permanently disallow the reintroduction of wolves into Washington.	Legislation and regulations of this type are not needed. WDFW recognizes the sensitivity of the issue and established a policy to not reintroduce wolves from outside the state.
Chapter 2 - Background	
I would like to see greater discussion of historical tribal views towards wolves.	Some additional information was added in the Final EIS/ recommended plan in Chapter 2, Section E. However, a detailed description of historical tribal views on wolves is beyond the scope of this document.
I know people who have seen wolves on the north side of the Blue Mountains recently, which tells me that wolves already inhabit this area.	The recommended plan (Chapter 2, Section B) includes updates on sighting reports and the current status of wolves in Washington, including the Blue Mountains, through July 2011.
The Methow Valley has supported a small population of wolves continually over the last several decades.	The recommended plan (Chapter 2, Section B) presents all of WDFW's documented knowledge of wolf reports and confirmed sightings in the Methow Valley and Okanogan County in recent decades through July 2011. Additional unknown animals could have been present.
I believe the Methow pack was transplanted there by WDFW, a conservation organization, or other people.	WDFW has no knowledge that the Lookout Pack was reintroduced or translocated by anyone. As stated in Chapter 1 of the plan, WDFW has ruled out any reintroductions of wolves into Washington from other states or provinces. Reintroduction is unnecessary because wolves are already dispersing naturally into the state. Furthermore, it would be highly controversial and divisive, and would detract from more important wolf conservation activities.
WDFW is underestimating the number of wolves currently in the state. I know/suspect there are more than 2 packs in the state already.	The recommended plan (Chapter 2, Section B) includes updates on sighting reports and the current status of wolves in Washington since the draft plan was published in 2009 and through July 2011.
Despite many years of extermination effort, wolves continue to exist in Washington in adequate numbers although they are too elusive to be found and counted.	The recommended plan (Chapter 2, Section B) includes updates on sighting reports and the current status of wolves in Washington since the draft plan was published in 2009 and through July 2011. WDFW will continue to follow up on leads to confirm additional wolf packs. If wolves are present, they typically leave tracks and are vocal, which usually leads to their detection by people. Updates on wolf status will be presented on the WDFW website.
The plan should be updated to reflect that wolves are now legally hunted in Idaho and Montana and information on harvest levels and impacts to wolf populations should be updated.	The Final Recommended Plan was updated to reflect the most recent legal status of wolves in these states, including a brief description of the hunting season that occurred in 2009-2010.
The plan should give greater detail on numbers of wolves killed by human-related accidents (i.e., vehicle collisions) in the Rocky Mountain States.	The recommended plan (Chapter 2, Section C) was updated to reflect that about 3% of the wolves in the northern Rocky Mountain states die from human-related accidents. More detailed information on this topic is beyond the scope of the plan, but can be found the U.S. Fish and Wildlife Service's annual wolf reports.
Wolves feed on salmon along the British Columbia coast. Greater discussion should be given in the plan about whether this could occur in Washington if wolves are present on the Olympic Peninsula.	The recommended plan (Chapter 2, Section C, Table 2) notes that salmon are eaten by wolves in coastal British Columbia and represent about 10% of the non-winter diet there. Similar use of salmon could occur in Washington, but this was considered too speculative to mention because the original wolves occurring in coastal Washington are now gone. It is unknown whether wolves reestablishing in this area would resume eating salmon in appreciable numbers.

Comment	Response
Wolves play an important role in ecosystems.	As noted in the comment, the reestablishment of wolves can help restore functioning ecosystems. Chapter 2, Section C, of the recommended plan discusses the scientific literature on this topic.
Wolves play an important part in regulating ecosystems and supporting biodiversity. Their recovery could lead to more resilient ecosystems, which could combat predicted climate-caused changes.	Wolves have the potential to make ecosystems more resilient to climate change in some locations. However, a variety of associated factors such as human management of wolves, their prey, and landscapes must also be considered and complicate predictions regarding wolves, ecosystem changes, and climate change.
Wolves will adversely affect the current balance of Washington's ecosystems.	Based on recent research in neighboring states, some of the ecosystem changes that wolf recovery may bring include changes in behavior and abundance of ungulates, increases in wildlife species that scavenge for all or part of their food, and changes in the composition of riparian forests and associated nongame species. Such changes could help ecosystems return to a more natural condition. The attitude that these changes will be "adverse" or "positive" is a matter of personal opinion.
I believe that the costs to humans and wildlife of restoring wolves outweigh the benefits in restoring the role of wolves in ecosystem function.	Under the recommended plan, WDFW believes that wolves can be recovered in the state, while minimizing the economic costs experienced by ranchers, hunters, and others. The plan contains various tools to reduce economic impacts. These include compensation for wolf depredation, non-lethal and lethal management of conflicts, and continued management of ungulate populations. This comment implies that most wildlife species will be hurt by wolf recovery, but this might occur only for some local populations of prey species. Instead, wolf recovery will likely benefit a number of species, while having little or no impact on most others (see Chapter 6 of the recommended plan).
Ranchers and farmers support a healthy environment, but wolves will not bring that.	WDFW believes that wolf recovery will generally benefit ecosystems in Washington.
Greater discussion of trophic cascades and the ecological importance of re-establishing wolves should be provided.	Information on these topics was added to Chapter 2, Section C.
I have seen the damage caused by excessive browsing of riparian vegetation by elk in water drainages of the Olympic Peninsula. Wolf recovery in this area would benefit riparian areas.	Research conducted by Beschta and Ripple (2008) suggested that wolf recovery could benefit riparian ecosystems on the Olympic Peninsula, but this conclusion should be confirmed through additional research.
The report by two professors at Oregon State University that wolves will lead to restoration of riparian areas on the Olympic Peninsula is a hoax. Stream bank erosion is caused by excessive rainfall in the area, not by too many elk.	In the absence of wolves, changes in ungulate behavior could include overbrowsing of riparian vegetation, which could result in reduced tree and shrub coverage in riparian areas and make these areas more prone to erosion. Research conducted by Beschta and Ripple (2008) suggested that wolf recovery could benefit riparian ecosystems on the Olympic Peninsula, but this conclusion should be confirmed through additional research.
If ungulate populations need to be controlled to prevent ecological damage, it should be done by hunters not wolves.	WDFW recognizes the need to balance social values with ecological values. Further, it considers hunting a valuable management tool to achieve wildlife population objectives. Given these considerations, both hunting and wolf predation will be factored into the management of ungulate populations in the state.
If wolves are federally delisted in eastern Washington, why is the state trying to recover them in that area, since the federal ESA no longer applies? This plan should apply only to the western 2/3 of the state, where wolves are still federally protected.	The wolf is listed as an endangered species under Washington state law, and the state's wolf plan is applicable to the state listing, not federal listing. The state plan serves as the recovery plan for the wolf in Washington, as specified under state law (WAC 232-12-297).

Comment	Response
Wolves are plentiful in Montana, Idaho, Wyoming, Canada, and Alaska. Why should they be considered endangered in Washington? Why should we be attempting to recover wolves in this state?	The state of Washington identifies endangered, threatened, and sensitive species (WAC 232-12-297), regardless of regional or tribal status. Wolves are listed under state law. The WDFW prepares recovery plans for state listed species (WAC 232-12-297). The goal of this work is to achieve viable and self-sustaining populations of these species in the state, thereby allowing state delisting to occur. The WDFW has a mandate to preserve, protect, and perpetuate wildlife species within Washington.
Washington is not required by federal law to recover wolves, so why are we doing it?	Wolves are a state endangered species and the WDFW prepares recovery plans for state listed species (WAC 232-12-297).
The plan should state whether wolves in the western two-thirds of the state are currently considered "essential" or "non-essential" under the federal Endangered Species Act. If wolves are federally listed again in eastern Washington, will they be considered "essential" or "non-essential"? How do these designations affect the granting of federal lethal control permits by the U.S. Fish and Wildlife Service?	Clarification on this issue was added to the final recommended wolf plan. Wolves listed under federal law in Washington are endangered and are not considered part of a "non-essential" experimental population that was reintroduced into Idaho and Yellowstone.
Wolves should be restored because of the mandates under federal and state endangered species laws.	Comment noted.
Why isn't the U.S. Fish and Wildlife Service including all of Washington state, as well as other states in the Pacific Northwest, in a single regional management strategy to recover wolves?	The U.S. Fish and Wildlife Service decided to recover wolves in the lower 48 states according to regional populations known as Distinct Population Segments (DPS). The U.S. Fish and Wildlife Service included the eastern one-third of Washington in the Northern Rocky Mountains DPS to include any wolves that might disperse out of the Idaho and Montana into Washington. The distance into the state that the western boundary of the DPS goes is based on the dispersal distances documented for wolves in the Northern Rocky Mountains DPS.
Washington is being forced to recover wolves because of a federal mandate.	This comment is incorrect. The state of Washington identifies endangered, threatened, and sensitive species (WAC 232-12-297), regardless of federal or tribal status. Wolves are listed under state law. The WDFW prepares recovery plans for state listed species (WAC 232-12-297). The goal of this work is to achieve viable and self-sustaining populations of these species in the state, thereby allowing state delisting to occur. The WDFW has a mandate to preserve, protect, and perpetuate wildlife species within Washington. The state works cooperatively with the federal government to recover federally listed species.
As state delisting goals are approached and met, what actions will WDFW take to coordinate with the U.S. Fish and Wildlife Service to achieve federal delisting?	WDFW is currently working with the U.S. Fish and Wildlife Service in their determination of whether a federal Pacific Northwest distinct population segment (DPS) should be designated and, if so, the status of the wolves within it. If a DPS is designated, it is anticipated the Service would develop a recovery plan for the DPS, which would identify recovery objectives for the DPS.
The plan needs added clarification on how its proposed objectives for state downlisting and delisting may be impacted by the federally listed status of wolves, particularly in the western two-thirds of the state. In particular, the U.S. Fish and Wildlife Service's approach to wolf recovery and	WDFW is currently working with the U.S. Fish and Wildlife Service in their determination of whether a federal Pacific Northwest distinct population segment (DPS) should be designated and, if so, the status of the wolves within it. If a DPS is designated, it is anticipated the Service would develop a recovery plan for the DPS, which would identify recovery objectives for the

Comment	Response
delisting elsewhere has been based on identifying distinct population segments of wolves. Will this occur for wolves in the western two-thirds of Washington?	DPS.
The U.S. Fish and Wildlife Service should not be involved in wolf management in Washington. This is a state issue that should be managed by the state.	The wolf is listed as federally endangered in the western two thirds of Washington, and the U.S Fish and Wildlife Service has lead authority over wolf management in that portion of the state. Wolves are also a state endangered species, thus WDFW will coordinate with U.S. Fish and Wildlife Service on wolf recovery and management as long as the species remains federally listed. In areas of Washington where wolves are federally delisted, but remain state listed, WDFW has the lead management responsibility for the species.
Protection for wolves should be removed now.	The state's current wolf population is inadequate to remove any protections at this time. State delisting will occur when Washington meets the population objectives for delisting.
Wolves continue to play an important cultural role for Native Americans in Washington	Comment noted.
Wolves have a cultural role for our tribe; however, the ungulate populations that our tribal members rely on for subsistence are of significantly higher priority. Therefore, we don't want wolves in our area.	As mentioned in Chapter 2 of the plan, wolf management may vary among tribes in the state.
Have the tribes been involved with planning efforts for wolf conservation and management? Will tribes in Washington accept wolves within the boundaries of reservations as part of the management plan?	Tribes were offered an opportunity to provide input on the development of the Wolf Conservation and Management Plan for Washington. Wolf management may vary among tribes in the state, with some tribes willing to accept wolves on tribal lands, and others not willing to do so. Individual tribes in Washington are free to develop their own wolf management plans for tribal lands, which may or may not be consistent with the state wolf plan (see Chapter 2, Section D, of the recommended wolf plan). If issues were to arise over inconsistencies in wolf conservation and management between state and tribal governments, they could be discussed in government-to-government consultations between WDFW and the tribes.
What is the status of government to government discussion with the tribes? It is impractical to advance a plan that relies so heavily upon tribal lands for recovery without the participation of tribes. This plan should have consulted with the Tribes prior to moving forward, then come with a Draft EIS that incorporates Tribal support if it is there? WDFW should have consulted with the tribes prior to moving forward on the wolf plan, then come with a Draft EIS that incorporates tribal support if it exists.	Tribes were offered an opportunity to provide input on the development of the Wolf Conservation and Management Plan for Washington. Wolf management may vary among tribes in the state, with some tribes willing to accept wolves on tribal lands, and others not willing to do so. Individual tribes in Washington are free to develop their own wolf management plans for tribal lands, which may or may not be consistent with the state wolf plan (see Chapter 2, Section D, of the recommended wolf plan). If issues were to arise over inconsistencies in wolf conservation and management between state and tribal governments, they could be discussed in government-to-government consultations between WDFW and the tribes.
Concerned that wolves could be adversely affected by tribal hunting following removal from the federal Endangered Species Act.	While wolves are federally listed in Washington, tribes are subject to restrictions under the federal Endangered Species Act. After federal delisting, tribes may choose to develop their own management plans and regulations regarding wolves. These may or may not be consistent with the state wolf plan. If issues were to arise over inconsistencies, they would be discussed in government-to-government consultations between WDFW and the tribes.

Comment	Response
This section doesn't provide any information regarding potential economic impacts from wolf recovery.	Potential economic impacts are described in detail in Chapter 14 of the recommended wolf plan.
Regarding the large reported amount of support for wolf recovery among Washington residents, those that "oppose" wolf recovery are those who will be financially impacted (i.e., ranchers, hunters). People who support the plan will never have to live with it.	Comment noted.
Did any of the opinion survey questions inform respondents that wolves could someday kill 5,000-8,000 deer and elk annually?	None of the questions asked of respondents included estimates of the number of deer and elk that could be killed annually by wolves. Questions asked in the survey can be viewed at: http://wdfw.wa.gov/publications/pub.php?id=00433
Chapter 3 – Wolf Conservation	
Concern that the plan's primary emphasis is delisting the wolf rather than obtaining a healthy population first.	Under the plan, wolves would not be delisted until they had achieved a healthy population. It is believed that the recovery objectives of 15 breeding pairs for three years, with distribution throughout a significant portion of the historic range, would constitute a healthy, self-sustaining population. Modeling of persistence indicated that 15 breeding pairs would persist on the landscape as long as they were allowed to increase and were not held at that number.
This chapter gives a thorough review of the current issues surrounding wolf recovery in the West but pays lip service to the many ideals of connectivity, genetic diversity, population sustainability, viability, etc., without addressing what WDFW will actually do on these issues. More detail is needed on how these issues will be addressed in practical terms.	Chapter 3 of the plan is intended to provide background information on conservation-related issues. Strategies and tasks for achieving wolf recovery are described in Chapter 12. Specific actions related to genetic diversity, population sustainability and viability, and connectivity are covered under Chapter 12, Tasks 1, 2, 3, and 7.
Modern conservation biology theory calls for recovery criteria for keystone species to be based not only on demographic viability, but also on restoration of the species' ecological role in ecosystems. For example, the ecological role of a large predator, such as the wolf, should be reestablished across significant portions of its range.	The primary goal of WDFW in recovering listed species is to reestablish viable and self-sustaining populations, which then allows delisting. While restoration of populations to levels that fulfill ecological function is desirable, this criterion is not part of existing recovery objectives under WAC-232-12-297. There are also no clear measures for assessing restoration of ecological function for most species. It is anticipated that wolves would begin to resume their ecological role as their population increases and reoccupies habitat. An expanded section describing the ecological role of wolves has been included in the recommended wolf plan (Chapter 2, Section C).
The plan should indicate that adequate scientific information is currently not available to determine if wolves in Washington will have to survive as a stand-alone population or whether there will be sufficient genetic exchange between the state's wolves and other populations in neighboring states and Canada. Given the strong efforts by Idaho, Montana, and British Columbia (southern areas) to reduce and maintain minimal wolf populations, there will probably not be many wolves left to disperse into Washington. This greatly weakens the plan's assumption of reliance	It's difficult to project future wolf numbers in other states. The WDFW conducted population modeling that included the influence of immigration on wolf population persistence. Results of these analyses demonstrated the importance of continued immigration of wolves from neighboring wolf populations in the recovery of Washington's wolf population. The population will be monitored as wolves recolonize the state to determine the frequency of successful dispersal between isolated populations of wolves both within the state and between Washington and adjacent populations in British Columbia, Idaho, and Oregon. Task 1.3.4 addresses the need to assess genetic characteristics and monitor the health of the wolf population through the collection

Comment	Response
on neighboring jurisdictions for sustaining Washington's wolf population. Without documented genetic exchange, WDFW cannot assume that Washington's wolf population is part of a larger metapopulation.	and analysis of biological samples from live-captured and dead wolves.
The plan should incorporate a stronger evaluation (habitat modeling) of connectivity between Washington and neighboring areas. Better information is also needed on the methods that WDFW will use to improve connectivity over time. Solid mechanisms for improving connectivity should be proposed so that wolf populations do not become or remain isolated. Currently, the plan relies mainly on translocation as the mechanism to address dispersal problems, but gives few other solutions for improving connectivity.	Carroll (2007) and Singleton et al. (2002) provide the only studies of habitat connectivity between Washington and neighboring areas (BC, ID, OR) for wolves. This information is presented in Chapter 3, Section A, of the wolf plan. Chapter 12, Task 7, of the plan presents several specific actions for conserving travel corridors to benefit wolves. These will hopefully enhance the natural movement of wolves enough that translocation will not be needed.
The I-5 corridor and Puget Sound represent nearly impossible barriers for wolves crossing into and recovering in the Pacific Coast region.	Potential barriers to connectivity are addressed in Chapter 3, Section A, of the final recommended wolf plan. The landscape permeability modeling by Singleton et al. (2002) indicates that the Puget Sound region could be a barrier to wolf dispersal between the Cascades and the Pacific Coast. While Singleton et al. (2002) considered the I-5 corridor to be a "potential barrier" to wolf dispersal, wolves have been documented dispersing across major interstate highways in other states (Idaho, Montana, and Wisconsin).
How will WDFW determine that wolves are moving between the recovery regions delineated in the plan?	Activities to monitor wolf movements between recovery regions are described in several tasks of Chapter 12 in the final recommended wolf plan. Tasks 1.3.3, 3.1, and 11.1 will monitor dispersal using radio tracking, howling surveys, and other methods. Tasks 1.3.4 and 11.2 will monitor genetic relationships of wolves to assess gene flow within and between wolf populations.
WDFW and the Washington State Department of Transportation should actively collaborate to plan highway crossing structures to enhance wolf movement.	This type of project would be evaluated by WDFW and WSDOT as described in Chapter 12, Task 7.3.
Wolf populations in general need to be large enough to be genetically interconnected. This means the population must show measurable gene flow, not a few wandering wolves like the U.S. Fish and Wildlife Service insists constitute a metapopulation in the Rockies.	The recommended plan that genetic interconnectedness is important to recovery of Washington's wolf population. WDFW will monitor the population (Tasks 1.3.4 and 11.2) for levels of gene flow consistent with maintaining viable populations. A new genetic study (vonHoldt et al. 2010) indicates that adequate gene flow does exist between the three main recovery regions in Idaho, Montana, and Wyoming.
Genetic connectivity should be maintained by excluding isolated pockets of wolves from wolf population totals used for viability quotas.	As indicated in the recommended wolf plan, all successful breeding pairs in Washington will be counted towards downlisting and delisting requirements. The plan contains a task (Chapter 12, Task 7) to maintain and restore habitat connectivity for wolves. This combined with the dispersal abilities of wolves means that there would likely not be any isolated pockets of wolves in the state that would be genetically disconnected from the main population or populations in neighboring states or British Columbia.
WDFW should work with neighboring states to	Under current circumstances, it is unrealistic to believe that wildlife

Comment	Response
present Washington's recovery objectives for wolves as consideration for ceasing further public wolf hunts in those states until Washington's wolf population objectives are met.	authorities in Idaho and Montana would delay public hunting and wolf management activities until Washington meets its own wolf recovery goals. British Columbia also would not be likely to put new protections of wolves into effect simply to assist wolf recovery in Washington. Nevertheless, the recommended plan includes a task (Chapter 12, Task 10.1.2) to work with adjacent states and British Columbia to encourage maintenance of populations and habitat connectivity to support long-term viability of wolf populations in Washington. Future discussions and cooperation of this type could perhaps lead to a more regional approach to wolf conservation.
The maps in the plan are deceptive in not showing the waters of Puget Sound covering over half the state in a north-south axis, and largely decoupling the Pacific Coast Region from the rest of the state.	Several maps in the wolf plan are general in nature and show only county boundaries. These maps do not illustrate Puget Sound. Most Washington residents are familiar with the location of Puget Sound and understand that the waters of the Sound represent an impassable barrier to any wolf that might attempt to disperse westward.
Sufficient habitat connectivity already exists in northeastern Washington.	As described in Chapter 3, Section A, of the wolf plan, the study by Singleton et al. (2002) indicates that several potential barriers to wolf movements exist in northeastern Washington. These include the upper Columbia (Lake Roosevelt)-Pend Oreille valleys and the Okanogan Valley.
Large areas of core wolf habitat, such as found in Idaho, Montana, and Wyoming, are less available in Washington. The consequences of this as it relates to wolf recovery could use more scrutiny and discussion.	A statement of this type was added to the wolf plan indicating that Washington does not have the large amounts of high quality habitat for wolves (i.e., large blocks of public lands with low road density, high ungulate populations, and low livestock abundance) as present in Idaho, Montana, and Wyoming.
Wolf recovery and conservation depends primarily on providing sufficient wild ungulate prey to support a wolf population sufficiently large enough to adapt to changing environmental conditions. This basic assessment, from a purely biological perspective, is missing from the plan.	The wolf plan acknowledges that sufficient wild ungulate prey is important for a viable wolf population in the state. The WDFW manages for healthy ungulate populations through habitat improvement, harvest management, and reduction of illegal harvest consistent with game management plans.
Washington does not have enough wild country and prey available to support any of the recommended number of breeding pairs. The state is too developed and fragmented by humans, and too large of human population. This will result in high levels of conflicts with livestock and people.	Habitat modeling information presented in Chapter 3, Section A, shows considerable habitat available for wolves in Washington. The four wolf habitat models referenced in the plan indicate an average of 38% of the state is potential wolf habitat. Washington lacks the extensive areas of highly suitable habitat that Idaho, Montana, and Wyoming have. Thus, Washington is not expected to support as many wolves as these states. Projections made in Chapter 14 suggest that wolf-human conflict levels through to the time of delisting will be lower than suggested in this comment.
There should be a discussion of how many breeding pairs or total wolves could be supported by suitable habitat in the state. The plan says that Washington currently has about 26,700 square miles of potentially suitable wolf habitat. At a density of 12-25 wolves/1000 square miles, this would yield a potential wolf population between 320 and 668 wolves.	WDFW estimated the potential biological carrying capacity for wolves in Washington by overlaying a circle representing a pack territory size of 360 sq mi (933 km^2) on a map of potential wolf habitat. Territory size used was based on the mean size of territories in Idaho and two packs in Washington. Amount of potential habitat was determined by the Maletzke model (≥50% probability of occupancy, using the parameters of Oakleaf et al. 2006; Figure 5 in the plan). The analysis resulted in an estimate of 76 packs for the state. As wolf recovery continues, WDFW will use Washington-specific data to refine estimates of biological carrying capacity in the state.
The plan does not establish critical habitat for	This comment appears to be in reference to federal critical habitat

Comment	Response
wolves. This designation is required before there can be any translocation of a listed species.	for listed species. There is no federal critical habitat for wolves anywhere in the U.S.
Recommend that the remaining wild areas in Washington be preserved as "wilderness" to give wolves a better chance for survival.	Comment noted.
Because of potential connectivity barriers that will likely limit natural dispersal to much of the Southern Cascades and Northwest Coast recovery region, the plan should allow delisting by individual recovery regions so that management issues can be better addressed. This will prevent one or two regions with abundant wolves from having to wait until the entire statewide distribution goal is reached. This will also result in greater social tolerance for wolves for people living in those regions that are down-listed more quickly.	Species and subspecies of wildlife may be listed and delisted under Washington state law (WAC 232-12-297), but not subpopulations.
Support the 3 recovery regions currently proposed in the plan. The Southern Cascades and Northwest Coast Recovery Region should not be separated into 2 recovery regions.	Comment noted.
I support separating the current Southern Cascades and Northwest Coast Recovery Region into 2 recovery regions. This would create a separate Pacific Coast Recovery Region with its own recovery objectives. This region offers good habitat for wolves because of ample prey populations and relative isolation from humans. It is also ecologically distinct from the Southern Cascades.	Comment noted. This was Alternative 3 in the Draft EIS. This alternative was not selected in the Final EIS because the WDFW believes recovery in a significant portion of the range can be accomplished without a 4th Pacific Coast recovery region.
Wolves should be fully restored to the wild areas of Washington, including the area identified as the Pacific Coast region recovery.	Comment noted.
Omission of a Pacific Coast Recovery Region from the delisting criteria is not consistent with meeting true recovery and restoration as required by Washington statute. The law requires that listed species must be restored to "all or a significant portion of their range".	Comment noted. This was Alternative 3 in the Draft EIS. This alternative was not selected in the Final EIS because the WDFW believes recovery in a significant portion of the range can be accomplished without a 4th Pacific Coast recovery region.
I support wolf recovery in the Olympic National Park, but not southwest Washington or the southern Cascades.	Comment noted.
I support wolf recovery in the Olympic National Park.	Comment noted.
Oppose wolf recovery on the Olympic Peninsula, but believe that having wolves in eastern Washington and the Cascades is adequate.	Comment noted.
Wolf recovery on the Olympic Peninsula should not be considered because the majority of residents of the region voted "no" in a referendum on wolf reintroduction in the past.	Comment noted. While WDFW is aware of a series of town hall meetings conducted in 1998 on the Olympic Peninsula regarding wolf introduction, we are not aware of a referendum in the past.
The plan should have a separate recovery region for southeastern Washington. The Blue Mountains are ecologically distinct from	WDFW and the Wolf Working Group considered this option (see Appendix I) but decided to combine most of eastern Washington into a single recovery region to reduce management complexity.

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northeastern Washington and are not directly connected to dispersing wolves from Idaho.	
The plan should include only 1 recovery region (i.e., the entire state), not 3 or 4.	The designation of multiple recovery regions in the wolf plan was done to help ensure that there would be distribution throughout a "significant portion of [their] range" in the state per WAC 232-12-297.
WDFW should divide the state into reasonably sized wolf management units similar to existing game management units.	WDFW and the Wolf Working Group considered an option of having a larger number of recovery regions (see Appendix I) but decided that three regions would reduce management complexity.
The plan should provide information on the carrying capacity of each recovery region for wolves.	Iinformation was added on the amount of potentially suitable habitat for wolves in each of the 3 recovery regions (see Table 3, Chapter 3) and the potential biological carrying capacity of the entire state for wolves (Chapter 3, Section B).
Support having wolves on public lands, but not on private lands.	Comment noted. As with other listed species, private lands have key roles to play in wolf recovery in Washington. Some of these include providing dispersal habitat between core habitats and providing seasonal habitat for ungulate prey. Wolf-related conflicts that occur on private lands can be addressed through the various management measures included in the recommended plan.
Given the uncertainty over whether Washington's wolf population will indeed be connected with populations in neighboring states and Canada, the number of wolves needed for ensuring recovery in Washington is impossible to determine at this time. Clearly additional research is needed to establish scientifically based conservation goals for wolves in the state. Instead of prematurely setting conservation goals through a negotiated stakeholder process, WDFW should work with research institutions to collect the needed information to determine the size of a long-term genetically sustainable wolf population for the state.	This approach of not providing specific numbers in the wolf plan's recovery objectives was considered early in the plan's development. However, it was rejected on the advice of all members of the Wolf Working Group, who preferred the inclusion of specific numbers (Appendix I), as in wolf recovery plans for other states. This greatly increases public understanding of the plan.
The plan does not provide a clear biological assessment of how many wolves are required to form a self-sustaining population in Washington, especially in isolation from other neighboring populations. What is needed is a clear, unbiased, wolf-focused analysis of how many wolves are needed, and then a clear, human-focused analysis of how this number can be obtained in Washington. A recommended approach to evaluating the size of a self-sustaining population may include the following: 1) conduct a population viability analysis (PVA) beginning with a minimum of 15 breeding pairs and a mid-winter population of 150 wolves as a population target in neighboring states, 2) use a spatially explicit population and habitat viability analysis (PHVA) for Washington to determine spatially where ungulate populations occur and therefore could support wolf packs, and 3) include in the spatially explicit analysis an assessment of where human needs on private lands occur, and where ungulate	New material was added to the recommended plan describing the results of a population model used to evaluate the long-term persistence of the plan's recovery objectives (Chapter 3, Section B; Appendix H). Peer and public review comments suggested that WDFW should conduct a population viability analysis to determine recovery levels, because of concern that a delisting goal of 15 successful breeding pairs was too low for achieving long-term recovery. Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether 15 was an adequate goal for delisting criteria. If not, WDFW would determine higher levels goals that may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (which may represent an estimated range of 97-365 wolves), the population could persist for 50 years, and didn't fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historic range. If the population model assumptions are correct, WDFW

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populations exist that support wolves, but would be in conflict with wolves. From these results, a socially tolerable plan to maintain a biologically sustainable wolf population could be provided. It is very important that this plan be presented as a compromise between the needs of wolves and those of people. The current, proposed plan does not indicate this well, nor does it show precisely where and how tradeoffs between population sustainability of wolves and human priorities (e.g., hunting, livestock production) are occurring.	believes that collectively, these factors would likely result in a self-sustaining wolf population. Higher recovery objectives were not believed to be necessary to achieve the purpose and need of the plan. In the future, if the population dynamics of wolves in Washington behave differently than those in the model assumptions, as stated in the wolf plan, WDFW may need to reevaluate whether the existing delisting goals remain sufficient.
The plan does not justify the use of 15 breeding pairs for 3 consecutive years as a viable wolf population and it indicates that proposed breeding pair numbers are based on compromise, not on science, which is unacceptable. The plan is contradictory in stating that 15 breeding pairs is below that thought needed for long-term persistence of an isolated population, yet later in the document it considers 15 breeding pairs to be minimal or barely adequate for population viability. If 15 breeding pairs was determined through political choice or compromise, then the plan should clearly state this and remove language stating that 15 breeding pairs represent a self-sustaining viable population. The plan should explicitly state how breeding pair numbers were established in light of recent research.	New material was added to the recommended plan describing the results of a population model used to evaluate the long-term persistence of the plan's recovery objectives (Chapter 3, Section B; Appendix H). Peer and public review comments suggested that WDFW should conduct a population viability analysis to determine recovery levels, because of concern that a delisting goal of 15 successful breeding pairs was too low for achieving long-term recovery. Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether 15 was an adequate goal for delisting criteria. If not, WDFW would determine higher levels goals that may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (which may represent an estimated range of 97-365 wolves), the population could persist for 50 years, and didn't fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historic range. If the population model assumptions are correct, WDFW believes that collectively, these factors would likely result in a self-sustaining wolf population. Higher recovery objectives were not believed to be necessary to achieve the purpose and need of the plan. In the future, if the population dynamics of wolves in Washington behave differently than those in the model assumptions, as stated in the wolf plan, WDFW may need to reevaluate whether the existing delisting goals remain sufficient.
Washington regulation requires delisting decisions be made "solely on the basis of the biological status of the species being considered, based on the preponderance of scientific data available." WDFW's wolf plan violates delisting criteria established in state statute. In fact, the plan acknowledges the target of 15 breeding pairs is an accommodation between conservation and livestock interests.	New material was added to the recommended plan describing the results of a population model used to evaluate the long-term persistence of the plan's recovery objectives (Chapter 3, Section B; Appendix H). Peer and public review comments suggested that WDFW should conduct a population viability analysis to determine recovery levels, because of concern that a delisting goal of 15 successful breeding pairs was too low for achieving long-term recovery. Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether 15 was an adequate goal for delisting criteria. If not, WDFW would determine higher levels goals that may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (which may represent an estimated range of 97-365 wolves), the

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	population could persist for 50 years, and didn't fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historic range. If the population model assumptions are correct, WDFW believes that collectively, these factors would likely result in a self-sustaining wolf population. Higher recovery objectives were not believed to be necessary to achieve the purpose and need of the plan. In the future, if the population dynamics of wolves in Washington behave differently than those in the model assumptions, as stated in the wolf plan, WDFW may need to reevaluate whether the existing delisting goals remain sufficient.
The number of breeding pairs required for delisting should be increased to ensure a viable wolf population. WDFW should err on the side of caution to account for various population threats, both human and natural (e.g., illegal killing, disease). The number of breeding pairs needed for delisting should be increased. A significant number of scientific reviewers believed that WDFW's numbers for delisting are too low, especially since the plan relies on natural migration areas outside the state for recovery. Breeding numbers should be based on the latest and relevant science, including possibly a population viability analysis (PVA). The 15 breeding pairs called for in the draft plan may translate into as few as 97 individuals. A population of less than 100 animals with 30 breeders results in an effective population size that is too small to be sustainable. A population that small is more under the influence of random genetic drift than it is under the action of natural selection, and therefore cannot be considered an evolutionary sustainable total population	New material was added to the recommended plan describing the results of a population model used to evaluate the long-term persistence of the plan's recovery objectives (Chapter 3, Section B; Appendix H). Peer and public review comments suggested that WDFW should conduct a population viability analysis to determine recovery levels, because of concern that a delisting goal of 15 successful breeding pairs was too low for achieving long-term recovery. Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether 15 was an adequate goal for delisting criteria. If not, WDFW would determine higher levels goals that may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (which may represent an estimated range of 97-365 wolves), the population could persist for 50 years, and didn't fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historic range. If the population model assumptions are correct, WDFW believes that collectively, these factors would likely result in a self-sustaining wolf population. Higher recovery objectives were not believed to be necessary to achieve the purpose and need of the plan. In the future, if the population dynamics of wolves in Washington behave differently than those in the model assumptions, as stated in the wolf plan, WDFW may need to reevaluate whether the existing delisting goals remain sufficient.
The plan's recommended breeding pair numbers need to be increased to be consistent with federal recommendations for Idaho, Montana, and Wyoming combined. The plan's recommended breeding pair numbers need to be decreased so they are consistent with federal recommendations for Idaho, Montana, and Wyoming	New material was added to the recommended plan describing the results of a population model used to evaluate the long-term persistence of the plan's recovery objectives (Chapter 3, Section B; Appendix H). Peer and public review comments suggested that WDFW should conduct a population viability analysis to determine recovery levels, because of concern that a delisting goal of 15 successful breeding pairs was too low for achieving long-term recovery. Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether 15 was an adequate goal for delisting

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	criteria. If not, WDFW would determine higher levels goals that may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (which may represent an estimated range of 97-365 wolves), the population could persist for 50 years, and didn't fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historic range. If the population model assumptions are correct, WDFW believes that collectively, these factors would likely result in a self-sustaining wolf population. Higher recovery objectives were not believed to be necessary to achieve the purpose and need of the plan. In the future, if the population dynamics of wolves in Washington behave differently than those in the model assumptions, as stated in the wolf plan, WDFW may need to reevaluate whether the existing delisting goals remain sufficient.
U.S. Fish and Wildlife Service's recovery goals of 30 breeding pairs of wolves and 300 individuals as a viable population for Idaho, Montana, and Wyoming combined has been harshly criticized as being an inadequate population target. WDFW's plan target of 15 breeding pairs for delisting is an even smaller size that clearly does not ensure a long-term sustainable population. This means that WDFW's plan fails to meet Washington state's law for achieving long-term sustainability.	New material was added to the recommended plan describing the results of a population model used to evaluate the long-term persistence of the plan's recovery objectives (Chapter 3, Section B; Appendix H). Peer and public review comments suggested that WDFW should conduct a population viability analysis to determine recovery levels, because of concern that a delisting goal of 15 successful breeding pairs was too low for achieving long-term recovery. Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether 15 was an adequate goal for delisting criteria. If not, WDFW would determine higher levels goals that may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (which may represent an estimated range of 97-365 wolves), the population could persist for 50 years, and didn't fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historic range. If the population model assumptions are correct, WDFW believes that collectively, these factors would likely result in a self-sustaining wolf population. Higher recovery objectives were not believed to be necessary to achieve the purpose and need of the plan. In the future, if the population dynamics of wolves in Washington behave differently than those in the model assumptions, as stated in the wolf plan, WDFW may need to reevaluate whether the existing delisting goals remain sufficient.
Objectives for downlisting and delisting could include both a total population size as well as minimum numbers and distribution of breeding packs for recovery regions. For state delisting, 300+ wolves for 3 years with the following distribution: 2 breeding packs of 4+ wolves in	WDFW decided not to follow this recommendation. The recommended wolf plan continues to use only numbers of breeding pairs (in addition to requirements of sufficient distribution over 3 consecutive years) in its downlisting and delisting objectives. Requiring that both breeding pair numbers and total wolf numbers be tracked would add too much

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Eastern Washington, 2 breeding packs of 4+ wolves in the Northern Cascades, 5 breeding packs of 4+ wolves in Southern Cascades/NW Coast, and 6 breeding packs of 4+ wolves distributed in any of the 3 regions.	complexity to the agency's population monitoring. After delisting, the plan recommends (Chapter 12, Task 1.4) that consideration be given to shifting monitoring efforts to measurement of total numbers or packs.
Washington does not have large blocks of public land nor high ungulate densities, therefore wolf population densities will likely be relatively low (12-25/1000km^2). This estimate would result in about 200-250 wolves in the state. The plan indicates that about 500 wolves is considered viable for a population. How will the state accomplish a sustainable wolf population if the landscape will not support as many animals as hoped? How would WDFW justify proceeding with downlisting and delisting the wolf if it truly doesn't have a viable wolf population that is well-connected with neighboring wolf populations and exceeds generally accepted numbers of viability (500)? Given this, WDFW needs to proceed cautiously with delisting.	New material was added to the recommended plan describing the results of a population model used to evaluate the long-term persistence of the plan's recovery objectives (Chapter 3, Section B; Appendix H). Peer and public review comments suggested that WDFW should conduct a population viability analysis to determine recovery levels, because of concern that a delisting goal of 15 successful breeding pairs was too low for achieving long-term recovery. Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether 15 was an adequate goal for delisting criteria. If not, WDFW would determine higher levels goals that may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (which may represent an estimated range of 97-365 wolves), the population could persist for 50 years, and didn't fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historic range. If the population model assumptions are correct, WDFW believes that collectively, these factors would likely result in a self-sustaining wolf population. Higher recovery objectives were not believed to be necessary to achieve the purpose and need of the plan. In the future, if the population dynamics of wolves in Washington behave differently than those in the model assumptions, as stated in the wolf plan, WDFW may need to reevaluate whether the existing delisting goals remain sufficient.
WDFW should follow the population assessments used by the U.S. Fish and Wildlife Service (1994) and Wisconsin DNR (1999), which concluded that about 500 wolves are needed for a self-sustaining population. At least 50-100 breeding pairs are needed for delisting. Delisting should not occur until 50 breeding pairs of wolves are present. At least 50 breeding pairs per isolated region are needed to recover wolves in this state. WDFW should set recovery goals of 30 or more breeding pairs of wolves and these need to represent a single connected population. The plan's current recovery objectives are not	New material was added to the recommended plan describing the results of a population model used to evaluate the long-term persistence of the plan's recovery objectives (Chapter 3, Section B; Appendix H). Peer and public review comments suggested that WDFW should conduct a population viability analysis to determine recovery levels, because of concern that a delisting goal of 15 successful breeding pairs was too low for achieving long-term recovery. Because the number 15 was selected as acceptable by most members of the wolf working group, WDFW decided it would first evaluate whether 15 was an adequate goal for delisting criteria. If not, WDFW would determine higher levels goals that may be necessary for achieving recovery. Results of the analysis suggested that with an initial population of 15 breeding pairs (which may represent an estimated range of 97-365 wolves), the population could persist for 50 years, and didn't fall below recovery objectives, as long as it was allowed to grow and was not limited. Other associated factors that reduced the risk to viability included robustness on the landscape (3 years), using successful breeding pairs as the measure , and distribution throughout three recovery regions in a significant portion of the species' historic

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sufficient. Population viability analysis work in Wisconsin suggests 300 individuals are needed for an isolated, self-sustaining population. Therefore, a population viability analysis should help with identifying a self-sustaining population, but a reasonable estimate may be between 150 and 300 wolves together with a stipulation that 15 breeding pairs be geographically distributed and stable over time The number of breeding pairs required for delisting should be increased to more than 15 breeding pairs, which represents an effective breeding population size of just 30 individuals. Current management policies in neighboring states and Canada emphasize lethal control, which will limit immigration into Washington. WDFW's plan should therefore produce a population that can survive even if it is isolated and not part of a larger metapopulation.	range. If the population model assumptions are correct, WDFW believes that collectively, these factors would likely result in a self-sustaining wolf population. Higher recovery objectives were not believed to be necessary to achieve the purpose and need of the plan. In the future, if the population dynamics of wolves in Washington behave differently than those in the model assumptions, as stated in the wolf plan, WDFW may need to reevaluate whether the existing delisting goals remain sufficient.
The 150 wolves cited as a minimum for wolf recovery in western Washington is a number based on politics, not biology. To avoid genetic problems of inbreeding and malformations, a recovered wolf population needs to number in the thousands, not hundreds; this concept of genetic viability is well-established in the scientific literature.	This first sentence in this comment is incorrect. The draft wolf plan does not require that western Washington have a minimum of 150 wolves to achieve delisting. Instead, for delisting, it requires that 15 successful breeding pairs be established for 3 consecutive years, with specific numbers of pairs spread across 3 recovery regions in Washington. This number of breeding pairs is estimated to represent a range of about 97-361 wolves. The population model used by WDFW indicates that 15 breeding pairs represent a viable population for Washington as long as numbers are allowed to continue growing and are not capped at 15 breeding pairs (Chapter 3, Section B; Appendix H).
Support greater than 15 breeding pairs of wolves per county.	Given the generally small size of Washington's counties (which range in size from 175 to 5,268 sq mi; average = 1,681 sq mi) and the large home range sizes of wolf packs (about 200-400 sq mi on average in Idaho, Montana, and Wyoming), this goal is biologically unattainable.
Wolves should be recovered to their historical numbers.	This goal is unattainable because of the many changes that have occurred in Washington's landscape during the past 150 years.
Delisting should not be considered until genetic diversity, genetic connectivity, and genetically viable population goals have been met for at least 5 years. Proof of genetic diversity should not be required to achieve wolf recovery. This is a long-term issue for future generations to consider.	Genetic criteria are not part of the downlisting and delisting criteria used in the recommended wolf plan. For delisting, the plan only requires that 15 successful breeding pairs be established for 3 consecutive years, with specific numbers of pairs spread across 3 recovery regions in Washington. The population model used by WDFW indicates that 15 breeding pairs represent a viable population for the state as long as numbers are allowed to continue growing and are not capped at 15 breeding pairs (Chapter 3, Section B; Appendix H). If the population is connected to wolf populations in neighboring states and British Columbia, then there should be sufficient gene flow to maintain viability. Continued monitoring of genetic diversity over time will reveal whether the population contains sufficient genetic variation. This will inform future management of the population.
Recommend using the generation time of wolves	Generation time has not been well described for wolves. One

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rather than the period of 3 consecutive years for recovery targets.	recent report (vonHoldt et al. 2008) documented it to be 4.16 years at Yellowstone National Park. Populations outside of protected areas like Yellowstone probably have smaller generation times because wolves in them typically experience higher rates of human-related mortality. Variation of this type may make generation time an impractical measure to use in Washington's wolf recovery objectives.
At least half of breeding pair numbers should be in areas where they are protected from all hunting pressure and prey populations are not hunted.	The issue of whether or not to hunt wolves in Washington and how hunting might be managed will be determined by the Fish and Wildlife Commission after delisting occurs. As noted in the recommended wolf plan, WDFW will not close the public hunting of ungulates in some areas to benefit wolf recovery.
Support WDFW not placing an upper limit on the number of wolves allowed to live in Washington, unless serious conflicts arise due to high wolf population densities.	The population delisting objectives presented in the wolf plan are not intended to represent a population size limit (or "cap") at which the population would be managed (see Chapter 3, Section B). One reason for not managing the population at the delisting level is that any decline in numbers through natural fluctuation or other reasons could trigger the need for relisting.
It appears that Washington has the habitat to sustain more than 15 breeding pairs (see Figures 4-7 of the draft plan). Would WDFW allow more than 15 breeding pairs to exist in the state, which would help enhance viability?	The population delisting objectives presented in the wolf plan are not intended to represent a population size limit (or "cap") at which the population will be managed (see Chapter 3, Section B). One reason for not managing the population at the delisting level is that any decline in numbers through natural fluctuation could trigger the need for relisting. Management of wolves after delisting will be determined by the Fish and Wildlife Commission and could include the establishment of population goals for wolves in Washington. It is impossible to forecast what these goals might be set at. WDFW believes that a population level above 15 breeding pairs would enhance the population's viability.
If pack size in Washington is small (about 5 animals/pack), will WDFW consider revamping its 15 breeding pairs as the delisting number and consider more packs and pairs to reach a sustainable population size?	This scenario of small pack size (about 5 wolves/pack) is unlikely to occur among all of Washington's successful breeding pairs of wolves. Pack size will likely be more variable based on local differences in prey availability and mortality rates. The Diamond Pack numbered 12 members in 2010, indicating that Washington will likely be able to sustain some larger packs. Once approved by the Fish and Wildlife Commission, the delisting requirements for wolves are very unlikely to change in the near future. However, if poor viability of the population were demonstrated in the more distant future, then delisting criteria might be reevaluated.
If pack size in Washington is small (about 5 animals/pack), does WDFW have a plan to augment small packs, such as using cross-fostering of pups into existing packs?	Pack augmentation is not included as a management technique in the wolf plan and WDFW does not believe that it would be necessary. To WDFW's knowledge, this type of management has never been used to enhance wolf populations in the wild.
The delisting process should begin prior to reaching the 15 pair target (e.g., at 8-12 pairs) and the 3 consecutive year requirement should be reduced or eliminated. These measures will allow wolves to be immediately delisted when the 15 pair target is reached and will avoid having wolf numbers far exceed the target while WDFW's long review process takes place. Potential lawsuits (as seen in other states) will extend the delisting review period even further. Wolf populations in neighboring states have increased 24% per year	The requirement that breeding pair targets for downlisting and delisting be met for 3 consecutive years is an important part of the recovery criteria in the wolf plan and ensures that wolf numbers will be maintained over time. Given the lower quality of habitat for wolves in Washington, as compared to Idaho, Montana and Wyoming, it is uncertain that wolves will increase at a similar high rate in Washington. Table 4, which projects potential wolf numbers in Washington when 6, 12, and 15 successful breeding pairs are present, already incorporates the likelihood that additional wolf packs will be present in the population. WDFW might initiate the delisting process sometime before the full 3-year

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(pre-public hunting) and will likely increase at similar rates in Washington. Furthermore, there will likely be additional unconfirmed wolf packs present at the time of delisting, which means that wolf populations will be greater than the 15 confirmed pairs.	requirement is reached, but would not do so with only 8-12 breeding pairs present.
The requirement that 5 pairs be present in the Southern Cascades and Northwest Coast Recovery Region for downlisting to state sensitive status will take many years to achieve and will result in far too many wolves becoming established in Eastern Washington and the Northern Cascades Recovery Regions before management is allowed.	If wolves fail to naturally disperse to the Southern Cascades and Northwest Coast Recovery Region, translocation of wolves to the region could be conducted (see Chapter 3, Section B) from other recovery regions that have exceeded their delisting targets. Once present in the Southern Cascades and Northwest Coast Recovery Region, wolf numbers will likely grow quickly because of the high prey abundance present there. Management of wolves to address conflicts is allowed in each recovery region during all listed phases under the wolf plan. The plan outlines a variety of options to address potential conflicts (Chapter 4, Section E, conflicts with livestock; Chapter 5, Section F, conflicts with wild ungulates) regardless of population size and distribution within the state.
The wolf population should be limited (or "capped") at the delisting level with all excess wolves removed from the population. This will minimize damage to livestock and game populations.	As stated in the recommended plan, WDFW will not place a size limit (or "cap") on the state's wolf population. Population modeling suggests a very high likelihood of the population falling below the delisting requirement if it was capped at 15 successful breeding pairs (Chapter 3, Section B; Appendix H), which would then require relisting. The plan outlines a variety of options to reduce potential conflicts (see Chapter 4, Section E, for conflicts with livestock; see Chapter 5, Section F, for conflicts with wild ungulates) while wolves are listed. Management of wolves after delisting will be determined by a separate public process.
I believe Washington could support 12 wolf packs.	Population modeling presented in the recommended plan suggests that the state has the habitat to support substantially higher numbers of wolves (more than 50 packs; Appendix H).
Recommend maximum of 3 breeding pairs to downlist to threatened, 6 breeding pairs to downlist to sensitive, and 9 pairs to consider wolves for delisting. Delisting should occur at 8 breeding pairs unless adequate funding is available to address all wolf-related concerns. The state's wolf population should be capped at 8 breeding pairs, which represents a genetically viable population.	WDFW believes that delisting targets of fewer than 15 breeding pairs would not result in a viable and self-sustaining wolf population. The 3 blind peer reviewers were asked to review a proposal for delisting at 8 breeding pairs. Two of the three said this number would not result in a viable, self-sustaining population of wolves. Both believed that the number of successful breeding pairs needed to achieve delisting should be higher and that even the current recommended plan fell below current scientific standards for sustainability and genetic viability. The third reviewer considered the plan's recovery objectives of 15 successful breeding pairs for 3 consecutive years to be reasonable for achieving a recovered and self-sustaining wolf population. Based on this information, the recommendations in this comment does not meet WDFW's mandate to preserve, protect, and perpetuate the native wildlife species of the state.
WDFW should err on the side of caution and begin with a small population (e.g., the 8 breeding pairs called for in the minority report, or 50 wolves total). Then, once an adequate amount of time has passed for further review and evaluation of conflicts, wolf numbers could be increased if few conflict situations exist.	WDFW does not take this incremental approach in the recovery of state listed species. WDFW's state recovery and management plans reflect population size and distribution requirements for establishing viable and self-sustaining populations of listed species. Evaluation of conflict levels is not part of this process.
Recommend downlisting to state sensitive status	WDFW believes that delisting targets of fewer than 15 breeding

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when 6 pairs are present in the state for 2 consecutive years. Delisting should occur when 2 breeding pairs are verified in each recovery region. Delisting should occur at 3-6 breeding pairs. Support having a small wolf population in the state, but the current downlisting and delisting goals are too high.	pairs would not result in a viable and self-sustaining wolf population. Therefore the recommendation in this comment does not meet WDFW's mandate to preserve, protect, and perpetuate the native wildlife species of the state.
Wolves should be downlisted to state threatened status in eastern Washington now.	Comment noted.
I oppose any plan that calls for increased wolf numbers. Washington already has too many wolves.	Comment noted.
The Eastern Washington Recovery Region already has too many wolves and numbers should be controlled.	Comment noted.
The wolf plan needs to take a more conservative approach by reducing the wolf numbers required for delisting. The current plan is too aggressive and does not provide good balance between recovering wolves and minimizing livestock and ungulate impacts. Having more reasonable (i.e., lower) population recovery goals may also help WDFW obtain support from hunters and outdoor enthusiasts, and help prevent illegal harvest.	Per WAC 232-12-297, recovery targets used by WDFW must be supported by science and result in a healthy, self-sustaining population. Population modeling conducted by WDFW found the delisting targets of 15 successful breeding pairs to be adequate and capable of persisting on the landscape as long as the population is allowed to increase and is not held at that number (Chapter 3, Section B; Appendix H). The 3 blind peer reviewers were asked to review a delisting proposal with lower numbers (i.e., 8 breeding pairs). Two of the three said 8 pairs would not result in a viable, self-sustaining population of wolves. Both believed that the number of successful breeding pairs needed to achieve delisting should be higher and that even the current recommended plan fell below current scientific standards for sustainability and genetic viability. The third reviewer considered the plan's recovery objectives of 15 successful breeding pairs for 3 consecutive years to be reasonable for achieving a recovered and self-sustaining wolf population. Based on this information, the recommendations in this comment to take a lower and more conservative approach to delisting does not meet WDFW's legal mandate with respect to recovering listed species.
Support a process where if breeding numbers are found to be too large (i.e., there are too many conflicts involving wolves), then breeding pair numbers can be reduced at a later date.	WDFW believes that a delisting target of 15 breeding pairs is necessary for a viable and self-sustaining wolf population in Washington. While wolves are listed, the recommended plan identifies a variety of management options to address and reduce wolf-related conflicts (see Chapter 4, Section E, for conflicts with livestock; see Chapter 5, Section F, for conflicts with wild ungulates). The plan allows for lethal control of wolves and packs that are repeatedly involved in livestock conflicts, which could temporarily reduce breeding numbers.
The plan allows too many wolves in the Southern Cascades/Northwest Coast Recovery Region. Targets for each region should be the same.	In the recommended plan, each of the three recovery regions has similar breeding pair numbers for delisting: 5 in Eastern Washington; 4 in the Northern Cascades; and 6 in the Southern Cascades/Northwest Coast region. The three recovery regions vary in the amount of suitable habitat and prey available to support wolves. The Southern Cascades/Northwest Coast Recovery

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	Region has the largest amount of public land, greatest elk abundance, and a greater likelihood of reduced wolf-livestock conflicts. These factors would potentially make this region a key contributor to achieving a viable, self-sustaining wolf population in the state. It could also potentially act as a source of dispersing wolves to other areas of the state. For these reasons, recovery objectives are set higher for this region.
Restoring wolves to historical levels is an absurd concept given current human population pressures on the land.	The plan does not call for restoring wolves to historical levels; as stated in Chapter 1 of the final plan, this is not an attainable goal because of the broad landscape changes that have occurred in the state during the past 150 years. It was an alternative that was not considered in the Draft EIS.
The language used in the conservation/recovery objectives states that there must be "at least" a certain number of breeding pairs per recovery region to meet downlisting and delisting criteria. The language "at least" should be removed.	This was removed in the recommended plan.
Support a regionally-based population target for delisting criteria. There isn't a need for Oregon, Idaho, Montana, and Washington to each have self-sustaining wolf populations.	Comment noted. The regional status of wolves is outside the scope of the state plan. The wolf is listed as endangered under state law and requires a state recovery plan that establishes downlisting and delisting population targets for a healthy, self-sustaining population.
Wolves in Montana, Wyoming and Idaho have all recovered to the point of over-population, which shows that wolves do not need help from humans to be successful. Washington already has a sufficient number of breeding pairs of wolves to indicate that the population will be able to recover on its own.	Wolf recovery in Idaho, Montana, and Wyoming was facilitated by reintroductions and the protections given to the species under the federal Endangered Species Act. In Washington, wolves are dispersing naturally into the state and there are no reintroductions. The primary conservation efforts for wolves (as described in the recommended plan) are protection from human-caused mortality and managing conflicts as they occur. The plan also establishes recovery objectives for downlisting and delisting the species.
Recommend that WDFW protect only those wolves coming in from British Columbia and northern Idaho, which are more like the original strain of wolf historically present in Washington.	All wolves dispersing into and establishing in Washington are protected under state law. This comment implies that the reintroduced wolves now present across most of Idaho, Montana, and Wyoming are different than the wolves that occurred historically in these states and Washington. This belief is erroneous for several reasons. First, examination of historical and recent wolf specimens from throughout North America indicates all wolves occurring in the Canadian and northern U.S. Rockies, interior B.C., Northwest Territories, and nearly all of Alaska are genetically and morphologically similar and belong to a single subspecies (*Canis lupus occidentalis*). Weights of wolves harvested in the 2009 hunting seasons in Idaho (ave weight = 101 lbs; max weight = 130 lbs) and Montana (ave weight = 97 lbs; max weight = 117 lbs) are similar to the sizes of the original wolves that occurred in these states in the 1800s and early 1900s. Second, radio-tracking data shows that wolves dispersing from southeastern B.C. and southwestern Alberta mix with wolves from Idaho and Montana and with wolves from farther north in B.C. and Alberta near the sources of the wolves used in the reintroductions to Idaho, Montana, and Wyoming in the mid-1990s. When combined with recent genetic research (vonHoldt et al. 2010) that reveals considerable genetic mixing among wolf populations in Idaho, Montana, and Wyoming,

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	this information shows that wolves form a single population across the Rocky Mountains of the northern U.S. and southern Canada. Third, recent genetic research (vonHoldt et al. 2010) involving hundreds of wolves sampled from Idaho, Montana, and Wyoming in the 1990s and 2000s found no evidence of a remnant native population of wolves that differed genetically from the reintroduced wolves.
WDFW should use total wolf numbers in the plan's recovery objectives, rather than numbers of successful breeding pairs. Successful breeding pairs can be difficult to measure, especially in heavily forested regions. It may be easier to count the number of wolf breeding packs of 4 or more wolves in mid-winter when track counts in snow can be conducted, instead of the number of successful breeding pairs at the end of December, as currently stipulated in the plan.	The recommended plan retains the use of successful breeding pairs (a male and female with 2 or more pups that survive to Dec. 31) in its recovery objectives rather than total number of wolves. While it can be time consuming to determine if 2 or more pups survive to the end of the year, number of successful breeding pairs is a better indication of a viable, self-sustaining population if it can be determined if recruitment is occurring. This is the standard measure used in wolf recovery in the northern Rocky Mountains.
Rather than using numbers of successful breeding pairs as recovery criteria, numbers of "large" packs (i.e., packs with 6 or more members that have successfully bred for a calendar year) should be used instead. Large packs provide higher pup survival rates and have greater capacity for creating new packs.	The recommended plan retains the use of successful breeding pairs (a male and female with 2 or more pups that survive to Dec. 31) in its recovery objectives rather than number of large packs. Number of successful breeding pairs is the standard measure used in wolf recovery in the northern Rocky Mountains.
Why does the plan rush to delist wolves? This appears to be true so that wolves can be killed immediately by hunters and livestock operators.	Wolves will be delisted in Washington based solely on the biological status of the species (WAC 232-12-297). The delisting criteria in the recommended wolf plan are believed to represent a healthy, self-sustaining population throughout a significant portion of the historical range in the state.
How do we know that WDFW has accurately estimated the number of wolves in the state, rather than giving the public a rough estimate?	WDFW provides the public with the most accurate wolf numbers currently known to occur in the state. Comprehensive population monitoring is an essential part of wolf conservation and management in Washington (see Chapter 12, Task 1, of the wolf plan) and will be a high priority of WDFW while wolves remain state listed.
WDFW's delisting requirements are not clear in this plan.	WDFW believes that the delisting requirements are clearly presented in the wolf plan (see Chapter 3, Section B) and final environmental impact analysis.
Requirements needed to meet federal delisting are not clear in this plan.	There are no federal delisting criteria for wolves in Washington; to date, the USFWS does not have a recovery plan for wolves in Washington. The relationship between state and federal listing and delisting are clarified in the final recommended plan.
Are the 15 breeding pairs called for in the plan in addition to the 6-8 breeding pairs already present in the state?	Successful breeding pairs currently known to exist in Washington would be counted toward the delisting recovery objective of 15 successful breeding pairs. As of December 2010, there was only one confirmed successful breeding pair of wolves known in the state.
The plan is unclear about whether a target of 15 breeding pairs must be established within the Southern Cascades/Northwest Coast Region.	The 15 breeding pairs required for delisting are distributed among the 3 recovery regions. In the final recommended plan, 6 of the 15 breeding pairs would be needed in the Southern Cascades and Northwest Coast Region.
The plan does not provide enough information about how many wolves there might be when 15 breeding pairs are present in Washington.	Estimates of what range of numbers might be represented by 15 breeding pairs are presented in Table 4 of the recommended plan.

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Projected wolf numbers shown in Table 3 are a deliberate distortion of the truth.	WDFW believes that the table (now Table 4 in the recommended plan) accurately projects the range of wolf numbers that may occur in the state when 6, 12, and 15 breeding pairs are present.
Support the use of translocation to speed the recovery of wolves in Washington.	Comment noted.
Support the translocation of wolves to primary locations such as the Olympic Peninsula, Mt. St. Helens, Mt. Rainier area, the Dark Divide area of Gifford Pinchot National Forest, or other locations that offer large blocks of public land, good prey for wolves, and lower risk for conflicts.	Comment noted.
Believe that translocation should only be used as a last possible resort because of the complicated social and biological issues involved with its use.	The final recommended plan notes that natural dispersal is preferred, and that translocation would be a tool available if wolves fail to reach a recovery region through natural dispersal. Any proposed translocation would require a separate public EIS process.
Support translocation of wolves statewide so that all parts of Washington share in the "burden" of having wolves.	Comment noted.
Oppose any translocation, reintroduction, release, or placement of wolves in Washington, including the Olympic Peninsula.	Comment noted.
Oppose translocation because wolves are already becoming established in the state through natural dispersal. This will save money and avoid public acrimony. Public acceptance of wolves will be greater if wolves are allowed to naturally disperse through the state rather than being translocated to new locations.	Comment noted.
Oppose translocation because it would result in greater state and federal regulatory control over land use and natural resource management decision-making.	With the exception of some temporary area closures near den sites in national parks only, there have been no restrictions on grazing methods, road use, timber management and logging, mining, recreation, public access, or other activities due to the presence of wolves. Restrictions on human development and other land use practices have not been necessary to achieve wolf recovery in Idaho, Montana, and Wyoming.
Oppose translocation as an artificial means to meet recovery goals by establishing small isolated wolf populations that would be difficult to maintain after delisting.	The final recommended plan notes that natural dispersal is preferred, and that translocation would be a tool available if wolves fail to reach a recovery region through natural dispersal. The purpose of a translocation, if it occurred, would be to establish a population that would be linked to other populations and not isolated. Any proposed translocation would require a separate public EIS process, which would include a feasibility study to address factors such as connectivity or isolation.
Oppose translocation based on the high cost.	Comment noted.
Eastern Washington livestock operators may favor translocation, but western Washington livestock operators do not.	Comment noted.
The plan should include the potential negative aspects of translocations. These could include less public support for wolf recovery because the wolves were artificially brought to the region, greater agency blame if translocated wolves cause problems, translocated wolves suffer higher	Many of these concerns are about translocation are correct, but none were mentioned in the recommended wolf plan. These concerns are some of the reasons why the plan notes that natural dispersal is preferred for achieving wolf recovery in Washington, and why the plan does not recommend immediate implementation of translocation. Any proposed translocation would require a

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mortality, and translocated wolves may display erratic dispersal behavior and move into less desired areas, and will be costly to plan and conduct translocations, including monitoring of individuals.	separate public EIS process. This would include a feasibility study that examines many facets of translocation, including these concerns.
The plan needs more detail on conducting translocations, including time and funding schedules, type of release (hard vs. soft), numbers, methods to enhance genetic diversity, monitoring, etc. WDFW should designate a specific time interval for initiating translocations (i.e., how long will WDFW wait before planning and conducting translocations in state?).	The final recommended plan notes that natural dispersal is preferred, and that translocation would be a tool available if wolves fail to reach a recovery region through natural dispersal. Any proposed translocation would require a separate public EIS process. This would include a feasibility study and an implementation plan, which would contain details on conducting a translocation. It is premature at this time to provide details on conducting a translocation – these would be developed in the future if translocation were proposed.
Before translocations are conducted, a genetic study should be conducted to determine if wolves in eastern Washington are distinct from wolves that historically occurred in western Washington, and if so how this information should inform translocations. Ideally, it is important to maintain genetic diversity and unique populations when conducting translocations.	A statement has been added to Chapter 12, Task 3.3, of the recommended plan regarding genetic considerations of any translocations. The implementation plan to conduct translocations would address genetic aspects of moving wolves, including appropriate source populations.
Translocations should be postponed until a comprehensive feasibility study is conducted.	There are no translocations proposed. The final recommended plan notes that natural dispersal is preferred, and that translocation would be a tool available if wolves fail to reach a recovery region through natural dispersal. Any proposed translocation would require a separate public EIS process. This would include a feasibility study and an implementation plan, which would contain details on conducting a translocation (Chapter 3, Section B; Chapter 12, Tasks 3.2 and 3.3).
Concern that translocations will result in excessive numbers of wolves being removed from one or more recovery regions before numbers in those regions are large enough to sustain removals. This could hinder recovery in those regions and interfere with natural dispersal. WDFW should set the trigger for evaluating translocation at 2 regions exceeding their recovery objectives and should include some of the 6 "floating" breeding pairs required for delisting.	Criteria in the recommended plan for translocation are that wolves would only be removed from a region if population numbers within the region exceeded delisting objectives and removal would not jeopardize the region's population by causing it to fall below delisting objectives (Chapter 3, Section B). Recovery objectives in the recommended plan no longer have unassigned breeding pairs.
Translocation should not be viewed as a replacement for protecting habitat connectivity. Translocation should be conducted no matter the political implications.	WDFW does not view translocation as a replacement for ensuring habitat connectivity for wolves. The wolf plan includes a specific task (Chapter 12, Task 7) that addresses the importance of maintaining and restoring habitat connectivity for wolves.
The plan recommends translocation "if needed" but never defines the term "if needed". Similarly, the plan says that "translocation would be used if wolves failed to reach one or more recovery regions through natural dispersal".	Translocation will be deemed necessary if wolves are failing to successfully disperse into each recovery region and establish successful breeding pairs.
Translocation of wolves to the western two-thirds of the state will place these animals under federal jurisdiction through the federal Endangered Species Act. We suggest that these populations be classified as "non-essential experimental	Because wolves remain federally listed in the western two-thirds of Washington, any translocation of wolves to this region will require approval by the U.S. Fish and Wildlife Service. The Service has previously stated that wolf packs that become established in this part of the state will have full protection under the federal

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population" under Section 10(j) of the Endangered Species Act. This would allow for appropriate management of conflicts involving translocated populations.	Endangered Species Act and will not be designated as a "non-essential experimental population".
Private property owners should have a voice in what is put on their property.	Large blocks of public land with abundant prey away from livestock operations will be the best places for releasing translocated wolves. Any proposed translocation would require a public EIS process, which would give the public an opportunity to comment on the proposal. WDFW would very likely not consider translocating wolves to private land and would never do so without landowner consent.
Translocation should be put to a public vote in the areas where it is proposed.	Any proposal to translocate wolves in Washington would go through a public EIS process (i.e., a National Environmental Policy Act review if it was proposed on federal lands or a SEPA review if on nonfederal lands). This would allow the public an opportunity to comment on the proposal.
Translocation and reintroduction are the same concepts. It's deceiving to portray them as different.	In the final recommended plan, the two terms have different meanings (see plan's Glossary). Reintroduction refers moving wolves into Washington from outside the state. Translocation refers to moving wolves from one area of Washington to another. As stated in Chapter 1, WDFW has ruled out any reintroductions because wolves are already dispersing naturally into the state. Translocation is a tool that could be used if wolves fail to disperse to a recovery region in the state, which could delay or prevent recovery and delisting of the species. Any such translocation proposal would be evaluated through a separate public EIS process.
WDFW should conduct translocations but not inform the public as to their location.	Any proposal to translocate wolves in Washington would go through a public EIS process (i.e., a National Environmental Policy Act review if it was proposed on federal lands or a State Environmental Policy Act [SEPA] review if on nonfederal lands). This would allow the public an opportunity to comment on the proposal. WDFW will not conduct translocation in secret.
Wolves should be translocated to city parks so that city people can experience them directly and watch their pets be attacked and eaten.	Comment noted.
All wolves in eastern Washington should be caught and translocated to western Washington.	Efforts to recover wolves in Washington will require wolf population targets to be met in all three recovery regions of the state.
Measures described in the wolf plan to mitigate genetic concerns by moving individual wolves violate the plan's own definition of population viability. Recovery objectives and strategies should be revised so that genetic concerns would be addressed without requiring that wolves be moved.	The recommended plan includes a task (Chapter 12, Task 1.5) for moving individual wolves within Washington for genetic purposes. If WDFW determines that certain wolf populations are isolated and analyses identify genetic problems developing, such as inbreeding depression, WDFW would use move single wolves to a problem area to increase genetic diversity of a local gene pool. This activity differs from translocation (see Chapter 12, Task 1.5) and would not require a public EIS process. The recommended plan contains a task (Chapter 12, Task 7) to maintain and restore habitat connectivity for wolves. This combined with the dispersal abilities of wolves means that populations with genetic concerns will likely not occur in Washington and that this task would not be needed.
The plan needs to address wolf management after delisting. It should provide greater detail on the	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves

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management tools (e.g., hunting, trapping, and government hunters) that could be used to limit wolf numbers in Washington. Alternatively, full protection after delisting may be warranted if wolf numbers remain small enough that they cannot sustain public hunting.	while they are a state listed species. Achieving delisting of wolves could require a substantial period of time. After delisting occurs, conservation and management needs should be fully reevaluated using all pertinent information available at the time. This is far superior to attempting to predict the species' needs after delisting based on the limited information that is currently available for Washington.
Support the use of a broad public review process for determining whether or not to classify the wolf as a game species after delisting.	A proposal to reclassify the wolf as a game species following delisting would go through the Washington Fish and Wildlife Commission, which is a public process.
WDFW will benefit from review of post-delisting management of wolves in neighboring states and elsewhere.	Information from surrounding jurisdictions would undoubtedly be closely examined and evaluated by WDFW when it makes post-delisting decisions about wolf conservation and management in Washington.
Support public hunting (and perhaps trapping) of wolves after delisting. This may help build overall tolerance for wolves among hunters and the general public, will help decrease the costs of other types of management, will help lessen impacts on game populations and livestock, will generate funds for WDFW, and provide valuable data on the wolves themselves. To this end, hunting of wolves should be made a goal of the plan.	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after delisting through a separate public review process, as indicated in the plan. Hunting of wolves could produce multiple benefits as indicated in this comment.
Public hunting of wolves will have the added benefit of keeping wolves afraid of people. This will make them less bold in their behavior and will discourage them from inhabiting areas used by people.	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after delisting through a separate public review process, as indicated in the plan. Hunting of wolves could produce multiple benefits, one of which is noted in this comment.
Wolves should be managed like other game species. Furthermore, there is no other carnivore in Washington that kills livestock and game that is not controlled through regulated hunting.	Comment noted.
Regulated public wolf hunting alone will not curb the wolf population. This belief is supported by the papers of Mech (2001) and Adams et al. (2008). It may be necessary to use other methods, such as poisoning and aerial shooting, to keep wolves under control.	Much greater knowledge of the impacts of public hunting on wolf populations will be learned in Idaho and Montana as these states enact public wolf hunts in the future. This information would be used to inform decisions about public wolf hunting in Washington.
If hunting (and perhaps trapping) of wolves is allowed, it needs to be carefully managed to prevent abuses and restricted to specific locations where management of wolves is required.	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after delisting through a separate public review process, as indicated in the plan. However, any public hunting of wolves that is allowed in Washington would be carefully managed by WDFW.
Oppose wolf hunting immediately after delisting. WDFW should follow Minnesota's model of waiting 5 years after delisting before public hunting is allowed. WDFW should also establish a wolf population "buffer" of at least 30% above target levels set for state delisting before hunting is	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after delisting through a separate public review process, as indicated in the plan. Minnesota's decision to wait 5 years after delisting before allowing

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allowed.	hunting is one option that the Washington Fish and Wildlife Commission could consider. Under any public hunting of wolves that might be approved, WDFW would manage at harvest levels that would not jeopardize the wolf population or require it to be relisted.
If wolves become a game species after delisting, core habitat areas should be established on federal lands where hunting is not allowed. Wolf hunting should also not be allowed near the borders of national and state parks or wilderness areas.	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after delisting through a separate public review process, as indicated in the plan. Specific decisions about hunting areas, harvest levels and methods, season lengths, etc would be made after hunting was approved.
The plan says that local communities will benefit more from "eco-dollars" from wolf watching than hunting dollars. Therefore, WDFW should support wolf tourism by being very conservative in the hunting of wolves, if and when hunting occurs.	The wolf plan says only that "the economic gain from wolf tourism has the potential to offset or exceed the combined costs of livestock depredation and reduced hunting opportunities." As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about balancing public hunting of wolves with wolf-related tourism benefits will be made after delisting through a separate public review process, as indicated in the plan.
After delisting of wolves occurs, WDFW should ban the potential use of aerial hunting, trapping, poisons, and the use of motorized vehicles to kill wolves.	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about approved methods for killing wolves will be made after delisting through a separate public review process, as indicated in the plan.
Oppose wolf hunting after delisting.	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after delisting through a separate public review process, as indicated in the plan.
Needs to be greater consideration of the impact that wolf hunting will have on pack structure and behavior.	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after delisting through a separate public review process, as indicated in the plan.
Would like landowner "preference tags" for hunting wolves as soon as hunting of wolves is approved.	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after delisting through a separate public review process, as indicated in the plan. Specific decisions about hunting areas, harvest levels and methods, season lengths, etc would be made after hunting was approved.
Suggest that when 4 breeding pairs are confirmed in the state, that WDFW form a committee to formulate the process and implementation of wolves as a game species.	WDFW will begin the state delisting process for wolves in a timely fashion at or near when state delisting criteria have been achieved. A review of potential game status could possibly begin at or about the same time or soon after.
WDFW should be able to remove all wolves above a minimum number with special permits issued for this activity.	As stated in Chapter 3, Section C, any wolf hunting program that might be established would manage the population at a viable and sustainable level rather than at an arbitrary number or "cap."
Because wolves in eastern Washington are federally delisted, they should be considered a game animal and hunted now, just as they were in Idaho and Montana in 2009.	Wolves remain a state listed species throughout Washington, including the eastern one-third of the state. Wolves will not be delisted under state law until they have met the delisting criteria specified in Chapter 3, Section B, of the recommended plan.

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	These include 15 successful breeding pairs for 3 consecutive years, with certain breeding pair numbers needed in each of 3 recovery regions. Current wolf numbers in Washington are far too low to support hunting. A separate public review process to consider wolf hunting will be necessary after wolves are delisted, as stipulated in Chapter 3, Section C.
The wolf plan denies that WDFW has authority to manage wolves and wolf hunting on lands owned by other agencies and private lands, but I thought that WDFW could manage wolf hunting the same way it does other species, that is by setting hunting seasons and species, sex/age groups that may be hunted. In fact, WDFW would appear to have authority to establish areas where no hunting of wolves or their prey could be allowed.	This comment is partially incorrect. The recommended plan does not state that WDFW lacks the authority to manage wolf hunting on lands owned by other agencies and private lands. However, the plan does note that WDFW has no or minimal legal authority to implement land use restrictions to benefit state listed species on lands owned by other agencies and private lands (see Chapter 8, Sections B and C). If wolves are reclassified as a game species after being federally and state delisted (see Chapter 3, Section C), WDFW would establish statewide management goals for the species, which could include a public hunting program. The details of such a program would need to be established, but would likely allow wolves to be hunted on both public and private lands where in regions of the state where a sustainable harvest could be conducted. Under a hunting program, some areas or regions may be closed to wolf hunting.
What is WDFW's strategy for dealing with anti-hunters when wolf numbers are out of control and we can't get wolf harvest implemented soon enough?	As described in Chapters 1 and 3 (Section C), the wolf plan identifies only the conservation and management needs of wolves while they are a state listed species. Decisions about instituting public hunting of wolves will be made after state delisting occurs. Any related implementation strategies related to wolf hunting are beyond the scope of this wolf plan.
It is not moral or responsible to manage with the intent to remove protections. If wolves recover well to their native habitat, we should celebrate that as the correct order of things and see the benefit to ecosystems and all of us instead of taking it as a sign that wolves can be hunted and shot by ranchers.	The goal of endangered species conservation is to recover species to the point that their populations are self-sustaining and no longer in need of special protection. For species that cause human conflicts, such as wolves, hunting and allowing greater use of lethal control by affected landowners might instill greater public tolerance and value for the species, thereby securing their long-term conservation.
Plans are already underway to start hunting wolves as indicated by a proposal made by members of the Wolf Working Group in May 2008.	This statement is incorrect, as indicated in the wolf plan (see Chapter 3, Section C).
How will WDFW determine that the wolf needs to be relisted? The current plan is ambiguous about the criteria to trigger relisting.	As described in Chapter 3, Section C, of the recommended plan, WDFW will continue to monitor the wolf population after delisting. If the population appears to be declining toward the minimum population objectives for delisting, WDFW will undertake a full review of the population's status and threats, and make a decision on whether relisting is appropriate.
Chapter 4 – Wolf livestock conflicts	
Washington pioneers eliminated wolves for good reason, which was to protect their livestock and families.	Comment noted.
The needs of livestock operators should not be a higher priority than wolves.	Given the generous compensation program for livestock depredation and the various non-lethal and lethal control measures of the recommended wolf plan, WDFW believes that wolf recovery can be accomplished without significant adverse impacts to the state's livestock industry.
Livelihoods of ranchers should receive greater	WDFW considers the values and needs of multiple stakeholder

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consideration than wolf recovery.	groups in the management of wildlife in the state. Two public attitude surveys conducted in 2008 and 2009 indicated that about 75% of Washington's citizens support the recovery of wolves, thus livestock owners cannot be the only stakeholder group considered as wolf recovery and management moves forward. Given the generous compensation program for livestock depredation and the lethal and non-lethal control measures of the recommended wolf plan, WDFW believes that wolf recovery can be accomplished without significant adverse impacts to the state's livestock industry.
Predators have a place but it isn't everywhere in the landscape. It's irrational to believe that Americans can preserve large predators, like wolves, in close proximity to humans given the high human population and impacts to the livelihoods of livestock owners.	As demonstrated in neighboring states, wolves are expected to re-establish themselves primarily in areas with adequate wild ungulate prey and few conflicts with people (i.e., primarily on public lands). Where wolves interact with livestock, the wolf plan allows for a number of non-lethal and lethal management options to address and reduce conflicts.
Ranchers should not have to bear the costs and problems of having wolves on their land.	Given the generous compensation program for livestock depredation and the lethal and non-lethal control measures of the recommended wolf plan, WDFW believes that wolf recovery can be accomplished without significant adverse costs to most livestock owners.
Livestock are our nation's food-source animals and cannot be taken for granted.	Given the generous compensation program for livestock depredation and the various non-lethal and lethal control measures of the recommended wolf plan, WDFW believes that wolf recovery can be accomplished without significant adverse impacts to the state's livestock industry.
As a rancher, I would rather go out of business than see one of my cows suffer the terror of a wolf attack.	Comment noted.
Wolf-related impacts to livestock will likely occur in Washington but should not be the primary focus in the wolf plan.	The recommended plan emphasizes both recovery and management of conflicts with wolves. Reducing conflicts is considered an important part of wolf recovery by preventing loss of public tolerance for the species.
There should be a balance between wildlife and farming/ranching. Wolves belong in Washington just as much as ranchers.	Re-establishment of a viable and self-sustaining wolf population in Washington will only occur if there is a fair balance between the conservation needs of wolves and the needs of the public. Given the generous compensation program for livestock depredation and the lethal and non-lethal control measures in the recommended wolf plan, WDFW believes that wolf recovery can be accomplished without significant adverse impacts to most livestock owners.
There has been an ongoing problem with wolves killing livestock north of Northport in Stevens County, which is not reported in the plan.	To date, WDFW is aware of only one incident of wolf depredation on livestock in Stevens County or the rest of Washington. This involved the loss of several calves near Northport in August 2007. This incident is now mentioned more prominently in Chapter 2, Section B, of the recommended plan. Any rancher in the state who believes he or she has experienced wolf depredation should report this to the U.S. Fish and Wildlife Service, WDFW, or USDA Wildlife Services.
There should be a discussion of how many wolf breeding pairs could be expected to have little or no interactions with livestock operations on both private and public lands.	This type of information is now featured more prominently in Chapter 4, Section D, and Chapter 14, Section B, of the draft wolf plan. Tables 8, 19, and 20 give projections of the number of cattle, sheep, and dog losses and their monetary value for four different population sizes of wolves in Washington. Wolf numbers between 50 and 100 animals should pose minimal threat to the vast majority

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	of the state's livestock owners. As wolf numbers become larger and more widely distributed, more producers are likely to experience financial impacts. Wolves are generally expected to settle and survive in areas of Washington with adequate ungulate prey and low human-related mortality, which will most likely be on public lands. However, projections of the specific locations that wolves will occupy and at what number cannot be made at this time. This means that estimates of wolf impacts to livestock operations on private and public lands are not possible.
A goal of the environmental community is to eliminate the viability of livestock grazing, and they are using wolf recovery at higher populations numbers as the tool to attain this goal.	The livestock industry is a vital component of the Washington economy and provides important open space and habitats that support a wide variety of wildlife, including deer and elk. Thus, WDFW has no intention of trying to reduce or eliminate this industry. As described in Chapter 4 of the wolf plan, the agency is committed to working with livestock owners to reduce and resolve conflicts with wolves through a variety of non-lethal and lethal approaches.
I think WDFW is using wolf recovery to eliminate cattle ranching in Washington just like it used spotted owl recovery to eliminate logging in the state.	The livestock industry is a vital component of the Washington economy and provides important open space and habitats that support a wide variety of wildlife, including deer and elk. Thus, WDFW has no intention of trying to reduce or eliminate this industry. As described in Chapter 4 of the wolf plan, the agency is committed to working with livestock owners to reduce and resolve conflicts with wolves through a variety of non-lethal and lethal approaches.
Washington Department of Natural Resources should be the lead agency for wolf management because of its far superior track record in working with private landowners and because of WDFW's poor record in dealing with wildlife damage issues.	WDFW is the state agency with the legal responsibility for managing wildlife throughout Washington, thus the Washington Department of Natural Resources cannot assume the lead role in wolf recovery and management.
Wolves will have a significant adverse impact on livestock.	Given the generous compensation program for livestock depredation and the various non-lethal and lethal control measures of the recommended wolf plan, WDFW believes that wolf recovery can be accomplished without significant adverse impacts to the state's livestock industry.
Ranchers exaggerate the numbers of livestock killed by wolves.	Numbers of confirmed livestock depredations by wolves in Idaho, Montana, and Wyoming are presented in Table 5 of the wolf plan. These figures represent minimum estimates of the number of livestock killed by wolves. Probable losses are not included and ranchers sometimes fail to locate carcasses, or do not do so soon enough to reliably determine the specific cause of death, thus true losses can be substantially higher than confirmed (see Chapter 4, Section A). Nevertheless, wolves still cause only a small percentage of the cattle and sheep losses resulting from all predators in Idaho, Montana, and Wyoming (see Chapter 4, Section A).
Vastly more livestock are lost annually to dogs, disease, weather, and other causes than to wolves. Wolves probably account for less than 1% of livestock losses per year in other states. The plan should provide more discussion on this topic.	This issue is discussed in Chapter 4, Section A, of the wolf plan. Wolf losses are far smaller in number than those from non-predator related causes (sickness, disease, birthing problems, and weather) in Idaho, Montana, and Wyoming, accounting for less than 0.1% of total cattle losses and 0.6% of total sheep losses. Among all predator-related sources of mortality, wolves account for 1.6% of cattle losses and 0.6% of sheep losses in these states.
The plan is thorough in describing the effects of	Comment noted.

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wolves on livestock.	
Wolves will reduce coyote numbers, which can benefit livestock operators through reduced depredation by this species.	As indicated in Chapter 6, Section A of the wolf plan, reestablishment of wolves has led to reductions in coyotes in some areas, like Yellowstone and Grand Teton National Parks, but not others. It remains unclear whether these same interactions will occur outside of protected areas, where wolf densities may be lower because of conflicts with humans. If these interactions should occur in Washington, they could potentially benefit some livestock producers, but this remains to be demonstrated. As indicated in Figure 12, coyotes are the most significant predator of livestock in neighboring states.
The plan says that wolves could reduce coyotes and cougars, which could result in fewer total depredations on livestock by predators, and therefore possibly benefit some ranchers. I disagree with this and do not believe that ranchers will benefit from the addition of any new predators.	As stated in Chapter 6, Section A, of the wolf plan, wolves could affect the abundance, distribution, and behavior of other predators in some areas. This could potentially reduce livestock depredations caused by other species in those locations, but whether this would actually occur or not and to what extent remains unknown.
I do not have fears that wolves will harm my livestock. I know that if there is adequate natural prey available, and my management is well thought out, my animals will not be in danger from wolves.	WDFW believes that greater use of proactive measures (i.e., modified husbandry practices and non-lethal deterrents) by ranchers can reduce wolf depredation on livestock.
Wolves will move to low elevations during winter as they follow wild ungulates, and therefore will come into conflict with livestock more frequently. In addition, wild ungulates will cause greater damage to agricultural crops.	Some wolf packs in Washington are expected to move to lower elevations during the late fall, winter, and spring as they follow wild ungulates. One of the state's packs (the Lookout Pack) has followed this pattern of movement. Chapter 4, Section A, of the wolf plan notes that wolf depredation on livestock in the northern U.S. occurs most frequently from March to October, when livestock spend more time under open-grazing conditions, calving is taking place, and wolf litters are being raised. This suggests that wolf-livestock conflicts from late fall to early spring will likely not be an important problem in Washington. Most livestock are kept under confined conditions during this time of year, which should enable livestock owners to enact stronger protective measures for their animals. Increased ungulate damage to agricultural crops resulting from wolf presence has not been widely reported at any time of the year in Idaho, Montana, and Wyoming, and therefore is also not expected to be an important problem in Washington.
The plan could include estimates of the number of livestock raised on public forest lands versus those occurring on private pasture land. This information would be helpful in assessing the potential impacts of control measures on wolf populations due to conflicts between wolves and livestock on public lands.	WDFW is unaware of any data on the numbers of livestock raised on private lands versus public lands, thus the information requested in this comment was not included in the plan. For example, the U.S. Forest Service was unable to provide the numbers of livestock present on its grazing allotments in Washington. Additionally, many livestock are raised on a combination of private and public lands.
Although difficult, it is possible to protect livestock from coyotes. However, as wolves become present, it will be practically impossible to protect my livestock.	Presence of wolves will require livestock operators to undertake additional management measures, including modified husbandry techniques and use of non-lethal deterrence, to protect their stock. The recommended wolf plan also provides for the use of lethal control under various circumstances, either by state or federal agents, or the livestock owner (Chapter 4, Section E). The plan's compensation program would offset some of the costs associated with wolf depredations. Similarly, the plan would make funding available to assist livestock owners in implementing proactive non-

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	lethal deterrents to reduce losses from wolves. With these various tools and programs, WDFW believes that few livestock owners in Washington will be seriously affected by wolf recovery.
Livestock producers using public lands must change their way of doing business and become more wolf-friendly. They must adapt like all other businesses and industries. For example, livestock owners should not be allowed to leave their stock unattended on public grazing allotments.	The recommended wolf plan encourages, but does not require, the use of proactive non-lethal tools by livestock producers on both public and private lands to reduce wolf depredation. However, to receive compensation, producers will be responsible for following appropriate management methods that seek to limit wolf attractants in the vicinity of their livestock, including removal of dead and sick animals and other proactive measures. Livestock owners who have already been compensated for a depredation will be required to demonstrate that they are implementing appropriate management methods to be eligible for compensation for subsequent wolf depredation.
Support the wolf management measures appearing in Table 7 of the draft plan.	Comment noted. This table number referred to in the comment corresponds to Table 9 in the recommended wolf plan.
Oppose a "one size fits all" approach when making decisions about problem wolves.	As stated in Chapter 4, Section E, of the recommended plan, wolf managers will examine wolf-livestock conflicts on a case-specific basis when attempting to resolve conflict situations. A "one size fits all" approach to management would not be used.
Support giving livestock operators a wide range of management tools for resolving wolf-livestock conflicts. This should include liberal use of lethal control methods by landowners.	WDFW believes that the recommended wolf plan does give livestock producers a wide range of management tools for dealing with wolf-livestock conflicts, but does not believe that liberal use of lethal control is necessary. Excessive lethal control would likely prevent the establishment of a viable and self-sustaining wolf population in the state.
There appears to be a conflict in the plan between the need to build public tolerance of wolves and allowing liberal lethal management of wolves.	WDFW does not believe that the recommended wolf plan advocates a policy of liberal lethal management of wolves. Some use of lethal control is allowed by government staff, enforcement agents, and livestock owners under the plan, with restrictions on killing becoming more relaxed as wolves progress toward a delisted status. However, the plan attempts to limit the need for killing wolves through various actions, including establishment of a generous compensation program, emphasizing the use of proactive deterrents, restricting different types of lethal control during endangered, threatened, and sensitive statuses, and actively monitoring and, if needed, reducing the extent of lethal removals.
On public lands, grazing allotment holders should have less influence in determining management outcomes for wolves.	The recommended wolf plan does not take land ownership (public vs. private) into consideration during the implementation of non-lethal and most lethal management measures for wolves (see Table 9). However, some partner land agencies may wish to be more restrictive in the use of some measures on their administered lands to benefit wolves.
The US Forest Service should remove livestock from grazing allotments with wolves.	This is a decision for the US Forest Service to make, but WDFW does not advocate this position. WDFW and partner agencies will try to resolve conflicts between wolves and livestock on public grazing allotments using proactive management and, when necessary, lethal control.
The plan should consider advocating predator and mortality insurance as another means of protecting livestock owners from wolf depredations.	The recommended plan does not take a position on insurance for livestock. Few livestock operators carry this type of insurance on normal livestock.
The plan should designate specific areas of the state where livestock production takes precedence over wolf recovery. Wolves would be strongly	WDFW opposes this concept, which would be unfair to some livestock owners and also overlooks the fact that not all wolf packs will cause conflicts with livestock. Packs that stay out of trouble

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controlled, if needed, in these areas.	should be allowed to reside wherever they occur. Individual wolves dispersing through areas with livestock should also not be controlled unless they cause repeated conflict. Dispersal of this type is important for establishing wolves in new locations and maintaining genetic connectivity between existing wolf subpopulations.
All forms of wolf management in Idaho, Montana, and Wyoming have greatly failed in preventing wolf-livestock conflicts. I have no faith that WDFW can do any better. Wolves eventually do whatever they want.	With the lethal removal of more than 1,500 wolves involved in livestock depredations through 2010 and expanded use of proactive deterrent measures, wolf management practices in these states have certainly led to much lower levels of depredation than would have occurred without these forms of management.
Land management agencies require livestock on grazing allotments to be dispersed to reduce ecological damage, whereas WDFW recommends concentrating livestock to reduce wolf depredation. These guidelines are in conflict.	This comment is incorrect about land management agencies always requiring that livestock owners keep their stock dispersed on grazing allotments. In fact, land management agencies require allotment holders to follow different management procedures to make grazing compatible with different natural resources present on an allotment. This means that livestock should be dispersed in some situations, but concentrated in others. Therefore, on allotments with wolves, land management agencies would very likely talk to allotment holders about appropriate methods for avoiding wolf-livestock conflicts and require the holders to follow these.
Support lethal control of wolves for resolving livestock depredation.	Comment noted.
Support the provisions for lethal control by livestock owners proposed in the draft plan.	Comment noted.
Support using the same measures to lethally remove problem wolves on both public and private lands.	As described in Chapter 4, Section E, of the recommended wolf plan, lethal control to remove problem wolves involved in repeated wolf-livestock conflicts is allowed on both private and public lands by state and federal agents during all listed statuses. In situations where WDFW issues livestock owners a permit to lethally control wolves, this would mostly be allowed only on private land (the only exception is for resolving repeated depredations during sensitive status, which would be allowed on both private and public lands). WDFW believes restricting lethal take by livestock owners to primarily private land will assist with recovery of wolves on public lands during the state listed period.
Support lethal control only on private lands once wolves reach sensitive status.	WDFW will use non-lethal control methods whenever possible during endangered and threatened status, but believes that lethal control is necessary on both public and private lands under some circumstances to address wolf-livestock conflicts by removing problem animals that jeopardize public tolerance for overall wolf recovery.
Support "caught in the act" provision by livestock owners regardless of wolf listing status.	WDFW believes that use of the "caught in the act" provision should be restricted to users with a permit while wolves are state listed to avoid causing excessive mortality to wolves during the crucial early stages of reestablishment, which could possibly prevent recovery of the population. The recommended plan now allows this tool (with a permit) during all listed statuses.
Lethal control of wolves by livestock owners, including the "caught in the act" provision, should not be allowed during the endangered and threatened phases. Given the history of poaching in the state and the potential for misuse, this	Under the recommended wolf plan, state and federal wildlife agents would perform most lethal control of wolves during state endangered and threatened statuses. However, under limited circumstances, WDFW could consider issuing permits to livestock owners to lethally remove wolves during all state listed statuses.

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provision could seriously hamper recovery efforts during the critical early phases of recovery. For example, 2 wolves are already known to have been killed illegally in the state in 2008. Any removal of wolves during these legal phases should be done by professional staff from WDFW.	This could be done under the provisions for repeated wolf-conflict depredation and "in the act" of attacking livestock. Allowing permitted lethal control by livestock owners gives WDFW some additional flexibility in dealing with problem situations, but is not expected to be widely implemented. Allowing permitted livestock owners to immediately address their own wolf-livestock problems can prevent a further loss of tolerance for wolves by giving the owner an active role in protecting his/her stock. Additionally, it can reduce agency workload and costs and is more likely to result in the removal of only the offending animals.
The "caught in the act" provision should not be allowed on public land, where abuse could lead to higher illegal kill on these lands.	The "caught in the act" provision has been changed in the recommended wolf plan. It is now allowed only by livestock owners with a permit from WDFW on private land owned or leased by the livestock owner. Permits for this activity can be issued during any state listed status, but would be issued only after WDFW has confirmed that wolves previously wounded or killed livestock in the area and efforts to resolve the problem were deemed ineffective. Efforts to resolve the problem may either be preventative measures (i.e., documented non-lethal actions implemented specifically to minimize or avoid wolf-livestock conflict before the initial depredation), or non-lethal control efforts (i.e., non-lethal actions implemented specifically to minimize or avoid wolf-livestock conflict after the initial depredation). The permit holder is required to continue implementing non-lethal actions to minimize or avoid wolf-livestock conflicts during the life of the permit, with issuance of future permits being contingent upon this effort. "In the area" means the area known to be used by the depredating wolves. In some cases, the area may be specifically delineated by data (i.e., radio telemetry). WDFW will provide training to permit holders to ensure the appropriate use and prevent abuse of this provision.
Support lethal control of wolves on private and public lands, regardless of listing status, when wolves are attacking, chasing, or harassing livestock and domestic/herding dogs.	WDFW believes that allowing livestock owners to kill wolves chasing or harassing livestock (including domestic/herding dogs) would result in excessive mortality to wolves that would prevent or delay recovery.
Support lethal control of wolves by government agencies only.	Under the lethal control provisions of the recommended wolf plan, WDFW believes that most lethal control of wolves will be conducted by government staff or enforcement agents while wolves are state listed. However, under limited circumstances, WDFW could consider issuing permits to livestock owners to lethally remove wolves. This could be done under the provisions for repeated wolf-conflict depredation and "in the act" of attacking livestock. Allowing permitted lethal control by livestock owners gives WDFW some additional flexibility in dealing with problem situations, but is not expected to be widely implemented. Allowing permitted livestock owners to immediately address their own wolf-livestock problems can prevent a further loss of tolerance for wolves by giving the owner an active role in protecting his/her stock. Additionally, it can reduce agency workload and costs and is more likely to result in the removal of only the offending animals.
Support lethal control of wolves primarily by government agencies. As a second option, I support allowing animal control businesses or hunters with Master Hunter training to be issued	Options for allowing animal control businesses or hunters with Master Hunter training to conduct control efforts were not considered during preparation of the plan. WDFW believes this would be controversial, could be more costly to the government or

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species permits for conducting lethal control. Issuing special permits to private landowners and holders of grazing allotments should be a last resort.	livestock owners, and could result in liability issues, longer response times, and difficulty in verification of lethal control criteria. Furthermore, many livestock owners may prefer to conduct lethal wolf control themselves on their own land.
Public hunting of wolves needs to be included among the methods of problem animal control.	Public hunting of wolves will not be considered until after wolves are state delisted. As described in Chapter 3, Section C, of the recommended wolf plan, the issue of public hunting of wolves in Washington will be determined through a separate public review process after delisting takes place. Hunting of wolves could produce several benefits, including removal of problem animals, but is inappropriate while the species is still recovering.
Wolves should be treated similarly to coyotes with hunting allowed year round and no bag limit. Year-round hunting will also keep packs smaller.	This type of management would result in excessive mortality to wolves and would prevent recovery of the species in Washington. As described in the recommended wolf plan, WDFW's intention is to develop a viable and self-sustaining wolf population in the state, thereby allowing the species to be delisted.
Support liberal hunting opportunities for wolves as soon as their numbers begin to increase.	This type of management would result in excessive mortality to wolves and would prevent recovery of the species in Washington. As described in the recommended wolf plan, WDFW's intention is to develop a viable and self-sustaining wolf population in the state, thereby allowing the species to be delisted.
Oppose lethal take by livestock owners while wolves are state listed.	Based on experience from Idaho, Montana, and Wyoming, most wolf control in Washington would continue to be conducted by government staff or enforcement agents during the later stages of recovery (i.e., sensitive status). However, the wolf plan was changed to allow, under limited circumstances, WDFW to consider issuing permits to livestock owners to lethally remove wolves during all state listed statuses. This could be done under the provisions for repeated wolf-conflict depredation and "in the act" of attacking livestock. Allowing permitted lethal control by livestock owners gives WDFW some additional flexibility in dealing with problem situations, but is not expected to be widely implemented. Allowing permitted livestock owners to immediately address their own wolf-livestock problems can prevent a further loss of tolerance for wolves by giving the owner an active role in protecting his/her stock. Additionally, it can reduce agency workload and costs and is more likely to result in the removal of only the offending animals.
Oppose lethal control of wolves on public lands to manage depredation of livestock.	WDFW will use non-lethal control methods whenever possible, but believes that lethal control is necessary on both public and private lands under some circumstances to address wolf-livestock conflicts by removing problem animals that jeopardize public tolerance for overall wolf recovery. However, some partner land agencies may wish to be more restrictive in the use of some lethal measures on their administered lands to aid in wolf recovery.
Lethal control of individual problem wolves should only be used as a last resort.	WDFW will use non-lethal control methods whenever possible, but believes that lethal control is necessary on both public and private lands under some circumstances to address wolf-livestock conflicts to remove problem animals that jeopardize public tolerance for overall wolf recovery.
Oppose the "caught in the act" provision and believe it should be removed from the plan.	The "caught in the act" provision has been changed in the recommended wolf plan. It is now allowed only by livestock owners with a permit from WDFW on private land owned or leased by the livestock owner. Permits for this activity can be

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	issued during any state listed status, but would be issued only after WDFW has confirmed that wolves previously wounded or killed livestock in the area and efforts to resolve the problem were deemed ineffective. Efforts to resolve the problem may either be preventative measures (i.e., documented non-lethal actions implemented specifically to minimize or avoid wolf-livestock conflict before the initial depredation), or non-lethal control efforts (i.e., non-lethal actions implemented specifically to minimize or avoid wolf-livestock conflict after the initial depredation). The permit holder is required to continue implementing non-lethal actions to minimize or avoid wolf-livestock conflicts during the life of the permit, with issuance of future permits being contingent upon this effort. "In the area" means the area known to be used by the depredating wolves. In some cases, the area may be specifically delineated by data (i.e., radio telemetry). WDFW will provide training to permit holders to ensure the appropriate use and prevent abuse of this provision.
Oppose any lethal take of wolves while they are state listed.	WDFW will use non-lethal control methods whenever possible, but believes that lethal control is necessary on both public and private lands under some circumstances to address wolf-livestock conflicts by removing problem animals that jeopardize public tolerance for overall wolf recovery.
Oppose lethal control of wolves for any reason other than protection of human safety.	WDFW will use non-lethal control methods whenever possible, but believes that lethal control is necessary on both public and private lands under some circumstances to address wolf-livestock conflicts by removing problem animals that jeopardize public tolerance for overall wolf recovery.
Oppose any form of lethal control of wolves.	WDFW will use non-lethal control methods whenever possible, but believes that lethal control is necessary on both public and private lands under some circumstances to address wolf-livestock conflicts by removing problem animals that jeopardize public tolerance for overall wolf recovery.
The plan states that lethal wolf management "builds public tolerance for wolves" without offering any supportable basis for this conclusion. Compensation may indeed result in greater public tolerance of wolves, but killing wolves may simply foster an inaccurate view of wolves as nuisances. WDFW does not explain why non-lethal harassment or limiting lethal control to state agents is somehow insufficient to build tolerance.	WDFW will use non-lethal control methods whenever possible to resolve wolf-livestock conflicts. However, experience shows that non-lethal measures are usually not permanent solutions by themselves. Therefore, WDFW believes that lethal control is necessary on both public and private lands under some circumstances to address wolf-livestock conflicts by removing problem animals that jeopardize public tolerance for overall wolf recovery. Allowing permitted lethal control by livestock owners gives WDFW some additional flexibility in dealing with problem situations, but is not expected to be widely implemented. Allowing permitted livestock owners to immediately address their own wolf-livestock problems can prevent a further loss of tolerance for wolves by giving the owner an active role in protecting his/her stock. Additionally, it can reduce agency workload and costs and is more likely to result in the removal of only the offending animals.
Because wolves in the eastern third of Washington are likely to be relisted through federal court action, WDFW should prohibit all killing and harassment of depredating wolves in this part of the state.	This comment no longer applies because wolves were federally delisted in the eastern one-third of Washington through congressional action in May 2011.
Lethal control of wolves under this plan violates the federal Endangered Species Act.	The recommended plan has been revised to state more clearly that the U.S. Fish and Wildlife Service has lead authority over decisions

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	involving the lethal removal of wolves in the western two-thirds of Washington, where wolves remain federally listed as endangered. In these areas, the U.S. Fish and Wildlife Service would likely consult with and collaborate with WDFW on management decisions and actions pertaining to wolf conflicts. In the eastern one-third of Washington, where wolves are federally delisted, WDFW has lead management authority over wolves and would make decisions to use lethal control. WDFW would consult with other appropriate land management agencies before conducting lethal control on their lands.
No lethal control should be allowed until the wolf conservation and management plan has been approved.	WDFW believes that lethal control is necessary under some circumstances to address wolf-livestock conflicts by removing problem animals that jeopardize public tolerance for overall wolf recovery. However, WDFW would first use non-lethal control methods to address a problem situation. The Washington Fish and Wildlife Commission is expected to make a final decision on the recommended wolf plan by December 2011. With the small number of wolves currently present in Washington, it is unlikely that any serious conflicts involving wolves will occur before this date.
The "caught in the act" provision is ambiguous.	The "caught in the act" provision has been changed in the recommended wolf plan. It is now allowed only by livestock owners with a permit from WDFW on private land owned or leased by the livestock owner. Permits for this activity can be issued during any state listed status, but would be issued only after WDFW has confirmed that wolves previously wounded or killed livestock in the area and efforts to resolve the problem were deemed ineffective. Efforts to resolve the problem may either be preventative measures (i.e., documented non-lethal actions implemented specifically to minimize or avoid wolf-livestock conflict before the initial depredation), or non-lethal control efforts (i.e., non-lethal actions implemented specifically to minimize or avoid wolf-livestock conflict after the initial depredation). The permit holder is required to continue implementing non-lethal actions to minimize or avoid wolf-livestock conflicts during the life of the permit, with issuance of future permits being contingent upon this effort. "In the area" means the area known to be used by the depredating wolves. In some cases, the area may be specifically delineated by data (i.e., radio telemetry). WDFW will provide training to permit holders to ensure the appropriate use of this provision.
WDFW needs to develop clear criteria on when lethal control will be allowed for livestock-wolf conflicts. For example, the plan needs to provide additional detail on how incremental control measures will be implemented.	The recommended plan states that lethal control may be used in situations where livestock have clearly been killed by wolves, non-lethal methods have been tried but failed to resolve the conflict, depredations are likely to continue, and there is no evidence of intentional feeding or unnatural attraction of wolves by the livestock owner. Situations will have to be evaluated on a case-specific basis, with management decisions based on pack history and size, pattern of depredations, number of livestock killed, age and class of the livestock, availability of natural prey in the area, state listed status of wolves, extent of proactive management measures being used on the property, and other considerations. The plan does not provide detail on how incremental control measures would be implemented because of the many factors

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	(listed above) that must be considered in each incident.
The plan should give more detail on who will make decisions about lethal control and when and how those decisions will occur.	The recommended plan has been revised to state more clearly that the U.S. Fish and Wildlife Service has lead authority over decisions involving the lethal removal of wolves in the western two-thirds of Washington, where wolves remain federally listed as endangered. In these areas, the U.S. Fish and Wildlife Service would likely consult with and collaborate with WDFW on management decisions and actions pertaining to wolf conflicts. In the eastern one-third of Washington, where wolves are federally delisted, WDFW has lead management authority over wolves and would make decisions to use lethal control. WDFW would consult with other appropriate land management agencies before conducting lethal control on their lands. Under these circumstances, state and district wolf managers for WDFW and, where applicable, wildlife managers from the appropriate partner agency would be involved in decisions about lethal control. The process for deciding when and how lethal control will be implemented is described in Chapter 4, Section E, of the recommended plan.
If WDFW chooses to allow lethal management, it should set specific limitations on the total numbers of wolves that may be killed annually due to wolf conflicts. Further, if lethal management is allowed, WDFW should prohibit the killing of any member of a breeding pair.	Wolf-livestock conflicts cannot be ignored by wolf managers, especially if they jeopardize overall wolf recovery. WDFW will use non-lethal control methods to resolve conflicts whenever possible, but believes that lethal control is necessary on both public and private lands under some circumstances to address wolf-livestock conflicts by removing problem animals that jeopardize public tolerance for overall wolf recovery. Lethal removal of members of the breeding pair will be avoided if possible, but if they are confirmed to be involved in depredations, their removal may be necessary.
The plan should give more detail on how WDFW will investigate cases where lethal force was used.	Enforcement agents or other staff from WDFW, the U.S. Fish and Wildlife Service, or USDA Wildlife Services would follow up on all incidents of wolves being killed by livestock owners with WDFW-issued permits to ensure compliance with permit requirements. Where wolves were killed in non-permitted situations, these same personnel would investigate the cases to determine their circumstances and compliance with the law.
WDFW should not use USDA Wildlife Services for lethal control because they do a poor job of removing the individual wolves responsible for depredations, and frequently remove non-offending wolves. The track record of Wildlife Service's dealings with wolf control in other states supports this concern. Wildlife Services also seems to enjoy killing wolves.	Comment noted.
If wolf numbers must be reduced, WDFW should identify problem packs and eliminate these.	This management scenario would not exist while wolves were state listed (when WDFW is trying to increase numbers) and is therefore outside the scope of the recommended wolf plan. WDFW intends to address conflicts in a timely manner using either non-lethal or lethal methods so that problem wolves and packs do not build up and jeopardize public support for overall wolf recovery.
Oppose any consideration of a "3 strikes rule" for dealing with problem wolves, as in New Mexico and Arizona.	A "3 strikes rule" is not being considered for wolf management in Washington.

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Wolf control can disrupt natural wolf pack dynamics that affect traditional breeding patterns and have negative consequences on pack behavior and genetics.	These problems are noted in the recommended plan, based on the study of Brainerd et al. (2008).
The plan should emphasize non-lethal deterrents for management, such as carcass burial, use of guard animals and predator fencing. During the early stages of wolf recovery, non-lethal methods should be emphasized instead of lethal take.	The recommended wolf plan encourages the use of non-lethal deterrents to reduce wolf-livestock conflicts, especially during endangered and threatened statuses. As stated in Chapter 12, Task 4.1.1, WDFW will emphasize non-lethal techniques early in recovery and will transition to greater use of lethal control if necessary as wolves approach delisting status. Under Task 4.3.4, WDFW and partners will seek funding to assist livestock producers with implementing non-lethal deterrents.
Non-lethal methods are not effective in preventing wolf depredation of livestock, plus these methods are impractical and costly, especially to large-scale cattle operations.	Proactive measures do have limitations, but when used in combination, they often temporarily succeed in reducing the vulnerability of livestock to wolf depredation (see Chapter 4, Section B). However, they are usually not permanent solutions in themselves and can be costly to implement. To help offset some costs, WDFW and partners will seek funding to assist livestock producers with implementing non-lethal deterrents (see Chapter 12, Task 4.3.4).
Some suggested non-lethal measures are impractical. For example, the suggestion for delaying spring calf turn-out until the calves are at least 200 pounds is a foolish requirement. A wolf will kill a calf weighing 500 lbs just as fast and easy as it will kill a 150-lb calf. Use of portable fencing and fladry as night pens under open grazing conditions is not feasible for cattle operations. In regards to radio-activated light and noise scare systems to frighten wolves away from confined livestock, will every wolf have a radio collar?	Delaying spring turnout may be practical for some producers, but not for others. As stated in Chapter 4, Sections A and B, smaller calves have been shown to be the most vulnerable to wolves in neighboring states. This comment is correct that fladry and portable fencing are generally not suitable for large cattle operations. Radio-activated light and noise scare systems work well when several members of a pack wear radio collars, especially when these are individuals that actively participate in hunting for the pack.
Some suggested non-lethal measures are costly, for example, portable fencing, range riders, and radio collars to signal radio-activated guard boxes. WDFW should pay for the cost of proactive techniques to help ranchers adopt these measures.	Many proactive non-lethal deterrents will impose additional costs on the livestock producers using them (see Chapter 14, Section B). Under Chapter 12, Task 4.3.4, of the recommended plan, WDFW and partners will seek funding to assist producers in implementing these types of deterrents.
Non-lethal harassment of wolves during the act of attacking livestock should be allowed by anyone at any time.	Under Chapter 4, Section E, of the recommended plan, non-injurious harassment of wolves is allowed by livestock owners whenever wolves are near livestock on private and public lands during all listed phases. The recommended plan also allows livestock owners and grazing allotment holders (or their designated agents) to use non-lethal injurious harassment on their own land or their legally designated allotment, respectively, during all listed phases, but requires they have a permit and have received training from WDFW for this type of harassment.
Support the wolf plan's proposal to allow non-lethal injurious harassment with a permit and training from WDFW during all listing statuses.	Comment noted.
Non-lethal harassment using rubber bullets and other methods is unlikely to be effective.	Use of rubber bullets and other non-lethal munitions to harass wolves has not been well evaluated to determine effectiveness. Relatively few producers use rubber bullets and there have been relatively few cases of wolves being hit by rubber bullets. Bangs et al. (2006) reported that some wolves that previously stood and watched people would immediately run from people after having

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	been shot at by non-lethal munitions.
Oppose use of non-lethal injurious harassment on public land.	Non-lethal injurious harassment is intended to make wolves afraid of humans and livestock, thus it has potential benefits to wolf conservation and management by reducing depredation on both private and public lands. To date, there have been relatively few cases of wolves being hit by rubber bullets or other non-lethal munitions in neighboring states and very few if any cases of animals being seriously injured by them.
Oppose the requirement that livestock operators must receive training before they can harass wolves.	Under the recommended wolf plan, training is only required for the use of non-lethal projectiles (i.e., rubber bullets and beanbags). Training is important because these munitions can cause serious injury or kill wolves if used improperly.
Aspects of the plan's proposals for non-lethal harassment violate the federal Endangered Species Act.	The recommended plan has been revised to state more clearly that the U.S. Fish and Wildlife Service has lead authority over decisions involving the non-lethal harassment of wolves in the western two-thirds of Washington, where wolves remain federally listed as endangered. In these areas, the U.S. Fish and Wildlife Service would likely consult with and collaborate with WDFW on management decisions and actions pertaining to wolf conflicts. However, under a federal ESA Section 6 Cooperative Agreement with the USFWS, WDFW is allowed to use non-lethal control measures on any federally listed species in the state. In the eastern one-third of Washington, where wolves are federally delisted, WDFW has lead management authority over wolves and would make decisions to use non-lethal control. WDFW would consult with other appropriate land management agencies before authorizing non-lethal control on their lands.
Oppose moving wolves that have been involved in depredation as a non-lethal solution. This will only transfer the problem to another location. They should be euthanized.	Studies from the northern Rocky Mountain states concluded that moving wolves involved in depredation was most effective during the early stages of wolf recovery, and that use of other non-lethal techniques is probably better for preventing or resolving conflicts when larger wolf populations exist (see Chapter 4, Sections B and E). These studies showed that 18% of relocated wolves resumed depredation of livestock near their release site. Because of its potential drawbacks, moving wolves involved in depredation will be considered on a case-specific basis under the recommended plan, and would most likely be done only during the endangered and threatened phases.
Oppose the wolf plan's recommendation for strengthening the genetic diversity of the state's wolf population by releasing surplus or offending wolves from unrelated packs in different parts of the state over time.	The recommended wolf plan does <u>not</u> currently recommend that problem wolves be moved for this purpose. Moving single wolves to strengthen the genetic diversity of the state's wolf population is a potentially valuable conservation tool (see Chapter 12, Task 1.5), but may not be necessary. Although the details of using this technique in Washington have not yet been established, it likely wouldn't be used until the later stages of recovery or following delisting after genetic testing is conducted and confirms problems with lack of genetic diversity. Surplus wolves could be used for this purpose, but it is unlikely that problem animals would be considered.
Support moving problem wolves to more remote areas of the state as an alternative to lethal control.	Studies from the northern Rocky Mountain states concluded that moving wolves involved in depredation was most effective during the early stages of wolf recovery, and that use of other non-lethal techniques is probably better for preventing or resolving conflicts

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	when larger wolf populations exist (see Chapter 4, Section E). These studies showed that 18% of relocated wolves resumed depredation of livestock near their release site. Because of its potential drawbacks, moving wolves involved in depredation will be considered on a case-specific basis under the recommended wolf plan, and would most likely be done only during the endangered and threatened phases.
Support moving problem wolves to the Olympic Peninsula where the likelihood of repeat offenses is likely low due to the presence of reduced livestock numbers.	As stated in the recommended plan (Chapter 4, Section E), problem wolves generally would be moved only within the same recovery region. The intention of moving problem wolves is to resolve wolf-livestock conflicts and to avoid killing wolves, not to reestablish new populations in unoccupied recovery regions, which requires substantial advance planning and public review.
Maybe sterilization should be considered as another non-lethal tool to control wolf population size as well as livestock depredation.	This tool could perhaps be used under certain circumstances in the future if it is ever shown to be effective with wolves, but WDFW would not consider using it in Washington before the species is delisted. WDFW is aware of sterilization being used in only two studies, neither of which has been published. The technique apparently worked fairly well but was costly in Alaska, whereas in the Yukon, it generally proved unsuccessful. Sterilization is likely to be controversial with the public.
Commend WDFW for proposing separate livestock depredation compensation programs for documented and unknown losses.	Comment noted.
There is a distressing lack of detail in the wolf plan on how the verification process for livestock depredation will occur.	Details on the verification process appear in Chapter 4, Section G, and Chapter 12, Task 4.2, of the recommended wolf plan.
The process for compensating ranchers for their livestock losses due to wolf kills should be as easy as possible with minimal "red tape". For example, the measures for verification of losses are too cumbersome and bureaucratic.	Details of the compensation program have not yet been established, but two important elements are to make the program simple to implement and that it must offer timely processing and payment of claims. Regarding verification of livestock losses to wolves, the process used in the recommended wolf plan is necessary so that the cause of a death/injury can be correctly attributed to the right predator or other cause. This will reduce the likelihood of erroneous or fraudulent claims which, if substantial, would jeopardize the entire compensation program.
WDFW must respond to a reported wolf-livestock interaction within 3-6 hours day or night. Time is of the essence.	A rapid response is critical to determining the cause of livestock mortalities, whether it be from wolves, other predators, or other causes. The plan (Chapter 12, Task 4.2.3) indicates that on-site inspections will be made within 24 hours after the incident is reported. This response time should be sufficient for making correct determinations.
WDFW should respond to wolf conflicts on private lands within a reasonable amount of time, otherwise private landowners should have the right to protect their livestock on their own.	A rapid response is critical to determining the cause of livestock mortalities, whether it be from wolves, other predators, or other causes. The plan (Chapter 12, Task 4.2.3) indicates that on-site inspections will be made within 24 hours after the incident is reported. This response time should be sufficient for making correct determinations.
Concerned that livestock owners cannot always prove that a wolf killed their livestock and that they will therefore not be adequately compensated. For example, depredated livestock carcasses may be found too late to verify that the animals were indeed killed by wolves.	This is a legitimate concern for producers grazing livestock on large land parcels or in remote locations, and is one of the limitations of most compensation programs. Based on a recommendation by the Wolf Working Group, the recommended plan would compensate livestock operators at a 2:1 ratio for carcasses found on grazing sites of 100 or more acres (and where

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	the agency determines it would be difficult to survey the entire acreage or that not all animals are accounted for) as a method to reimburse them for suspected wolf kills that go undetected. The recommended plan also compensates ranchers, albeit at a reduced rate, for "probable" depredations wherein wolves likely caused the depredation but clear confirmation was not obtained.
Measureable criteria for establishing the value of livestock, including consideration of reproductive status, age, readiness for market, etc. should be incorporated into the plan for determining compensation.	Under the recommended plan, compensation will be based on the current market value of an animal, which is defined as its value at the time it would have normally gone to market. Current market value should reflect many factors such as age, reproductive status, and readiness for market.
The plan needs to define "full value" compensation and whether this includes value for breeding, pregnancies, animal losses covered by insurance, registered animals costing thousands of dollars, sentimental value, etc.	Current market value was already defined in Chapter 4, Section G, of the recommended plan and reflects factors such as age, reproductive status, and readiness for market. A definition was added to the glossary of the plan. Under the compensation program in the recommended plan, current market value does not take into consideration the value of an animal for breeding, future pregnancies, animal losses covered by insurance, or sentimental value of the animal to the owner. However, the program would pay full compensation for registered animals with high values providing the owner has verification proving the value of the animal.
The proposed compensation package should cover wolf-related losses from stress and weight loss on livestock and lost time for ranchers. Compensation should also cover the non-tangible value of losses. For example, ranchers put considerable personal effort, time, and emotion into raising their livestock and improving their herds.	Various physiological impacts in livestock related to the presence of wolves, such as weight loss, reduced birth rates, and greater miscarriages, may occur, but have not been verified under field conditions. Two recent studies (Laporte et al. 2010, Muhly et al. 2010b) have shown that cattle increase their movements and avoid grazing sites of high quality in response to wolf presence, but did not confirm that this resulted in the problems listed above. These same problems can also result from other causes, such as poor forage and weather conditions making it difficult to measure the true impacts of wolves on livestock. Because of these uncertainties, the compensation package in the recommended wolf plan does not cover these concerns. Non-tangible losses certainly occur, but are also not included in the compensation package because it is impossible to assign a monetary value to them.
Providing compensation for probable losses of livestock invites the possibility of fraud. What standards exist for determining "probable" depredation by wolves.	Determinations of probable wolf depredations will be made by trained personnel from WDFW or USDA Wildlife Services, and therefore would not be susceptible to fraudulent claims. Criteria for classifying probable wolf depredations appear in Chapter 4, Section G, of the recommended plan.
Concerned about the potential for abuse of the compensation program. To prevent abuses, a fine of $10,000, jail time, and rewards for those turning in the abusers should be enacted.	Abuse of compensation programs is an important concern and can jeopardize the programs for all livestock owners. Penalties for fraudulent claims could be incorporated into the compensation program, which will be developed under Chapter 12, Task 4.3, of the recommended wolf plan.
Lack confidence in WDFW's ability to administer the compensation program because of its poor track record in handling issues regarding elk and other wildlife damage to agriculture.	Comment noted. WDFW (with help from the Legislature) has been working hard to improve its handling of and its responses to wildlife damage issues. This has included revisions to statutes and regulations pertaining to wildlife damage, and improved processing for submitted claims.
The plan needs to clarify whether compensation will be paid for guarding/herding dogs injured or killed by wolves.	As stated in Chapter 4, Section G, of the recommended wolf plan, compensation will be paid for guarding/herding animals killed by wolves.

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The plan should provide livestock owners with a fair and effective compensation package for losses of livestock as an alternative to allowing liberal use of lethal control of wolves.	Compensation and judicious use of lethal control are both considered necessary in addressing wolf-livestock conflicts, preventing further loss of public tolerance for wolves, and ultimately in achieving wolf recovery. Non-lethal measures for resolving wolf-livestock conflicts will be considered first, but in serious conflict situations where non-lethal measures have failed to stop depredations, lethal control will be performed if necessary to resolve the conflicts.
Compensation should be set at a "10 to 1" ratio.	The plan's compensation package, which was developed by the Wolf Working Group, is one of the most generous programs in the nation. Payment ratios higher than 2:1 are not justifiable unless new research confirms that higher ratios are appropriate. Furthermore, payment ratios exceeding 2:1 will likely exhaust revenues more quickly, result in stronger public opposition to the program, and could result in larger numbers of fraudulent claims.
The compensation package proposed in the plan is not "generous," as claimed in the draft environmental impact analysis. Livestock owners should receive greater compensation for losses than what is currently proposed in the plan.	The compensation package, which was developed by the Wolf Working Group, is one of the most generous in the nation. Most other compensation programs in the country pay 1:1 ratios (see Chapter 4, Section C). Payment ratios higher than 2:1 are not justifiable unless new research confirms that higher ratios are indeed appropriate. Furthermore, payment ratios exceeding 2:1 will likely exhaust revenues more quickly, result in stronger public opposition to the program, and could result in larger numbers of fraudulent claims.
Support the "2 to 1" compensation package proposed in the plan.	Comment noted.
Support the "2 to 1" compensation, but this option should be provided for all losses of livestock and herding dogs, regardless of property size. Owners of livestock that are constantly harassed should also receive compensation.	Compensation at the higher "2 to 1" rate is not necessary on grazing parcels of less than 100 acres, where producers should be able to find all livestock carcasses. WDFW adopted the Wolf Working Group's recommendation that livestock operators be paid the higher rate for carcasses found on larger acreages as a method to reimburse operators for suspected wolf kills that go undetected. Harassment of livestock by wolves can potentially result in weight loss, reduced birth rates, and greater miscarriages, but these have not been verified under field conditions. Two recent studies (Laporte et al. 2010, Muhly et al. 2010b) have shown that cattle increase their movements and avoid grazing sites of high quality in response to wolf presence, but did not confirm that this resulted in the problems listed above. These problems can also result from other causes, such as poor forage and weather conditions, making it difficult to measure the true impacts of wolves on livestock. Because of these uncertainties, the compensation package does not address harassment.
The "2 to 1" concept should be used to compensate livestock owners on small plots (i.e., less than 100 acres), who likely will suffer a greater financial impact from a depredation than wealthier livestock owners with access to larger grazing areas.	Livestock owners on parcels of less than 100 acres would still receive full compensation per animal lost to wolves under the recommended wolf plan. The "2 to 1" compensation rate is not necessary on these smaller parcels because producers should be able to find all livestock carcasses. WDFW adopted the Wolf Working Group's recommendation that livestock operators be paid at the higher rate for carcasses found on larger acreages as a method to reimburse operators for suspected wolf kills that go undetected.
Support the proposed "2 to 1" compensation package on private lands, but believe that	WDFW adopted the Wolf Working Group's recommendation for a compensation package, which treats producers using grazing

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compensation on public lands should only be paid at fair market value.	parcels of 100 or more acres (and where the agency determines it would be difficult to survey the entire acreage or that not all animals are accounted for) equally on both private and public lands. This is intended to provide fair compensation to producers on both types of land ownership and will hopefully prevent further loss of tolerance for wolves among those using public lands.
The 100-acre requirement for "2 to 1" compensation is too small. Livestock owners should be able to detect all carcasses on lands somewhat larger than this.	WDFW adopted the Wolf Working Group's recommendation that livestock operators be paid at a 2:1 ratio for carcasses found on grazing parcels of 100 or more acres (and where the agency determines it would be difficult to survey the entire acreage or that not all animals are accounted for) as a method to reimburse operators for suspected wolf kills that go undetected. The Working Group discussed the parcel size limit at which the higher compensation rate should be paid and decided that 100 or more acres was an appropriate size.
Compensation should be at least 1.5 times the value of any animal killed.	WDFW adopted the Wolf Working Group's recommendation that livestock operators be paid at a 2:1 ratio for carcasses found on grazing parcels of 100 or more acres (and where the agency determines it would be difficult to survey the entire acreage or that not all animals are accounted for) as a method to reimburse operators for suspected wolf kills that go undetected.
The compensation program should not pay more than the full market value for livestock depredations for the following reasons: 1) funding will undoubtedly be limited yet the proposed program will be the most generous of any existing in the U.S., 2) Washington does not have the vast rangelands, such as those found in Montana, 3) high compensation rates will reduce the incentive for livestock owners to adopt reasonable non-lethal deterrent methods, and 4) WDFW could find itself paying substantially more for compensation than if it had encouraged greater use of non-lethal methods.	Some of these points represent valid concerns about the compensation program laid out in the recommended wolf plan. Points 3 and 4 may be invalid because the recommended plan requires livestock producers to implement appropriate management methods (i.e., proactive deterrent measures) to be eligible for compensation payments.
For confirmed and probable depredations, support compensation for full value for each livestock animal killed on parcel sizes >5 acres.	The compensation ratios and parcel size requirements in the recommended wolf plan were developed based on consensus among members of the Wolf Working Group.
Livestock owners should not be compensated for wolf depredations that occur on public land.	WDFW adopted the Wolf Working Group's recommendation for a compensation package, which compensates producers for wolf-related losses on both private and public lands. In this regard, the program matched the former Defenders of Wildlife compensation program in other western states, which also reimbursed for wolf depredations on both private and public lands (see Chapter 4, Section C). This approach provides equal treatment for producers and will hopefully prevent further loss of tolerance for wolves among the livestock community.
Livestock owners should not be compensated for unknown losses.	WDFW adopted the Wolf Working Group's recommendation for a compensation package, which includes development of a separate program for reimbursement of unknown losses (see Chapter 4, Section G). Full program details must still be worked out (see Chapter 12, Task 4.3.3). WDFW acknowledges that compensation for unknown losses is controversial and complex to implement, but believes that the provision is potentially important to address the reality of wolf depredations that go unverified.

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Livestock owners should not be compensated for probable livestock losses associated with wolf depredation.	The compensation package in the recommended wolf plan follows the former Defenders of Wildlife compensation program used in other western states by reimbursing for probable wolf-related livestock losses. A number of factors are considered by investigators in determining whether wolves likely caused the depredation (see Chapter 4, Section G). These include (1) recent confirmed predation by wolves in the same area or nearby areas, and (2) evidence (e.g., telemetry monitoring data, sightings, howling, fresh tracks, etc.) suggesting that wolves may have been in the area when the depredation occurred.
Oppose all payment of compensation. Livestock operators should not be subsidized with taxpayer money.	Compensation programs are intended to prevent further loss of tolerance for wolves among the livestock industry and other segments of the general public. To date, most compensation for wolf depredation in the West has been paid by a private organization (Defenders of Wildlife). However, this program has ended. Continued payment of compensation in Washington in the future may require funding from government sources, although private sources will also be sought (Chapter 4, Section G).
Livestock operators need to accept some financial loss from predators as a part of their operating expenses. Furthermore, ranching has long been subsidized by taxpayers.	Compensation programs are intended to prevent further loss of tolerance for wolves among the livestock industry and other segments of the general public, which could jeopardize overall wolf recovery. Compensation programs do not cover all of the expenses that some livestock operators will experience with the return of wolves. As described in Chapter 14, Section B, other expenses may be incurred, such as the need for additional labor and ranch supplies, and those associated with changes in grazing methods and possible physiological impacts to livestock.
Ranchers should be required to use proactive methods to minimize wolf-livestock conflicts before being eligible for compensation.	The recommended plan does require ranchers to implement appropriate management methods (i.e., proactive deterrent measures) to be eligible for compensation payments (see Chapter 4, Section G).
Livestock operators must be eligible for compensation regardless of what they have done to take proactive measures.	The recommended plan does require ranchers to implement appropriate management methods (i.e., proactive deterrent measures) to be eligible for compensation payments (see Chapter 4, Section G).
Not all depredations will be reported due to the cost of reporting and the lack of guaranteed compensation funding.	This comment is probably correct that some producers may choose not to report wolf depredations on their livestock. Under Chapter 12, Task 4.3.4, of the recommended plan, WDFW will work with livestock groups and others to secure a funding source for the compensation program described in the recommended plan. Secure funding would make this program available to all claimants seeking compensation.
I suggest naming the state's program for compensation of livestock losses and covering non-lethal measures as a "livestock loss prevention and compensation fund" to build greater support for its funding.	This suggested change was not made in the recommended plan, but could be made in the future as the compensation program is further developed.
As a professional agronomist who deals with livestock owners, I suggest using a stronger legal definition for confirmed compensation. A standard of "more likely than not" should be used rather than "to a reasonable degree of scientific certainty." This will reduce potential ambiguity in determinations.	The recommended plan's definitions for classifying depredation follow those used by USDA Wildlife Services.

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Chapter 5 – Wolf-Ungulate Interactions	
Managing for sustainable ungulate populations will benefit many more nongame species than will managing for wolf recovery. This is because ungulate hunting generates far greater funding for habitat conservation than wolves will.	Habitat conservation provides benefits to multiple wildlife species. Recovery of listed species requires more specific conservation planning, such as this state wolf plan.
The public would be better served by having WDFW do a better job of managing and enhancing the state's ungulate populations rather than having the agency try to convince the public that wolf recovery will help manage these herds.	WDFW has a dual mandate to preserve, protect, and perpetuate the native wildlife species of the state and to provide hunter opportunity by maintaining sustainable ungulate populations. As stated in the wolf plan, WDFW believes it can accomplish both objectives. The wolf plan does not state that wolf recovery will be used to "help manage" ungulate herds in Washington as indicated in this comment.
The plan should acknowledge that during the past 100 years sport hunters, in concert with fish and wildlife agencies and aided by funds generated by the Pittman-Robertson Act, have brought back ungulate populations, which will serve as the prey base for wolves.	WDFW readily acknowledges the important role that hunters have played in supporting the conservation of fish and wildlife resources for many decades. This fact is widely recognized among fish and wildlife managers and does not need to be restated in the wolf plan.
Wolf recovery efforts by WDFW jeopardize all of the past and current management efforts by the agency and hunters to strengthen elk and deer numbers in the state.	As noted in the background sections of the plan (Chapters 5, 14), observations from Idaho, Montana, and Wyoming, where most elk and deer populations remain at or above management objectives, suggest that as wolf populations increase in Washington, they will have some localized impacts on ungulate abundance and habitat use, but they will have a relatively small impact at a statewide level.
The plan states that ungulate herds will be managed to provide an adequate prey base for wolves. How will this be accomplished?	Continued implementation of WDFW game management plans for elk, deer, and other species should result in achieving healthy population objectives for these species. This goal would be accomplished primarily through habitat improvement, harvest management, and minimizing illegal hunting. Harvest objectives may need to be adjusted if overall predation levels increase. Harvest objectives should be compatible with long-term sustainable populations of predators and prey.
The proposed plan will make hunter concerns secondary to the needs of wolves.	The plan broadly calls for managing ungulate populations and their habitats to provide both an adequate prey base for wolves and to maintain harvest opportunities for hunters. It does this through continued implementation of WDFW game management plans for elk, deer, and other ungulates, which should result in achieving healthy population objectives for these species.
Sportsmen want to be able to harvest deer and elk, and do not want to compete with wolves for game.	As described in the background sections of the plan (Chapters 5, 14), observations from Idaho, Montana, and Wyoming, where most elk and deer populations remain at or above management objectives, suggest that as wolf populations increase in Washington, they will have some localized impacts on ungulate abundance and habitat use, but they will have a relatively small impact at a statewide level. Thus, WDFW does not expect wolves to interfere with the harvest of deer and elk in most areas of the state.
The plan needs to address tribal harvest levels of game because it affects prey levels for wolves.	The recommended plan doesn't specifically discuss levels of tribal harvest of game and how it might affect wolf recovery. Most tribal harvest data is shared with WDFW. This information is then incorporated into the agency's management of game populations. Tribal harvest statistics are available for all western Washington

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	tribes and most eastern Washington tribes at the Northwest Indian Fisheries Commission website.
In some areas of the state (i.e., Okanogan, Chelan, and Ferry counties), WDFW's regulations are designed to keep deer and elk numbers small to prevent agricultural damage. However, this policy will deprive reestablishing wolves of an important prey source. The plan does not discuss this conflict in management goals. Allowing greater elk abundance in these areas would potentially provide more prey for wolves, reduce wolf conflicts with livestock, and provide additional big game hunting opportunities, but could increase crop damage.	Although WDFW does manage for reduced deer and elk populations in some areas to reduce recurring property damage, deer and elk numbers are not so greatly diminished that it would greatly affect wolf reestablishment. For example, one of the counties (Okanogan) mentioned in this comment had the first wolf pack documented in the state in 2008. WDFW has long recognized that managing for large ungulate populations must be balanced against concerns over localized property damage.
How is WDFW going to sustain large wolf packs given that this Rocky Mountain wolf is larger than the native wolf of this area and will require much more food?	The belief that the wolves reintroduced in the mid-1990s to the northern Rocky Mountains states from west-central Alberta and east-central British Columbia were larger than the wolves originally present is erroneous. Wolves from the Canadian and northern U.S. Rockies, interior British Columbia, Northwest Territories, and nearly all of Alaska are closely related and belong to a single subspecies known as *Canis lupus occidentalis*. This conclusion is based on the examination of historical and recent wolf specimens collected throughout North America. Those originating from the region described above have proven to be genetically and morphologically similar. Examples of this are seen in the wolves harvested during the 2009 hunting seasons in Montana and Idaho. Adults from Montana weighed an average of 97 lbs with a maximum of 117 lbs, whereas adults from Idaho weighed an average of 101 lbs with a maximum of about 130 lbs. These weights are similar to the sizes of the wolves that occurred in these states in the 1800s and early 1900s. Thus, it is wrong to believe that the wolves now entering Washington are larger than the ones historically present and will require more prey to support themselves.
Wolves will move to low elevations during winter and prey on wintering ungulate populations. Deer and elk already struggle to survive on wintering sites because of steady human encroachment.	Wolves in some locations will move to lower elevations during winter and spring where there are more prey. This has already been seen with one of Washington's existing wolf packs. WDFW will use adaptive management to address serious problems involving wolves and wintering ungulate populations. Wolves have generally not proven to be a major problem in these situations in neighboring states.
The plan should stipulate maintaining a balance between predators and prey. This will ensure that healthy ungulate populations will persist, but would probably require that cougars be reduced.	The plan stipulates that management of ungulate and carnivore populations should be integrated on an ecological basis. The statewide Game Management Plan includes chapters for each of Washington's major ungulate and carnivore species, and management plans exist for eight of the state's 10 elk herds and white-tailed deer. Achieving management goals for all of these species will be enhanced if the plans are considered collectively. The ecological roles of predators and prey should be integrated in these management plans. Thus, WDFW will not take steps to control other predator species to make room for wolves.
The plan seems to assume that adequate prey exists in many parts of the state to support its population objectives. However, the plan lacks an	The plan already contains several analyses of potential suitable habitat for wolves in Washington that included prey density as part of the analysis (see Chapter 3 Section A). Results of the analyses

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analysis of potential carrying capacity for wolves based on prey abundance. This analysis should be included as part of the process for establishing delisting objectives and should be done before initiating wolf recovery.	show varying but adequate amounts of estimated suitable habitat for wolves in the state. WDFW conducted population modeling of the Washington's wolf population using one of the analyses of potential suitable habitat noted above. This test indicated that state's wolf population has sufficient habitat available to expand to as many as 58 packs within 50 years.
As a non-hunter, I am forced to accept not hiking in the autumn and must tolerate the introduction of non-native turkeys and their harmful effects on other wildlife, therefore it is reasonable for hunters to have to tolerate some wolves.	Comment noted.
Deer and elk populations do not exist solely as recreation for people to hunt.	In addition to providing a hunting resource, sustainable populations of deer and elk also 1) give recreational viewers of wildlife the opportunity for seeing game, 2) provide prey for a variety of carnivores, and 3) help fulfill other aspects of the ecological roles of these species in natural ecosystems.
Hunters may need to change their personal hunting style in order to adapt to changes in ungulate behavior due to the presence of wolves.	This comment is likely to be true in some locations. Recent research indicates that elk at Yellowstone National Park now spend more time in forested areas, on steeper slopes, and at higher elevations than before wolf reintroductions. Elk have also changed their herding behavior and movement rates in response to wolves. These types of behavioral changes in areas outside of parks suggest that hunters may need to adjust their own strategies for locating elk.
The plan needs to provide estimates of the numbers of elk and deer that wolves will kill per year in Washington. These figures need to be made public.	This information was already present in Chapter 14 of the draft plan, but has been moved to Chapter 5, Section E, where it is now more prominently featured.
WDFW should pay for damage to agricultural crops resulting from wolves pushing ungulates onto croplands.	Under WAC 232-36, WDFW can now compensate farmers for ungulate damage to crops, regardless of cause, if funding is available and other eligibility requirements are met.
Hunting groups have assisted WDFW in wildlife conservation activities for many years. If the current proposed plan is approved, some members of these groups will stop assisting the department in the future with conservation activities, such as raising money and assisting with habitat improvements for ungulate and other wildlife.	WDFW is required both to manage game populations at sustainable levels to provide hunter opportunity and to recover state listed species like the wolf. WDFW readily acknowledges the many contributions that hunting groups have made to wildlife conservation in Washington over the years. WDFW would hope that hunters would continue to volunteer their time and efforts to enhance the resource, but recognizes that some hunters may wish to end their contributions. As discussed in the recommended wolf plan, WDFW does not believe that wolves will have serious impacts on most ungulate populations in Washington, although they could contribute to localized declines in some populations.
The plan is very thorough and accurate in describing the complex relationships between wolves and wild ungulates and the potential impacts that may occur in Washington.	Comment noted.
Projected effects of wolves on ungulate populations are inaccurate, out of date, or a deliberate distortion of the truth.	In spring 2011, during preparation of the recommended plan, WDFW updated the information appearing in Chapter 5, Section B, regarding wolf impacts on ungulate populations in neighboring states. This work included contacting wolf and game managers in Idaho and Montana and review of recent publications from these states and Wyoming. Observations from these states continue to indicate that most elk and deer populations remain at or above management objectives. However, wolves have contributed to

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	some localized declines in ungulate abundance and changes in habitat use. These same types of effects are therefore expected in Washington.
WDFW is using outdated science or ignoring the science that indicates wolves will have major adverse impacts on ungulate populations. The plan should cite the publications of Creel et al. 2009 and V. Geist.	The wolf plan contains an up-to-date review of the science pertaining to wolf-ungulate interactions. The study of Creel et al. (2009) was already discussed in the draft plan (see Chapter 5, Section A). It should be noted that a more recent study (White et al. 2011) refutes some of the findings of Creel et al. (2009). Valerius Geist has not published any scientific studies of wolf-prey dynamics and is therefore not cited in the wolf plan.
The plan states that wolf predation has less of an impact on ungulate populations than the antlerless harvest. Please explain.	The plan cites the findings of Eberhardt et al. (2007), who reported that predation by wolves has a much lower overall impact on ungulate populations than does antlerless harvest by hunters. Wolves primarily prey on young of the year and older individuals beyond their prime, both of which have lower reproductive value in a population, whereas antlerless removals by hunters result in a greater proportional take of adult females of prime age. Thus, wolf predation has less effect on reproductive rates and growth of populations.
I believe that wolves mainly kill weak and sick prey, which benefits ungulate breeding stock and results in healthier ungulate populations. Thus, wolves will not result in overall population declines of ungulates.	A number of scientific studies have shown that young-of-the-year (especially in larger prey like elk and moose), older animals, and diseased and injured animals are taken in greater proportion than healthy, prime-aged individuals (see Chapter 5, Section A). As noted in the background sections of the plan (Chapters 5, 14), observations from Idaho, Montana, and Wyoming, indicate that wolves do have localized impacts on ungulate abundance in some locations, but that they have a relatively small impact on ungulate abundance at a statewide level. Where wolf impacts occur, they are usually one of several factors causing a decline. These other factors often include habitat decline and loss, high human harvest (especially high antlerless take), drought, severe winters, and increased bear and cougar predation.
Wolves kill not only weak and sick prey, but many healthy prey in prime condition.	A number of scientific studies have shown that wolves tend to select more vulnerable and less fit prey, including young-of-the-year (especially in larger prey like elk and moose), older animals, and diseased and injured animals. Wolves do kill healthy, prime-aged individuals, but these animals are taken in lower proportion than their occurrence in populations.
Elk, deer and other game populations will be decimated or reduced by wolves.	As noted in the background sections of the plan (Chapters 5, 14), observations from Idaho, Montana, and Wyoming indicate that most elk and deer populations in these states remain at or above management objectives. Wolves have had some localized impacts on ungulate abundance in these states (see Chapter 5, Section B, for examples), but they have had a relatively small impact at a statewide level. Where wolf impacts occur, they are usually one of several factors causing a decline. These other factors often include habitat decline and loss, high human harvest (especially high antlerless take), drought, severe winters, and increased bear and cougar predation.
I am not aware of any evidence that ungulate populations already affected by winter loss, habitat loss, hunting, predation, and disease can maintain themselves after wolves arrive.	As noted in the background sections of the plan (Chapters 5, 14), observations from Idaho, Montana, and Wyoming indicate that most elk and deer populations in these states remain at or above management objectives. Wolves have had some localized impacts on ungulate abundance in these states (see Chapter 5, Section B,

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	for examples), but they have had a relatively small impact at a statewide level. Where wolf impacts occur, they are usually one of several factors causing a decline. These other factors often include habitat decline and loss, high human harvest (especially high antlerless take), drought, severe winters, and increased bear and cougar predation.
Wolves often kill their prey for the fun of it and often leave prey (both wild ungulates and livestock) uneaten. Wolves also target pregnant elk cows, eating or often just killing the unborn fetuses.	This comment is not accurate and anthropomorphizes the intentions of wolves. As with any predator, wolves must kill prey to survive. Wolves rarely surplus kill, with examples of this primarily involving domestic sheep. Wolves may leave prey uneaten or partially uneaten when disturbed by people or when intending to return later to the carcass to continue feeding on it.
Wolves are vicious cold-blooded killers and torture their prey. Prey of wolves die a painful and horrible death.	This comment is not accurate and anthropomorphizes the intentions of wolves and the deaths of their prey. As with any predator, wolves must kill prey to survive. Predators killing prey are a part of the natural world.
Wolves present a threat to ungulate health through the spread of tapeworm infections.	Wolves, coyotes, domestic dogs, and foxes probably all contribute to the infection of wild ungulates with the tapeworm *Echinococcus granulosus* in the northern Rocky Mountain states. Dogs associated with domestic sheep herds probably played a role in bringing the tapeworm to this region. Based on available information, the health risks associated with *Echinococcus granulosus* to wildlife is low. Heavy infections in ungulates may be related to poor body condition. For more information on tapeworm disease, see Chapter 7, Section E, of the wolf plan.
Moose will be adversely affected by wolves, which is not indicated in the plan.	Wolf impacts on moose have not been well studied in the northern Rocky Mountain states. As described in Chapter 5, Section B, of the wolf plan, wolves are believed to be a main factor in the recent decline of moose in Idaho's Lolo zone, but their impact on moose in other parts of Idaho is poorly known. Moose populations in some areas of Idaho may be more directly affected by habitat changes, harvest levels, or other causes. In Wyoming, wolves are considered a potential threat to some moose populations on their wintering ranges, but documented effects on such populations are lacking. A severe decline in moose has occurred in northwestern Wyoming since the late 1980s, but the decline has been primarily attributed to deteriorating habitat quality, with bear and wolf predation being a minor contributing factor.
Wherever wolves overlap with bighorn sheep populations, predation will definitely occur.	Bighorn sheep are not regularly taken by wolves in the northern Rocky Mountain states, probably because of little habitat overlap between the two species. Wolf predation on bighorn sheep in Washington is therefore expected to be minor.
The summary of wolf impacts on ungulates in other states is inaccurate and does not correctly summarize the declines that have occurred.	WDFW believes that Chapters 5 and 14 of the wolf plan provide an accurate account of wolf impacts to ungulates and hunting in other states.
Your analysis of what is happening with the Northern Yellowstone elk herd is inaccurate. It states that it is being caused by antlerless hunting. Antlerless hunting has been suspended for several years now. I think a new report identifies wolves as the real reason for the decline.	Chapter 5, Section B, of the wolf plan states that "wolf predation is one of several causes, along with high human harvest (including high antlerless take through 2005), drought, severe winters, and increased bear and cougar predation, contributing to a 72% decline (from about 16,800 to 4,600) in the northern Yellowstone elk herd from 1996 to 2010, which had existed at artificially high levels for decades due to declines and extirpations of large predators. As the wolf population expanded, it had an increasingly greater impact on this herd (Vucetich et al. 2005, White and Garrott 2005, Barber-

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	Meyer et al. 2008). However, bear predation on elk calves has greatly increased over the last decade or two in and around Yellowstone National Park and is currently having a larger impact on elk recruitment than wolf predation (Barber-Meyer et al. 2008). Cougar densities have also increased in the park over the past decade (Hebblewhite and Smith 2010). The wolf population has fallen from a peak of 174 wolves in 2003 to 97 wolves in 2010, mostly because of the smaller elk population (USFWS et al. 2011)." WDFW believes this information is accurate.
Information on wolf-ungulate interactions in Yellowstone is not very relevant to discussions of impacts in Washington. The ecosystems and mix of public and private are different.	Studies of wolf-ungulate interactions in Washington are not available because wolves are just starting to recolonize the state. WDFW therefore relied on information from other states with wolves, especially the northern Rocky Mountain states, to draw some basic conclusions on the impacts that wolves could have on ungulates in Washington. However, as this comment points out, there are important differences between Washington and these states, thus wolf impacts may differ from those seen elsewhere.
Hunters exaggerate the numbers of wild ungulates killed by wolves.	As noted in the background sections of the plan (Chapters 5, 14), most elk and deer populations in Idaho, Montana, and Wyoming remain at or above management objectives. Wolf predation has had some localized impacts on ungulate abundance and habitat use in these states (see examples in Chapter 5, Section B), but a relatively small impact at a statewide level.
Contrary to what is being communicated to the public by many hunters, elk numbers in Idaho have not been decreasing, as of 2009 and reported by the Rocky Mountain Elk Foundation. Elk are becoming more challenging to hunt by sportsmen as elk are pushed out of the valleys by wolves and into the mountains.	As noted in the background sections of the plan (Chapters 5, 14), most elk and deer populations in Idaho, Montana, and Wyoming remain at or above management objectives. Wolf predation has had some localized impacts on ungulate abundance and habitat use in these states (see examples in Chapter 5, Section B), but a relatively small impact at a statewide level. Recent research indicates that elk at Yellowstone National Park now spend more time in forested areas, on steeper slopes, and at higher elevations than before wolf reintroductions. Elk have also changed their herding behavior and movement rates in response to wolves. These types of behavioral changes in areas outside of parks suggest that hunters may need to adjust their own strategies for finding elk.
Deer and elk numbers are already lower than normal in my area of the state or throughout the state as a whole. Washington does not have the prey resources available to support numerous wolf packs.	The plan contains several analyses of potential suitable for wolves in Washington that included prey density as part of the analysis (see Chapter 3 Section A). Results of the analyses show varying but adequate amounts of estimated suitable habitat for wolves in the state. WDFW conducted population modeling of the Washington's wolf population using one of the analyses of potential suitable habitat noted above. This test indicated that state's wolf population has sufficient habitat available to expand to as many as 58 packs within 50 years.
Review of this chapter indicates that most elk herds in the state are below management objectives. Therefore, wolf recovery will be an additional factor that complicates meeting elk management objectives.	Updated information on elk herd sizes has been added to the recommended wolf plan. This new information shows that only 3 of the state's 10 elk herds are below management objective (3 are at objective, 2 are above objective, and 2 do not yet have an objective established). As noted in WDFW's game management plan for 2009-2015, wolves will be an additional factor to consider in managing elk in Washington.
The plan needs to provide greater detail on localized trends in ungulate herds throughout the state to better evaluate the potential impacts of	This level of detail can be found in other WDFW documents describing ungulate management in Washington, but goes beyond the scope of the recommended wolf plan.

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wolves.	
Ungulates are over-populated in my area. Wolf predation would help keep their numbers in check.	Wolf predation would probably help control some overpopulated herds of deer and elk in Washington depending on the localized situation. One situation where this might not occur would be with overabundant herds living in or close to urban areas.
Inadequate discussion in the plan of expected losses of deer and elk to wolves relative to other sources of mortality, such as hunting, dogs, other predators, vehicle collisions, disease, weather, and the impact of competition between livestock and ungulates for food.	Chapter 5 of the wolf plan contains some information on other sources of mortality to ungulates (e.g., see Table 12), but this type of information is not available for most game populations in Washington.
Collisions with vehicles are another significant source of mortality to ungulates in this state. Ungulate-vehicle collisions also cause many human mortalities and injuries in addition to high costs for vehicle repair. If we are concerned about declining ungulate populations, then a good place to begin reversing that trend is reducing the number of ungulate road-kills.	Various locations in Washington experience a high level of collisions between deer and cars. WDFW works with the Washington State Department of Transportation to design highways to reduce ungulate-car collisions. However, in many situations, there are few practical solutions to the problem. Wildlife fencing is often impractical, expensive to build and maintain, and often inhibits the movement of deer and other wildlife to important habitats.
The plan should point out that wounding losses caused by hunters is an important source of ungulate mortality because of the many unskilled and poorly motivated hunters.	Wounding loss is mentioned as a component of hunting-related mortality for elk in Chapter 5, Section C and Table 12, of the wolf plan. Four studies from Washington indicate that 5-14% of all adult and yearling elk die from hunting wounds and are not recovered by the hunter.
My family homesteaded in the Methow Valley in the early 1900s. Family history passed down says that few deer existed in the valley then and that they only became more common after white settlers began irrigating crops and bitterbrush became prevalent because of fire control.	Deer abundance was relatively low in the Methow Valley in the early 1900s. Early settlers in the area are known to have relied on deer and elk for sustenance, which reduced the abundance of both species. Irrigation of crops and other habitat changes helped deer numbers expand in the county, as did the enactment of state harvest regulations, which prevented further overharvest.
Wolves will have considerable adverse impacts at Washington's winter feeding stations for elk.	Chapter 5, Section D, of the wolf plan discusses possible impacts of wolves on elk at winter feeding stations. Observations from Wyoming and Idaho indicate that although wolves visit some winter feeding stations, but they have not caused significant losses of elk or other major problems. Incidences of surplus killing of elk are rare, and increased fence breaching by elk and increased fence-related injuries to elk have not been recorded. This suggests that impacts at Washington's winter feeding stations could also be minor.
Wolves shouldn't be allowed to occur at elk feeding stations and raise havoc. Those that do should be exterminated or moved out of state.	Chapter 5, Section D, of the wolf plan discusses possible impacts of wolves on elk at winter feeding stations. Observations from Wyoming and Idaho indicate that although wolves visit some winter feeding stations, but they have not caused significant losses of elk or other major problems. Incidences of surplus killing of elk are rare, and increased fence breaching by elk and increased fence-related injuries to elk have not been recorded. This suggests that impacts at Washington's winter feeding stations could also be minor.
Oppose WDFW's proposal to evaluate wolf-ungulate conflicts at winter feeding stations on a case-specific basis to determine appropriate management responses.	This comment does not suggest an alternative method for handling wolf-ungulate conflicts at winter feeding stations. Chapter 5, Section D, of the wolf plan discusses possible impacts of wolves on elk at winter feeding stations. Observations from Wyoming and Idaho indicate that although wolves visit some winter feeding stations, but they have not caused significant losses of elk or other

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	major problems. Incidences of surplus killing of elk are rare, and increased fence breaching by elk and increased fence-related injuries to elk have not been recorded. This suggests that impacts at Washington's winter feeding stations could also be minor.
The plan needs to give greater discussion about how WDFW will handle wolves coming to winter feeding grounds.	Chapter 12, Task 5.3.1, states that wolf-ungulate conflicts at winter feeding stations "will be evaluated on a case-specific basis to determine if management responses are needed and, if so, what the responses should be. In some cases, it may be desirable to develop a response plan in advance to address an anticipated conflict." Both the state and federal listed statuses of wolves at the time would likely factor into decisions made on responses. Non-lethal solutions would be emphasized while wolves are listed as endangered or threatened.
The plan should indicate that substantial wolf management will likely be needed in resolving adverse wolf-elk interactions at winter feeding stations, which present highly unnatural situations.	Chapter 5, Section D, of the wolf plan discusses possible impacts of wolves on elk at winter feeding stations. Observations from Wyoming and Idaho indicate that although wolves visit some winter feeding stations, but they have not caused significant losses of elk or other major problems. Incidences of surplus killing of elk are rare, and increased fence breaching by elk and increased fence-related injuries to elk have not been recorded. This suggests that impacts at Washington's winter feeding stations could also be minor.
Information should be included from Idaho's feeding stations. One is located along the south fork of the Payette.	Based on this comment, WDFW contacted the Idaho Department of Fish and Game to learn more about wolf-ungulate conflicts at winter feeding stations in Idaho. Winter feeding of elk and deer occurs on a much smaller scale in Idaho than in Wyoming. Most Idaho sites operate infrequently or on an emergency basis. Wolves do visit some winter feeding stations in Idaho, but have not caused significant losses or other problems at these locations to date (J. Rachael, pers. comm.).
Washington's elk are not native to this region; they were introduced in 1913. Because of this, they have no winter range and depend on winter feeding stations for nutrition. Wolves will decimate elk herds at winter feeding stations.	This comment is incorrect. Elk are indeed native to both sides of Washington and are thought to have occurred historically throughout all or most of the state. Thus, elk are adapted to winter conditions in Washington. Chapter 5, Section D, of the wolf plan discusses possible impacts of wolves on elk at winter feeding stations. Observations from Wyoming and Idaho indicate that although wolves visit some winter feeding stations, but they have not caused significant losses of elk or other major problems. Incidences of surplus killing of elk are rare, and increased fence breaching by elk and increased fence-related injuries to elk have not been recorded. This suggests that impacts at Washington's winter feeding stations could also be minor.
Chapter 6 – Wolf interactions with other species	
Wolves will reduce coyote numbers, which can benefit natural ecosystems.	As indicated in Chapter 6, Section A, of the recommended wolf plan, reestablishment of wolves has led to reductions in coyotes in some areas, like Yellowstone and Grand Teton National Parks, but not others. It remains unclear how strongly these same interactions will occur outside of protected areas, where wolf densities may be lower because of conflicts with humans. If coyote reductions due to wolves should occur in parts of Washington, this could possibly benefit some other small or medium-sized carnivores or some prey species, but this is difficult to predict with any certainty (see Chapter 2, Section C).

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Disagree with the coyote-wolf competitive interaction and that fewer coyotes could result in reduced impacts on ungulate populations	In Yellowstone and Grand Teton National Parks, wolves have been demonstrated to compete with coyotes and reduce their abundance (see Chapter 6, Section A). In areas occupied by wolves, transient coyotes experience higher mortality rates due to wolves and higher dispersal rates. One of the indirect effects of this has been higher survival rates among pronghorn fawns in protected areas (see Chapter 2, Section C). Therefore, wolf restoration could enhance other ungulate populations by reducing coyote predation rates on newborn ungulates, including mule deer and white-tailed deer. Whether these same interactions would occur in Washington is difficult to predict, but warrants further investigation.
Wolves will reduce the number of other predators through competition for food.	Information on this topic is presented in Chapter 6, Section A, of the recommended wolf plan. Wolves have long coexisted with a variety of other carnivore species in many different habitats. How different carnivores interact with wolves varies depending on the extent of dietary overlap, habitat, environmental conditions, and other factors. Research to date suggests that wolves can reduce certain carnivores (e.g., coyotes) locally, while others (e.g., grizzly bears) may benefit.
What will happen to other predators, including cougars? These large predators are already having enough trouble due to low prey numbers. There will be more cases of them coming to lower elevations and causing problems for people.	Information on this topic is presented in Chapter 6, Section A, of the recommended wolf plan. Few observations of direct wolf-cougar interactions have been reported, but the two species do occasionally kill each other. The degree of interactions between cougars and wolves probably varies over time and among areas with the greatest potential for interactions occurring at kill sites at lower elevations in winter. However, cougars have been observed moving away from kills to avoid wolf contact. Cougars may also exhibit shifts in their diet and habitat use in areas where they occur with wolves.
The killing of coyotes by wolves will allow house cats to proliferate near human habitation, which will result in greater cat predation on small birds and mammals.	WDFW is not aware of any reports of this happening in areas occupied by wolves in Idaho, Montana, Wyoming, or in the Great Lakes region. Wolves generally avoid living in areas close to human habitation, thus this situation seems unlikely to occur.
Wolves will benefit populations of scavenging wildlife, such as eagles, bears, foxes.	This statement is correct (see Chapter 6, Sections A and B, of the recommended plan).
The plan is overly optimistic in its assessment of impacts from wolves on listed species.	WDFW believes that wolf recovery is likely to have few significant adverse impacts to other listed species (see Chapter 6, Section C of the recommended wolf plan). Several listed and candidate species are likely to benefit from wolf recovery, especially those that scavenge, such as golden eagles, grizzly bears, and Cascade red foxes, which are likely to experience greater availability of ungulate carcasses provided by wolf kills. Mountain caribou could be adversely affected by wolf recovery. Caribou distribution in Washington is restricted primarily to the Salmo Priest Wilderness Area in northeastern Pend Oreille County. This area is characterized by high elevations and extensive closed canopy forests, and therefore supports relatively low densities of other ungulate prey that might attract wolves. For other listed species, few if any interactions with wolves have been observed in North America, making it difficult to predict the possible effects of wolf recovery on these species in Washington. Where conflicts between wolves and listed species do occur, the recommended plan calls for case-specific evaluations to determine what management responses

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	are needed (Chapter 12, Task 8).
What impact will wolves have on recovery of woodland caribou in the Selkirk Mountains? I believe the impacts on the caribou population could be greater than indicated in the wolf plan.	Wolves have the potential to adversely affect mountain caribou, which in Washington are restricted primarily to the Salmo Priest Wilderness Area in northeastern Pend Oreille County. The area is characterized by high elevations and extensive closed canopy forests, and therefore supports relatively low densities of other ungulate species that might attract wolves. The U.S. Fish and Wildlife Service is proposing to investigate potential interactions between wolves and caribou in the Selkirk Mountains.
Lynx numbers will not grow as wolf numbers increase.	Few interactions between wolves and lynx have been documented in North America, making it difficult to predict the extent of impacts that might occur in Washington. In Montana, where lynx and a recovering wolf population co-exist, cougars accounted for almost all known cases of predation of lynx, with snow-free months being the most vulnerable period for lynx when lack of snow allows large predators access to high elevation habitats.
Olympic Marmots are being killed by coyotes. I think wolves being present in Olympic National Park would benefit the marmot population by reducing coyote numbers.	As stated in the recommended plan, wolf recovery could potentially benefit Olympic marmots by reducing coyote abundance, but such outcomes are difficult to predict with any certainty.
This chapter should include possible wolf impacts to Washington's reintroduced fisher population based on interactions in the Great Lake States. In Wisconsin, at least 1 fisher has been confirmed to be killed by wolves. Fisher populations in forested areas of the northern Great Lake States have declined in recent years and high wolf populations in this area may be reducing fisher abundance.	This information has been added to the recommended wolf plan. There have been few other published interactions between wolves and fishers, making it difficult to predict the possible effects of wolf recovery on fisher populations. Competition between wolves and fishers could result in wolves killing fishers, particularly when fishers scavenge carrion at ungulate kills in winter.
Chapter 7 – Wolf-human interactions	
Wolves represent a threat to people, including ranchers, children, and hikers.	Wild wolves generally fear people and rarely pose a threat to human safety. Attacks on humans by wolves are rare. In North America, there have been only two deaths caused by wolves since 1950 and injuries are also rare. Two broad summaries published in 2002 documented 28 reports of wolf aggression towards humans in North America from 1969 to 2001. Nineteen of these involved wolves habituated to humans and five involved the presence of domestic dogs. There have been no physical attacks on people in Idaho, Montana, or Wyoming from the time wolf recovery began in the 1980s until the present. However, because wolves are large carnivores capable of inflicting serious injury to people, wolves should be respected for their capabilities and humans should avoid close contact at all times. Chapter 7, Section A, of the recommended plan gives information on human safety around wolves, including how to prevent wolves from becoming habituated to people and what to do during a close encounter with a wolf.
Recovery of a pack-hunting carnivore frightens me. How do you compensate a family that loses a child during a wilderness hike?	Wild wolves generally fear people and rarely pose a threat to human safety. Attacks on humans by wolves are rare. In North America, there have been only two deaths caused by wolves since 1950 and injuries are also rare. Two broad summaries published in 2002 documented 28 reports of wolf aggression towards humans in North America from 1969 to 2001. Nineteen of these involved wolves habituated to humans and five involved the presence of

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	domestic dogs. There have been no physical attacks on people in Idaho, Montana, or Wyoming from the time wolf recovery began in the 1980s until the present. However, because wolves are large carnivores capable of inflicting serious injury to people, wolves should be respected for their capabilities and humans should avoid close contact at all times. Chapter 7, Section A, of the recommended plan gives information on human safety around wolves, including how to prevent wolves from becoming habituated to people and what to do during a close encounter with a wolf.
I believe that wolf attacks on humans are more common than indicated in the plan.	Information in the plan regarding the frequency of wolf attacks on humans is taken primarily from the published reports of Linnell et al. (2002) and McNay (2002a,b). These are considered accurate summaries of the number of wolf attacks on humans in North America from 1969 to 2001. These documented 28 reports of wolf aggression towards people during this period. Nineteen of these involved wolves habituated to humans and five involved the presence of domestic dogs. There have been only two human deaths caused by wolves in North America from 1950 to the present. Additionally, there have been no physical attacks on people in Idaho, Montana, or Wyoming from the time wolf recovery began in the 1980s until the present.
Wolves will be forced to move to low elevations during winter, and therefore will come into conflict with humans more frequently.	During the late fall and winter in many parts of Washington, wolves will likely follow prey species to lower elevations where more people may live. This could result in more wolf-human interactions, including conflicts. Nevertheless, wolves generally fear people and rarely pose a threat to human safety, thus few direct wolf-human conflicts are expected. The recommended wolf plan (Chapter 7, Section A) provides information on human safety around wolves, including how to prevent wolves from becoming habituated to people and what to do during a close encounter with a wolf.
What rights do I have if a wolf attacks me?	This information is presented in Chapter 7, Section A, of the recommended wolf plan. The federal Endangered Species Act allows a person to kill endangered wildlife in defense of his or her own life or the lives of others. A recently enacted state law also makes it permissible to kill wild animals engaged in the physical act of attacking a person (Chapter WAC 232-36-050(3)(a)). It is important to understand that wolves passing near, watching, or otherwise behaving in a non-threatening way near humans should not necessarily be considered as dangerous. Under these circumstances, wolves should perhaps be hazed using non-lethal methods, but use of lethal force is unneeded and illegal.
Support killing wolves during attacks to protect humans, regardless of wolf listing status. The plan should be clearer in indicating that people can kill a wolf that threatens their safety.	As mentioned in Chapter 7, Section A, of the recommended wolf plan, people have the right to kill a wolf that is attacking a person. The federal Endangered Species Act allows a person to kill endangered wildlife in defense of his or her own life or the lives of others. A recently enacted state law also makes it permissible to kill wild animals engaged in the physical act of attacking a person (WAC 232-36-050(3)(a)). It is important to understand that wolves passing near, watching, or otherwise behaving in a non-threatening way near humans should not necessarily be considered as dangerous. Under these circumstances, wolves should perhaps be hazed using non-lethal methods, but use of lethal force is

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	unneeded and illegal.
Wolves are not a potential threat to human safety, including children.	While wolves rarely pose a threat to human safety, increasing wolf populations in the West and large numbers of humans visiting parks and other areas inhabited by wolves increase the opportunity for wolf-human encounters. Because wolves are large carnivores capable of inflicting serious injury to people, wolves should be respected for their capabilities and humans should avoid close contact at all times. Chapter 7, Section A, of the recommended plan gives information on human safety around wolves, including how to prevent wolves from becoming habituated to people and what to do during a close encounter with a wolf.
Presence of wolves, without any attack on humans, should be recognized as non-threatening and lethal control should not be allowed.	Chapter 7, Section A, already contains a statement that wolves passing near, watching, or otherwise behaving in a non-threatening way near people should not necessarily be considered as dangerous. Under these circumstances, wolves should perhaps be hazed using non-lethal methods, but use of lethal force is unnecessary and illegal.
I have been in the vicinity of wolves, but have never feared them.	Comment noted.
Why does the plan offer compensation for livestock losses but nothing for people that will be killed or injured by wolves?	Compensation programs for human deaths or injuries do not exist for attacks caused by any wildlife species in the U.S. Additionally, the lack of any wolf attacks on people in the lower 48 states in recent decades means that such a program is not needed for wolf attacks. Current or recent wolf-related compensation programs in the western U.S. were established only for the purpose of reimbursing livestock depredation by wolves. These programs are intended to shift the economic burden of wolf recovery away from livestock producers to those who support wolf recovery or to taxpayers.
Wolves are a threat to pets.	Situations where wolves and domestic dogs encounter each other can result in deaths and injuries to the dogs. Dogs used for livestock guarding, herding, and hunting are most vulnerable to attack. Most attacks on dogs in Idaho, Montana, and Wyoming in recent years occurred in remote areas away from homes. Domestic dogs are also vulnerable to attack or killing by a variety of predators other than wolves, such as coyotes, cougars, bears, and feral dogs. Chapter 7, Section C, of the recommended wolf plan gives details on ways to avoid wolf attacks on dogs. Wolf depredation on other types of pets such as cats has not been reported from Idaho, Montana, and Wyoming, and therefore is not expected in Washington.
Backcountry recreation with pet dogs will become dangerous if wolves populate our forests.	Recreationists visiting occupied wolf range will have a greater likelihood of encountering wolves in the wild. Chapter 7, Section C, of the recommended plan recommends that hikers consider leaving their dogs at home when visiting areas known to be occupied by wolves. Hikers with dogs should learn to recognize wolf sign and bring a leash to restrain their dogs if wolf sign is found. If an encounter with a wolf takes place, the dog should be brought to heel at the person's side or leashed as quickly as possible. Standing between the dog and the wolf often ends the encounter. To avoid risk of personal injury, a person should not attempt to break up a physical fight between a wolf and a dog. Chapter 7, Section C, provides steps that houndsmen can take to reduce interactions between their dogs and wolves. These include

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	releasing hounds only on fresh sign to avoid longer chases, avoiding releases in areas with fresh evidence of wolves, yelling or making noise when releasing hounds and going to the tree, reaching hounds at trees as quickly as possible so they are not unattended for long periods, leashing dogs at trees to control them, and placing bells or beeper collars on hounds.
Wolves are not a threat to pets.	Wolves can be a potential threat to domestic dogs, especially those used for livestock guarding, herding, and hunting. Other types of pet dogs can also be at some risk when accompanying their owners into areas occupied by wolves and allowed to run free. Most attacks on dogs in Idaho, Montana, and Wyoming in recent years occurred in remote areas away from homes and have been largely limited to livestock guarding, herding, and hunting dogs. Measures for avoiding attacks on pet dogs appear in Chapter 7, Section C, of the recommended plan. Wolf depredation on other types of pets such as cats has not been reported from Idaho, Montana, and Wyoming, and therefore is not expected in Washington.
Domestic pets are already killed by other wildlife. The arrival of wolves should not be treated any differently.	WDFW encourages pet owners to take responsible steps to avoid depredations on any pets by wildlife. Chapter 7, Section C, of the recommended plan gives guidance for what recreationists and houndsmen, respectively, can do to reduce interactions between their dogs and wolves.
The plan should give more attention to addressing potential conflicts between wolves and domestic dogs.	Measures for avoiding wolf attacks on hunting hounds and other dogs appear in Chapter 7, Section C, of the recommended plan. Additional suggestions for avoiding such attacks were added to this part of the wolf plan.
Support killing wolves during attacks to protect dogs, regardless of wolf listing status.	Killing wolves to protect dogs being attacked is not allowed under the recommended wolf plan, with the exception of livestock guarding and herding dogs (see Chapter 4, Section E). Practices that dog owners can take for avoiding wolf attacks on pet dogs, including hunting hounds, have been expanded in the plan and appear in Chapter 7, Section C.
Support lethal control in the case of dogs being attacked after wolves reach threatened status.	Killing wolves to protect dogs being attacked is not allowed under the recommended wolf plan, with the exception of livestock guarding and herding dogs (see Chapter 4, Section E). Practices that dog owners can take for avoiding wolf attacks on pet dogs, including hunting hounds, have been expanded in the plan and appear in Chapter 7, Section C.
Oppose use of lethal control for wolves in the act of attacking pet dogs by private citizens on private and public lands during sensitive status.	Killing wolves to protect dogs being attacked is not allowed under the recommended wolf plan, with the exception of livestock guarding and herding dogs (see Chapter 4, Section E). Practices that dog owners can take for avoiding wolf attacks on pet dogs, including hunting hounds, have been expanded in the plan and appear in Chapter 7, Section C.
Oppose lethal control of wolves attacking dogs while on public lands regardless of state status.	Killing wolves to protect dogs being attacked is not allowed under the recommended wolf plan regardless of land ownership, with the exception of livestock guarding and herding dogs (see Chapter 4, Section E). Practices that dog owners can take for avoiding wolf attacks on pet dogs, including hunting hounds, have been expanded in the plan and appear in Chapter 7, Section C.
Wolves attacking pet dogs on public lands should not be punished because they are defending their territories.	This comment is correct in that wolves attacking dogs are most likely defending pups at rendezvous sites or dens or defending their territories rather than trying to prey on them. Killing wolves to protect dogs under attack is not allowed under the

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	recommended wolf plan regardless of land ownership, with the exception of livestock guarding and herding dogs (see Chapter 4, Section E). Practices that dog owners can take for avoiding wolf attacks on pet dogs, including hunting hounds, have been expanded in the plan and appear in Chapter 7, Section C.
Compensation should be paid for wolf depredation of pet dogs, including hunting dogs.	The recommended wolf plan proposes compensation for wolf depredation on livestock herding and guarding dogs, but not hunting dogs or other pet dogs. From 2000 to 2008, wolves in Idaho and Montana were responsible for one to two fatal attacks on hunting hounds annually in most years. Except for guarding/herding dogs (see Table 5), very few other types of pet dogs have been killed. WDFW expects similar low rates of wolf-related mortalities for non-guarding/herding dogs in Washington and believes these do not warrant compensation. Payments for these dog types would be an extra burden on funding for livestock compensation. Houndsmen and recreationists should take the preventative measures described in Chapter 7, Section C, to reduce interactions between their dogs and wolves.
Support the draft plan's recommendation that compensation should not be paid for wolf depredation of pet dogs, including hunting dogs.	The recommended wolf plan proposes compensation for wolf depredation on livestock herding and guarding dogs, but not hunting dogs or other pet dogs. From 2000 to 2008, wolves in Idaho and Montana were responsible for one to two fatal attacks on hunting hounds annually in most years. Except for guarding/herding dogs (see Table 5), very few other types of pet dogs have been killed. WDFW expects similar low rates of wolf-related mortalities for non-guarding/herding dogs in Washington and believes these do not warrant compensation. Payments for these dog types would be an extra burden on funding for livestock compensation. Houndsmen and recreationists should take the preventative measures described in Chapter 7, Section C, to reduce interactions between their dogs and wolves.
Wolf-dog hybrids and pet wolves should be prohibited in Washington. WDFW should work with other agencies to propose legislation to ban ownership of these animals in the state.	Pet wolves are already prohibited in Washington under state law RCW 16.30. Legal efforts to similarly ban wolf-dog hybrids throughout the state have been attempted over the past few years, but the legislation has failed to pass. WDFW will continue to support legislative efforts to outlaw wolf-dog hybrids in the state. This is because hybrids running free can complicate wolf recovery by being misidentified as wild wolves when threatening human and livestock safety and by confusing efforts to monitor the status of wild wolf populations. Although considered a small risk, hybrids may interbreed with wild wolves and thereby contaminate the wolf gene pool.
Hybrid ownership should be heavily controlled.	Possession of wolf-dog hybrids as pets should be discouraged because of public safety concerns (see Chapter 7, Section E, of the recommended wolf plan). Hybrids running free can also complicate wolf recovery by being misidentified as wild wolves when threatening human and livestock safety and by confusing efforts to monitor the status of wild wolf populations. Although considered a small risk, hybrids may interbreed with wild wolves and thereby contaminate the wolf gene pool. For these reasons, WDFW supports legislative efforts to outlaw wolf-dog hybrids in the state.
Ownership of wolf-dog hybrids should require a license and owners should be evaluated for	There are no statewide requirements for licensing of wolf-dog hybrids. City and county jurisdictions may have their own

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whether they can provide proper care of the animal.	restrictions. WDFW supports legislative efforts to outlaw wolf-dog hybrids in the state.
Concern that dogs will significantly "contaminate" the wolf gene pool.	Two recent studies (vonHoldt et al. 2008, 2010) from Idaho, Montana and Wyoming did not reveal any evidence of genetic material from dogs in the wild wolf populations in these states. Therefore, interbreeding between dogs and wild wolves and alteration of the genetic makeup of wolves is currently not a major concern of wolf managers in Washington.
Wolves present a threat to humans because of possible tapeworm infection.	People rarely become infected with the type of hydatid disease caused by the tapeworm *Echinococcus granulosus*, which is associated with canids and ungulates. People can obtain the disease by drinking water or eating vegetation contaminated with tapeworm eggs. Infections can also result from handling contaminated canid fur or scat, and then transferring the eggs to the person's mouth by touching the face or eating before adequate hand washing. The disease is extremely unlikely to be spread by handling ungulate capes or meat, unless those parts are contaminated with canid feces and handlers do not use good basic hygiene. People cannot be infected by eating the cysts found in ungulates. These tapeworms are neither wind-born nor transmissible to humans in any way other than direct ingestion of eggs. To avoid infection, people should practice good hygiene when handling live wild animals, dead wild animals, their secretions, or their products. Dogs should not be allowed to feed on or scavenge ungulates, or allowed to roll in canid scat in areas where the tapeworm occurs. People should always wash their hands after handling dogs with access to ungulate carcasses and regularly deworm the dogs. Information on the tapeworm and its infection of humans was added to a new section of the recommended wolf plan (Chapter 7, Section E).
Chapter 8 – Land management	
Oppose wolf-related land use restrictions of any kind.	State and federal restrictions on human development and other land use practices have not been needed to achieve wolf recovery in Idaho, Montana and Wyoming, and are not expected to be necessary in Washington (see Chapter 8 of the recommended plan). The Washington Forest Practices Rules contain a provision for reviewing forest practices that occur near wolf dens and provides seasonal closures for various forest harvesting activities near dens. The plan recommends that this rule be reviewed and modified to reflect that prevention of excessive disturbance near occupied dens is needed only during the active wolf denning period (see Chapter 12, Task 2.3.2).
While wolves are listed as endangered or threatened, grazing, logging, and other commercial activities should be prohibited on public lands occupied by wolves.	State and federal restrictions on human development and other land use practices have not been needed to achieve wolf recovery in Idaho, Montana and Wyoming, and are not expected to be necessary in Washington (see Chapter 8 of the recommended wolf plan). The Washington Forest Practices Rules contain a provision for reviewing forest practices that occur near wolf dens and provides seasonal closures for various forest harvesting activities near dens. The wolf plan recommends that this rule be reviewed and modified to reflect that prevention of excessive disturbance near occupied dens is needed only during the active wolf denning period (see Chapter 12, Task 2.3.2).

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Support temporary road closures and other land use restrictions to benefit wolf recovery. These would help protect wolf dens and rendezvous sites, and would also reduce disturbance to ungulate populations. The plan should provide greater detail on WDFW's collaboration with other land management agencies and timber companies on the use of road closures to benefit wolf recovery.	State and federal restrictions on human development and other land use practices have not been needed to achieve wolf recovery in Idaho, Montana and Wyoming, and are not expected to be necessary in Washington (see Chapter 8 of the recommended wolf plan). The Washington Forest Practices Rules contain a provision for reviewing forest practices that occur near wolf dens and provides seasonal closures for various forest harvesting activities near dens. The wolf plan recommends that this rule be reviewed and modified to reflect that prevention of excessive disturbance near occupied dens is needed only during the active wolf denning period (see Chapter 12, Task 2.3.2).
On the Olympic Peninsula, federal lands tend to be older forests and are surrounded by younger forests on private and state forest lands. This means that ungulate populations will be more abundant on private and state forestlands, and will attract wolves to these land ownerships with corresponding land use restrictions.	Restrictions on forestry on private and state lands have not been needed to achieve wolf recovery in Idaho, Montana and Wyoming, and are not expected to be needed in Washington (see Chapter 8 of the recommended wolf plan). The Washington Forest Practices Rules contain a provision for reviewing forest practices that occur near wolf dens and provides seasonal closures for various forest harvesting activities near dens. The wolf plan recommends that this rule be reviewed and modified to reflect that prevention of excessive disturbance near occupied dens is needed only during the active wolf denning period (see Chapter 12, Task 2.3.2).
WDFW and appropriate federal land management agencies must also include permittees in discussions regarding livestock grazing permits.	Responsibility for management of public lands resides with the various federal and state administrating agencies. WDFW has no legal authority to implement restrictions on lands it does not manage, and land management agencies can and may adopt seasonal or localized area restrictions independently from WDFW. However, these agencies would likely consult with WDFW on issues pertaining to land management actions involving wolves. Presumably, federal and state agencies would discuss any changes in the management of grazing allotments with affected permittees.
Public lands are the property of all the public, not just the ranchers who lease and degrade it through their activities. Public lands should be managed to support healthy wolf populations.	Responsibility for management of public lands resides with the various federal and state administrating agencies. WDFW has no legal authority to implement restrictions on lands it does not manage, and land management agencies can and may adopt seasonal or localized area restrictions independently from WDFW. However, these agencies would likely consult with WDFW on issues pertaining to land management actions involving wolves.
The plan needs to clarify how public lands will be managed for wolves.	Responsibility for management of public lands resides with the various federal and state administrating agencies. WDFW has no legal authority to implement restrictions on lands it does not manage, and land management agencies can and may adopt seasonal or localized area restrictions independently from WDFW. However, these agencies would likely consult with WDFW on issues pertaining to land management actions involving wolves. Regarding lethal control of wolves on public lands, the plan states that this type of management may be necessary to resolve wolf-livestock conflicts and other types of conflicts.
Outdoor recreationists will find extreme restrictions put on them by land management agencies that limit their ability to access areas occupied by wolves.	WDFW does not believe that restrictions of this kind will occur. Loss of access to outdoor recreationists has not occurred in Idaho, Montana, and Wyoming because of wolf recovery.
Wolf recovery will result in land use restrictions being placed on livestock owners on the Olympic Peninsula.	WDFW does not believe that restrictions of this kind will occur. State and federal restrictions on human development and other land use practices on private lands have not been needed to

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	achieve wolf recovery in Idaho, Montana and Wyoming, and are not expected to be necessary in Washington (see Chapter 8 of the recommended plan).
WDFW needs to have local support from landowners if they attempt to place restrictions on private lands.	State and federal restrictions on human development and other land use practices on private lands have not been needed to achieve wolf recovery in Idaho, Montana and Wyoming, and are not expected to be necessary in Washington (see Chapter 8 of the recommended plan).
Will efforts to improve habitat connectivity for wolves increase land use restrictions on property owners?	State and federal restrictions on human development and other land use practices on private lands have not been needed to achieve wolf recovery in Idaho, Montana and Wyoming, and are not expected to be necessary in Washington (see Chapter 8 of the recommended plan).
Oppose WDFW buying private land to benefit wolf recovery. Working ranches should be maintained.	Conservation easements and agreements are two mechanisms to conserve lands and maintain working landscapes that do not include purchase of the land. It is very unlikely that any land conservation actions of this type (or land acquisitions from willing landowners) would be conducted solely for wolf conservation. Instead, they would need to provide benefits to multiple species, such as other endangered and threatened species, carnivores, ungulate populations, etc.
The report denies that WDFW has legal authority for any restrictions on private lands, but I suspect WDFW does have authority for restrictions on avoiding incidental take of state-listed endangered and threatened species.	Under state law, it is illegal to hunt, fish, possess, maliciously harass or kill endangered fish or wildlife, or maliciously destroy the nests or eggs of endangered fish or wildlife (RCW 77.15.120). It is also illegal to hunt, fish, possess, or maliciously kill protected fish or wildlife, or possess or maliciously destroy the eggs or nests of protected fish or wildlife (RCW 77.15.120). Both provisions apply to private and public land. WDFW has limited authority to protect fish and wildlife habitat under state law.
Chapter 9 – Information and education	
Unbiased education programs are needed about wolves.	A well-informed public is essential to wolf conservation. WDFW believes it is crucial that wolves and wolf management issues be portrayed in an objective and unbiased manner, and that the public must receive accurate information on the species.
Expanded education programs are needed to inform people about all aspects of wolves, including the low risk they pose to human safety, how to protect livestock and pets, how to react to wolves when encountered, penalties for poaching, etc.	As described in Chapter 9 and Chapter 12, Task 9, of the recommended plan, an active and expanded outreach program targeting a number of different groups in the public will best benefit wolf conservation.
Concerned that WDFW's wolf education programs will be strongly biased toward the need to recover wolves and the value of this species.	A well-informed public is essential to wolf conservation. WDFW believes it is crucial that wolves and wolf management issues be portrayed in an objective and unbiased manner, and that the public receives accurate information on the species.
Oppose education programs that will portray wolves as wonderful animals that need to be recovered.	A well-informed public is essential to wolf conservation. WDFW believes it is crucial that wolves and wolf management issues be portrayed in an objective and unbiased manner, and that the public receives accurate information on the species.
Because Defenders of Wildlife was one of the litigants against delisting of wolves in other western states, it is inappropriate that WDFW has information from this organization on its website.	This comment refers to a guidance document on WDFW's website titled "Livestock and Wolves: A Guide to Nonlethal Tools and Methods to Reduce Conflicts," which was published by Defenders of Wildlife. This publication uses the experiences, insights and recommendations of livestock producers, wildlife conservationists,

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	university researchers, and biologists to describe proactive livestock protection tools and non-lethal methods and strategies available to reduce livestock losses to wolves. This information is relevant to livestock producers regardless of its source.
Chapter 10 - Research	
Wolves have been studied all over the world, therefore research should not repeat studies that have already been done.	Extensive research on wolves and their impacts has been conducted in recent decades in Idaho, Montana, and Wyoming, and has provided excellent information for directing wolf recovery and management in those states. This body of work will be especially useful in guiding future wolf studies in Washington. In some instances, the results of this research will be directly applicable to Washington, making it unnecessary to repeat some studies. However, in other cases, similar studies will be needed in this state because of differences in habitat quality, prey availability, human densities, and other characteristics. This research will help wildlife managers better understand wolves and their impacts on other species in Washington. It will also guide the development of long-term conservation and management objectives for wolves in the state.
The only necessary research is to document total numbers of packs and individuals, and their impacts on ungulate populations and hunter harvest levels.	Additional research is needed to help wildlife managers better understand wolves and their impacts on other species in Washington. It will also guide the development of long-term conservation and management objectives for wolves in the state. Chapter 12, Task 11, of the recommended wolf plan provides topics for research that will be conducted by WDFW, other federal and state agencies, tribes, universities, and other scientists. This work will rely on cooperative partnerships among these entities.
Additional research on wolves is needed.	WDFW believes that additional research is needed to help wildlife managers better understand wolves and their impacts on other species in Washington. This work will also guide the development of long-term conservation and management objectives for wolves in the state.
Baseline research should be conducted prior to the arrival of wolves or in the early stages of their recovery to help assess the ecological effects resulting from wolf recovery.	Collecting baseline information will be helpful in assessing the ecological effects of wolf recovery. Depending on the research question, some of this baseline information has very likely already been collected by WDFW or other entities during other studies.
Believe that wolf research will be manipulated to further WDFW's wolf agenda.	Most wolf research in Washington will be conducted by researchers not affiliated with WDFW. Their research would follow scientific principles and their results would be independent from WDFW's wolf conservation and management goals.
Chapter 11 – Reporting and evaluation	
How will WDFW ensure that the latest scientific research is used to manage wolf recovery?	As noted in Chapter 11 of the recommended wolf plan, an adaptive management approach will be used so that new information can be incorporated into management strategies.
WDFW should prepare a regular report to update the public on the status of the wolf in Washington.	As noted in Chapter 12, Task 12.2, WDFW will produce an annual report summarizing all activities and results of wolf conservation and management that occurred in Washington during the previous year. Reports will provide summaries of monitoring with information on population status, distribution, reproduction, population growth, and mortality; documented depredation on domestic animals and management responses; law enforcement; research; outreach; and other activities pertinent to wolves. The

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	annual report will be available to the public on the WDFW website and provided to the Washington Fish and Wildlife Commission, elected officials, and others requesting copies.
Chapter 12 – Goals, objectives, strategies and tasks	
WDFW may need to hire more than 2 wolf specialists to provide technical assistance to ranchers and conduct many other duties.	Chapter 12, Task 1.1, of the wolf plan states that a wolf specialist will be hired. Whether WDFW would need to hire more than one wolf specialist would be evaluated as wolf recovery progresses. One option for avoiding this might be to contract with USDA Wildlife Services for additional assistance.
The plan should provide more detail on how WDFW will track distribution and abundance of wolf packs and total wolf numbers to assess current population status. Radio collaring members of each wolf pack will be an important element of monitoring wolf distribution and abundance.	Chapter 12, Task 1, of the wolf plan provides greater detail on how WDFW and its partners will monitor wolf abundance and distribution. Radio telemetry will be an important tool in population monitoring while wolves are listed (Task 1.3.1). Monitoring results will be available to the public in annual reports produced by WDFW (Chapter 12, Task 12.2).
How will WDFW adequately monitor wolves given recent and projected budget reductions? Cooperative monitoring with other agencies or groups would provide efficiencies and cost savings.	Future funding is difficult to predict under the current budget constraints. Despite recent budget reductions, wolves will remain a priority for WDFW. Several ways to reduce the costs of monitoring and overcome staffing limitations are to partner with other agencies and entities (Task 10) and to use new, more efficient survey methods as they are developed (Task 1.2.1).
I would never report a wolf sighting on my land because some official or environmentalist would try to take my rights away as a landowner.	Comment noted.
How will genetic variation be monitored to ensure a healthy wolf population?	Genetic monitoring is addressed in Chapter 12, Tasks 1.2.1, 1.3.4, and 11.2 of the recommended plan. Standard up-to-date methods and analyses of genetic variation will be used.
Support the idea of moving wolves for promoting genetic diversity, as mentioned in Chapter 12, Task 1.5.	Comment noted.
WDFW should collaborate with the tribes, other federal and state agencies, NGO's (e.g., the National Park Service, Defenders of Wildlife, Conservation Northwest), and volunteers (i.e., students, sportsmen) to assist in wolf recovery. These partnerships will provide cost savings and educational benefits.	Partnering with other agencies and entities can lead to cost savings and improved efficiencies as well as other benefits such as educational opportunities. Partners that can assist in monitoring are mentioned in Chapter 12, Tasks 1, 10, and 11, and in Chapter 13.
A task should be included that aids the cultural revitalization of Native American communities through the recovery of wolves.	WDFW would be willing to assist any tribe with projects of this type.
Research should be conducted to study the impacts of wolves on ungulate populations, recreational hunting opportunity, and livestock in Washington.	Research pertaining to this comment is already recommended in Chapter 12, Task 11, of the recommended wolf plan.
Research on the potential ecosystem role of wolves outside of national parks should be conducted to demonstrate that the ecosystem benefits are widespread.	Research to this type would be valuable in any western state with wolves, including Washington, and would fall under that recommended in Chapter 12, Task 11.5, of the recommended wolf plan.
Research should be conducted on the genetic differences between Rocky Mountain and "Coastal/Cascade" wolves.	One of the research tasks in the plan (Chapter 12, Task 11.2) is to determine various genetic aspects of the wolf populations that become reestablished in Washington.

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WDFW should consider creating a scientific review panel (including biologists, economists, and social scientists) that regularly reviews proposed management actions in a timely manner. This could greatly improve public and managerial confidence in proposed wolf management activities.	WDFW has its own scientific review process, but also uses outside scientific review panels from time to time to assist with evaluation of issues and related science. A review panel of this type could be something to consider in the future in regards to wolf management in Washington.
WDFW should provide the Washington Fish and Wildlife Commission and general public with regular updates on the status of wolf management in the state. Quarterly updates would be appropriate.	As stated in Chapter 12, Task 12.2, of the recommended plan, WDFW will produce an annual report summarizing all activities and results of wolf conservation and management occurring in Washington during the previous year. The annual report will be available to the public on the WDFW agency website and provided to the Fish and Wildlife Commission, elected officials, and others requesting copies. WDFW will provide the Commission with more frequent updates on wolves as requested.
WDFW should be required to meet with agricultural stakeholder groups and the Legislature's agricultural and natural resource committees annually to report on numbers of wolves and stages of recovery for each region.	WDFW staff from headquarters and the regions have already been meeting with affected stakeholders and legislators during the development of the recommended wolf plan. Meetings and presentations of this type will continue after the plan is finalized. Additionally, WDFW will produce an annual report summarizing wolf conservation (including wolf pack distribution and size) and management activities that have occurred during the previous year (Chapter 12, Task 12.2). This report will be available to the public on the WDFW agency website and provided to the Fish and Wildlife Commission, elected officials, and others requesting copies.
The plan should provide the strongest possible protections to wolves as they make their return to the state.	Chapter 12, Task 2, of the recommended wolf plan addresses the various protective actions that WDFW will engage in to minimize wolf mortality during recovery.
WDFW should provide legally binding enforcement protections to prevent another extinction of wolves from the state.	State law RCW 77.15.120 already protects endangered species from killing, malicious harassment, hunting, and possession. Enforcement activities to minimize wolf mortality from illegal killing will be implemented by enforcement staff from WDFW, U.S. Fish and Wildlife Service, and other agencies (see Chapter 12, Task 2.2.2).
What will be done to limit wolf poaching? For example, wildlife poaching is extensive on the Olympic Peninsula and will put wolves at risk without adequate enforcement by WDFW.	Information pertaining to the prevention of illegal killing of wolves is provided in Chapter 12, Task 2.2.2, of the recommended wolf plan. Enforcement efforts will be greatly enhanced by the public's assistance in reporting illegal activities involving wolves.
As many wolves as possible should be radio-tagged to help enforcement officers find people that kill wolves illegally.	Intensive radio-tagging would be used primarily for monitoring wolf distribution, abundance, and identifying sources of mortality (including from illegal killing) while the species remains listed. Monitoring of this type could help enforcement officers with some wolf poaching investigations, but the extent to which this would happen and whether it would lead to increased arrests are unknown.
WDFW should strongly consider closing the coyote season during the firearm season for ungulates while wolves are listed. This will prevent "accidental" mortality of wolves "misidentified" as coyotes.	The recommended wolf plan does not propose this action. Chapter 12, Tasks 2.2.2 and 2.2.3, mention various activities that will be implemented to minimize deliberate and accidental killing of wolves during listed status. If excessive wolf mortality occurs during the ungulate hunting season, WDFW would review options for reducing losses. These might include increased public outreach and education and increased patrolling by enforcement officers, but could also include possible consideration of closing coyote

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	hunting in some areas.
Enforcement alone will not be the only factor needed to ensure wolf recovery. Various methods for building public tolerance of wolves are vital as well.	This comment is correct, as described in Chapter 12, Task 2.2.2, of the recommended wolf plan.
The plan calls for minimizing wolf mortality from lethal control. However, Dr. David Mech has written "28-50% of a wolf population must be killed by humans per year (on top of natural mortality) to even hold a wolf population stationary. Indeed, the agencies outside the Northern Rocky Mountain states, which are seeking to reduce wolf populations, try to kill 70% per year (Fuller et al. 2003)."	The numbers given in this comment were previously thought to apply to wolf populations that were already well established. However, recent research by Creel and Rotella (2010) indicates that maximum removal rates per year should not exceed 22-24% of an established wolf population. Even these reduced rates should not be applied to a population that is in the early stages of attempting to recover. As discussed in Chapter 12, Task 2.2.1, of the recommended plan, limitations on lethal control of wolves are desirable early in recovery to promote expansion of the population. One of the main premises of the plan is that lethal control of wolves needs to be most restrictive during state endangered and threatened statuses, but could be somewhat more relaxed during sensitive status.
WDFW should expand the protection of wolf habitat near wolf packs. WDFW should treat den site locations as sensitive data and not release these data to the general public or landowners.	Wolves are habitat generalists, thus increased habitat protection and stricter land use practices have not been needed to achieve wolf recovery in other states. WDFW already treats locations of wolf den sites as sensitive data (i.e., it will not release information on the locations of dens to the general public). However, under Chapter 12, Task 2.3.1, WDFW would provide landowners with information on locations of dens to help avoid possible conflicts that could occur and to avoid possible disturbance of the site.
This chapter should provide greater detail on law enforcement activities to reduce illegal kill.	Chapter 12, Task 2.2.2, describes enforcement activities that will aid in reducing the illegal killing of wolves. Providing additional detail about this activity is not necessary for a conservation and management plan of this type.
Efforts to translocate wolves to U.S. Forest Service lands will require early coordination with the Forest Service.	As noted in Chapter 12, Task 3.3, any consideration of translocation of wolves to lands of the U.S. Forest Service or another agency would involve extensive consultation with that agency from the onset of consideration and planning.
Rapid response times (i.e., within 24 hrs) to reports of wolf depredation involving livestock will be critical. How many WDFW wolf specialists will be available to ensure speedy response times?	A rapid response is critical to determining the cause of a livestock mortality, whether it be from wolves, other predators, or other causes. The recommended plan indicates that on-site inspections will be made by WDFW or USDA Wildlife Services within 24 hours of the incident being reported (see Chapter 12, Task 4.2.3). This response time should be sufficient for making correct determinations. WDFW will have sufficient trained staff available to conduct these investigations and will also contract with USDA Wildlife Services to provide assistance of this type.
WDFW should supply or loan equipment like fladry, turbo fladry, lighting sensors, alarm systems, and other tools to ranchers to deter wolves.	Under Chapter 12, Task 4.1.2, of the recommended plan, WDFW will assist livestock owners with obtaining equipment of this type, but producers would need to pay for this with their own money. However, under Task 4.3.4, WDFW will attempt to secure a funding source for implementing proactive deterrents, which will provide greater amounts of reimbursements for these types of equipment. Defenders of Wildlife has announced its intention to expand its program to reimburse livestock producers in the West for proactive deterrents, which could benefit some producers in Washington.
WDFW could develop a mobile response team of	An example of a successful range rider program is described in

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volunteer range riders to alleviate conflicts for livestock producers.	Chapter 4, Section B, of the wolf plan. A volunteer program of the type mentioned in this comment is worth investigating and could be managed by a partner organization or perhaps WDFW.
The plan needs a more detailed strategy of how ungulate habitat will be managed.	The recommended wolf plan states that ungulate populations and their habitat will be managed through the implementation of WDFW's game management plans (see Chapter 5, Section F; Chapter 12, Task 5.2.1). These plans contain more detailed information on desired habitat management for ungulates, thus inclusion of this type of information into the wolf plan is not necessary.
This section indicates that better habitat management, flexibility in harvest strategies, and increased prevention of poaching are needed to sustain healthy ungulate populations. WDFW's current activities have generally been unsuccessful to date in realizing any meaningful improvements. What will WDFW do in the future to accomplish these objectives that it isn't already doing?	Improvements in habitat management could be achieved by continuing to work with other land management agencies. Protection of important ungulate habitats, such as winter habitat, remains a priority. WDFW's Game Management Plan 2009-2015, various elk herd plans, and the White-tailed Deer Management Plan all describe different types of habitat enhancement that are needed for different ungulate species.
Support increased habitat management to benefit both ungulate populations and wolves.	As noted in Chapter 12, Task 5.2.1, habitat maintenance and enhancement of habitat for ungulates will be a key part of maintaining ungulate abundance as wolves recover.
The ability to improve habitat for ungulates is limited by land management activities that can take place in those areas and by opposition from stakeholders seeking a "natural" landscape. Wolf recovery should be based on currently available habitat to support prey, because those habitats should already be managed for healthy ungulate populations. The generalization that habitat management will help ungulate herds is likely not true, especially if herds are limited by other factors. The plan presents too simplistic and too optimistic of a view of habitat management for ungulates. Furthermore, habitat improvements will take at least several years to provide benefits to ungulates, whereas wolf predation may generate rapid population declines in ungulates.	Improvements in habitat management could be achieved by continuing to work with other land management agencies. Protection of important ungulate habitats, such as winter habitat, remains a priority. WDFW's Game Management Plan 2009-2015, various elk herd plans, and the White-tailed Deer Management Plan all describe different types of habitat enhancement that are needed for different ungulate species.
The plan should recommend that grazing allotments on public land be closed so that more forage is available to deer and elk. This will enhance ungulate numbers, thereby benefiting hunters and wolves.	Allotment permits issued by the U.S. Forest Service already incorporate the need to provide adequate forage for wild ungulates in addition to that for cattle. Decisions to manage grazing allotments, including closures, are made by the Forest Service, not WDFW, thus a recommendation of the type made in this comment is not included in the plan. Changes in the management of allotments go through a public review process under the National Environmental Policy Act (NEPA), which allows the public to recommend alternative forms of management, such as closures to benefit wolves.
One method to improve habitat for wolves and their prey is to include plans for permanent road closures. The wolf plan should reference work that is being considered or already being conducted by other agencies, such as Washington Department of Natural Resources and the U.S. Forest Service.	The recommended wolf plan does not propose closing forest roads to protect wolves. WDFW reviews and comments on draft forest plans prepared by other federal and state agencies, which may be reluctant to close forest roads if this results in significant reduction of recreational activities in popular areas. Forest road closures can benefit some ungulate populations, therefore WDFW game management plans often suggest collaboration between

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	WDFW and other state and federal agencies to consider closures of this type. The wolf plan states that ungulate populations will be managed through the implementation of WDFW's game management plans, thus the wolf plan does not discuss the more detailed management approaches for ungulates that are included in the game management plans.
Where the opportunity presents itself, WDFW should work with timber companies and other land management agencies to manage ungulate habitat to provide optimal interspersion of foraging habitat and hiding cover for ungulates. This could help reduce hunting success of wolves and reduce predation rates.	WDFW actively works with federal and state forest management agencies and private timber companies to provide habitat for ungulates, but this is more of a challenge with private companies, which manage their lands for profit. Even federal and state forest management agencies are somewhat limited in what they can accomplish for habitat improvement for ungulates because of requirements that they protect older growth forests.
More logging and prescribed burning is needed, not less, to increase browse production for ungulate populations. This may help offset increased predation rates by wolves.	This comment is correct that logging and prescribed burning helps deer and elk populations by increasing browse production. WDFW actively works with federal and state forest management agencies and private timber companies to provide habitat for ungulates, although agencies are somewhat limited in what they can accomplish because of emphasis in recent decades on protection of older growth forests.
Tribes will not accept reducing their ungulate harvests. State recreational hunters must reduce their harvest first. Current tribal harvests are below needs. All mortality factors must be managed concurrently.	Comment noted.
WDFW should reduce the number of hunting licenses sold while wolves are re-establishing themselves, so they will have enough prey.	WDFW has a dual mandate to preserve, protect, and perpetuate the native wildlife species of the state and to provide hunter opportunity by maintaining sustainable ungulate populations. As stated in the wolf plan, WDFW believes it can accomplish both objectives. Thus, WDFW does not believe that directly limiting deer and elk hunting is necessary to recover wolves. However, the wolf plan states that harvest objectives levels may need to be adjusted (probably mainly through changes in antlerless take) if overall predation levels on herds increase. Harvest objectives should be compatible with long-term sustainable populations of ungulates and predators.
WDFW should do more to reduce the tremendous impact cars have on deer populations in the Methow valley; this would provide more deer for hunters and wolves.	The Methow valley does experience a high level of collisions between deer and cars. WDFW works with the Washington State Department of Transportation to design highways to reduce ungulate-car collisions. However, in many situations, there are few practical solutions to the problem. Wildlife fencing is often impractical, expensive to build and maintain, and often inhibits the movement of wildlife to important habitats.
The plan needs greater emphasis on restoring ungulate populations as a prey base for wolves.	The recommended wolf plan calls for implementation of WDFW ungulate management plans, which should result in achieving healthy populations of deer, elk, and other species. The plan (Chapter 12, Task 5.2) lists three main methods for enhancing ungulate populations: improving habitat, management of recreational hunting, and reduction of poaching.
The plan needs to provide better information on how WDFW will maintain ungulate populations and hunter opportunity in the face of substantial wolf predation. The impact of wolf recovery on ungulate seasons and land access also needs to be	Implementation of WDFW game management plans for ungulates should result in achieving healthy population objectives for elk, deer, and other species. This goal would be accomplished primarily through habitat improvement, harvest management, and minimizing illegal hunting (see Chapter 12, Task 5, for more

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addressed.	detail). Harvest objectives (especially for antlerless take) may need to be adjusted if overall predation levels increase, and they should be compatible with long-term sustainable populations of predators and prey. Wolf recovery should not impose any additional limitations on land access for hunters.
The plan calls for increased enforcement to maintain ungulate numbers, yet these measures have generally been unsuccessful to date in realizing any meaningful improvements.	WDFW already prioritizes enforcement in areas known to experience higher rates of poaching. Presence of wolves will further drive enforcement priorities regarding poaching of ungulates.
The plan needs to include methods for protecting localized declining ungulate herds prior to delisting.	The recommended wolf plan now contains a provision stating that WDFW could consider reducing wolf abundance in localized areas occupied by at-risk ungulate populations before state delisting of wolves occurs if WDFW determined that wolf predation was a primary factor limiting the population and the wolf population in that wolf recovery region was healthy (i.e., it exceeds the delisting objectives for that recovery region). For the purposes of the recommended wolf plan, at-risk ungulate populations are defined as those that are federal or state listed, or any ungulate population for which it is determined to have declined 25% or more below management objectives for three or more years and population trend analysis predicts a continued decline. For populations for which numeric estimates and/or management objectives are not currently available, it will not be possible to use a specific threshold to assess a need for management action. Instead WDFW will use other sources of information related to the population, such as harvest trends, hunter effort trends, sex and age ratios, and others.
The plan must set better criteria (i.e., predator-prey ratios, cow-calf ratios, minimum elk numbers) for deciding when to intervene on declining ungulate populations and when to take appropriate wolf management responses. The plan is unclear on how much research is necessary to document adverse wolf impacts on ungulates before action is taken.	The recommended wolf plan now contains a provision stating that WDFW could consider reducing wolf abundance in localized areas occupied by at-risk ungulate populations before state delisting of wolves occurs if WDFW determined that wolf predation was a primary factor limiting the population and the wolf population in that wolf recovery region was healthy (i.e., it exceeds the delisting objectives for that recovery region). For the purposes of the recommended wolf plan, at-risk ungulate populations are defined as those that are federal or state listed, or any ungulate population for which it is determined to have declined 25% or more below management objectives for three or more years and population trend analysis predicts a continued decline. For populations for which numeric estimates and/or management objectives are not currently available, it will not be possible to use a specific threshold to assess a need for management action. Instead WDFW will use other sources of information related to the population, such as harvest trends, hunter effort trends, sex and age ratios, and others. The plan states that decisions of this type would be based on scientific principles and evaluated by WDFW.
WDFW should increase hunting of cougars, bears, and bobcats to control their numbers. This would help protect ungulate populations as wolves increase and would benefit wolves through reduced competition over food.	One of WDFW's management goals for black bears, cougars, and other predators is to preserve, protect, perpetuate, and manage these species and their habitats to ensure healthy, sustainable, and viable populations. Thus, WDFW would not reduce the numbers of some predator species in an effort to increase the abundance of others. As noted in Chapter 6 of the recommended wolf plan, ecological relationships within predator communities are complex, thus the type of management suggested in this comment could easily fail to produce the intended result (in this case, benefit

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	wolves).
Supplement elk populations in wolf recovery areas to increase elk populations. If unsuccessful, domestic livestock should be purchased to support the wolves.	The first suggestion is not a practical approach for managing multiple elk populations. The second suggestion is unrealistic and could lead to increased levels of wolf depredation on livestock in an area.
Support the use of ungulate monitoring in the wolf plan to ensure that deer and elk numbers remain within acceptable limits. The plan should explicitly state how these numbers will be assessed and WDFW should be held accountable to provide those numbers.	The level of detail requested in this comment is beyond the scope of the wolf plan, but additional information on ungulate monitoring can be found in other WDFW documents pertaining to deer, elk, and other big game management.
Support the draft plan's use of non-lethal hazing methods for wolves showing signs of habituation to humans before using lethal measures.	Comment noted.
The recommendation to expand existing efforts to maintain and restore habitat connectivity for wolves may be the single most expensive and publicly sensitive part of the plan.	WDFW believes that maintaining and restoring habitat connectivity is important in achieving recovery goals for wolves and other large carnivores. Chapter 12, Task 7, of the recommended wolf plan identifies actions needed to accomplish this. Few if any actions related to improving habitat connectivity would be done solely on behalf of wolves. They would also be conducted to assist in the conservation of other large carnivores (such as grizzly bears, wolverines, and lynx), ungulates, and other wildlife. Much of this work would be done through existing funding opportunities and therefore may not require large amounts of new funding. WDFW acknowledges that land purchases by the government can be controversial, but conservation easements and other types of agreements may be equally suitable methods for improving habitat connectivity without being as controversial. Acquisitions would only be done with willing landowners.
Public hunting of cougars should be reduced if wolves are shown to be adversely affecting cougar populations in the state.	If cougar numbers were shown to be declining in the state for any reason, WDFW would evaluate whether reductions in cougar hunting were needed. As described in Chapter 6, Section A, of the recommended plan, wolf recovery has not been shown to have widespread effects on cougar abundance in other western states or provinces. Thus, cougar abundance is not expected to decline greatly in Washington as wolf numbers expand.
Support a plan that allows WDFW to manage and control problem wolves immediately, if needed, to protect other listed species.	Chapter 12, Task 8, of the recommended plan describes the steps that would be taken to manage conflicts between wolves and other listed species. WDFW would work with partner agencies to resolve conflicts as quickly as possible. In many cases, in-depth field investigations or research may be needed to confirm that a listed species is indeed being adversely impacted by wolves and not by other factors. This could slow response times, but would ensure that the correct problem(s) are addressed when management actions are taken.
The plan should include greater discussion on management options for avoiding potential wolf impacts on listed species, such as woodland caribou. Management actions should be based on good science.	Chapter 12, Task 8, of the recommended wolf plan describes the steps that would be taken to manage conflicts between wolves and other listed species. WDFW would work with partner agencies to resolve conflicts as quickly as possible. In many cases, in-depth field investigations or research may be needed to confirm that a listed species is indeed being adversely impacted by wolves and not by other factors. This could slow response times, but would ensure that the correct problem(s) are addressed when management actions are taken. Some additional discussion has

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	been added to this task, but greater detail is difficult to provide in a plan of this type because of the many species and different circumstances that need consideration.
Education about wolves should also cover the benefits they provide to ecosystems. WDFW's wolf webpage should include more information on this topic.	WDFW has added material to Chapter 12, Task 9, of the recommended plan to include wolf-related benefits to ecosystems.
I believe wolf education that targets livestock producers, hunters, and backcountry hikers will be vital in promoting tolerance of wolves.	Several of the tasks (9.2, 9.3, 9.4, 9.5) in Chapter 12 of the wolf plan include actions to promote tolerance of wolves among these stakeholder groups.
WDFW should provide wolf educational materials to hunters at the time they buy licenses and to ranchers. These should explain that their fears are unfounded, that wolves will not decimate ungulate populations, and that wolves are intelligent family-oriented animals.	Under Chapter 12, Tasks 9.3 and 9.4, of the recommended plan, WDFW will develop and provide educational materials for livestock owners and hunters, both of which are considered key stakeholder groups in wolf conservation and management. These materials would be provided in various ways. A better method of reaching hunters might be through publication of wolf information in the hunting regulation pamphlet rather than by distribution of materials at the time of license purchase.
WDFW should host workshops that bring ranchers dealing with wolf-livestock conflicts in neighboring states to inform ranchers in Washington about successful practices.	WDFW would consider educational opportunities of this type. These could be part of the various training and educational programs for livestock owners mentioned in Chapter 12, Task 9.3, of the recommended plan.
I believe wolf education in rural areas will be vital in promoting tolerance of wolves.	Several of the tasks (9.2, 9.3, 9.4) in Chapter 12 of the recommended plan include actions that would mainly or partially target rural residents.
Hikers should be educated to not bring their dogs with them when hiking in areas inhabited by wolves.	Under Task 9.5.2 in Chapter 12 of the recommended plan, wolf information could be distributed to recreationists at trailheads and other appropriate outlets. This material would include information warning outdoor users about the potential for negative interactions between wolves and dogs in areas occupied by wolves. This could include a suggestion that dog owners leave their dogs at home when hiking in such areas. This suggestion is also given in Chapter 7, Section C.
WDFW should consider working with groups such as Wolf Haven International, the Wolf Education and Research Center, and Conservation Northwest, who are also committed to presenting balanced information campaigns about wolves.	WDFW would be willing to work with any partner group that would provide balanced educational information about wolves (see Chapter 12, Task 9.5.4, of the recommended plan).
Would like to see community-based conservation approaches used for recovering wolves. These will help resolve conflicts.	Community-based conservation approaches (where conservation and development are simultaneously achieved) may have applicability in wolf recovery in Washington. WDFW would be willing to work with partners to investigate the application of this approach in resolving wolf-human conflicts at the community level.
Chapter 13 – Costs and funding priorities	
It's important that WDFW coordinate with other agencies so there isn't competition for management dollars and redundancy in programs.	This comment is correct, as noted in Chapter 12, Task 10, of the recommended plan.
Washington State's current fiscal crisis should prevent any money being spent on wolf management. The state just can't afford it.	Washington's current fiscal problems will present challenges to funding certain portions of the recommended wolf plan. The availability of various federal funds and partnering with other state and federal agencies, organizations, and other entities will be important in addressing some aspects of the plan and in reducing

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	the financial burden on WDFW. As wolves continue to reestablish in Washington, it is unrealistic to believe that no public funding should be spent on their conservation and management, especially for monitoring and conflict management.
Oppose spending tax dollars on wolf recovery, including compensation.	As a top predator that is returning naturally to Washington, wolves have a much greater capacity to affect people, other wildlife, and ecosystems than most other species of wildlife. The many potential benefits and costs resulting from the reestablishment of wolves in the state require that considerable management effort (and associated spending) be devoted to this species. Partnering with non-governmental organizations will help reduce some of the taxpayer costs associated with implementing the actions called for in the recommended plan. However, it is unrealistic to believe that no public funding should be devoted to a species that has the potential to affect a number of stakeholder groups.
Increased funding for wolf recovery is extremely important and should be secured before implementation of the plan begins.	Long-term conservation and management projects, such as those described in the recommended plan, are ongoing and cannot be delayed while sufficient funding is accrued. Typically, funds for most WDFW activities are provided on an annual or biannual basis.
Wolf conservation and management costs will likely be larger than anticipated in the plan. The annual cost of the plan including compensation will be closer to $750,000-$1,000,000 per year. The estimates for livestock conflicts are too low and should be increased.	Chapter 13, Table 14, of the recommended plan already indicates that funding needs for wolf conservation and management could reach about $400,000 by 2016. Costs beyond then become increasingly difficult to predict and will depend in part on how many wolves are present in Washington at that time. However, annual funding needs would likely continue to grow to higher levels. Expenditures for addressing wolf-livestock conflicts in Table 14 are expected to be relatively small over the next 6 years because of the state's small wolf population. Conflicts will likely increase over time as the population grows, but wolf numbers in Washington are expected to increase more slowly than in Idaho, Montana, and Wyoming because Washington lacks large blocks of high quality habitat for wolves.
The cost estimates provided in the plan are very general. Are other costs buried in other parts of the state budget for more staff, office space, vehicles, and other operating costs?	Many of the cost estimates given in Chapter 13, Table 14, of the recommended wolf plan, such as those for hiring a wolf specialist, include operating costs such as staff time, office space, office equipment, and vehicles. However, for existing staff participating in wolf-related work, some of these costs are already covered through other funding sources.
Concerned that staff losses at WDFW will mean fewer people available to conduct wolf management tasks.	Staff and budget reductions at WDFW are affect many aspects of the agency's work. As with all of its activities, WDFW's work on wolves will need to be done with the resources available and prioritized by importance. The recommended wolf plan calls for hiring a wolf specialist who will conduct much of the field work on wolves for the agency. Because wolf conservation and management is a priority for WDFW, management of other nongame species could be reduced as work on wolves increases.
Concerned that more bureaucrats will be hired with state taxpayer dollars to manage wolves.	This likely will not happen because most wolf conservation and management activities need to be performed at the field level rather than the headquarters level.
Funding measures described in the plan do not consider the costs associated with lawsuits involving wolf recovery.	The estimated budget presented in Chapter 13 of the recommended wolf plan focuses only on the high priority conservation and management activities called for in the plan. Costs of lawsuits are an unknown factor for many of WDFW's

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	activities, including wolves, and are not possible to anticipate.
If there are so few wolves in Washington, why not let them remain endangered rather than undertaking costly recovery measures? Is WDFW receiving some sort of outside funding (for example, Title VI "slush funds") in exchange for recovering wolves?	WDFW attempts to actively manage state listed species with the goal of achieving recovery and eventual delisting. WDFW relies on a combination of federal and state endangered species grants to fund current wolf conservation and management efforts.
With limited resources available, where will WDFW get the funding to expand habitat improvements for ungulates and enforcement against poaching of ungulates, as called for in the wolf plan? These activities need a funding source.	Because of staff and budget reductions at WDFW, some desired activities such as expanded anti-poaching enforcement may be delayed or performed at a reduced level until improved funding becomes available. As noted in Chapter 13, WDFW will continue to seek additional funding for wolves from different sources. It will also work partner agencies and organizations to conduct some activities and to provide some funding.
Adequate funding for compensation is important. However, I am concerned that the Legislature will not fully fund the compensation portion of the plan, especially because of the state's current budget crisis.	WDFW considers adequate funding for depredation compensation to be very important. At this time, the Legislature may be unable to fund the compensation program proposed in the recommended wolf plan (see Chapter 4, Section G). However, compensation in Washington is currently available through special grants to WDFW from the U.S. Fish and Wildlife Service and Defenders of Wildlife. Until the wolf plan is approved, WDFW would likely pay only the full market value of confirmed wolf depredations and half the market value for probable wolf depredations rather than the higher rates recommended in the plan. Because of the small size of Washington's wolf population, only small amounts of funding for compensation is expected to be needed through at least 2015.
Livestock owners should receive financial assistance for purchasing and implementing non-lethal measures to prevent livestock losses. Making these measures available at little or no cost to ranchers is just as important as paying compensation for livestock losses and needs full funding.	Implementation of proactive non-lethal deterrents will impose additional financial costs on the livestock producers using them. Under Chapter 12, Task 4.3.4, of the recommended wolf plan, WDFW will seek funding to help producers implement these types of deterrents. However, widespread use of proactive measures would likely mean that total costs exceed available funding and that most producers will receive no or only partial reimbursement.
Who will pay for non-lethal control measures to protect livestock? Currently, WDFW has problems paying for crop damage due to elk. Protection of livestock from wolves will be much more expensive, and the funding sources for this should be outlined now.	Implementation of proactive non-lethal deterrents will impose additional financial costs on the livestock producers using them. Under Chapter 12, Task 4.3.4, of the recommended wolf plan, WDFW will seek funding to help producers implement these types of deterrents. However, widespread use of proactive measures would likely mean that total costs exceed available funding and that most producers will receive no or only partial reimbursement.
The plan should identify funding priorities among the many tasks associated with wolf conservation and management. This would allow limited funding to be directed toward activities of high priority.	High priority tasks associated with wolf conservation and management are shown in Chapter 13 and Table 14 of the recommended wolf plan.
Adequate funding is important for monitoring the wolf population as it recovers. This will provide several benefits, including ensuring prompt delisting.	WDFW agrees with this comment.
Wolf education programs should be a high priority and well funded.	Education and outreach are one of the most important components of wolf conservation and management (see Chapter 9 and Chapter 12, Task 9). In Chapter 13, outreach and education are considered a high priority activity and rank third in estimated spending over the next 6 years after monitoring and protection.

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Funding for translocation should be included as part of the plan.	Translocation is not considered a high priority activity over the next 6 years in Chapter 13, but could become an important priority beyond then if wolves are failing to reach one of the recovery regions designated in the plan, thereby delaying downlisting and delisting.
Research on wolves should be well funded.	WDFW does not list research as a high priority activity over the next 6 years in Chapter 13. Nevertheless, research (Chapter 12, Task 11) will be needed to support many of the activities called for in the recommended plan, including population modeling, determination of population viability, and impacts to game populations. Therefore, research needs to be well funded.
Because of Washington's current fiscal crisis, funding for research, training, and education should be deleted.	Research, training, and education are all important components of wolf conservation and management in Washington. Failure to fund these would leave major gaps in conservation and management efforts and would not be in the public's interest. For example, education and outreach directed toward livestock producers, rural residents, and outdoor users regarding methods for reducing conflicts with wolves (Chapter 12, Tasks 9.2 through 9.5, of the recommended wolf plan) can help reduce the overall costs of wolf management. Research (Chapter 12, Task 11) will be needed to support many of the activities called for in the plan, including population modeling, determination of population viability, and impacts to game populations.
Funding should be prioritized toward management and control rather than education and outreach.	WDFW considers education and outreach about wolves to be a high priority component of wolf conservation and management (Chapter 13). Chapter 12, Tasks 9.2 through 9.5, of the plan calls for education and outreach of livestock producers, rural residents, and outdoor users about methods for reducing conflicts with wolves. Education and outreach can therefore be important in reducing the overall costs of wolf management, including control work.
Suggest WDFW hire a wolf specialist to conduct general purpose wolf-related activities and reduce funding for remaining wolf-related activities by 75%.	Major funding restrictions of the type recommended in this comment would mean that many necessary aspects of wolf conservation and management would not be performed or performed only a limited basis. These activities could include resolving wolf-livestock and human safety conflicts, managing game populations affected by wolves, monitoring, enforcement against illegal killing, outreach and education, research, and collaboration with other entities to reduce costs for WDFW.
WDFW's resources should be devoted to game and other wildlife management needs, not to wolf recovery.	As a top predator that is returning naturally to Washington, wolves have a much greater capacity to affect people, other wildlife, and ecosystems than most other species of wildlife. The many potential benefits and costs to other wildlife populations resulting from the reestablishment of wolves in the state require that considerable management effort (and spending) be devoted to this species.
Wolves should not receive greater priority for spending than other listed wildlife.	As a top predator that is returning naturally to Washington, wolves have a much greater capacity to affect people, other wildlife, and ecosystems than almost any other species of listed wildlife. The many potential benefits and costs resulting from the reestablishment of wolves in the state require that considerable management effort (and spending) be devoted to this species.
Funding human needs in this state is far more important than paying to recover wolves.	As a top predator that is returning naturally to Washington, wolves have a much greater capacity to affect people, other wildlife, and

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	ecosystems than most other species of wildlife. The many potential benefits and costs to the public resulting from the reestablishment of wolves in the state require that considerable management effort (and spending) be devoted to this species.
Gaining legislative support for funding the plan needs to be a number one priority of WDFW.	WDFW will work with the Legislature to obtain funding support for various programs involving wolves, especially those providing compensation for livestock depredation and implementation of proactive deterrents.
Because of the state's current financial crisis and WDFW's shrinking budget, where are the funds going to come from for the many different aspects of wolf recovery and management? It is doubtful that there will be enough funding to adequately compensate livestock owners for economic losses due to wolf recovery.	Nearly all funding for wolf-related activities in Washington currently comes from federal endangered species recovery grants, shared costs with partner agencies and non-governmental organizations, research grants, and state nongame and endangered species funding. These sources are likely to continue at some level in the future. WDFW will continue to explore new funding opportunities to supplement these sources. In particular, WDFW will work with the Legislature to obtain funding support for compensation for livestock depredation and implementation of proactive deterrents.
Where will the money for wolf recovery come from after wolves destroy game populations and hunting revenue declines? There will be no money left to fund wolf management.	WDFW does not expect major declines in game populations and hunting revenue to occur because of the reestablishment of wolves in Washington (Chapter 14, Section C). Hunting license revenue funds only a tiny portion of the administrative costs devoted to wolf conservation and management in the state. Nearly all funding for wolf-related activities comes from federal endangered species recovery grants, shared costs with partner agencies and non-governmental organizations, research grants, and state nongame and endangered species funding. These sources are likely to continue at some level in the future, but will need to be supplemented by funds from other sources.
Oppose WDFW spending funds from the sales of hunting licenses on wolf recovery.	Nearly all funding for wolf-related activities in Washington currently comes from federal endangered species recovery grants, shared costs with partner agencies and non-governmental organizations, research grants, and state nongame and endangered species funding. Hunting license revenue currently funds only a tiny portion of the administrative costs devoted to wolf conservation and management in the state. Hunting license revenue is not expected to be used in the future except for managing some wolf-ungulate interactions.
Any revenue obtained from hunting wolves should be put into programs that benefit wolves and their prey, including habitat restoration.	The recommended wolf plan only describes the conservation and management activities needed for wolves until they become state delisted. The plan does not make a decision on whether wolves will be hunted by the public after state delisting occurs. Thus, it does not discuss how revenue from public wolf hunting would be spent, although it very likely would contribute to WDFW's game management activities. This could include habitat restoration projects for game.
Compensation programs should be paid by taxpayers, not hunters or livestock operators.	Compensation for wolf depredation of livestock has recently shifted from a conservation organization to a state-run program that has received initial funding grants from the U.S. Fish and Wildlife Service and Defenders of Wildlife. WDFW will work with U.S. Fish and Wildlife Service, the state legislature, and other entities to continue adequate funding for compensation in the future. Hunting revenue will not be used for this program. Livestock organizations may have a role to play in maintaining the

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	program, but it would not be through direct contributions by members.
Livestock operators should contribute to the costs of wolf recovery because they have long been subsidized by taxpayers.	Compensation for wolf depredation of livestock has recently shifted from a conservation organization to a state-run program that has received initial funding grants from the U.S. Fish and Wildlife Service and Defenders of Wildlife. WDFW will work with U.S. Fish and Wildlife Service, the state legislature, and other entities to continue adequate funding for compensation in the future. Livestock organizations may have a role to play in maintaining the program, but it would not be through direct contributions by members.
This chapter presents a wish list of spending on wolf-related activities and is vague on how funding for wolf management will be secured. This section could indicate whether State Wildlife Grants, Pittman Robertson funds, and other sources will be used.	Chapter 13 has been revised to show costs for implementing high priority activities. It also provides more information on funding sources. Currently, nearly all funding for wolf-related activities in Washington comes from federal endangered species recovery grants, shared costs with partner agencies and non-governmental organizations, research grants, and state nongame and endangered species funding. Hunting license revenue and Pittman Robertson grants currently fund only a tiny portion of the administrative costs devoted to wolf conservation and management in the state. Hunting license revenue and Pittman Robertson grants are not expected to be used in the future except for managing some wolf-ungulate interactions.
Once wolves are federally delisted, funding from the federal government will decline or disappear. Establishing a trust originating from a Congressional appropriation or private donations could build interest and help offset the future high costs of managing wolves in the state.	This suggestion is worthy of consideration.
WDFW should not be too reliant on federal funding to achieve wolf recovery because these sources of funds could suddenly shift. The state needs to be able to contribute significant amounts of its own funding on a long-term basis.	No funding sources are ever considered permanent. Thus, WDFW will continue to seek out new sources of funding in the future to maintain or expand wolf conservation and management activities.
To raise funds for livestock depredation, WDFW could consider a "wolf depredation" check-off on the filing of state income taxes or a wolf license plate.	These suggestions are worthy of consideration.
It is unfortunate that the most innovative funding source identified in the draft environmental impact analysis and plan is to create a new wolf license plate, especially since there is currently a moratorium on new background license plates in the state.	Additional suggestions for potential funding sources were added to Chapter 13. The moratorium on new background license plates was recently lifted.
The state general fund should be used to pay for monitoring the size of the wolf population.	Monitoring of the wolf population is already being funded by federal endangered species recovery grants, shared costs with partner agencies and non-governmental organizations, and state nongame and endangered species funding. These sources are likely to continue at some level in the future, but could perhaps be supplemented by additional sources such as the general fund. However, WDFW has received less funding from the general fund in recent years and this trend is expected to continue because of the state's current budget problems.
The U.S. Fish and Wildlife Service received large	Private funding will be important in many wolf conservation and

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amounts of money from special interest groups and support from big city folks to reintroduce wolves into Yellowstone and Idaho. These sources of revenue should be explored for wolf recovery funding in Washington as well.	management activities. WDFW will explore funding opportunities from all sources, including conservation organizations and other non-governmental entities.
Private funding of wolf recovery will be critical.	Private funding will be important in many wolf conservation and management activities. WDFW will explore funding opportunities from all sources, including conservation organizations and other non-governmental entities.
If lack of adequate funding for translocation is a concern, I am sure there are private conservation groups that could assist with funding for this activity.	Private funding will be important in many wolf conservation and management activities, including possibly translocation if this activity is initiated. In the case of translocation, WDFW would explore funding opportunities from multiple sources, including conservation organizations and other non-governmental entities. The recent fisher reintroduction onto the Olympic Peninsula was funded in part by conservation groups.
Funding for wolf management activities, including compensation, should come from pro-wolf groups and supporters rather than from the limited funds devoted to other wildlife management programs.	WDFW will explore funding opportunities from all sources, including conservation organizations, to help with wolf conservation and management (Chapter 12, Task 4.3.4). However, for other wolf management programs, it is unrealistic to expect conservation organizations to provide all funding. As a top predator that is returning naturally to Washington, wolves have a much greater capacity to affect people, other wildlife, and ecosystems than most other species of wildlife. It is therefore reasonable that some public funding should go towards managing wolves, which have the potential to affect so many segments of society.
Suggest that funding for proactive measures be obtained from a 0.5 of 1% wolf/endangered species sales tax.	This funding source is probably not worthy of consideration, given the current anti-tax mood of state residents. If these sentiments change in the future, then perhaps it could be considered.
There should be a tax on all private lands based on how much the current use has displaced the natural communities. A fee of $5/acre for parcels which support little or none of the original native plant and animal communities, with reduced fees for large blocks of land that support at least some of the native community, could provide an annual revenue of about $100 million dollars. This money could be used for acquisition of wildlife habitat, restoration of native communities, improve management of human activities, such as poaching, and studying the impacts of humans on wildlife.	Comment noted.
Support ways for the general public to contribute financially to wolf recovery.	One addition made to Chapter 13 was to list voluntary public contributions as a possible funding source.
I am willing to pay taxes or other fees to ensure there are programs to recover wolves in the state.	Comment noted.
Chapter 14 – Economic analysis	
The economic costs of wolf recovery are underestimated in the draft wolf plan.	As described in Chapter 14 of the recommended wolf plan, it is difficult to predict with certainty the total value of the costs and benefits that will be associated with wolf recovery in Washington. This is partly because of the difficulty in predicting the numbers and locations of wolves that will become reestablished in the state.

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	As noted in Chapter 14, Section B, some types of costs for livestock producers (such as physiological impacts to livestock, changes in grazing methods, additional ranch labor, and additional ranch supplies) could not be analyzed because of a lack of data to conduct analyses. Thus, costs for livestock owners living in or using areas occupied by wolves are perhaps underestimated. As noted in Chapter 14, Section B, a small wolf population (fewer than 100 animals) is expected to have few negative effects on big game hunting and related economic activity in the state, whereas a larger wolf population (200 or more animals) will likely produce greater impacts. Despite this, WDFW does not believe that the total costs of wolf recovery will be high. Wolf-related tourism has the potential to offset some overall costs (see Chapter 14, Section D).
Wolf recovery will be too much of a financial burden on local economies, taxpayers, livestock owners, and governments (through reduced tax revenues), and the state as a whole.	WDFW does not believe this statement will be true. As described in Chapter 14 of the recommended wolf plan, it is difficult to predict with certainty the total value of the costs and benefits that will be associated with wolf recovery in Washington. This is partly because of the difficulty in predicting the numbers and locations of wolves that will become reestablished in the state. As noted in Chapter 14, Section B, some types of costs for livestock producers (such as physiological impacts to livestock, changes in grazing methods, additional ranch labor, and additional ranch supplies) could not be analyzed because of a lack of data to conduct analyses. Thus, costs for livestock owners living in or using areas occupied by wolves are perhaps underestimated. As noted in Chapter 14, Section B, a small wolf population (fewer than 100 animals) is expected to have few negative effects on big game hunting and related economic activity in the state, whereas a larger wolf population (200 or more animals) will likely produce greater impacts. Despite this, WDFW does not believe that the total costs of wolf recovery will be high. Wolf-related tourism has the potential to offset some overall costs (see Chapter 14, Section D).
Wolves should not be considered more important than people trying to make a living.	WDFW acknowledges that some people will experience adverse effects as a result of wolf recovery in the state, but believes the number of people impacted will be relatively small. A major goal of the wolf plan is to reduce conflicts with wolves through various proposed management tools so that large numbers of people are not adversely affected by wolf recovery. These tools include the use of both non-lethal and lethal measures to minimize and prevent wolf-livestock and other conflicts, generous compensation for livestock depredations, methods to address wolf impacts to at-risk ungulate populations, and measures to prevent wolf-human interactions. Outreach and education programs will be used to inform the public on ways to avoid conflict situations with wolves.
The costs of wolf recovery are likely to be high and will likely exceed any financial benefits generated from tourism.	As described in Chapter 14 of the recommended wolf plan, it is difficult to predict with certainty the total value of the costs and benefits that will be associated with wolf recovery in Washington. This is partly because of the difficulty in predicting the numbers and locations of wolves that will become reestablished in the state. Nevertheless, based on the analyses presented in Chapter 14, WDFW does not believe that the total costs of wolf recovery will be high. However, total costs could indeed surpass the benefits generated by wolf-related tourism in Washington if this form of

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	tourism develops only to limited extent.
The economic benefits of wolf recovery mainly through increased tourism and healthier ungulate herds will likely exceed the costs of recovery.	As described in Chapter 14 of the recommended wolf plan, WDFW does not believe that the total costs of wolf recovery will be high in Washington. It is possible that the benefits mentioned in this comment could eventually surpass the costs resulting from conflicts. Overall, it is difficult to predict with certainty the total value of the costs and benefits that will be associated with wolf recovery in Washington. This is partly because of the difficulty in predicting the numbers and locations of wolves that will become reestablished in the state.
This chapter does a good job of identifying and addressing the potential problems associated with wolves but devotes only one paragraph to positive impacts. More information should be provided.	It is unclear whether this comment is referring to the potential positive economic impacts of wolves or to overall positive impacts, including ecological benefits. Currently, the recommended wolf plan discusses the potential positive economic impacts in Chapter 14, Section B (see page 182) and Section D, and the potential positive ecological impacts in Chapter 2, Section C.
Economic analyses need to be presented for each county that will likely be inhabited by wolves. The use of broader statewide data hides the adverse impacts that will occur in smaller areas.	The use of statewide data can mask potential adverse impacts (and benefits too) on smaller geographic units. However, pertinent data are generally not available for Washington's counties, especially for ungulate populations and hunting levels. This prevents conducting meaningful analyses of impacts at the county level. Additionally, the numbers and locations of wolves that will become reestablished in the state cannot be predicted at this time, which further precludes county-level analyses.
This chapter should be updated annually as data on wolf impacts come in from other states.	Although occasional updated economic analyses may be informative, WDFW does not believe that annual updates are necessary. The funding needed for such updates is better spent on actual on-the-ground wolf management.
Costs of wolf recovery are disproportionately placed on landowners. Those who want wolves don't have to pay the "costs."	The first sentence in this comment is true for livestock owners and a few other landowners living in areas occupied by wolves, but not for the vast majority of landowners in these areas or statewide. Regarding the second sentence, one of the major challenges of modern wildlife conservation in the U.S. is finding methods to expand financial support for conservation from a broader segment of the public, especially wildlife supporters.
Wolf presence will require changes in how ungulates and livestock are managed, but overall, this will have relatively little economic impact to the state as a whole.	As described in Chapter 14 of the recommended wolf plan, it is difficult to predict with certainty the total value of the costs and benefits that will be associated with wolf recovery in Washington. This is partly because of the difficulty in predicting the numbers and locations of wolves that will become reestablished in the state. Nevertheless, based on the analyses presented in Chapter 14, WDFW does not believe that the total costs of wolf recovery will be high.
This chapter should discuss the costs of protecting campers, kids, and pets from wolves.	No data exist on these aspects of wolf management in other states, thus analyses of these costs cannot be made for Washington. WDFW is not aware of significant resources being spent to protect campers, children, and pets from wolves in other states, thus the costs of such protection in Washington are likely to be small.
Economic assessment and much of the science used to manage wildlife populations here was conducted in a low wolf population environment, therefore costs may be substantially understated.	This statement is incorrect. Much of the information considered and used during the preparation of WDFW's recommended wolf plan comes from Idaho and adjoining parts of Montana and Wyoming, where moderate to high densities of wolves now exist. Because Washington does not have the large amounts of high quality wolf habitat found in these states, much of Washington

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	may never support a high density wolf population. This means that the economic costs associated with wolf recovery could be lower than some people fear.
What would the economic analysis look like for 500 wolves?	Because of the limited amount of high quality habitat for wolves in Washington, it seems unlikely that the state will ever reach a wolf population of 500 animals. Thus, economic analyses for this population size were not conducted in Chapter 14 of the recommended wolf plan.
Wolf restoration will have an adverse impact on ranchers and farmers, many of whom are already barely making it financially. Wolf-livestock conflicts will result in higher production costs for livestock operators. The livestock industry is important to the state's economy.	The livestock industry is an important component of Washington's economy. As discussed in Chapter 14, Section B, of the recommended plan, WDFW believes that a wolf population numbering 100 or fewer animals would pose little detriment to the state's livestock industry as a whole. At this population level, the vast majority of producers will probably experience few if any annual costs, whereas a few individual producers would be more affected. As the wolf population becomes larger and more widely distributed, financial impacts are likely to accrue to more producers. Nonetheless, most producers in the state will likely remain unaffected.
Wolves will ruin livestock operations. It is criminal to ruin anyone's business.	As discussed in Chapter 14, Section B, of the recommended plan, inquiries with state wolf managers in Idaho, Montana, and Wyoming did not indicate that ranchers in these states are being forced out of business due to wolf depredation and other wolf-related expenses. Thus, this problem is not expected to occur in Washington.
While wolf recovery will result in some livestock depredation, the amount will not be large enough to have any serious economic impact, and can be controlled in a responsible manner.	Wolf depredation on livestock will not cause serious economic harm to Washington's livestock industry, with populations of 50 and 100 wolves causing few depredations and affecting few livestock producers (see Chapter 14, Section B). Larger and more widely distributed wolf populations in the state will likely cause greater financial impacts and affect more producers. Given the generous compensation program for livestock depredation and the lethal and non-lethal control measures proposed in the plan, WDFW believes that wolf recovery can be accomplished without significant adverse costs to most livestock owners.
Wolf restoration will not have an adverse impact on the ranching industry because ranchers will be compensated for losses.	Wolf depredation on livestock will not cause serious economic harm to Washington's livestock industry, with populations of 50 and 100 wolves causing few depredations and affecting few livestock producers (see Chapter 14, Section B,). Larger and more widely distributed wolf populations in the state will likely cause greater financial impacts and affect more producers. Given the generous compensation program for livestock depredation and the lethal and non-lethal control measures proposed in the plan, WDFW believes that wolf recovery can be accomplished without significant adverse costs to most livestock owners.
Do the livestock statistics presented in this chapter include beef cattle, feeder cattle, and dairy cattle? Some of these numbers do not look accurate.	The footnotes accompanying Tables 15 and 16 of the recommended plan have been updated to indicate more clearly that cattle numbers include beef, dairy, and other cattle. The category of "other cattle" includes heifers, steers, bulls 500 pounds and over, and all calves under 500 pounds. These figures include feeder cattle as well. The numbers presented in these tables were obtained from reports published by the National Agricultural Statistics Service.
There are very few large producing ranches left in	As discussed in Chapter 14, Section B, of the recommended plan,

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north-central Washington, thus wolf recovery will not have a big impact on the state's livestock industry.	WDFW does not believe that wolves will have a significant impact on Washington's livestock industry as a whole. However, some individual producers living in areas occupied by wolves will undoubtedly experience adverse financial impacts due to wolf recovery.
The statement that numbers of active grazing allotments on national forests have declined substantially is not completely accurate. In many parts of the state the number of permittees may have decreased but the number of AUMs (animal unit months) and acres has not decreased.	WDFW consulted with Bill Gaines of the U.S. Forest Service in Wenatchee, Washington, about this comment. He confirmed information previously given to WDFW that there has been a decline in active allotments, allotment acreage, and the number of AUMs over time on Forest Service allotments in Washington.
The numbers presented in Table 14 do not appear to be accurate compared to what actually is used, based on size of the national forest and the recollection of livestock producers having active permits.	The numbers previously presented in this table (now Table 17) were provided by the U.S. Forest Service, which administers their allotments, and therefore should be accurate. Additional grazing lease data from the Washington Department of Natural Resources, U.S. Bureau of Land Management, and WDFW have been added to the table to give a more complete picture of grazing allotments on public lands in Washington.
Will grazing allotments with wolves on national forests be rebid at a lower value due to anticipated livestock losses from wolves? If so, this could result in a decline in revenue to governments.	According to staff from the U.S. Forest Service, grazing allotments with wolves would not be rebid at a lower value due to anticipated livestock losses from wolves. Bid prices are set nationally and are non-negotiable, and therefore cannot be changed to reflect alterations in local conditions. Forest Service staff told WDFW that they would work with allotment holders to overcome potential wolf-related problems. This could include allowing changes in the locations and timing of where livestock are allowed to graze.
The plan does not consider the economic impacts of wolf depredation to small livestock producers in comparison to medium and large operators.	Small and extra small livestock producers comprise 87% of all livestock operations in Washington (see Table 16 of the recommended plan). As stated in Chapter 14, Section B, wolf-related losses could cause disproportionately greater financial hardship for small or extra small producers than for larger producers. However, a lack of sufficient background information on this topic prevented a more detailed analysis from being done in Section B.
This section states that there are possible non-lethal physiological impacts on ranch animals, including possible weight loss, stress, and lower birth rates in ranch animals resulting from the presence of wolves nearby. These are not "possible" impacts, but are documented real impacts that the livestock producer must bear.	WDFW stands by the language used about these concerns in Chapter 14, Section B, of the recommended plan. Inquiries with state wolf managers in Idaho, Montana, and Wyoming indicate that weight loss, stress, and lower birth rates among livestock exposed to wolves have not yet been confirmed under field conditions through scientific study. Recent studies by Laporte et al. (2010) and Muhly et al. (2010), which have been incorporated into Chapter 14, Section B, have shown that wolf presence can cause cattle to move more and avoid sites with high quality food. Although this implies higher energetic costs to the cattle affected, these concerns have not yet been proven to result in reduced weight gain or reproductive output. Until these problems are verified, the plan considers them as "possible" impacts.
The plan does not consider the problems caused by wolves on confined feeding operations or confined dairy operations where animal stress has a direct impact on production and profitability.	Feedlot cattle and dairy cattle kept in confined conditions or on relatively small pastures should be much less vulnerable to direct predation by wolves than beef cattle grazing on larger acreages. Feedlot cattle and dairy cattle could be vulnerable to stress from wolves occurring close by, which could potentially impact weight gain, milk production, and reproductive output. However,

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	research has not confirmed or measured these types of losses in other states, thus it was not possible to analyze these potential impacts for Washington in Chapter 14, Section B.
This section states that ranchers may need to move livestock more often or move them to alternative grazing sites to avoid wolf depredation. If livestock need to be moved more often, where do they get moved to?	As indicated in Chapter 14, Section B, ranchers wanting to avoid wolves could consider delaying livestock turnout in the spring or temporarily moving their livestock to other locations, such as elsewhere on their grazing allotment, to private pastures, or to fenced pastures. WDFW recognizes that such changes could be costly or may not be possible for some ranchers. Quantified information on these types of grazing changes by ranchers does not exist for Idaho, Montana, and Wyoming, thus an analysis of their economic impact to Washington livestock producers could not be included in this chapter.
The financial impact on a livestock operation having to hire additional personnel to keep track of animals over vast areas is prohibitive and is not discussed in the plan.	Chapter 14, Section B, of the recommended plan includes a subsection discussing the need to hire additional ranch labor in response to wolves. Some ranchers, especially those grazing larger acreages, may need to hire additional employees specifically to herd livestock in areas with wolves. Estimates of the extent and frequency of hiring additional labor for this purpose are not available for neighboring states. Therefore, an analysis of the type suggested in this comment could not be done to estimate this future cost for livestock producers in Washington.
This section states some ranchers may need to hire additional labor so they can increase supervision of ranch animals in areas with wolves, report depredation losses, and seek compensation. There may also be increased expenditures, including purchasing of replacement stock and proactive non-lethal control measures, such as herding and guarding dogs, fencing, fladry, and noise deterrents, as well as increased wear on vehicles and fuel use. Who pays for all of that?	Replacement of stock and guarding/herding dogs killed or injured by wolves would be paid through the compensation program proposed in the recommended plan (Chapter 4, Section F). As stated in Chapter 12, Task 4.3.4, WDFW will attempt to secure a funding source to assist ranchers in implementing proactive non-lethal deterrents. Some of this funding could go toward reimbursement of equipment costs for ranchers. Ultimately, however, many proactive measures and the hiring of additional ranch labor may have to be paid for by ranchers without reimbursement.
This section of the wolf plan does not consider that other necessary activities on a ranch will be neglected while the rancher is busy filing depredation claims with WDFW.	Chapter 14, Section B, of the recommended wolf plan mentions the time that ranchers could lose as they investigate potential depredation incidents and submit claims for compensation. This part of the plan provides a minimum value of the time spent on these activities, but acknowledges this is probably an underestimate for several reasons.
The economic impacts associated with this plan will force livestock owners to sell their lands to developers, which will be bad for wildlife conservation in the state.	As discussed in Chapter 14, Section B, inquiries with state wolf managers in Idaho, Montana, and Wyoming did not indicate that wolf depredation was forcing ranchers out of business in these states. Therefore, this concern seems unlikely to happen in Washington. WDFW agrees that the conversion of ranches and farms into residential and other types of developments is an important problem for wildlife conservation in Washington. However, given the above information, wolves are unlikely to cause increased conversion of ranchlands.
The value of grazing land is greatly reduced with the presence of wolves.	As noted in Chapter 14, Section B, inquiries with state wolf managers in Idaho, Montana, and Wyoming did not indicate that wolf depredation was reducing the value of grazing lands in these states. Therefore, this concern seems unlikely to happen in Washington.
This chapter claims that wolves may benefit some livestock operations by reducing the abundance of	As discussed in Chapter 6, Section A, and Chapter 14, Section B, of the recommended plan, wolves have reduced coyote numbers in

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coyotes and redistributing ungulates, thereby lowering coyote predation on livestock and ungulates. WDFW needs to present all documentation that supports this claim.	some locations (e.g., Yellowstone and Teton National Parks). Coyote reductions could therefore occur on other lands occupied by wolves, although as the recommended plan indicates, this has not yet been investigated or verified on ranchlands. If this was to occur, the plan states that any coyote reductions and accompanying benefits to ranchers would likely be localized and minor.
Ranchers and private landowners should be given tax incentives so they can modify their business practices to be more wolf compatible.	WDFW would support the creation of this type of tax incentive if it benefited wolf conservation, however, this would be up to individual counties to consider and implement.
Where are predator-friendly markets located and do they last during economic downturns?	Predator-friendly markets remain quite small and are spread across the country. WDFW does not have any information on their resiliency during economic downturns.
This chapter should discuss how ranchers feel about losing their livestock to wolves.	WDFW acknowledges that wolf predation on livestock also carries an emotional cost for many ranchers. However, Chapter 14 of the recommended plan attempts to assess only economic impacts. Non-tangible arguments are not presented for either side of the wolf recovery issue.
Wolf recovery will result in more food production being shifted to Latin America.	WDFW does not believe that this will occur. As discussed in Chapter 14, Section B, of the recommended plan, most livestock producers in Washington will experience few if any significant financial impacts related to wolf recovery.
Hunters have contributed in many ways to help finance wildlife and habitat conservation over the years. Wolf recovery risks alienating the hunting community to the point that hunting revenue will decline with associated losses to conservation.	WDFW certainly acknowledges the many contributions that hunters have made to wildlife and habitat conservation in Washington. The presence of wolves in the state could cause some hunters to stop hunting, but the extent of this will depend on the effects that wolves eventually may have on deer and elk populations through predation and changes in behavior.
A better evaluation of lost hunting opportunity and harvest opportunity resulting from wolf recovery should incorporated into this chapter. For example, has WDFW calculated how many fewer hunters will harvest elk as wolf recovery proceeds?	Table 13 gives estimates of the numbers of deer and elk that may be killed annually by different population sizes of wolves in Washington. However, calculations of "lost" hunting opportunity and harvest opportunity associated with these estimates were not made because there are no hard data to base them on, thus they would be too speculative.
This chapter should state whether wolf recovery will result in reduced hunter opportunity for bighorn sheep and mountain goats.	Chapter 14, Section C, states that wolf take of bighorn sheep and mountain goats is expected to be minor, thus little or no reduction of hunting opportunity for these species is expected.
I disagree with the information presented indicating that wolves have had little effect on hunter harvest in neighboring states.	In spring 2011, during preparation of the recommended plan, WDFW updated the information appearing in Chapter 14, Section C, regarding wolf impacts on hunter harvest in neighboring states. This work included contacting wolf and game managers in Idaho and Montana and review of recent publications from these states and Wyoming. Wolves have contributed to reduced hunting opportunity in a few areas, but appear to have had little impact overall on hunter opportunity or license revenue at the statewide level in these states.
We need to ensure healthy ungulate populations because hunting is a big economic generator in our state.	One of the goals of the recommended plan is to manage ungulate populations in the state to provide adequate prey for wolves and to maintain harvest opportunities for hunters (see Chapter 5 and Chapter 12, Task 5).
Wolf restoration will have an adverse impact on big-game hunting opportunity, license sales, and associated spending by hunters. The decline in license and tag sales will strongly hurt WDFW's	WDFW believes that wolf recovery will have less of an effect on big game harvest and hunting opportunity in Washington than this comment suggests. Chapter 5, Section E, of the recommended plan indicates that a relatively small wolf population of fewer than

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own budget. Furthermore, there will be a drastic decline in big-game hunting in Washington, which will adversely affect local economies.	100 animals will probably produce few negative effects on big game hunting in the state. Larger wolf populations will likely have greater impacts on big game hunting and hunting opportunity although these are difficult to predict for a number of reasons (Chapter 14, Section C). In spring 2011, during preparation of the recommended plan, WDFW updated the information appearing in Chapter 14, Section C, regarding wolf impacts on hunter harvest in neighboring states. This work included contacting wolf and game managers in Idaho and Montana and review of recent publications from these states and Wyoming. Wolves have contributed to reduced hunting opportunity in a few areas, but appear to have had little impact overall on hunter opportunity or license revenue at the statewide level in these states.
Wolf restoration will not have a substantial adverse impact on big-game hunting opportunity, license sales, and associated spending by hunters.	Chapter 5, Section E, of the recommended plan indicates that a relatively small wolf population of fewer than 100 animals will probably produce few negative effects on big game hunting in the state. Larger wolf populations will likely have greater impacts on big game hunting and hunting opportunity although these are difficult to predict for a number of reasons (Chapter 14, Section C). In spring 2011, during preparation of the recommended plan, WDFW updated the information appearing in Chapter 14, Section C, regarding wolf impacts on hunter harvest in neighboring states. This work included contacting wolf and game managers in Idaho and Montana and review of recent publications from these states and Wyoming. Wolves have contributed to reduced hunting opportunity in a few areas, but appear to have had little impact overall on hunter opportunity or license revenue at the statewide level in these states.
The value of game species should be set at their raffle values. Thus, each moose should be worth $30,000 and each bull elk $6,000.	The recommended plan does not place a dollar value on any game animal or on a wolf. In addition, WDFW does not consider raffle values to be a good measure of the economic value of individual ungulates of each species.
The plan needs to estimate the number of deer and elk killed by wolves annually in the state, including prey that wolves kill for fun and do not eat.	Projected numbers of deer and elk killed by different population sizes of wolves are provided in Table 13 of the recommended plan. Wolves do not kill prey "for fun" and very rarely perform surplus killing (in which some prey are not eaten) of wild prey, thus these factors were not considered in the preparation of Table 13.
How were the numbers in Table 17 derived?	The numbers presented in this table (now Table 21 of the recommended plan) were derived primarily through telephone interviews with an adult member of 85,000 households nationwide to determine hunting, fishing, and wildlife watching patterns. Information for Washington was extracted from this large pool of respondents. Readers seeking more information on the procedures of this study should refer to the report cited in the table (i.e., US Fish and Wildlife Service and US Census Bureau 2008).
Impacts to big game hunting due to wolf recovery need to be managed in a way that does not incur a financial loss to the state.	One of the goals of the recommended plan is to manage ungulate populations in the state to provide adequate prey for wolves and to maintain harvest opportunities for hunters (see Chapter 5 and Chapter 12, Task 5). WDFW will attempt to manage both wolves

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	and ungulates in a sustainable way, which should cause little significant financial loss to state and local economies.
WDFW needs to contact hunting guides in Idaho to get accurate information on the impacts to guided hunting.	As stated in Chapter 14, Section C, Washington's outfitter industry is considerably smaller than in some neighboring states such as Montana and Idaho, but quantified information on the size and economic contributions of outfitting in Washington is lacking. Based on information obtained from the Washington Outfitters and Guides Association, many outfitters in the state offer multiple activities for clients during the year, with guided hunting being of lower importance as a source of income for most outfitters.
Hunter numbers and hunting opportunity in Washington have been declining over time. Wolves will make the problem worse. Hunters bring in lots of revenue and help the state's economy. I worry that wolf-caused declines to ungulate populations will cause more hunters to quit hunting or find hunting opportunities out of state.	Information presented in Chapter 14, Figures 19-21, indicates that deer and elk hunter numbers, number of elk hunter days, numbers of deer and elk harvested, and deer and elk hunter success have remained relatively steady in recent years. Only the number of deer hunter days has declined. Hunting brings in considerable revenue and contributes to many local economies and the state economy (see Table 21). Chapter 14, Section C, of the recommended plan indicates that a relatively small wolf population of fewer than 100 animals will likely have few negative effects on big game hunting in the state. Larger wolf populations will likely result in greater impacts to big game hunting and hunting opportunity.
Wolves can have significant adverse impacts on local ungulate populations. This is a particularly important consideration for tribal families who rely on subsistence harvest of game.	Any significant localized declines in deer and elk numbers could negatively affect those tribal families who rely on subsistence harvest of game.
Game populations provide far greater values to citizens of the state in the form of food, hunting opportunity, and in turn economic benefits to rural areas, whereas wolves offer none or few of these benefits.	The data presented Chapter 14, Sections C and D, support this comment. However, WDFW believes that wolves will not have a large impact on big game harvest and hunting opportunity in Washington and that big game hunting will continue to generate substantial economic benefits for state and local economies after wolves recover. Furthermore, wolf-related tourism has the potential to develop in Washington (see Section D) and generate modest economic benefits in some localities.
Public hunting of wolves will provide WDFW with an additional revenue source.	This will likely be true if public hunting of wolves is ever adopted in Washington. Chapter 14, Section C, provides a preliminary estimate of the revenue that might be generated for WDFW from wolf hunting in Washington. Based on information from Idaho and Montana, where wolf hunting license sales in 2009/2010 generated about $450,000 and $326,000, respectively, the estimated revenue that WDFW could earn from wolf hunting was increased in this section of the recommended plan over the amount that appeared in the public review draft.
Wolf recovery has the potential to bring tourism dollars to Washington.	This statement is true, as described in Chapter 14, Section D, of the recommended plan. However, whether significant wolf-related tourism ever occurs or not in Washington will depend on the numbers and locations of wolves that eventually become reestablished in the state and other factors.
Wolf-related tourism should not be intrusive to wolves.	WDFW agrees with this comment. This is one reason why WDFW does not provide the locations of wolf dens to the public (see Chapter 12, Task 2.3). Except at Yellowstone National Park, where large numbers of tourists go to see wolves, WDFW is not aware of any significant disturbance of wolves caused by tourist activities in other states.

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Presence of wolves will enhance the experience for many backcountry users in Washington.	This opinion is supported in part by the results of one of the survey questions summarized in Chapter 2, Section E, of the recommended plan, which indicate that 54% of Washington residents would travel to see or hear wild wolves in the state.
I support local economies by my participation in wildlife viewing. For example, I've already visited the Twisp area in hopes of hearing the Lookout Pack.	Comment noted.
My family is already boycotting Montana, Idaho and Oregon because they shoot wolves. We no longer spend our vacation dollars in these states.	Comment noted.
Wildlife tourism is fine, but it shouldn't be the only approach to maintaining and funding local and state economies.	Comment noted.
Washington does not have the viewing opportunities for observing wolves that places like Yellowstone National Park offers. Therefore, Washington will benefit minimally from wolf-related tourism. Furthermore, tourism related to viewing of deer, elk, and other wildlife will decline. Presence of wolves may also frighten some people away from visiting the state's wild areas.	As described in Chapter 14, Section D, of the recommended plan, WDFW believes that Washington has the potential to develop modest wolf-related tourism, but whether or not this ever occurs will depend on the numbers and locations of wolves that eventually become reestablished in the state and other factors. Mt. St. Helens and the Methow Valley are two locations that could possibly support wolf-related tourism. Regarding the last two sentences of this comment, the last paragraph of Chapter 14, Section D, indicates that disturbance by wolves could reduce tourism associated with the viewing of deer, elk, and other wildlife in some locations. Wolves could also frighten some people away from visiting the state's wild areas. Again, the extent to which these problems occur in the future will depend on the numbers and locations of wolves that eventually become reestablished in the state and other factors.
I disagree that overall wildlife tourism produces greater economic benefits than hunting and livestock production.	Chapter 14, Section D, of the recommended wolf plan states that "wolf tourism has the potential to offset or exceed the combined costs of livestock depredation and reduced hunting opportunities" in Washington, but does not make any broader statements such as the type given in this comment. However, as indicated in Chapter 14, Tables 21 and 22, data collected by the U.S. Fish and Wildlife Service indicate that wildlife tourism easily surpasses hunting in Washington in terms of total money spent by participants.
The plan should compare the amount of revenue WDFW received last year from watchable wildlife with the amount of revenue it received from ungulate tag sales, and hunting licenses.	This information is provided in Chapter 14, Sections C and D, of the recommended plan for the year 2007.
Who conducted the studies related to wildlife tourism and are they unbiased?	As noted in Chapter 14, Section D, the U.S. Fish and Wildlife Service and U.S. Census Bureau conducted the studies on wildlife tourism. Their results should therefore be relatively free of bias. Readers should refer to the cited studies to learn more about the potential limitations of this work.

State of Washington
Department of Fish and Wildlife

Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

July 28, 2011

Dear Interested Parties:

The Washington Department of Fish and Wildlife (WDFW) has published a Final Environmental Impact Statement (FEIS) titled: Final Environmental Impact Statement (EIS) for the Wolf Conservation and Management Plan for Washington. The plan has been developed to guide recovery and management of gray wolves as they naturally disperse into the state and reestablish a breeding population.

The Recommended Wolf Conservation and Management Plan will be provided to the Washington Fish and Wildlife Commission for consideration at their August 4, 2011 meeting in Olympia, Washington. The Agenda for that meeting is found on the following link: http://wdfw.wa.gov/commission/meetings/2011/08/agenda_aug0411.html.
The Commission has scheduled three more special meetings to discuss the recommended Wolf Conservation and Management Plan and take public comment. Those meetings are tentatively scheduled for Aug. 29 in Ellensburg, and Oct. 6 and Nov. 3 in Olympia. Final action on the plan is expected to occur at the December 2011 Commission meeting.

The Draft EIS underwent public review from October 5, 2009 to January 8, 2010. Nearly 65,000 people provided comments on the plan. With consideration of all comments received, WDFW has prepared this Final Environmental Impact Statement in compliance with the State Environmental Policy Act (SEPA) and other relevant state laws and regulations.

MAJOR CONCLUSIONS

This is a phased non-project review proposal. Phased review allows agencies and the public to focus on issues that are ready for decision and excludes from consideration issues that are already decided or are not yet ready.

The wolf is listed as an endangered species by the State of Washington, and the Wolf Conservation and Management Plan serves as the state recovery plan for the species. The goals of the plan are to: (1) restore the wolf population in Washington to a self-sustaining size and geographic distribution that will result in wolves having a high probability of persisting in the state through the foreseeable future, (2) manage wolf-livestock conflicts in a way that minimizes livestock losses, while at the same time not negatively impacting the recovery or long-term perpetuation of a sustainable wolf population, (3)

maintain healthy and robust ungulate populations in the state that provide abundant prey for wolves and other predators as well as ample harvest opportunities for hunters, and (4) develop public understanding of the conservation and management needs of wolves in Washington, thereby promoting the public's coexistence with the species.

AREAS OF CONTROVERSY AND UNCERTAINTY

Recovery Objectives – the plan establishes recovery objectives to achieve a self-sustaining population, distributed throughout a significant portion of the historic range in the state, per WAC 232-12-297 (Endangered, threatened, and sensitive wildlife species classification). Fifteen breeding pairs, which represent an estimated 97-361 wolves, are considered minimal to achieve recovery. Several components of the delisting objectives serve to reduce the risk to long-term viability of a wolf population in Washington, including: the geographic distribution requirements across three recovery regions, the use of successful breeding pairs as a measurement standard, and a three-year requirement for maintaining population robustness on the landscape. The WDFW also conducted a modeling analysis of the delisting objective to test persistence on the landscape. Results indicated that the population would persist, as long as it was allowed to grow and was not limited at that number.

Wolf-livestock conflict management – addressing and reducing wolf-livestock conflicts is an important part of the plan. The plan includes both proactive, non-lethal (e.g., modified husbandry methods and non-lethal deterrents) and lethal management options to address wolf-livestock conflicts. The plan emphasizes prompt response to reported depredations and includes a program to compensate livestock producers for livestock killed or injured by wolves.

Wolf-ungulate conflict management – ungulates are the natural prey of wolves. The plan includes management options to address localized impacts to ungulate populations, if they occur. If WDFW determines that wolf predation is a primary limiting factor for an "at-risk" ungulate population, and the wolf population in that wolf recovery region is healthy, WDFW may consider reducing wolf abundance in the localized area occupied by the ungulate population. Management options would include both non-lethal and lethal measures; with non-lethal options prioritized while the species is listed.

WDFW believes this FEIS will assist decision makers to identify the key environmental issues and options associated with this action. Comments received from agencies and interested parties during public review of the draft document have been considered and incorporated into this final EIS. WDFW thanks all of those who comments and input into this process.

Sincerely,

Bob Zeigler
SEPA/NEPA Coordinator
Agency Responsible Official
Protection Division
Habitat Program

Fact Sheet

Title: Final Environmental Impact Statement (EIS) for the Wolf Conservation and Management Plan for Washington

Description: This is a non-project review proposal. Wolves were classified as endangered in Washington under federal law in 1973 and under state law in 1980. They were federally delisted in the eastern third of Washington in 2011; and remain federally listed in the western two-thirds of the state, and state listed throughout Washington. As of July 2011, Washington had five confirmed wolf packs. Continued population growth in Washington is expected as a result of dispersal of wolves from existing packs and from wolf populations in Idaho, Montana, Oregon, and British Columbia.

The Washington Department of Fish and Wildlife (WDFW) initiated development of a state wolf conservation and management plan in 2007 in response to: increasing wolf dispersal and pack establishment in the state; requirements under WAC 232-12-297 to develop recovery plans for listed species; and the anticipated eventual return of all wolf management to the state. A determination of significance and request for comments on the scope of an environmental impact statement (EIS) was issued August 1, 2007 and seven public scoping meetings were held around the state. Also in 2007, WDFW appointed an advisory Wolf Working Group comprised of 17 citizens to provide recommendations on the plan to the Department. The Draft EIS/Wolf Conservation and Management Plan for Washington was completed in 2009.

Following the requirements of the State Environmental Policy Act (SEPA), the Draft EIS was made available for public review on October 5, 2009 for a 95-day public comment period. During the review period, WDFW held 12 public meetings across the state in October and November 2009. These meetings were attended by 1,157 people with 229 people providing comments on the plan. Nearly 65,000 people provided email and written comments on the Draft EIS. A blind peer review was also conducted during that time and WDFW received comments from 3 scientific peer reviewers. WDFW addressed the public input and met with the Working Group in June 2011 for review and comment on the proposed changes, and then produced the Final EIS/Recommended Plan. Responses to the comments received are included in the Final EIS.

The Final EIS incorporates recommendations and suggestions from public comments, peer review comments, WDFW reviews and the Wolf Working Group recommendations. The Preferred Alternative Final Recommended Wolf Conservation and Management Plan was developed as a result of the alternatives studied. The plan will serve as the state recovery plan for the wolf in Washington. As such, it establishes recovery objectives for downlisting and delisting the wolf in the state, per WAC 232-12-297, and identifies strategies to address conflicts and achieve recovery.

A decision on adoption of the Wolf Conservation and Management Plan by the Washington Fish and Wildlife Commission is expected at the December 2011 meeting. Prior to that, the Commission will hold workshops and discussions on the plan in August, October, and November 2011.

Location: Statewide

Proponent and Lead Agency:
Washington Department of Fish and Wildlife (WDFW)
Wildlife Management Program
600 Capitol Way North
Olympia, WA 98501-1091

EIS Project Manager: Harriet Allen
Phone: (360) 902-2694

WDFW Responsible Official:
BobZeigler, SEPA Responsible Official
Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, WA 98501-1091
Natural Resources Building, 5th Floor
Phone: (360) 902-2578
Email: SEPAdesk2@dfw.wa.gov

Permits and Licenses Required: None required

Authors and Principle Contributors: WDFW : Gary Wiles, Harriet Allen, Gerald Hayes, John Pierce, Rocky Beach, Dave Ware, Jerry Nelson, Donny Martorello, Nathan Pamplin, Madonna Luers, Steve Pozzanghera, Dave Brittell, Jeff Lewis; Washington State University: Ben Maletzke, Rob Wielgus.

Wolf Working Group:
In 2007, former WDFW Director Koenings appointed a group of 17 citizens to provide recommendations to the Department to assist in development of the plan. The names and affiliations of members are shown in Appendix B of this document.

Date Draft Environmental Impact Statement (DEIS) was issued: October 5, 2009. Comments were taken through January 8, 2010.

Date Final Environmental Impact Statement (FEIS) is issued: July 28, 2011

Public meetings on the Draft EIS : Public meetings were held during October – November 2009 at the following locations: Clarkston, Richland, Yakima, Colville, Spokane, Vancouver, Aberdeen, Seattle, Mount Vernon, Sequim, Omak, and Wenatchee, Washington.

Date Final Action is Planned: The Final EIS/Recommended Wolf Conservation and Management Plan for Washington will be presented to the Washington Fish and Wildlife Commission on August 4, 2011. Commission review will occur during August-November, and decision-making will occur at the December 2011 meeting.

Date of Next Action and Subsequent Environmental Reviews: The Final Environmental Impact Statement (FEIS) is a phased non-project action. The Recommended Wolf Conservation and Management Plan will be provided to the Washington Fish and Wildlife Commission for consideration on August 4, 2011 at their meeting in Olympia, Washington. The Agenda for that meeting is found on the following link:
http://wdfw.wa.gov/commission/meetings/2011/08/agenda_aug0411.html

Notice of Availability: The Final EIS is available for download on WDFW's website at: **http://wdfw.wa.gov/licensing/sepa/sepa_final_docs_2011.html .**

The complete public comments on the Draft EIS can be viewed at:
http://wdfw.wa.gov/conservation/gray_wolf/comments.html

Distribution List: Notice of the availability of this FEIS is posted on the WDFW SEPA website at: **http://wdfw.wa.gov/licensing/sepa/sepa_final_docs_2011.html .** Copies have been sent to local government planning departments (city and county); affected Tribes; all state and federal agencies with jurisdiction and interested parties.