WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Final Environmental Impact Statement

Game Management Plan

July 2003-June 2009

Wildlife Program
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FINAL ENVIRONMENTAL IMPACT STATEMENT

for the

GAME MANAGEMENT PLAN

November 27, 2002

Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, Washington 98501-1091

AN OFFICIAL PUBLICATION OF THE STATE OF WASHINGTON

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This Program Receives Federal Aid in Wildlife Restoration, Project W-96-R, Game Surveys.

This report should be cited as:

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State of Washington
DEPARTMENT OF FISH AND WILDLIFE
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November 27, 2002

Dear Interested Parties:

Game Management Plan Final Environmental Impact Statement, Issued November 27, 2002 Available on Request

The Washington Department of Fish and Wildlife has issued their Final Environmental Impact Statement (FEIS) titled, Game Management Plan Final Environmental Impact Statement. If you wish a copy of the FEIS, please contact the Wildlife Program Reception Desk, (360) 902-2515, by e-mail at wildthing@dfw.wa.gov or by Fascimile at (360) 902-2162.

The focus of the FEIS was to address game management planning in a comprehensive approach, establishing goals, objectives and strategies for managing game species. This approach (plan) would meet the public's expectations and priorities, while achieving a balance between opposing viewpoints, carry out agency mandates and look at strategies that would help resolve issues. The time line of the plan, as well as the issues (impact assessments) and mitigation strategies were analyzed.

It was determined that a six-year plan would allow for implementation of various objectives, while still being flexible to allow for changing conditions, research results necessitating new strategies and public acceptability.

Issues were identified based on extensive public outreach. Objectives were developed in order to draft strategies (mitigation) to resolve identified issues. These issues included the following:

- Scientific/professional management of hunted wildlife
- Public support for hunting as a management tool
- Hunter ethics and fair chase
- Private lands programs and hunter access
- Tribal hunting
- Predator management
- Hunting season regulations
- Game damage and nuisance
- Species specific management issues

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Following the requirements of the State Environmental Policy Act, the Draft EIS was made available for public review July 26, 2002 and a Supplemental EIS was issued on October 18, 2002. The Draft

Non-Project Review Form (DNPR) was used as a basis for preparing the Scoping document, and helped in preparing the Game Management Plan, DEIS, SEIS and this FEIS. The DNPR is an optional non-project form authorized by the Department of Ecology to be used as an analysis tool. It encourages an iterative planning process that allows changes as analysis develops and as comments are received to help shape decision-making.

The DEIS was sent out statewide to over 500 recipients, including agencies with jurisdiction, Tribes and interested parties, a news release was sent to various newspapers across the state, copies were made available in our Regional Offices, as well as the Washington State Library, and the draft was assessable through the agency's Internet site. (http://www.wa.gov/wdfw/hab/sepa/sepa.htm).

Another 550 to 650 SEIS copies were sent out to the same constituents plus those that responded to the initial DEIS or requested to be added to our mailing list. Any additional respondents have been added to our FEIS mailing list.

During the formal public comment periods that ended November 18, 2002, the agency received both e-mail and written comments. Comments were also received on the Wildlife Program's Wildthing website (wildthing@dfw.wa.gov). Responses to these comments are included in the appendix as well as incorporated into the FEIS as appropriate, through references and analysis.

A decision by the Washington Fish and Wildlife Commission on whether to adopt the Game Management Plan will occur during their December 6 and 7, 2002, meeting held at the Skagit County Public Utility District, Aqua Room, 1415 Freeway Drive, Mount Vernon, Washington 98273-1436. The Game Management Plan is scheduled for discussion on December 7, at approximately 1 pm.

Thank you for your interest.

Sincerely,

Cynthia R. Pratt
SEPA/NEPA Coordinator
Agency Designated Responsible Official
Regulatory Services Section
Environmental Services Division
Habitat Program

FACT SHEET

Project Title:

Final Environmental Impact Statement (FEIS) for the Game Management Plan

Project Description:

The management plan will describe and guide agency activities for hunted wildlife for the next six years. The focus is on the scientific management of hunted species populations, harvest management (hunting), and other significant factors affecting game populations. Alternatives to developing a plan are described as well as alternative issues, objectives, and strategies.

Public review of the Draft EIS was completed on September 10, 2002. Review of the Supplemental EIS was completed November 18, 2002. The FEIS includes revisions based on both public reviews and edits by the lead agency, the Washington Department of Fish and Wildlife (WDFW).

Proponent:

Washington Department of Fish and Wildlife.

Lead Agency:

Washington Department of Fish and Wildlife
Wildlife Program
600 Capitol Way North
Olympia, WA 98501

Responsible Official:

Cynthia Pratt, SEPA/NEPA Coordinator
Habitat Program
Washington Department of Fish and Wildlife

Contact Person:

Dave Brittell, Assistant Director
Wildlife Program
Washington Department of Fish and Wildlife

Date of Implementation:

Tentative date for implementation is July 1, 2003.

License Required:

No license is required for this proposal. Implementation of some strategies may require Hydraulic Project Approval, Shorelines Permits, or other permits.

Authors and Principal Contributors:

This draft and supporting documentation was mainly prepared by the Game Division staff of the Washington Department of Fish and Wildlife: Dave Ware, Game Division Manager; Jerry Nelson PhD, Deer and Elk Section Manager; Don Kraege, Migratory Bird Section Manager; Donny Martorello, Big Game and Furbearer Section Manager; Mick Cope, Small Game Section Manager; and George Tsukamoto, Game Planner. In addition, Dick Stone, WDFW's Wildlife Policy Manager, developed and edited several sections of the plan.

Date of Issue of Final EIS:

November 27, 2002

Date of Action and Meeting Location:

The proposed adoption date by the Washington Fish and Wildlife Commission is 12/7/02. Upon adoption by the Fish and Wildlife Commission, subsequent implementation of management strategies will occur. The Commission meeting will take place at:

Skagit County Public Utility District
Aqua Room
1415 Freeway Drive
Mount Vernon, WA 98273-1436

Type and Timing of Subsequent Environmental Review:

Individual projects or management strategies beyond this proposal will be reviewed on a case-by-case basis under the appropriate SEPA process.

Location of Background Data:

Background data and materials referenced in this EIS are available for review at the WDFW headquarters office (see location under lead agency above), from the Wildlife Management Program (360) 902-2515.

Cost to the Public for Copy of FEIS:

Copies of the FEIS are available at no cost.

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EXECUTIVE SUMMARY

The Washington Department of Fish and Wildlife's management of hunted wildlife for the next six years will be determined upon completion of this plan and adoption by the Washington Fish and Wildlife Commission. The focus is on the scientific management of game populations, harvest management (hunting), and other significant factors affecting game populations.

Washington's citizens played a strong role in developing this plan. Over the past two years, a variety of public involvement opportunities were used to solicit ideas. In all, several thousand citizens provided comments, edits, and priority issues. The Game Management Advisory Council, a group of citizens representing conservation and hunting organizations, landowners, and biologists, was continually involved in identifying and refining issues. The Wildlife Diversity Advisory Council, representing environmental organizations and mostly non-consumptive viewpoints, also provided important counsel on key predator management issues. In addition, an extensive public opinion survey was conducted for the Department by the private consulting firm, Responsive Management.

A panel of scientists, from several universities and specialists from across the west reviewed key issues associated with Washington's elk management and made recommendations to WDFW for management direction and strategies to incorporate into the plan. The information and the priority actions identified in this comprehensive process directed the development of alternative strategies.

The priority issues identified by the public include:

1. Scientific/professional management of hunted species
2. Public support for hunting as a management tool
3. Hunter ethics and fair chase
4. Private lands programs and hunter access
5. Tribal hunting
6. Predator management
7. Hunting season regulations
8. Game damage and nuisance
9. Species specific management issues

The first public release of the Draft Environmental Impact Statement (EIS) for the Game Management Plan (GMP) was on July 26, 2002. After an extension, the deadline for public comment was September 10, 2002. Extensive public comments resulted in significant re-writing and re-formatting of the EIS and GMP. Key changes included the EIS formatting, modification of elk and cougar issues, objectives, and strategies, and consideration of the impacts of hunting on non-target wildlife species. A Supplemental EIS was released on October 18, 2002 with a public comment deadline of November 18,

2002. During this comment period, a scientific peer review of the cougar management section of the plan was also requested by WDFW.

The process of developing a non-project EIS allowed WDFW wide latitude to use an iterative process with releases of a Draft and a Supplemental EIS to take comments and add, modify, or delete alternative strategies. This iterative process was used instead of the more traditional use of preferred and alternative strategies. Essentially the number of alternative strategies was not limited and the preferred strategies were developed in concert with the public through multiple scoping and comment periods.

Key changes after the DEIS and SEIS public comment periods and review by cougar specialists (Oct. 18 to Nov. 18) were mainly focused on cougar management and refinement of elk management strategies, with less comprehensive modifications or clarifications of various other issues, objectives, and strategies.

The preferred alternative for the planning process is a six-year plan. The six-year plan was selected because it meets the Legislative mandate and Fish and Wildlife Commission guidelines. It provides long-term direction and accountability to the public. In addition, it provides sufficient time to analyze the results of management changes, while still providing flexibility.

A longer term than a six-year plan was considered, however flexibility to make changes would be more difficult. An annual operation type plan could be developed outside of the SEPA process, but it generally does not receive the same level of public participation and support. The species by species approach was used to develop plans over the past eight years with limited results. In that time, only three statewide plans were completed. An alternative suggested during the DEIS comment period to reduce emphasis on hunting of game species may be in conflict with the Legislative mandate (RCW 77.04.012) for the Fish and Wildlife Commission to "…attempt to maximize public recreational hunting opportunities…" and 82% of the public is supportive of hunting as determined in a recent public opinion survey (Duda 2002). A no action alternative would mean no change from what is currently in place. There are a total of three completed statewide plans out of over 50 game species. Currently, management direction hasn't been clearly described or discussed in a public fashion for the majority of game species.

The strategies that remain in this FEIS game management plan are the preferred alternative strategies for the plan. The preferred alternative strategies were selected and prioritized after consideration of public and agency comments from both the DEIS and SEIS, comments from peer review, and edits by WDFW staff. Several things contributed to the selection of preferred alternatives including: the preponderance of public comment, balancing public opinion, funding and staffing levels, feasibility and ability to accomplish the alternative within the six year time frame, and agency priority.

The overall goals of the plan are to protect, sustain, and manage hunted wildlife, provide stable, regulated recreational hunting opportunity to all citizens, protect and enhance wildlife habitat, and minimize adverse impacts to residents, other wildlife, and the environment.

In general, the impact of developing and implementing a management plan that achieves these goals will be positive to the environment. Potential negative impacts from some of the management activities are mitigated by the strategies identified in the plan. The analyses contained in the FEIS and the GMP represents the best information available to WDFW and is based on our long history of managing game species in this state.

As mandated by the Washington State Legislature (RCW 77.04.012), "… the department shall preserve, protect, perpetuate, and manage the wildlife…"; "the department shall conserve the wildlife… in a manner that does not impair the resource…"; and "The commission shall attempt to maximize the public recreational… hunting opportunities of all citizens, including juvenile, disabled, and senior citizens." It is this mandate that sets the overall policy and direction for managing hunted wildlife. Hunters and hunting will continue to play a significant role in the conservation and management of Washington's wildlife.

The existing conditions, significant planned population impacts, and mitigation measures are addressed in various sections of the GMP, with existing conditions described extensively in chapter one. They are also described for individual species or groups of species in chapter four under headings of population status, recreational opportunity, and data collection. Chapters three and four identify significant impacts within the "Issue Statements" mainly under the separate titles: habitat, population, and recreation management, information and education, research, and enforcement. Strategies to address and mitigate impacts are listed for each objective under the Issue Statements. There are few if any significant impacts that have not or cannot be successfully mitigated as described.

With all of these issues, it is understood that the implementation of strategies are conditioned first on meeting game population objectives. Science is the core of wildlife management, supporting WDFW's Legislative mandate to preserve, protect, and perpetuate wildlife populations while maximizing recreation.

General Management Issues

With science and the goal of sustaining game populations as the foundation, many of the preferred strategies in chapter three identify education, public involvement in decisions and participation in data collection, and subsequent monitoring of public satisfaction as priorities. Hunter ethics/fair chase issues such as the development of equipment restrictions are largely based on public opinion because any biological or environmental impacts from equipment technology can be mitigated in other ways. Techniques for mitigating equipment impacts on hunted species include adjustment of season length and timing, bag limits, and other harvest restrictions.

Preferred tribal hunting strategies hinge on the development of cooperative harvest management plans and increased coordination in the management of our respective hunters. Strategies to review and improve private land programs and address game

damage rely on working groups of stakeholders to develop recommendations for future actions.

Attention is given to those values identified in recent public opinion surveys for predator management and hunting season preferences. The intent of the preferred alternatives is to provide intensive public education on key issues to maintain public support for hunting; address human/wildlife conflicts with focused hunting strategies; and provide a variety of hunting opportunities that satisfy different preferences while meeting game population objectives.

Road management issues are complicated with a precarious balance between protection of wildlife and hunter access. The development of road management plans is the key preferred strategy to develop and maintain an appropriate balance.

As mentioned previously, the foundation for all objectives and strategies identified in this plan is science and the professional judgment of biologists. At times, the science may not be as strong as managers would like. In those instances, management actions will be more conservative to minimize the potential for significant negative impacts to hunted wildlife species. Chapter four focuses on the science and management of hunted species and lays out how those populations will be monitored to ensure perpetuation of these species over the long term.

Elk Management

The preferred strategies are designed to maintain or increase the number of mature (five year old/six points or greater) bulls that survive after hunting seasons; to determine habitat limitations and estimate carrying capacity for several herds, and where populations are meeting or exceeding goals, to increase harvest of antlerless animals. These measures will be phased in and monitored over six years with expected improvements to recruitment and herd dynamics. Improvements are planned to better monitor population status and determining herd composition. Distinct population management units will be reviewed and updated to form the geographic boundaries for achieving herd objectives.

From the recreational standpoint, current general season strategies will be maintained to the extent possible with a variety of hunting opportunities available and balanced for archers, muzzleloaders, and modern firearm hunters within each of WDFW's seventeen districts. Spike only management will continue to be emphasized in most of eastern Washington, using branch bull permit levels to achieve sex ratio objectives and three point or better regulations will be retained in western Washington, mainly relying on road management to achieve sex ratio objectives.

Deer Management

Recommended changes to deer management are subtle, since many factors that determine population levels are beyond the control of state wildlife managers-such as weather, wild fires, disease, and timber harvest. Preferred strategies will emphasize improvements in population monitoring, mule deer research, and refinement of population model inputs such as mortality and recruitment rates. Actions will be increased for surveillance of

chronic wasting disease and determination of population impacts from hair slip syndrome.

Hunting season changes will be similar to elk regarding maintenance of current general season strategies while ensuring that a variety of hunting opportunities are available and balanced within each of WDFW's seventeen districts. These guidelines will allow continued debate regarding hunter preferences for season regulations while maintaining the minimum population objective of 15 bucks per 100 does after the hunting season.

Special Species Management
Management strategies for bighorn sheep, mountain goats, and moose will largely continue along current paths. The greatest issue for bighorns continues to be a slow recovery of Rocky Mountain bighorns along the Snake and Grande Ronde rivers. The main strategy for California bighorns is to continue reintroductions to suitable portions of their historic range. With populations of mountain goats in apparent decline and subsequent reductions in hunting opportunity, a new mountain goat research project is being initiated with federal funding. Moose populations continue to expand and management will focus on better documentation of suitable range and development of appropriate levels of harvest. Carefully regulated hunting will continue for all three species by issuing limited numbers of permits and managing for high success rates in these once-in-a-lifetime opportunities.

Black Bear Management
Preferred strategies for black bear management will emphasize resolution of public concerns for public safety, pet and livestock depredation, and timber damage. Hunting opportunities will focus on these concerns as well as providing recreational harvest. The potential development of a spring hunting season to help address timber damage will be considered through strategies identified in the plan.

Cougar Management
This section of the plan has seen the greatest number of changes, mainly in response to peer review and public comment. The greatest issues appear to be the concept or need for reserves where cougars would not be hunted and for harvest guidelines. Most public comments suggested that many areas currently function as reserves and based on sightings, reports of problems, and harvest levels, they do not see a need for identification of reserves.

Identification of areas where cougar survival is high and acting as a source for areas where survival is lower will replace the idea of creating reserves. These areas may fulfill similar functions, but would not be necessarily designated as reserves. In addition, monitoring strategies will be increased in units designated for cougar population reductions to provide greater assurances that hunting will not have a significant negative impact on the perpetuation of cougar populations. Population objectives and female harvest guidelines for each cougar management unit (CMU) have been retained in the plan. The preferred strategies identify ways to improve monitoring protocols and data collection.

Similar to black bear management strategies, harvest will be focused in those areas with concerns for public safety and pet and livestock depredation. A recently initiated cougar research project will be continued to determine behavior and habitat use of cougars with an emphasis on the urban-wild lands interface.

Management of Migratory Birds

The U.S. Fish and Wildlife Service and the Pacific Flyway states, including Washington, cooperatively manage migratory birds. Management efforts will continue to emphasize protection and enhancement of declining wetland habitats and to closely monitor harvest management. Refinement of harvest strategies will further emphasize regional differences and address crop damage concerns, while protecting populations of migratory birds of management concern. Studies will be developed to determine the impact, of snipe hunting on other wildlife (especially shorebirds) and investigate hunting impacts on mourning doves.

Management of Upland Game Birds

Preferred strategies for upland game birds (pheasant, quail, and partridge) and wild turkeys will continue to focus on enhancing populations in suitable habitats and providing appropriate harvest opportunities for these largely non-native species. Wild turkey populations have expanded dramatically due to enhancement activities over the past twenty years. Several strategies were developed and modified during the review process to re-evaluate current management direction, gauge the success of introductions, consider impacts to native wildlife, and determine future direction. Mountain quail are considered native to parts of south central and southeast Washington. Preferred strategies are identified to re-establish mountain quail in their native range in eastern Washington and to better monitor harvest in western Washington.

Pheasants continue to be the focus of upland bird management efforts. Other upland bird populations such as California quail are either considered healthier or receive less attention from hunters. Dedicated and targeted funding for pheasant management is discussed with identified strategies for changes in emphasis. Access to private lands continues to be emphasized with strategies to focus on expanding opportunities in higher quality pheasant habitat and hunting areas. Forest grouse management strategies suggest emphasis on improving harvest management and population monitoring.

Management of Small Game Animals, Furbearers, and Unclassified Wildlife

Small game animal management strategies are largely focused on refining distribution information and addressing nuisance problems. Harvest and education strategies will attempt to minimize negative human-wildlife interactions and potential accidental harvest of protected wildlife.

Final Environmental Impact Statement
Game Management Plan

CHAPTER 1

INTRODUCTION

The mission of the Washington Department of Fish and Wildlife (WDFW) is "Sound Stewardship of Fish and Wildlife." The Department 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. Planning helps the Department prioritize actions to ensure accomplishment of its mission and mandate.

The purpose of the Game Management Plan is to assess current issues for hunted wildlife and outline strategies to help WDFW prepare for the future. The emphasis in this plan is the scientific management of hunted species populations, harvest management (hunting), and other significant factors affecting game populations. The plan is dynamic, and is designed to facilitate resolution of emergent issues and allow adjustment of priorities when issues are resolved. The issues and options in the plan are based on current management information. As new information becomes available, options may be modified or new ones developed.

The plan identifies priorities for hunted wildlife and keeps the Department focused, directed, and accountable. The plan will guide the development of the three-year hunting season packages for 2003-05 and 2006-08. In addition, the plan will direct the development of WDFW Game Division work plans and budget proposals. Implementation will begin in July 2003 and continue through June 2009.

The overall goals of the plan are to protect, sustain, and manage hunted wildlife, provide stable, regulated recreational hunting opportunity to all citizens, to protect and enhance wildlife habitat, and to minimize adverse impacts to residents, other wildlife, and the environment.

PUBLIC INVOLVEMENT

Active public involvement is important for successful planning. In May 2001 WDFW asked the public to identify the key game management issues that need to be addressed in the next five to ten years. This was done using a series of questionnaires and by providing a place on the agency web site. Over 2,500 responses were received. Based on the issues identified during this process, WDFW hired a consulting firm to conduct a telephone survey of both the hunting public and the general public. This was used to get a more scientific sampling of the public. Responsive Management conducted the surveys using randomly selected telephone numbers with a sample of over 800 citizens for the general public survey and over 700 hunters for the hunter survey.

References to public opinion based on this survey are made throughout this plan. To further refine the issues, WDFW consulted with the Game Management Advisory Council, the Wildlife

Diversity Advisory Council, and members of the Fish and Wildlife Commission. The advisory councils include a cross section of interested citizens who provide feedback and advice to WDFW on a variety of topics. The information from the surveys, polls, and consultations identified the issues addressed in this plan. Finally, WDFW is following the Environmental Impact Statement process (EIS) to facilitate public involvement in reviewing alternatives and setting priorities.

The main issues identified by the public were categorized into several key areas:

- Scientific/professional management of hunted wildlife
- Public support for hunting as a management tool
- Hunter ethics and fair chase
- Private lands programs and hunter access
- Tribal hunting
- Predator management
- Hunting season regulations
- Game damage and nuisance
- Species specific management issues

The first public release of the Draft Environmental Impact Statement (DEIS) for the Game Management Plan (GMP) was on July 26, 2002. After an extension, the deadline for public comment was September 10, 2002. Comments were received from over 77 groups and individuals. Extensive public comments resulted in significant re-writing and re-formatting of the EIS and GMP. Key changes included the EIS formatting, modification of elk and cougar issues, objectives, and strategies, and consideration of the impacts of hunting on non-target wildlife species.

A Supplemental EIS (SEIS) was released on October 18, 2002 with a public comment deadline of November 18, 2002. During this comment period, a scientific peer review of the cougar management section of the plan was also solicited by WDFW. Over 60 groups and individuals provided comments during this review period. Lists of those receiving the DEIS and SEIS, as well as those who provided comments and WDFW's response to the comments, are attached as appendices.

The process of developing a non-project EIS allowed WDFW to use an iterative process, with releases of a Draft and a Supplemental EIS to take comments and add, modify, or delete strategies. This iterative process was used instead of the more traditional use of preferred and alternative strategies. Essentially the number of alternative strategies was not limited and the preferred strategies were developed in concert with the public through a long scoping and development process and multiple comment periods.

Key changes after the DEIS and SEIS public comment periods and review by cougar specialists (Oct. 18 to Nov. 18) were mainly focused on cougar management and refinement of elk management strategies, with less comprehensive modifications or clarifications for various other issues, objectives, and strategies.

PREFERRED ALTERNATIVE

The preferred alternative for the planning process is a six-year plan. The strategies that remain in this FEIS game management plan are the preferred alternative strategies. The preferred strategies were selected and prioritized after consideration of public and agency comments from both the DEIS and SEIS, comments from peer review, and edits by WDFW staff. Several factors contributed to the selection of preferred alternatives including: the preponderance of public comment, balancing public opinion, funding and staffing levels, feasibility and ability to accomplish the alternative within the six year time frame, peer recommendations, risk assessment, scientific basis, and agency priority.

Environmental impacts are generally contained within the plan's sub-heading "issues statements". The following "issue statements" (impacts) were added to the plan based on comments received during review of either the DEIS or SEIS: 1) emphasis on scientific management of hunted wildlife in chapter three; 2) flexibility for field staff in making decisions regarding elk population management; 3) Mt. Saint Helens winter elk mortality; 4) emergency feeding of elk; 5) elk study priorities; 6) population management units for deer; 7) monitoring deer health (body condition); 8) black-tailed deer mortality rates; 9) expanding white-tailed deer distribution; 10) black bear and cougar hunting impacts on other wildlife; 11) public safety issues for black bears and cougars; 12) population objectives for cougar; 13) predator-prey dynamics involving cougars; 14) identification of key habitat and cougar density areas; 15) habitat enhancement for wild turkeys; 16) forest grouse population monitoring; 17) impacts of hunting upland birds on other wildlife; 18) impacts of lead shot on wildlife; 19) impacts of trapping on non-target wildlife; 20) impacts of coyote hunting on wolf recovery; and 21) impacts of non-native wildlife on native wildlife.

Strategies (mitigation) that were added, deleted, or significantly modified in the DEIS, SEIS, or FEIS are shown in table 1. Strategies that changed slightly or did not change are not included in the table. Strategies suggested by those providing comments, but not incorporated into the plan may be found in Appendix D along with the rationale for not adding the suggested alternative strategy. In all cases, the preferred strategies are those remaining in Chapters Two and Three of this FEIS.

Table 1. Alternative Strategies that were added, modified, or deleted during the review process.

OBJECTIVE	STRATEGY	RATIONALE
1	This objective as well as strategies a, b, & c, were added	Public comment
2	Objective was modified and strategy g was added	Public comment
3	Objective clarified and strategies a & c added; b, e, & f modified; and old strategies b, c, & d deleted	Public comment
4	Objective modified and strategies b, c, & d deleted; new strategies b & c were added	Public comment
5	The issue statement was modified, the objective was modified to include baiting of wildlife and strategies a through e were deleted; strategy f was modified and three new strategies were added	Public comment
6	Strategy g was added	Public comment
7	Strategy d was deleted	WDFW edit

OBJECTIVE	STRATEGY	RATIONALE
8	Northeast Washington was added to the objective, strategies d & e were deleted, and a new strategy was added	Public comment, WDFW edit, and balance public opinion
11	Added two strategies	Tribal comment
12	Clarified objectives and strategies	Public comment
13	Deleted two strategies	Public comment
15	Deleted mature buck and bull harvest objectives	WDFW edit
18-41	Many changes were made to the elk objectives and strategies; mainly dealing with bull/cow objectives & strategies, Colockum elk herd mgmt strategies, elk population monitoring and modeling strategies, clarification of recreational hunting strategies, modification of damage mitigation strategies, clarification of habitat strategies, addition of Mt. St. Helens winter mortality objectives and strategies, added strategies for educational objectives, and added objectives and strategies for winter feeding and emergency feeding of elk	Mostly based on public comment, balancing public opinion, peer review, and WDFW edits
42-61	Again many changes were made to both objectives and strategies; objectives & strategies were added or clarified for dealing with population management units, techniques for monitoring deer population status and trends, development of sex ratio objectives, expansion of information provided to the public, dealing with hair slip syndrome in black-tailed deer, monitoring black-tailed deer mortality rates, strategies to understand and deal with white-tailed deer expansion, influencing timber harvest techniques, and crop damage issues; strategies to manage for 20-25 bucks per 100 does in GMUs managed for older age class bucks were deleted as well as several harvest strategies	Mostly based on public comment, balancing opinion, and WDFW edits
62	Add strategies c and f to address concerns about habitat improvements for bighorn sheep	Public comment
66	Added strategy c to address sightability studies	Public comment
69	Added issue, objective, and strategies to deal with how bighorn sheep permits are issued	Public comment
SEIS #88	Language referring to black bear reserves and associated objectives and strategies was eliminated or modified	Public comment
90-94	Many changes were made to address improving black bear population monitoring objectives and strategies, harvest strategies, impacts of black bear hunting on grizzly bears, public safety, and timber damage	Public comment, balancing public opinion, & WDFW edits
97-106	The greatest number of changes in the entire plan occurred in the cougar management section; objectives and strategies were eliminated that referred to reserves, while objectives and strategies were developed to address source and sink management concepts, the concept of harvest quotas that result in termination of hunting seasons was also eliminated, population objectives were developed, population monitoring strategies and verification of modeling parameters were added, predator-prey relationship objectives and strategies were added, harvest guidelines that trigger recommendations for season modifications were modified, and public safety strategies were added	Public comment, balancing public opinion, peer review, & WDFW edits.

OBJECTIVE	STRATEGY	RATIONALE
130	Added three new strategies to address common snipe and mourning dove research and harvest; including the impacts of common snipe harvest on other wildlife	Public comment & WDFW edit
131	Added three strategies related to a new wild turkey management plan and deleted two others	Public comment
136	Added one strategy to identify priority wild turkey range and modified another strategy to consider paying for turkey hunting access	Public comment
138	Added an issue, objective and three strategies to address habitat improvements for wild turkeys	Public comment
144	Modified mountain quail harvest monitoring strategies	Public comment
149	Added an issue, objective, and two strategies to address forest grouse population monitoring	Public comment
158	Added an issue, objective, and two strategies to address impacts of upland bird hunting on other wildlife	Public comment
159	Added a strategy d to develop a publication to inform the public about impacts of lead shot to wildlife	Public comment
166	Added an issue, objective and three strategies to address impacts of lead shot on wildlife	Public comment
172	Modified strategies to address collection of harvest information for unclassified wildlife and furbearers	Public comment
173	Added an issue, objective, and four strategies to address trapping impacts on other (non-target) wildlife	Public comment
174	Added an issue, objective, and two strategies to address impacts of coyote harvest on wolves	Public comment
176	Added an issue, objective, and two strategies to address impacts of non-native, unclassified species on native wildlife	Public comment

COMMISSION AND DEPARTMENT AUTHORITIES

The establishment of hunting seasons and management of game species is consistent with the authorities granted the Fish and Wildlife Commission and Department of Fish and Wildlife by the Washington State Legislature through Title 77 of the Revised Code of Washington. The Fish and Wildlife Commission develops regulations under their authority through the adoption of Washington Administrative Code. In addition, various Commission and Department Policies and Procedures guide game management.

The Washington Fish and Wildlife Commission and Department of Fish and Wildlife are responsible for the management and protection of fish and wildlife resources in Washington State. The Legislative mandate (RCW 77.04.012) for the Commission and the Department includes the following for wildlife:

- The commission, director, and the department shall preserve, protect, perpetuate, and manage the wildlife…
- The department shall conserve the wildlife resources in a manner that does not impair the resource. The commission may authorize the taking of wildlife only at times or places, or in manners or quantities, as in the judgment of the commission does not impair the supply of these resources.

- The commission shall attempt to maximize the public recreational hunting opportunities of all citizens, including juvenile, disabled, and senior citizens. (see Title 77 Revised Code of Washington)

In addition, various policies and procedures guided the Commission and Department in developing the plan. In particular the Washington Department of Fish and Wildlife Hunting Season Guideline (August 1999) provided further guidance for this plan:

"Hunting seasons and regulation recommendations should be based on good science. When biological information is lacking or insufficient, management decisions should be conservative to ensure protection of wildlife resources. At no time should decisions favor income to the agency or recreation over protection of wildlife populations.

1. *In general, hunting seasons and game management units should be easy to understand while maintaining hunting opportunity and management options.*
2. *Continuity in hunting seasons over time is highly valued by the public, therefore Department recommendations for significant changes to seasons should be based on resource or management need.*
3. *Hunting season establishment shall be consistent with the Hunting Co-Management Guidelines between WDFW and Tribes.*
4. *Hunting seasons should be consistent with species planning objectives and provide maximum recreation days while achieving population goals.*
5. *A three year season setting process should be maintained which will provide consistent general seasons from year to year with annual changes in permit levels to address emergent resource concerns; natural disasters; and to meet requirement of federal guideline changes; etc.*
6. *Substantial public involvement and timely opportunity to comment must be provided for 3-year season recommendations and must be in compliance with state's Regulatory Reform Act.*
7. *Public involvement for annual permit season setting shall include at a minimum, a standard written comment period and one public meeting where comments will be considered.*
8. *Provide separate deer and elk general season recreational opportunities for archers, muzzleloaders, and modern firearm hunters.*
9. *Special deer and elk permit hunt opportunities shall be allocated among three principal user groups (archery, muzzleloader and modern firearm) using the approved formula of success/participation rate.*
10. *Weapon and hunting equipment restrictions should be easy to understand and enforce, maintain public safety, protect the resource, and allow wide latitude for individuals to make equipment choices.*
11. *Enhanced general season considerations, special access opportunities, and other special incentives should be developed for disabled, Advanced Hunter Education (AHE) graduates, youth, and hunters 65 and older rather than special permit hunts. AHE*

incentives should return to the program's original intent, which was to address private lands, and associated hunter ethics issues. Disabled hunter opportunities should emphasize equal access consistent with the Americans With Disabilities Act.

12. *Private landowner hunting issues such as season length, damage control, and trespass should be given consideration when developing hunting season recommendations.*
13. *Standardize furbearer regulations that provide trapping opportunity and address damage control.*
14. *Establish migratory bird and small game regulations to provide maximum hunting opportunity considering federal guidelines, flyway management plan elements, and Department management objectives.*
15. *Hunting season closures and firearm restrictions should be based on resource conservation and public safety.*
16. *Maintain a high quality goat, sheep, and moose permit hunting opportunity consistent with resource availability. "*

Implementing the Legislative mandate and Commission guidelines for game species requires knowledge of game population trends and impacts of hunting regulations, development and management of hunting seasons and actions that support (maximizing) public hunting recreation, and conservation of wildlife resources. The Fish and Wildlife Commission adopts major hunting seasons every three years. Minor adjustments are made annually such as modifying permit levels or addressing crop damage or nuisance problems. Migratory waterfowl seasons are adjusted annually in coordination with the U.S. Fish and Wildlife Service and the Pacific Flyway Council.

The process for developing hunting seasons typically includes:

1) Determine the status of game populations and impacts of previous harvest strategies;
2) Preliminary discussion of ideas with the tribes, the public, state and federal agencies, and WDFW staff;
3) Development of season and regulation alternatives;
4) A formal drafting of regulations and establishment of a public comment period in compliance with the Administrative Procedures Act;
5) Development of final recommendations by WDFW staff;
6) Adoption of regulations by the Fish and Wildlife Commission.

The process of establishing hunting seasons, bag limits, and geographical areas where hunting is permitted is exempt from State Environmental Policy Act (SEPA) rules through WAC 197-11-840. In addition, feeding of game, issuing licenses, permits, and tags, routine release of wildlife or re-introductions of native wildlife are also listed as exemptions from SEPA rules. However, policy development, planning, and all other game management actions are not considered exempt from SEPA rules.

PLANNING ALTERNATIVES

Statewide management plans have been formally adopted through the State Environmental Policy Act (SEPA) process for three game species, elk, black bear, and bighorn sheep. In total, there are over 50 species classified as game species. The last comprehensive WDFW plan for management of wildlife was drafted in 1987, but was never finalized. Local elk herd and bighorn sheep herd plans have also been completed or in some cases are in a draft stage. These herd plans expand on the strategies identified in the statewide species plans, identifying more specific actions and local priorities. They are also the key document WDFW has used to facilitate discussion and cooperative management with tribes.

Currently, annual work plans are developed for agency staff to coordinate statewide activities, in many cases without benefit of comprehensive wildlife program plans. Activity priorities are developed at workshops conducted by Lands, Game, and Wildlife Diversity Divisions and incorporated into annual work plans.

Priorities for game management activities are generally driven by:

1) Legal requirements such as development of hunting seasons
2) Monitoring population trends and monitoring harvest with an emphasis on those species most impacted by hunting
3) Activities directed by dedicated funding such as raffle and auction; migratory bird permit, and pheasant enhancement programs
4) Federal, state, international, and tribal agreements
5) Attention to species of management concern
6) Response to emergent issues such as wild fire, disease, severe weather events, or crop damage

Alternative Methods for Game Management Planning:

Comprehensive planning for game species management could be conducted for:

1) A six-year plan.
2) A longer period of time (than six years proposed) within the SEPA process.
3) It could be done through internal agency (operating type) plans, or internally developed on an annual work plan basis.
4) Planning could be conducted on a more sporadic basis with plans developed on a species by species basis as in past years.
5) Other recommendations were received during the public involvement process for managing game species with a reduced emphasis on hunting in general, but especially for predators and for those actions with limited public support.
6) A no action alternative could be implemented.

While there is the potential for a large number of alternative methods for management, many of the recommended alternatives are specific to individual species or species groups. Comments and recommendations for refinement of alternative strategies for each of those species or groups have been addressed previously with the final preferred strategies identified within Chapters Two and Three of this plan. Only alternatives for developing long-term direction or planning are discussed here.

1) The preferred alternative is a six-year plan that allows WDFW a sufficient amount of time to collect and analyze results, while still providing for flexibility. The plan will guide the development of the three-year hunting season packages for 2003-05 and 2006-08. This six-year term should be an adequate amount of time to determine the impacts or trends from changes in management.

2) A longer term than a six-year plan was considered, however flexibility to make changes would be more difficult.

3) An annual operation type plan could be developed by WDFW outside of the SEPA process, but it might be at greater risk of legal challenge. An operation plan generally does not receive the same level of public involvement and support.

   Annual work plans are an important aspect of planning. However, without long-term direction, they may not adequately consider long-range objectives. Often annual work plans identify short term or reactive strategies. With a longer-term plan, proactive strategies can be emphasized. This reduces frequent changes in direction based on the latest emergency or controversy. With a six-year plan, the public has a better understanding of where game management is headed. With measurable objectives, the public will know when success is achieved. Long-term plans facilitate monitoring accomplishments and provide accountability to the public. Annual planning will continue to be necessary to balance emergent issues with the accomplishment of long-term goals.

4) The species by species approach was used to develop plans over the past eight years with limited results. In that time, only three statewide plans were completed. This proposal for a six-year plan will provide guidance for all game species.

5) The suggested alternative to reduce emphasis on hunting of game species is addressed in the plan in several ways. First, it is important to remember that the Legislative mandate for the Fish and Wildlife Commission is to attempt to maximize public recreational hunting opportunities. However, public support for agency actions and for hunting is very important for the long-term management of wildlife. In general, the public is very supportive (82%) of hunting as determined in a recent public opinion survey (Duda 2002). The majority of the general public also supports hunting predators, though the level of support was lower than for species such as deer and elk. As identified in chapter three of the plan, the Department plans to better identify those specific actions or regulations that the public does not support and recommend modifications as appropriate, rather than a general reduction in emphasis on hunting.

6) A no action alternative would mean no change from what is currently in place. Individual species plans are periodically developed to address contentious species related issues when new funding becomes available or when staff are reassigned. The last game species plan was adopted in 1997 and there are a total of three completed statewide plans

out of over 50 game species. The plans are five years old and ready for revision. Currently, management direction hasn't been clearly described or discussed in a public fashion for the majority of game species.

BACKGROUND AND SETTING

NATIVE AMERICANS

Native Americans have inhabited the State of Washington for at least 9,000 years. The Cascade mountain range splits Washington State into two very distinctive environments: the dry conditions of the east and the much wetter, rain forest areas of the west. Native Americans adapted to these different conditions and evolved into two distinct patterns. The Pacific coastal Indians inhabited a land of plenty with an abundance of fish, shellfish, roots, berries, and game. While Native Americans east of the Cascades also had access to salmon and steelhead returning up the Columbia River system, they depended more on game and other food sources (Pryor 1997).

In 1853, Isaac I. Stevens was named the first Territorial Governor of the new Washington Territory. He was also appointed Commissioner of Indian Affairs, and negotiated treaties between Pacific Northwest tribes and the United States of America to pave the way for settlement and assimilation of Native Americans into non-Indian society. The treaties established a number of reservations for the Indian people, and in exchange the tribes ceded much of their territory to the U.S. government. The treaties and associated tribes are shown in Table 1.

The tribes that signed the treaties retained certain rights and privileges. For example, Article 3 from the Medicine Creek Treaty with the Nisqually, Puyallup, Squaxin Island, and Muckleshoot Tribes states:

> *The right of taking fish, at all usual and accustomed grounds and stations, is further secured to said Indians in common with all citizens of the Territory, and of erecting temporary houses for the purpose of curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses on open and unclaimed lands: Provided, however, that they shall not take shellfish from any beds staked or cultivated by citizens, and that they shall alter all stallions not intended for breeding-horses, and shall keep up and confine the latter.*

Washington State courts have interpreted this treaty language to mean that treaty tribes can hunt within the boundaries of the area ceded to the federal government by their treaty, or in areas of traditional use, on open and unclaimed lands that have not been put to a use that is inconsistent with hunting. As part of this ability, tribes are responsible for the management of their own hunters and hunting activities, on and off-reservation.

Not all of the tribes signed treaties with the government. Several of these tribes have reservations designated by presidential proclamation. These include the tribes of the Colville, Spokane, and Kalispel reservations in eastern Washington, and the Chehalis and Shoalwater reservations in western Washington. Tribal hunting rights for these tribes are typically limited to

areas on the reservation, or in the case of the Colville tribe to areas that were formerly part of the reservation. There are additional tribal groups that are recognized by the federal government, but have no specific reservation or tribal hunting rights.

Since tribal and non-tribal hunters impact the wildlife resource over much of the state, it is important that WDFW and the tribes work cooperatively to develop management strategies that can meet the needs of both. This process is complicated by the fact that tribal subsistence and ceremonial hunting and state recreational hunting are two very different philosophies steeped in different traditions and cultural heritages (McCorquodale 1997). This means that both sides have to work very hard to understand and appreciate other views.

Tribal governments take an active role in the management of wildlife resources. They typically have a tribal hunting committee that meets to develop regulations and management strategies. Many tribes have hired biologists, or have access to biological staff that can advise them on the development of management approaches. Tribes have taken the lead in several areas on research projects to gather the information that is needed to better manage wildlife resources. WDFW and various tribes are working together to develop herd plans for key wildlife populations. WDFW is also working cooperatively with tribes to rebuild or augment populations that are below desired levels.

Table 1. Treaties between the United States of America and Northwest Indian Tribes.

Treaty	**Indian Tribes**	**Location and Date**
Treaty with the Yakamas	Yakama confederated tribes and bands	Camp Stevens, Walla Walla Valley June 9, 1855
Treaty with the Walla Wallas	Walla Walla, Cayuse and Umatilla tribes and bands	Camp Stevens, Walla Walla Valley June 9, 1855
Treaty of Olympia	Quinault, Hoh, and Quileute	Qui-nai-elt River –Jan. 25, 1856 Ratified March 8, 1859 Proclaimed April 11, 1859
Treaty of Point No Point	Jamestown S'Klallam, Port Gamble S'Klallam, Lower Elwha S'Klallam, Skokomish	Point No Point, Suquamish Head Jan. 26, 1855 Ratified March 8, 1859 Proclaimed April 29, 1859
Treaty of Point Elliot	Lummi, Nooksack, Stillaguamish, Swinomish, Upper Skagit, Suquamish, Sauk Suiattle, Tulalip, and Muckleshoot	Point Elliott January 22, 1855 Ratified March 8, 1859 Proclaimed April 11, 1859
Treaty with the Nez Perces	Nez Perce' Tribe	Camp Stevens, Walla Walla Valley June 11, 1855
Treaty of Neah Bay	Makah	Neah Bay January 31, 1855 Ratified March 8, 1859 Proclaimed April 18, 1859
Treaty of Medicine Creek	Nisqually, Puyallup, Squaxin Island, Muckleshoot	Medicine Creek December 26, 1854 Ratified March 3, 1855 Proclaimed April 10, 1855

EUROPEAN SETTLEMENT

During the early European settlement of North America, hunting was primarily a subsistence activity (Organ and Fritzell 2000). The same was true for the early immigrants to the Washington Territory. Hunting was also used to eliminate animals that posed a threat to humans or their livelihood. Hunting eventually became a profitable commercial venture promoted initially by the fur trade and later for food, clothing, and jewelry. Conflicts between market hunters and sport hunters began to occur by the mid 1800s and nationally some influential sportsmen's organizations were formed (Trefethen 1972). During the 19th century, hunting changed from mostly a subsistence activity to a commercial one, and then to the beginnings of a recreational activity. At the same time, wildlife habitats were being fenced, plowed, burned, developed into towns, and cut by roads and rails (Madson and Kozicky 1971).

By the late 1800s there was a new movement of sportsmen and other conservation minded people. Theodore Roosevelt led a social movement that pressed for an end to commercial traffic in wildlife and for government oversight of wildlife conservation (Reiger 1975, Warren 1997). Roosevelt introduced a new thought, "conservation through wise use" (Madson and Kozicky 1971). It was also the foresight of President Roosevelt that was responsible for the establishment of the U.S. Forest Reserves (Service) and the creation the National Wildlife Refuges. His legacy of public lands is in place today, more important than ever before, as strongholds of fish and wildlife in Washington State and the Nation.

In 1928, the American Game Conference, chaired by Aldo Leopold, formed a committee on Game Policy. During this period wildlife conservation programs focused on laws and enforcement, but a formal wildlife management profession did not exist. The report (Leopold 1930) described the problem of declining wildlife and recognized the need for scientific facts concerning game species management. The committee called for the reorganization of state game departments and outlined the steps needed to reverse the trend (Madson and Kozicky 1971, Organ and Fritzell 2000).

"The report strongly urged that conservation be taken out of politics, that fish and game funds be earmarked for fish and game programs, and that every effort be made to build competent, stable, adequately-financed conservation departments (Madson and Kozicky 1971)*."*

Funding for key elements of the (government) agencies was linked to earmarked fees paid by hunters. Most significant were, the Migratory Bird Hunting Stamp Act (1934) which funded National Wildlife Refuges, and the Federal Aid in Wildlife Restoration Act (1937) which provided federal funding for state agencies.

As the population of Washington increased, laws were enacted to protect the wildlife resources. The Legislative Assembly of the Territory of Washington enacted the first laws concerning wild animals within the territory in 1863. The first game species law allowed the, *"county commissioners of each and every county authority, if they think proper, to offer a bounty for killing wild animals."* Although a few early laws were passed to preserve and protect game, they were largely ineffective and not enforced. In 1890, the Governor was given authority by the Legislature to appoint game wardens in each county.

In 1901 the State Legislature passed the first hunting license requirement allowing counties to issues licenses with a fee of $1.00 for residents and $10.00 for non-residents. In addition, any person killing a male elk was required to pay an additional sum of $20. Thus game management in Washington entered the twentieth century with the beginnings of a user-fee hunting program to be administered by the county. Appendix 2 shows the cost of hunting licenses and deer and elk tag fee changes since 1901.

The passage of the Pittman-Robertson Federal Aid in Wildlife Restoration Act specified that an eleven percent excise tax on sporting arms and ammunition must be maintained in a separate fund in the Treasury, and allocated annually to the states. In order for the states to participate, each state was required to pass enabling legislation and adhere to the provisions of the Act. This required all hunting license fees be dedicated to use by the state game department. The enabling Legislation was passed by the Washington State WDFW and signed into law in 1939. This was the beginning of modern wildlife management.

THE NATURAL ENVIRONMENT

Washington has a rich diversity of flora. Forests cover about half of the state's land area. On the Olympic Peninsula there is a temperate rain forest consisting of spruce, cedar, and hemlock with an understory of ferns and mosses. The areas surrounding the Puget Sound and the western slopes of the Cascade Range are forested, consisting mostly of cedar, hemlock, and Douglas fir with an understory of shrubs. On the eastern slopes of the Cascades and the Blue Mountains of southeastern Washington ponderosa pine, Douglas fir, Grand fir, Western hemlock, and sub alpine fir are the major species. The forests in these areas are more open with an understory of grasses and shrubs especially at the lower elevations. Across the northeast region of the state the forest is primarily made up of Douglas fir, Western red cedar, Western hemlock and sub-alpine fir. The forests of the state have been intensively logged and contain second and third growth forest plantations of mostly Douglas fir (Access Washington 2002).

In the Columbia Basin the native vegetation is drastically different from the forested lands of the state, owing to the dryer and hotter climate of the region. The pristine vegetation consisted of shrubs and grass (shrub steppe). With the introduction of agriculture and livestock grazing in the mid-1800 the vegetative character of the land took on a new look. Overgrazing by sheep, cattle and horses was evident by 1885. Lands were cleared for intensive farming, both dry land and irrigated. On the prairies of the Palouse the conversion of all arable land was nearly complete by 1910 (Buchner 1953). Other lands are continuing to be converted to the growing of agricultural crops or converted to urban uses (AccessWashington 2002).

The introduction of non-native weed species by imported livestock, contaminated commercial seeds, and other sources have resulted in a dramatic change in the landscape and the productivity of the land for commercial use, as well as intrinsic values. In Washington invading weeds have adversely impacted native wildlife habitat and domestic livestock rangelands (Access Washington 2002).

THE SOCIAL ENVIRONMENT

The evolution of the human social environment and its impact on the natural environment has been dramatic from pre-settlement to the present. Some game species have benefited from this transition while others have not.

Between 1950 and 1960 60% of Washington's human population resided in incorporated areas. In 1990 only 52% live in incorporated areas (AccessWashington 2002). This movement of people into rural and formerly undeveloped lands had significant impacts on wildlife habitat and abundance.

Washington has the second largest human population of the western contiguous states but is the smallest in size. At the end of 2001 the population was estimated at 5,974,900 making it the 15th most populous state in the union. The long-term outlook in human population for the state of Washington is continued growth, with ever increasing impacts to the natural resources of the state.

The ten largest cities are almost exclusively on the west side of the state, with Spokane and Yakima the two representatives from the east side. The Interstate Highway 5 corridor is the area of highest human population and where the greatest changes to the natural environment have taken place. Seattle is the largest city in the state with over a half million people. The cities of Spokane, Tacoma, Vancouver and Bellevue are all over 100,000 in population.

INDUSTRY

Prior to settlement, the Pacific Northwest region was important for its fur-trapping industry. With the completion of the Northern Pacific Railroad in 1886 and Great Northern Railroad in 1893, Washington's economy grew. Agriculture and the lumber industry developed in western Washington and eventually to the east. A transportation network was a key to the growth of the state's economy (AccessWashington 2002).

During the twentieth century the construction of dams on the Columbia and Snake rivers provided abundant, cheap electrical power, resulting in the rapid growth of manufacturing. Dams for agricultural irrigation also advanced farming in the dryer Columbia Basin. Farms in western Washington are small, and dairy products, poultry, and berries are the primary commodities produced. The eastern side of the Cascade Range has larger farms, and small grains such as wheat and barley, potatoes, fruit, and vegetables are the primary crops.

According to the Economic Research Service of the U.S. Department of Agriculture, the 2000 Census of Agriculture showed that Washington farmland acreage totaled 15.7 million or about 35.6% of the total land area. Farmlands are highly valued wildlife habitats for which the landowner is not often recognized. Game species such as pheasants, quail, deer, and waterfowl are attracted to private lands for their abundance of food and water.

Recent changes in natural resource policies and implementation of new ecosystem management strategies have affected the timber industry, the people of Washington, and the Northwest. The timber harvest changes in Washington between 1989 and 1994 have been substantial (Table 2),

(Dodge 2001). The changes in forestry practices are necessary for the survival of many species that require older, larger trees. However there may be serious impacts to the future amount and quality of deer and elk forage and population numbers over the long term.

Table 2. Timber harvest changes in Washington between 1989 and 1994.

Ownership	1989 harvest [a]	1994 harvest [a]	Percent Decrease
Private	4,027,278	2,965,848	-26.4
Public	1,929,039	592,045	-69.3
Total	5,956,317	3,557,893	-40.3

[a] in thousand board feet

LAND USE AND OWNERSHIP

The total land area of the state is 45.9 million acres. Out of this total 2.6 million acres are aquatic lands and 43.3 million acres are uplands. The public land ownership and principal uses in the state are found in Appendix C, (Interagency Committee for Outdoor Recreation 2001).

Public lands make up about 52% of the state. The U.S. Forest Service, representing about 41% of public lands, manages the greatest amount of public land. The total of all federal ownership in Washington represents about 58% of public lands. State lands represent about 27% of public lands. The Department of Natural Resources is the largest manager of state lands. Local and tribal lands make up the rest.

Public lands are not evenly distributed across the state, because of the historical pattern of settlement and development. The largest concentrations of public lands are at the higher elevations, while the lowlands and lands associated with waterways are mostly private. The Columbia Basin in eastern Washington and the Puget Trough region on the west side are mostly in private ownership.

WASHINGTON HUNTERS

The number of licensed hunters in the state of Washington grew rapidly with the increase in leisure time and availability of game. Historical records of hunting license sales by the counties are not readily available from 1901 to 1933. From 1933 to 1953 hunting license sales show a significant increasing trend, peaking in 1953 at approximately 445,000 state and county hunting and fishing combination licenses sold (Figure 1). The incline in hunting license sales was particularly steep following World War II.

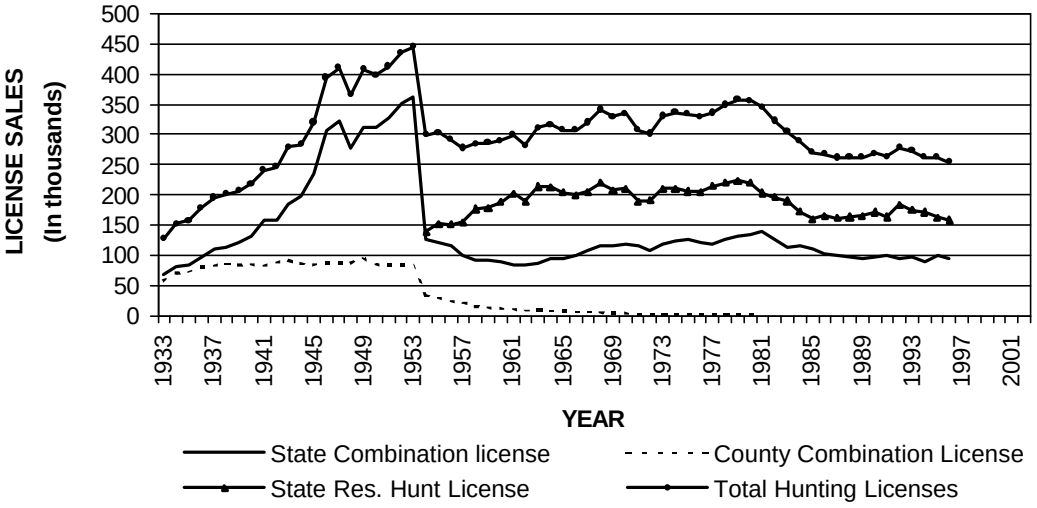


Figure 1. Washington hunting license sales and numbers, 1933-1997.

In 1954 a separate resident hunting license was introduced resulting in a significant drop in total licenses sold. This drop most likely reflects the number of fishers who chose not to purchase a state hunting license rather than the hunting/fishing combination license because they had no intention of hunting. If this is true, then the increasing trend in hunters actually peaked quite a few years later in 1979 with about 358,000 hunting licenses sold. Thereafter sales showed a declining trend through 1989, when 269,000 licenses were sold. Since 1989 there has been no clear trend in hunter numbers, however the state's human population has increased significantly.

A discussion of trends in hunting participation by Brown et al. (2000) suggests that the trend of stable to decreasing numbers of hunters continues. They predict managing wildlife damage through hunting will be increasingly challenging because of declining recruitment of hunters and declining social support for hunting. In Washington, an analysis of general season deer hunter trends does not support the predicted decline. Since 1984, deer hunting participation rates are highly variable from one year to the next and no clear trends are evident (Figure 2).

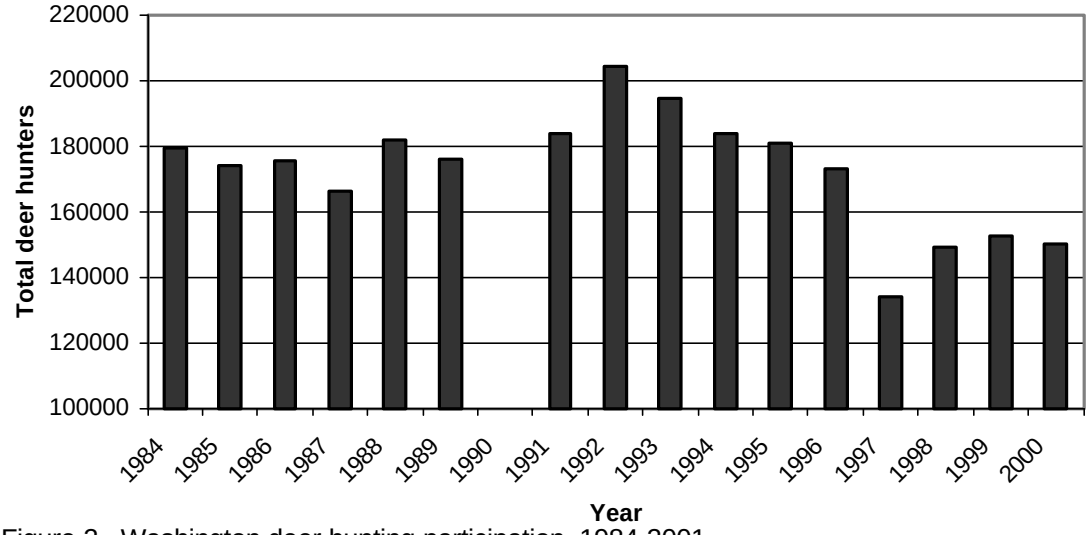


Figure 2. Washington deer hunting participation, 1984-2001.

Washington hunter characteristics in 2002 are very different from a century ago. They are mostly well educated, having graduated from high school or equivalent (37%), some having additional college or trade school training (18%), college graduates (16%), and some with post-graduate or professional degrees (12%), (Duda 2002b). Washington hunters are mostly older than 45 and male dominated (93%). Waterfowl and furbearer hunter groups were almost exclusively males (Duda 2002b). In comparing a demographic study of Washington hunters (Johnson 1973) to the recent survey, there has not been any change in male dominance (94% males and 6% females) in the intervening 31 years. Age distribution of hunters in 1972 and 2002 are not directly comparable between the two studies, however, it is apparent the majority of hunters in 1972 were less than 29 years of age compared to 2002 data where age of respondents were predominantly over 35 years of age.

RESOURCE ALLOCATION

During the 1970s, big game hunter numbers in Washington were at an all time high. Hunter crowding, competition among hunters, and the declining quality of the hunting experience resulted in significant hunter dissatisfaction. As a result, many hunters changed from the use of modern firearms to primitive archery equipment and black powder muzzle loading rifles to take advantage of less-crowded hunting conditions. In 1982, the Department formed a Big Game AD Hoc Committee to address the problems facing hunters in Washington, and develop a plan of fair allocation of hunting opportunity. The committee identified three major goals as follows:

1. Reduce crowding in the more popular modern firearm hunting seasons.
2. Provide quality-hunting opportunity.
3. Provide early primitive weapon opportunity.

Following extensive debate and public involvement in 1984, the Fish and Wildlife Commission adopted a major change in deer and elk hunting. This new rule required all deer and elk hunters to select one type of gear for hunting (modern firearm, archery or black powder muzzleloading rifle). In addition all elk hunters continued to be restricted to an elk tag area.

Since 1984, modern firearm deer hunters have continued to represent the majority of active hunters. Archery deer hunter numbers increased for the first 5 years and then stabilized. The number of muzzleloader deer hunters has shown a more protracted incline but appear to have stabilized, representing about 5% of the deer hunters (Johnson 1999).

Elk hunter numbers, on the other hand, have shown a more pronounced change in user group size. In 1984 modern firearm hunters represented 88% of all elk hunters, archery hunters 9.5% and muzzleloader hunters 2.4%. In 1998 the modern firearm hunter represented just 68% of the total, archery hunter numbers doubled in percentage and muzzleloader hunters increased six-fold. Since about 1994, the proportion of each user group (modern firearm, archery and muzzleloader elk hunter) has stabilized at about 69%, 17% and 14% respectively (Johnson 1999).

Separating hunters by hunting method has successfully distributed hunting pressure, relieved congestion and increased primitive weapon opportunity. The quality of hunting opportunity has been more difficult to assess.

Resource allocation continues to be a contentious issue with hunters. A few of the more hotly contested issues include:

1) Which group gets to hunt first?
2) How should timing of various hunting seasons between user groups be fairly established?
3) Should fairness be related to equal opportunity (days) or equal success?
4) How primitive should "primitive weapon" hunting seasons remain?

HUNTER EDUCATION/SAFETY TRAINING

Hunter education programs are in place in all 50 states, reaching about 650,000 hunters annually (Duda et al. 1998). In Washington all individuals born after January 1, 1972, must show proof that they have completed a hunter education course prior to purchasing a hunting license.

The former Washington Department of Game first offered hunter education in 1955 on a voluntary basis. In 1957, it became mandatory for all juveniles less than 18 years of age. In 1995, all individuals born after January 1, 1972 were required to successfully complete a hunter education class. In 1992 an Advanced Hunter Education Program was introduced as a voluntary program. For the last five years (1997-2001) enrollment in hunter education classes has been increasing, with approximately 11,500 students taught by a shrinking corps of volunteer hunter education instructors. Currently, the demand for hunter education classes exceeds the schedule of classes offered each year (Mikitik personal communications 2002).

HUNTER ACCESS

As early as 1875 the Legislative Assembly of the Territory of Washington passed a law that prohibited persons from entering upon private lands (enclosed premises) without permission from the landowner for the purpose of hunting grouse during the open season. This law demonstrates the early roots of conflict between hunters and landowners. Hunter access onto private lands and through private lands to public lands is a lingering issue.

WDFW has placed considerable emphasis over the years on obtaining access to lands for the enjoyment of hunting. Currently there are several programs promoting hunter access. The WDFW Upland Wildlife Restoration Project provides incentives to private landowners through technical assistance, implementation of habitat enhancement strategies, and hunter management assistance. Landowners agree to open their lands for recreational opportunity in exchange for materials and help planting and developing habitat. The Department provides free signs and assists the landowner in posting their lands as "free to hunt" or "hunt by written permission." There are over 4 million acres and over 1,300 landowners in Washington under cooperative agreement through 2001, (Johnson 2001).

The Private Lands Wildlife Management Area (PLWMA) program was developed and initiated on a trial basis in 1993. This program was designed to enhance wildlife habitat on private lands and encourage public access opportunities. Two PLWMAs were authorized in 1993, 201-Wilson

Creek and 401-Champion's Kapowsin Tree Farm. A third PLWMA 600-Pysht was added in 1997.

Many changes have been made to improve the program for the private landowner, as well as the public. A common criticism of this program from hunters is that public access is not adequately addressed and wildlife habitat enhancements may be driven by incentives, rationale, or regulations outside of the PLWMA program.

There are many benefits for market-based (economically beneficial) programs on private lands for both the public and the private landowner. The major benefits are opening closed private lands to public access, protection and enhancement of wildlife habitat, economic benefit to private landowner and local economies. On the other hand, major impediments include the concern for loss of control by state agencies, potential for over-exploitation of the wildlife resource, and a potential for forced decline in hunter participation rates because of escalating costs (Duda et al. 1998).

A survey of Washington hunters was conducted (Duda 2002b) to determine opinions about private land access and other private land programs. A strong majority of hunters felt that private lands were very important to wildlife and for outdoor recreation. All hunter groups surveyed felt that private land programs should provide incentives to landowners for improved wildlife habitat and allowing access onto their lands. The majority of all hunters agreed that access to private lands for hunting is important even if an access fee is charged.

Hunters are feeling the "crunch" in available hunting areas. Private lands are recognized as important to the future of hunting, especially upland game bird and waterfowl hunting. Maintaining hunting opportunities on these lands is becoming increasingly difficult and competitive. The hunter's willingness to pay landowners for hunting opportunity is a significant change from attitudes of the past.

ECONOMICS

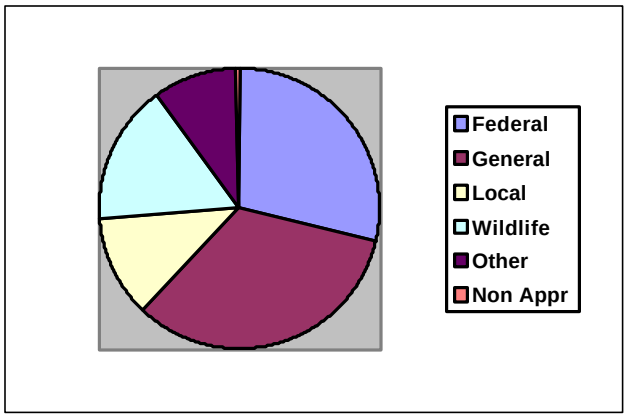
Washington hunters spent $327 million in 1996 for trip related expenses, equipment, and other expenditures primarily for hunting (U.S. Dept. of Interior et al. 1998). About 28% of their expenditures were for food, lodging, transportation; 66% for hunting equipment (guns, ammunition, camping); and 6% for purchase of magazines, membership dues, land leasing, and licenses and permits.

The national survey reported there were 271,000 resident and nonresident hunters 16 years of age or older who hunted in Washington. These hunters spent 4.7 million days hunting in the state. Expenditures per hunter per day were $67.73 for all hunters.

WDFW's 1999-2001 Biennial Report shows an average annual increase in hunting license revenue of $1.9 million over the previous ten year average. Hunting license revenue was $12.3 million in fiscal year 2000 and $14.3 million in fiscal year 2001. This increase coincides with a restructuring of licenses in 1999 and with improving deer populations after a hard winter in 1996-97.

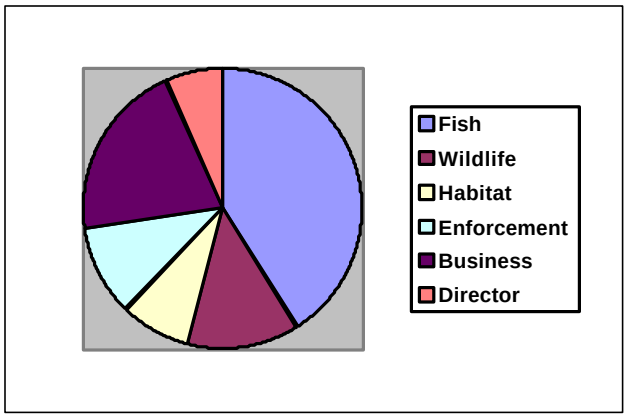
The budget for WDFW in the 1999-2001 biennium was made up from several sources of funds. The following chart shows the relative proportions of those funds:

Federal Funds	$78,333,088
General Funds	$92,695,990
Local Funds	$32,284,266
Wildlife Funds	$44,412,606
Other State Funds	$25,726,584
Non Appropriated	$1,394,473



There are six programs within WDFW and their proportion of the operating budget is shown in the following chart:

Fish	$113,060,819
Wildlife	$35,631,483
Habitat	$22,606,582
Enforcement	$28,806,191
Business Services	$56,322,832
Director's Office	$18,419,100



The Game Division is one of five divisions in the Wildlife Program. The biennial budget for the Game Division is about $6 million. Of that total, $1.3 million is dedicated to specific activities such as the migratory bird permit ($386,000), auction and raffle funds ($250,000), and the eastern Washington pheasant enhancement program ($670,000). Another $427,000 is from the general fund, dedicated for monitoring sea ducks as part of the Puget Sound Ambient Monitoring Program. The remaining funds come from the general fund ($232,000), revenue from license sales or the wildlife fund ($2.1 million), and federal funds ($2 million), which is mostly from the Pittman-Robertson Act (excise tax on sporting equipment and ammunition).

This $6.25 million is the base funding for most of the activities identified in this plan except for private lands access, hunter education, game damage, and law enforcement. These activities are funded from other divisions or programs within WDFW. Implementation of new activities in this plan will be dependant on additional funding, grants, and partnerships.

CHAPTER 2

ENVIRONMENTAL IMPACTS

This chapter of the plan provides a general discussion of the environmental impacts of managing hunted species. The major environmental impacts of game management identified during the public involvement process and by WDFW staff include:

1) Long-term and temporary changes in the population levels of game animals (increases or decreases)
2) Potential disturbance or killing of non-target wildlife
3) Seasonal increase in vehicle traffic
4) Impacts to rural residents by hunters
5) Impacts from non-native species on native wildlife
6) The impact of lead shot on wildlife
7) Winter-feeding impacts on disease control
8) Impacts of high deer and elk populations on their habitat and property damage by game species
9) Impacts on predator/prey relationships and public safety concerns from cougars black bears

Population Level Changes

The goal of regulated hunting is to provide recreation while sustaining game populations within habitat and social limits. Large fluctuations in population levels of game species are generally driven by factors other than hunting. Examples are severe weather during critical times of year especially winter and spring, prolonged drought, disease outbreaks, and large scale habitat changes such as human development, fire, timber harvest levels, and agricultural programs. Because game species tend to be relatively abundant, state wildlife managers have limited regulatory authority over human caused habitat changes. Forest practice rules, agricultural programs, and growth management plans mainly incorporate regulatory considerations for listed or rare species. However, program managers, land managers, planners, and regulators may be influenced through technical recommendations, advice, and comment from wildlife managers in support of game species needs.

Hunting can be an effective tool to modify species numbers to achieve identified objective levels (Strickland et al. 1994). Population level objectives for various game species are identified in chapter four of the Game Management Plan (GMP). Some objectives will result in expanded hunting opportunities and efforts to reduce game population levels, some will result in restricted hunting opportunities and activities to increase levels, and some maintain current levels. There are other species where hunting as currently provided does not have much influence over

population levels. Many of these species population levels fluctuate without regard to hunting opportunity due to natural factors or due to limited interest from the public (especially hunters).

Disturbance of Non-target Wildlife

Disturbance and killing of non-target wildlife is mitigated in a number of ways. First, the majority of hunting seasons are provided in the fall after most wildlife nesting and reproduction has occurred. Seasons are also timed to avoid disturbance during critical wintering periods. The Fish and Wildlife Commission may classify species as protected or endangered if warranted, which gives them legal protection and subjects violators to criminal prosecution.

In cases where misidentification may be a problem, educational information (showing differences) may be provided in the hunting regulations pamphlet, during hunter education classes, and signs are often posted. For example, in situations where endangered species such as grizzly bears are being protected, information is available in the hunting regulation pamphlet, signs are posted at campgrounds, biologists patrol protected areas educating hunters, and the black bear season opening date is delayed to minimize potential encounters between hunters and grizzly bears.

Close coordination occurs between the WDFW Game Division and the WDFW Diversity Division, which is responsible for non-hunted wildlife, to address potential management conflicts between species. The organizational structure and duties of field biologist positions include management responsibility for both game and diversity species. The same individual is responsible for local recovery actions of listed species and for hunting seasons and management of game species. This coordination and organizational structure helps ensure that conflicts are identified and addressed. Significant issues and mitigation measures are identified in the species management sections in chapter four of the Game Management Plan. In addition, significant conflicts for threatened and endangered species are identified in recovery plans.

Vehicle Traffic

Hunting seasons are currently in existence and this proposal will not significantly change current levels of vehicle traffic. Seasonal increases in vehicle traffic in most areas are expected to be no greater than those caused by other forms of recreation such as camping in summer or snow sports in winter, but may increase total traffic in some areas. Fall hunting seasons fit in well between other peaks of participation in outdoor recreation and provides significant support for rural economies.

Rural Resident Impacts

Private lands often provide a significant amount of hunting opportunities. Concerns are frequently expressed from private landowners and rural residents regarding poor behavior or problems with hunters. Local fish and wildlife officers and biologists meet informally with rural residents and periodically conduct more formal meetings to assess and mitigate landowner's concerns. Hunting seasons are modified to balance chronic hunter problems with property damage caused by game animals. In addition, Officers conduct emphasis patrols and surveillance when problems between hunters and landowners are particularly acute. There are

currently over 150 Officer positions statewide with responsibility to enforce the Fish and Wildlife Code. Residents may report violations and request assistance to address problems with hunters from Fish and Wildlife Officers by contacting the Washington State Patrol.

Non-native Game Species

Impacts of non-native species on native wildlife have been expressed as a concern although there is limited evidence of one species causing declines in another. Washington's non-native game species include low land fox, wild turkey, ring-necked pheasant, Hungarian and chukar partridge, northern bobwhite, and California quail. Many of these species have taken advantage of major habitat changes in this state. The most significant changes are the result of urbanization, agricultural development, and timber harvest practices. These large-scale habitat changes, not the presence of non-native species, are likely responsible for native species declines.

The current public concern is mainly focused on wild turkey management and potential conflicts with listed species. The wild turkey section in chapter four of the Game Management Plan calls for a re-evaluation of current management. That re-evaluation and subsequent development of a plan will include special emphasis on assessing and resolving (mitigating) conflicts with native wildlife species. In addition, one of the mitigating strategies under wild turkey research is to develop or participate in an inter-specific competition study.

Lead Shot Impacts

The concern that lead shot and bullets used by hunters results in ingestion and subsequent lead poisoning of wildlife has been addressed in a recent WDFW issue paper (see Fact Sheet under "Location of background data"). The review and subsequent modification of regulations emphasizes non-toxic shot restrictions in areas where wildlife may ingest deposited lead. This has included pheasant release areas where sheet water covers open fields and also included areas where raptors concentrate. Non-toxic shot restrictions for hunting waterfowl have been in place for over ten years.

As identified in the GMP, WDFW plans to continue surveillance of migratory birds for contaminants (such as lead) associated with mortality events and take corrective action. A recent example is a swan die-off caused by lead poisoning from shot deposition in Whatcom and Skagit counties and in southern British Columbia. A study to determine the source of the lead and begin remediation has been implemented. In addition, the project was the subject of an educational article in a 2002 WDFW hunting publication that was distributed to hunters (Game Trails, see Fact Sheet "Location of background data). Enforcement emphasis on lead shot violations will be increased in the area.

Winter Feeding of Wildlife

Winter-feeding has mainly been expressed as an issue with feeding of the Yakima elk herd and has been addressed in the GMP. The main concern for feeding is for potential *spreading* of diseases by concentrating animals. As the GMP states, we will follow disease management guidelines and action plans if a serious disease is detected. WDFW does not recommend or encourage winter-feeding of ungulates, but in the case of the Yakima elk herd, we recognize the

extensive loss of access to winter range. When faced with the decision of significant reductions of the elk herd many years ago, WDFW chose to feed the elk. Feeding will continue as planned, however strategies in this Game Management Plan as well as the Yakima elk herd plan stipulate reducing efforts and stations where possible. The GMP also identifies ongoing disease monitoring as an important component of management. Elk have been monitored for a variety of diseases and parasites for many years especially on the feedlots.

Habitat and Property Damage Impacts from "Over-population" of Ungulates

Concerns for high deer and elk populations and impacts to habitat are most often expressed relative to areas where deer and elk cause property damage and for elk herds in general. The plan calls for an evaluation of habitat conditions in several elk herds and for more routinely evaluating the relative health of deer and elk populations using body condition information. A poor body condition score may be an indication of poor habitat conditions. Specific techniques for addressing property damage are laid out in the plan with emphasis placed on dealing with specific problem animals through hunting.

Predator/Prey Relationships

Impacts to predators from human harvest of prey might be an issue where predator populations are limited. As discussed previously, many managers believe that most large-scale fluctuation of game species (especially prey) is the result of events not under the control of wildlife managers. It appears to require large reductions in prey to measurably impact predator populations and most hunting regulations and management strategies are not designed to cause large, widespread reductions (typically in excess of 30 percent of the population) in prey species. A question was specifically raised relative to snowshoe hare and lynx. Hunter interest in harvest of hares is not very high and the likelihood that hunting has much impact on hare numbers or on food availability for lynx is considered very low by the Department.

Concern for impacts of cougar and black bear on public safety as well as impacts to deer and elk populations was raised. The plan identifies strategies to address these issues, mainly through focused hunting opportunities, education, and immediate response to complaints or incidents in cases of public safety. Recent efforts such as agency response and cougar removals in high incident areas will be continued and appear to be working as complaint levels have declined. Overall population management strategies are designed to ensure healthy cougar and black bear population levels outside of problem areas.

AFFECTED NATURAL ENVIRONMENTS

Earth

Managing game species has no significant negative impact on natural conditions or processes on soils or substrates. Wildlife enhancement projects that involve construction will be subject to further environmental review as required by state and federal law.

The impacts of burrowing animals on managed or built soil environments (such as dikes) are mitigated through animal damage programs. Property owners may remove animals causing property damage as authorized under state programs and regulations.

Air

Exhaust from vehicles used to participate in hunting have minimal significant impact, and would have no greater impact on ambient air quality than general or other recreational vehicle use.

Water

Water quality may be affected by a number of game species. Over-abundant ungulate populations could reduce water quality by concentrating daily activities in riparian zones. This potential is greatest in dry climates during the summer. Because natural dispersal over the landscape during this time period generally results in low densities of animals, this problem has not been frequently documented in Washington. Another potential period of concentration of ungulates is during winter-feeding operations. Placement of feeding stations away from riparian corridors or exclusion from riparian areas is an important mitigation strategy currently utilized. Agency staff also address landowner and land manager concerns on a case-by-case basis to determine if the cause is related to excessive concentrations or the natural behavior of certain game species. Hunting regulations are adjusted as necessary to address cases of over abundance. Other actions to haze animals away from problematic areas may also be used.

The impacts of water dwelling game animals such as beaver and muskrat are well documented in the scientific literature and are generally considered positive in terms of water quality. Sustaining healthy population levels as described in the management plan helps ensure long-term benefits of these species to water quality. Harvest levels, established through hunting and trapping regulations, are designed to sustain populations on a broad scale. In addition, the Fish and Wildlife Commission may establish reserves or restrict harvest of species such as beaver in local areas where important water quality and habitat benefits are identified. Past examples include areas on the Olympic peninsula, Mount Saint Helens, and in Kittitas County.

Any planned wildlife enhancement projects that involve construction will be subject to hydraulic project approvals, permits, and environmental review as required by state and federal law.

Animals

The existing conditions, significant planned population impacts, and mitigation measures are addressed in the species sections of chapter four of the GMP. The existing conditions are described extensively in chapter one under background and setting. They are also described for individual species or groups of species in chapter four under headings of population status, recreational opportunity, and data collection. Some impact assessment is also identified under these headings in chapter four, but significant impact assessment is more specifically identified within the “Issue Statements” under the separate titles: habitat, population, and recreation management, information and education, research, and enforcement. Strategies to address and mitigate impacts (issues) are listed for each objective under the Issue Statements.

Public comments and recommendations for alternatives and the priorities for strategies have been incorporated into the revised GMP. Specific responses to comments are attached as an appendix to this document.

Plants

In general, the issues for plants and game species management are identified under the habitat sections of the species sections in chapter four. The main issue, identified during the public involvement to date, was related to localized habitat impacts from over abundant or concentrated ungulates described previously. Specific concerns related to protection of important or rare plants were not identified and are usually addressed in other ways.

Land managers such as WDFW, Department of Natural Resources, State and Federal Parks, and the U. S. Forest Service often protect rare plants from wildlife and from hunters by using exclusionary fences, regulations, and/or signs. These direct measures are considered most effective for protecting important plant resources. Any planned wildlife enhancement projects will be subject to environmental review as required by state and federal law.

Natural Resources

Negative impacts to other natural resources are considered insignificant. The impacts of the strategies identified in the GMP on the natural environment and long term conservation are positive. A stated goal in each of the species sections of the GMP is to preserve, protect, perpetuate and manage game species and their habitats to ensure healthy, productive populations. The strategies seek to maintain balance and harmony between game species, their environment, and humans.

ASSESSMENT OF IMPACTS TO THE BUILT ENVIRONMENT

Noise

Noise impacts from implementing the strategies identified in this plan are considered minimal. The likely causes of noise are from the discharge of weapons during hunting, vehicle traffic, and construction activities to improve and develop wildlife habitat. The discharge of firearms, in rural environments most associated with hunting, is generally not considered excessive or out of place. It is also no greater a factor than logging operations, farming practices, or other activities in these areas.

Vehicle noise is fairly consistent across rural landscapes with some increase during hunting seasons, especially in farming areas. However this increase is not considered a significant cause of noise when compared to other factors in these areas. Planned wildlife enhancement projects will be subject to environmental review as required by state and federal law.

Public Health

In comparing statistics from the National Safety Council, hunting is a safe recreational activity. Fewer injuries occur while hunting than during many other recreational activities. This record of safety may be attributed to mandatory hunter education for all hunters born after 1972 and to safety regulations such as it is unlawful to carry loaded guns in vehicles and the requirement that hunters (using modern firearms) wear visible orange clothing. In a recent public opinion survey, a majority of the general public agreed that hunting is a safe activity (Duda 2002).

Other public health issues are mainly associated with wildlife disease and parasites that might be transmitted to humans. In situations where diseases may be transmitted, warnings are provided through various public information means. While there are several wildlife diseases and parasites that may cause health problems for humans, public education campaigns have resulted in relatively few chronic or significant problems for Washington citizens. These health issues are addressed and coordinated by the Department of Health.

Land Use

Management of hunted wildlife does not preclude private property use or management. However property management may significantly impact game species management and population levels. In these situations, strategies have been identified in the species sections of chapter four to purchase easements, lease, acquire, or otherwise influence the use of key properties from willing property owners.

Aesthetics

Relevant aesthetic issues have also been addressed under the species sections of chapter four with strategies identified for developing a variety of expanded viewing or watchable opportunities.

Recreation

There are specific sections in chapter four dedicated to identifying existing recreation conditions, assessing impacts, and developing the necessary strategies (mitigation). Extensive public involvement has been focused on recreation and the specific strategies the public would like to see implemented. In addition, the hunting season setting process provides significant opportunity for the public to express their ideas for providing recreation related to game species. The recent public opinion survey showed that conflicts between other recreational users and hunters was minimal (Duda 2002). However, that response from the public may be influenced by past consideration from WDFW managers and the Fish and Wildlife Commission to avoid conflicts when establishing hunting season regulations.

Historic and Cultural Preservation

Chapter One of the GMP describes the significant historic and cultural relevance of hunting and management of game species in this state. Chapters Two and Three discuss the various strategies for preserving and enhancing these historic and cultural values. Protection of specific

sites during construction of wildlife enhancement projects will be addressed through environmental review as required by state and federal law.

Agricultural Crops

The conversion of many areas of the state to agricultural uses has significantly benefited some game species and reduced available habitat for others. Former game species that experienced significant declines have resulted in state listing (classification) as threatened or endangered. These species are no longer classified as game species.

The main issues, identified in Chapters Two and Three of the GMP, are related to crop, livestock, and property damage from game species, predominately deer and elk. The conditions, impacts, and mitigation are identified in several sections of these chapters.

Transportation/Traffic Hazards

While peak traffic conditions on highways often result from "opening day" hunting season participation, many feel that it is no more congested than on several major holidays. Probably the greatest issue regarding public transportation is from vehicle collisions with wildlife. Vehicle collisions are most evident with deer and elk and cause substantial personal injury and property damage.

There are several major highways that coincide with deer and elk migration corridors or concentrations. Coordination with the Department of Transportation during development or improvement of highways is the key to mitigating impacts.

CHAPTER 3

GENERAL GAME MANAGEMENT ISSUES

As stated in chapter one, the process of developing a non-project EIS allowed WDFW to use an iterative process, with releases of a Draft and a Supplemental EIS to take comments and add, modify, or delete strategies. This iterative process was used instead of the more traditional use of preferred and alternative strategies. Essentially the number of alternative strategies was not limited and the following preferred strategies were developed in concert with the public through a long scoping and development process and multiple comment periods.

Traditional EIS documents include sections referring to affected environments, existing conditions, significant planned population impacts, and mitigation measures. These EIS categories are addressed in various sections of the GMP, with affected environments and existing conditions described extensively in chapter one under background and setting. They are also described for individual species or groups of species in chapter four under headings of population status, recreational opportunity, and data collection. Some impact assessment is also identified under these headings in chapter four, but significant impact assessment is more specifically identified within the "Issue Statements" under the separate titles: habitat, population, and recreation management, information and education, research, and enforcement. Strategies to address and mitigate impacts (issues) are listed for each objective under the Issue Statements. There are few if any significant impacts that have not or cannot be successfully mitigated as described.

During the extensive public involvement process, issues were identified in nine categories for WDFW to address in this plan. Eight of those categories will be addressed in this chapter. These include scientific/professional management, public support for hunting as a management tool, hunter ethics and fair chase, private lands programs and hunter access, tribal hunting, predator management, hunting season regulations, and game damage and nuisance. The final category, species-specific management issues, is addressed in chapter four of this document. The issues, objectives, and strategies remaining in this plan are the preferred alternatives.

Scientific/Professional Management Of Hunted Wildlife

The concept of scientific management is very important to the public. The use of scientific information and the judgment of professionals in management decisions were rated very high (>90%) by both the general public and hunters. Next came economic (>68%) and social concerns (>54%), followed by political concerns (<25%), which received low ratings.

Issue Statement: WDFW wildlife managers and biologists are committed to developing goals, objectives, and strategies for this plan that will ensure long-term sustainability of all wildlife. The best available science will be the basis for the maintenance of all endemic wildlife populations. Strategies for hunted wildlife will not have significant negative impacts on the sustainability of other wildlife or their habitats. None of the strategies or subsequent hunting season recommendations or implementation of activities will deviate from these fundamental

principles. Science is the core of wildlife management, the basis for achieving the agency's mandate, and the foundation of this plan.

Objective 1: Develop agency hunting season recommendations and management actions that ensure long-term sustainability of endemic hunted and non-hunted wildlife.

Strategies:

a. Agency staff will maintain regular contact with peer scientists and wildlife managers and consider the best available scientific information when developing strategies and recommendations for hunting seasons and management actions.
b. Prior to implementation, WDFW will provide adequate opportunity for public review of recommendations for regulations and activities that may have significant impacts on non-hunted wildlife and their habitats.
c. Significant impacts and the scientific basis for recommended actions may be "peer reviewed" by scientists outside WDFW when determined necessary by biologists and managers making the recommendations.

Issue Statement: While science and professional opinion are important, social and economic issues often drive public opinion, and ultimately management strategies and regulations. A good public involvement process is necessary for people to make up their own minds and participate in making decisions. The key is to develop programs that achieve biological objectives and are supported by the public.

Objective 2: Provide multiple opportunities for stakeholders to participate in development of three-year regulation packages, collection of biological information, and in planning efforts for game species.

Strategies:

a. Maintain citizen advisory councils and use them throughout the process of developing plans and regulation packages.
b. Enhance the use of the WDFW Web page to encourage public comment and ideas for regulations and priorities.
c. Conduct one public meeting in each WDFW region for statewide issues, two per WDFW region for more local issues, and provide other routine opportunities for the public to interact with WDFW staff regarding plans and three-year regulation packages.
d. Conduct a public opinion survey at least once every five years to monitor support for agency programs, planned activities, and regulations.
e. Publicize and maintain a mailing list of citizens interested in receiving copies of plans and regulations and notify those on the list as plans and season recommendations are developed.
f. Encourage public participation and comment during the Fish and Wildlife Commission meeting process.
g. Develop new opportunities for citizens to help with collection of data and interaction with biological staff.
h. Increase public awareness regarding wildlife issues.

Public Support For Hunting As A Management Tool

With accelerating human population growth in Washington, a largely urban society, and two recent citizen initiatives that restricted hunting or trapping techniques, many are questioning general public support for hunting as a wildlife population management tool. This issue was identified by the public as one of the most significant issues for WDFW to address in the plan.

Issue Statement: When the general public was asked a series of questions about support for hunting, it is apparent that overall support for legal, regulated hunting was very strong (82%).

However, there are some specific issues where opinions are very pronounced:

- While a majority of those surveyed supported hunting cougar (55%) and black bear (56%), they did not support hunting furbearing animals (42%). The level of support for cougar and black bear hunting was also lower than for most other game species. However, public support for predator reduction was high for purposes of addressing public safety, property damage, and domestic animal depredation.
- Hunting for the purpose of obtaining a trophy was clearly not supported by the general public (22%). Hunting contests were not supported by a majority of either the general public (20%) or hunters (37%).
- The majority of respondents from the general public did not support introduction of non-native species and were split on the release of game birds to improve hunter success. A strong majority of hunters supported both of these activities.
- Sixty-four percent of the general public did not think it is WDFW's role to encourage participation in hunting. A majority of hunters do think it is the Department's role, but a surprising 39% disagree.
- The general public was split between those who supported and opposed providing special youth hunting opportunity, while a slight majority supported special opportunities for seniors. Hunters showed strong support for special opportunities for both youth and senior hunters.

In order to maintain public support for hunting, the Department should be sensitive to public opinion on these issues while still achieving game population objectives.

Objective 3: By 2008, improve level of public support for hunting regulations and management actions with special emphasis on cougar, black bear, and furbearers; management of non-native species; and youth and senior hunting opportunity.

Strategies:

a. Educate the public regarding current regulations and the rationale for them.
b. Conduct public outreach and determine the level of support for modifying regulations.
c. Carefully consider public support for regulations and management actions prior to developing recommendations and implementing actions.
d. Emphasize hunting opportunities for cougar, black bear, and furbearers in those instances that specifically address public safety, pet and livestock depredation, protection of threatened and endangered species, or property damage.

e. Develop a fact sheet by 2005 and develop several news articles each year describing the values of hunting.

Objective 4: By 2006, recommend changes to regulations associated with trophy hunting and hunting contests that are supported by the public.

Strategies:
a. Measure the current level of public support for specific Department regulations regarding these issues.
b. Provide education regarding current regulations and rationale and then conduct public outreach to determine regulation modifications that will receive support.
c. Recommend regulation modifications to the Fish and Wildlife Commission.

Hunter Ethics And Fair Chase

This issue is closely related to the previous one, since the public perception of hunters and hunting regulations may strongly influence support for hunting as a management tool. This is also a very significant issue to hunters, as identified during the initial public involvement process. Fair chase is defined in different ways by different people.

Issue Statement: Many hunters think that the latitude to determine what constitutes fair chase belongs to the individual. They feel that the public should not determine what is fair chase for someone else. Other hunters are concerned that the image and standard of ethics for hunting may be compromised, particularly with the expanding use of technology for hunting. This is particularly evident with equipment technology. During development of the 2000–2002 hunting season package, weapon technology was extensively debated and regulations were modified for archery, muzzleloader, and modern firearm equipment. The most recent debate was over the use of motorized waterfowl decoys, with Fish and Wildlife Commission action in 2001 that restricted the use of electronic waterfowl decoys

Objective 5: Develop and modify regulations for use of electronic equipment and baiting of wildlife for purposes of hunting.

Strategies:
a. Conduct public outreach and restrict those electronic devices or baiting of wildlife that are not supported, regardless of whether the opposition is based on improved harvest success or understanding of fair chase.
b. Regulate season length, timing, bag limits, and other restrictions as needed to address any increased harvest success from electronic devices that are not restricted.
c. Develop effective regulations regarding fair chase that are understandable and enforceable.
d. Consider exceptions to new equipment regulations to accommodate the needs of hunters with disabilities.

Hunter Behavior/Ethics

Another significant issue for hunters identified during the public involvement process is illegal activity, and a desire for greater enforcement presence in the field.

Issue Statement: A majority of the general public believes that a lot of hunters violate hunting laws. They feel that hunting without a license and poaching are the major violations, and that shooting game out of season and hunting over the bag limit are also common violations. Hunters cite these same concerns with the addition of shooting from a vehicle. The public has also indicated that hunter compliance with these laws should be 100% and that they developed their opinions from direct observation, physical evidence, and from talking with others. In addition, they support hunter refresher courses and feel that an additional training requirement will improve their opinion of hunters.

Objective 6: Improve compliance for common violations and public opinion of hunters by 2008.

Strategies:

a. Emphasize the importance of hunter compliance with regulations and public opinion of hunters in hunter education classes, hunting pamphlets, and other information provided to hunters.
b. Concentrate enforcement efforts on the most common violations, and monitor subsequent improvements in compliance.
c. Increase the frequency of field contacts and visible presence of officers and other uniformed agency staff during hunting seasons.
d. Publicize three news stories per year that emphasize the value and contributions of hunters or successful programs to improve regulation compliance.
e. Publicize improvements in hunter compliance rather than just arrests.
f. Review and simplify, clarify, or eliminate regulations that are dubious, ambiguous, or confusing.
g. Re-invigorate and publicize the Advanced Hunter Education program to help address public support for additional hunter training and to improve public opinion of hunters.
h. Provide incentives for hunters to complete additional training or refresher courses and consider mandatory refresher courses for wildlife law violations (at violator's expense).
i. Support hunter education curriculum and program improvements and funding.
j. Maintain or enhance the number of enforcement officers as funding and priorities allow.

Private Land Programs And Hunter Access

Based on the opinion survey, hunters believe that private lands are important to wildlife and to outdoor recreation. They agree that maintaining the economic viability of farming and timber production, and controlling urban sprawl, are vital for conserving the agricultural and rural landscape so important to wildlife. Hunters also support private lands programs that provide incentives, including access fees, to landowners in exchange for improvements of wildlife habitat and access onto their lands for outdoor recreation (Duda 2002b). This was identified as a major issue to hunters during the public involvement process leading to this plan. WDFW currently manages two such programs, the Upland Wildlife Restoration Program and the Private Lands

Wildlife Management Area (PLWMA) rogram that address wildlife habitat and hunter access to private land.

Issue Statement: Even with these existing WDFW programs, hunters and landowners would like to see more. Hunters are especially concerned about recent closures of private industrial timberlands in southwest Washington; a lack of access for waterfowl hunting in western Washington; limited pheasant hunting access in eastern Washington; extensive road management systems in south central Washington; and a lack of general information about how to access public lands and WDFW lands.

Objective 7: Determine hunter and landowner preferences for private land programs that address landowners' needs and increase lands available for hunter access by 25%.

Strategies:

a. Publicize current programs better through the agency Web page, direct mail, the hunting pamphlet and other hunter publications.
b. Identify the current level of hunter access to private land through a landowner survey and determine incentives that will be effective in encouraging landowners to provide greater levels of hunter access.
c. Host a symposium in 2003 with experts from across the western states to gather ideas about what types of programs are effective in other states and to develop the key attributes necessary for a successful hunting access program.
d. Form a task group of stakeholders to develop an implementation plan by November 2004, that includes recommendations for habitat and access requirements, addresses landowner needs, identifies a funding mechanism, includes draft legislation, and has strong public, hunter, and landowner support.

Road Management

While there is a need for public access for hunting, especially on private lands, there is also a need to control access during critical times of the year to protect wildlife resources. Road management has been recognized as an important means of controlling human disturbance by limiting vehicular access seasonally or permanently. Studies have shown that limited vehicular access reduces human disturbance that results in reduced movements and poaching of elk, Cole et al. (1977), Smith et al. (1994), Phillips and Alldredge (2000).

Washington hunters consider road closures as important for controlling hunter numbers and impacts to wildlife. A majority of hunters surveyed (>70%) considered road closures important in reducing illegal activity and supported the Green Dot Cooperative Road Management System (Duda 2002b). A very high percentage also supported periodic or temporary hunting closure areas, road closures to protect game during critical periods of the year, and total access closure areas (refuges) to maintain numbers of game species in local areas.

Issue Statement: There is strong overall support for road management systems that are designed to help manage game populations as well as protect fish and wildlife habitat. WDFW recognizes

the need to improve the balance between hunter access and wildlife and habitat protection. Some systems are more effective than others. Voluntary systems such as the Green Dot System require high levels of enforcement to be effective. Comments from the public and from WDFW wildlife managers regarding road manageme nt were mostly directed at southwest, northeast, and central Washington. In addition, with expanding regulations on road access, hunters are increasing use of off-road vehicles (ORV) to gain motorized access. Indiscriminant ORV use can cause environmental damage and circumvents the intent of road access restrictions.

Objective 8: Develop road management plans in southwest and northeast Washington and in the central Cascades.

Strategies:

a. Because resources are limited, develop plans that focus on the Yakima, Colockum, Selkirk, Willapa Hills, and Mount Saint Helens areas that reduce active road densities to target levels, yet maintain well-distributed access for hunting. Other areas such as the Blue Mountains will also receive attention as staffing and funds are available.
b. Place emphasis on the expansion of private lands incentive programs in these geographic areas.
c. Emphasize gated and barrier type closures, rather than voluntary systems.
d. Incorporate access exceptions for hunters with disabilities where possible and consider the needs of senior hunters.

Issue Statement: While Washington hunters supported most of the concepts and rationale for road management issues, significant concern continues to be expressed regarding the closure of specific roads and loss of hunting access. Many road closures on private lands are for reasons other than game management and in some cases have resulted in extensive access restrictions over large areas. These concerns are especially evident in the Yakima area and in northeast and southwest Washington.

Objective 9: Develop a plan that identifies the current level of hunter acceptance and understanding of road closures and resolves concerns, while addressing the resource needs in the Yakima area.

Strategies:

a. Survey hunters that utilize the Yakima area in 2004 to determine the current level of understanding and acceptance of road closures. Determine key areas of concern for hunters and develop a plan that addresses those concerns.
b. Develop at least three news articles by 2005 that explain the rationale and demonstrate the value of road closures in the Yakima area.
c. Publish a comprehensive article for the 2003 Game Trails publication.
d. Develop and provide fact sheets at the Oak Creek viewing area, Regional and District offices, and hunter check stations.
e. Develop an electronic slide show presentation and use annually (2003-05) during presentations to hunting organizations.

Objective 10: Manage hunter access opportunities on private industrial timberland in northeast and southwest Washington.

Strategies:
a. Inventory current access levels and distribution including landowner surveys.
b. Determine landowner concerns and ways to alleviate problems they experience.
c. Educate hunters about landowner concerns and facilitate the development of partnerships to alleviate problems and open up access.
d. Coordinate with other private lands and hunter access strategies and programs.
e. Make southwest Washington the priority for expansion of WDFW access programs.

Tribal Hunting

Native people have their own unique tradition, culture, and values related to hunting game and gathering traditional foods and medicines. Many tribes also have reserved rights to hunting and gathering in the language of the treaties signed with the United States. These rights allow tribes to manage their hunters, often with different seasons and rules than non-tribal hunters. This has lead to frustration, anger, and misunderstanding on the parts of both tribal and non-tribal citizens. At the same time limited state-tribal coordination has made it difficult for tribal and non-tribal wildlife managers to do their jobs of managing harvest and protecting game populations.

Issue Statement: Non-Indian hunters often do not understand the treaty rights issues, leading to anger and frustration.

Objective 11: Improve public understanding and acceptance of treaty hunting rights.

Strategies:
a. Develop an outreach package that can be sent to citizens concerned about tribal hunting.
b. Use Wild About Washington to highlight tribal rights and tribal management activities.
c. Develop cooperative management programs (see below) that can demonstrate state and tribal management programs.
d. Use links from the WDFW website to highlight tribal research, regulation packages, and harvest reporting.
e. Include a segment on tribal hunting rights and tribal management activities as part of the Hunter Education Program.
f. Include a description about tribal hunting rights and wildlife management programs in the hunting pamphlet.

Issue Statement: Improve coordination of treaty and non-treaty hunting and wildlife management.

Objective 12: By 2007, complete at least five additional coordinated tribal/state harvest management plans for deer, elk, and/or cougar populations subject to both tribal and non-tribal hunting.

Strategies:
a. Use existing herd plans to develop coordinated harvest management plans for elk herds or other game species.

b. Based on tribal interest and availability, pick a key population in each treaty area as a starting place to build working arrangements and processes for developing coordinated harvest management plans.
c. Build upon existing working agreements to move the process forward as quickly as possible.
d. The first plans to develop will be for key wildlife populations, where management and conservation issues are imminent.

Predator Management

Predator management is one of the most contentious issues WDFW will face in the next few years. As mentioned previously, there is less public support for hunting cougar and black bear than most other game species. In addition, a citizen initiative was passed in 1996 that restricted the use of hounds and baiting to hunt cougar and black bear. The passage of this initiative, and the subsequent debate centered on concerns for public safety and livestock depredation from cougar, has resulted in a polarization of public opinion regarding predator management. The Legislature modified the initiative in 2000 to allow the use of hounds to hunt cougar to address public safety in limited areas.

Washington has healthy populations of both cougar and black bear, which at times come into conflict with humans. This conflict appears to be increasing, at least partly in response to the growing human population. Managing this conflict and maintaining an appropriate balance between predator and prey populations will present a significant challenge over the next several years.

Issue Statement: Both the general public and hunters showed strong support for managing predator populations to address human safety, protect endangered species, and to prevent the loss of livestock and pets. There was a significant divergence of opinion between the general public and hunters when asked about managing predators to increase game populations. Hunters showed strong support, though less than for all other purposes, and the general public did not support reduction of predators to increase game populations.

Objective 13: Maintain public support for managing predator populations, while sustaining predator populations in balance with prey species and considering public safety and social tolerance.

Strategies:
a. Focus hunting and harvest efforts for predators on those areas and situations that address human safety, protection of pets and livestock, and recovery of listed species. Specific management proposals are included in the species sections of this plan.
b. Incorporate focused predator harvest activities using licensed hunters while ensuring sustainable predator populations.
c. Make any changes to current predator hunting on a gradual basis in order to monitor success prior to expanding hunting opportunities and to increase public support.

Issue Statement: Black bear damage to commercial timber in the spring is a significant expense to timber managers. Forest owners have the legal authority to protect their forests from

documented damage by killing black bears with a permit from WDFW. The general practice is for forest managers to contract with hound hunters and kill bears in areas sustaining damage (this was exempt from Initiative 655). Contractors (using hounds) kill over 100 black bears each spring to control damage. Adding to the management complexity, the public does not support reducing the number of black bears to prevent timber damage, opposes the use of hounds, and also opposes spring hunting seasons to control damage. Yet, when asked about the manner in which predator populations might be reduced if determined necessary by the Department, the general public supports using licensed hunters, although not to the same extent as trap-and-relocate strategies.

Objective 14: Determine the level of support and understanding from the public for spring black bear hunting in those commercial timber areas that receive damage and the feasibility of a spring damage hunt.

Strategies:

a. Conduct public involvement and education prior to recommending spring black bear hunting designed to reduce commercial timber damage.
b. Develop a fact sheet describing the feasibility of trap and relocation efforts prior to implementing spring seasons.
c. Implement localized spring hunts on a limited basis to determine effectiveness prior to recommending expansion.
d. Retain current black bear timber damage management program using contractors.

Hunting Season Regulations

The Washington State Legislature provides the directive: *"The commission shall attempt to maximize the public recreational game fishing and hunting opportunities of all citizens, including juvenile, disabled, and senior citizens."* (RCW 77.04.012).

In the hunter opinion survey conducted in preparation for this plan, most hunters expressed general satisfaction with their hunting experience. Eastern Washington pheasant, waterfowl, furbearer, black bear and cougar hunters were least satisfied and deer and elk hunters expressed that satisfaction could be higher. Harvesting an animal (hunter success) and seeing plenty of game were the main factors driving hunter satisfaction. Not enough game and dislike of the regulations or general management strategies were the main reasons given for dissatisfaction (Duda 2002b). It is fairly clear that harvest success plays a significant role in hunter satisfaction. Yet when asked, hunters often rank ability to harvest much lower than things like hunting with friends and family, seeing game, and low hunter densities.

Issue Statement: While some predict continued declines in hunter numbers over time, hunter demand for opportunity and game harvest still exceeds the supply of game animals in most situations in Washington. Hunters also feel that seasons are crowded and regulations too confining. In addition, they say that seasons are too short, success rates are too low, antler restrictions on deer and elk are too onerous, and there is not enough game.

Objective 15: Maintain sustainable game species populations while reducing hunter dissatisfaction as measured by a "poor" rating to less than a 10% for all game species hunting by 2008.

Strategies:

a. Consistent with population goals, conservation principles, and social constraints, develop and maintain a variety of deer and elk hunting season opportunities within each administrative district of WDFW:
    1. Provide sufficient hunting opportunities for archers, muzzleloaders, and modern firearm hunters to approach average statewide participation rates and seek to generally equalize success rates by 2008.
    2. Develop at least two hunting opportunities that emphasize low hunter densities and higher success rates (than current general seasons) through permit only restrictions.
    3. Provide general season antlerless harvest opportunities approximately equal to recruitment in Population Management Units (PMUs)(these are combinations of GMUs) meeting population objectives. Provide harvest opportunities that exceed recruitment in populations that are above objectives.
        (a) Provide general antlerless opportunity to users in the following order of priority:
            1) Hunters with disabilities
            2) Youth hunters
            3) Senior hunters
        (b) Provide antlerless opportunity to archery or muzzleloader hunters if needed to equalize success rates with modern firearm hunters, or equally between weapon types if success rates nearly equal.
    4. Support the intent of the Advanced Hunter Education program by providing Master Hunter graduates primary consideration in hunting efforts designed to resolve private land and sensitive damage issues.
b. Within population goals, provide consistent general-season opportunity rather than permit restrictions whenever possible. Use other techniques to manage success rates before considering permit only restrictions.
c. While striving to achieve population goals, maintain season length as a second priority to maintaining general seasons. Use other techniques to manage success rates, such as timing, antler points, etc.
d. Identify high priority (top 10%) waterfowl and pheasant hunting areas, increase hunter access, and provide a variety of hunting opportunities in these areas using access easements, cooperative programs, or acquisition.
    1. Develop limited entry areas, marked sites, walk-in sites, or other restrictions to reduce crowding.
    2. Focus habitat programs and population enhancement activities in these high priority areas.
e. Implement multiple public involvement strategies leading to Fish and Wildlife Commission adoption of three-year regulation packages.
f. Following implementation of strategies and allowing time for results, monitor level of dissatisfaction through opinion survey in 2007.

Game Species Damage And Nuisance

The Legislature, through RCW 77.36.005, has clearly articulated the state's policy that the responsibility to minimize and resolve conflicts between wildlife and humans is shared by all citizens of the state. However, in RCW 77.36.040, the Legislature allows farmers and ranchers to receive payment for damages caused by deer and elk to crops and rangeland.

In a recent public opinion survey (Duda 2002a), a substantial percentage of respondents indicated they had experienced problems with wildlife (26%). Raccoons (47%), deer and opossums (14% each) were the major culprits in Washington. Damage to garbage, pets, gardens, yards and livestock were the most common problems identified.

The public identified nuisance wildlife as a major issue frequently citing recent restrictions on the use of certain traps for furbearing species. Public appreciation of wildlife is critical to maintaining wildlife protection over the long-term. If the public's experiences with wildlife are increasingly negative over time, they may not be as supportive for maintaining abundant populations. The public's ability to resolve problems they encounter with wildlife is important to help maintain support for wildlife.

Issue Statement: Twenty-six percent of the public experienced problems associated with wildlife last year. The survey also found that the public is divided on whether funding for resolving problems should be the responsibility of impacted landowners or of local, state, or federal government. However, the survey did not include questions regarding two important issues: 1) Is the public satisfied with WDFW's response and 2) Are property owner's satisfied with their ability to resolve their wildlife problems?

Objective 16: Determine public support and desires for WDFW assistance in dealing with wildlife nuisance and damage by 2005.

Strategies:

a. Conduct a public opinion survey to determine satisfaction levels and desires for addressing nuisance and damage.
b. Develop regional focus groups to help resolve local damage and nuisance problems.
c. Provide information to the public on how they can resolve nuisance problems themselves or by hiring contractors.
d. Develop alternate strategies to mitigate or prevent damage from taking place.
e. Form a task group of stakeholders to develop an implementation plan by November 2005, that includes recommendations for deer and elk damage resolution, dangerous wildlife concerns, nuisance wildlife problems, identifies funding mechanisms as needed, develops draft legislation, and has strong public, hunter, and landowner support.

Issue Statement: The level of concern for deer and elk damage to croplands generally depends on landowner tolerance and landowner tolerance often depends on how quickly the problem is resolved. Historically, crop damage by deer and elk has been addressed with hunting as the primary tool. Washington residents continue to show strong support of hunting to control animal damage to private property. However some landowners and some situations do not favor resolution by hunting.

Objective 17: Foster greater landowner understanding of available options and develop new strategies for resolving crop damage. Respond to crop damage complaints quickly and initiate action to resolve damage.

Strategies:

a. Develop a brochure explaining available tools and priorities for resolving crop damage.
b. Provide list of options to landowner for handling damage and allow flexibility to the landowner.
c. Use harassment and other non-lethal methods to address damage in deer and elk populations that are below management goals.
d. Continue to prioritize hunting as the most efficient means of resolving damage problems in those deer and elk populations that are above management goals and focus efforts on the animals causing the problem rather than general herd reductions. The alternatives for addressing damage problems:
    1. Provide landowner's name to hunters or landowner selects hunters during general season hunt.
    2. Provide landowner's name to hunters or landowner selects hunters during permit only hunt.
    3. Agency selects hunters for "hot spot" hunts.
    4. Allow the landowner (or immediate family member) to kill and retain one or more deer or elk through issuance of a "landowner preference" permit.
    5. Allow the landowner to select one or more hunters to kill and retain one deer or elk through issuance of a "landowner damage access" permit.
    6. Issue the landowner a "kill" permit to take one or more deer or elk, with the state retaining the carcass. Provide the meat to programs like hunter's for hunger, other charitable organizations, or tribes to meet ceremonial and subsistence needs.
    7. Pay the landowner for the crop damage.
e. Conduct annual survey of landowners filing complaints to determine satisfaction with WDFW actions for resolving their problem.

PLAN MONITORING

In order to clearly identify accomplishment of the objectives identified throughout this plan, an annual reporting or "report card" will be prepared as part of the annual status report developed by the Game Division. The "report card" may be published separately in other publications as well. This list of accomplishments will clearly demonstrate public accountability associated with implementation of the Game Management Plan.

LITERATURE CITED

Access Washington Web Site. 2002. www.access.wa.gov/government/awgeneral.asp.

Brown, T.L., D. J. Decker, W. F. Siemer and J. W. Enck. 2000. Trends in hunting participation and implications for management of game species. In CAB International Publishing.

Trends in outdoor recreation, leisure and tourism editors W. C. Gartner and D. W. Lime. pp145-154.

Cole, E. K., M. D. Pope, R. G. Anthony. 1997. Effects of road management on movement and survival of Roosevelt elk. Journal of Wildlife Management 61(4):1115-1126.

Dodge, Sherri R. 2001. Pacific Northwest Research Station, U.S. Forest Service. Science – findings. Mapping people and communities. Issue 37.

Duda, M. D., S. J. Bissell, K. C. Young. 1998. Wildlife and the American mind. Public opinion on and attitudes toward fish and wildlife management. Responsive Management, Harrisonburg, Virginia, 803pp.

Duda, M.D. 2002a. Washington residents' opinions on and attitudes toward hunting and game species management. Responsive Management, Harrisonburg, Virginia, 168pp.

Duda, M.D. 2002b. Washington hunters' opinions on and attitudes toward hunting and game species management. Responsive Management, Harrisonburg, Virginia, 380pp.

Interagency Committee for Outdoor Recreation. 2001. The 1999 Public and Tribal Lands Inventory. Final Report. Olympia. 36pp.

Interagency Committee for Outdoor Recreation. 2002. An Assessment of Outdoor Recreation in Washington State. A state comprehensive outdoor recreation planning document 2002-2005. Public Review Draft. Olympia. 112pp.

Johnson, Rolf L. 1973. 1972 Demography of Washington hunters. Washington Game Department. Olympia, WA. 46pp.

Johnson, Rolf L. 1999. Staff Report: Update on resource allocation. Washington Department of Fish and Wildlife. Olympia. 23pp.

Leopold, A. 1930. Report to the American game conference on an American game policy. Transactions of the American Game Conference 17:281-283.

Madson, J. and E. Kozicky. 1971. Game, gunners, and biology: the scientific approach to wildlife management. Conservation Department – Winchester – Western Division, Olin East Alton. Illinois 48pp.

McCorquodale, S.M. 1997. Cultural contexts of recreational hunting and native subsistence and ceremonial hunting: their significance for wildlife management. Wildlife Society Bulletin 25:568-573.

Messmer, T. A., M. W. Brunson, D. Reiter, and D.G. Hewitt. 1999. United States public attitudes regarding predators and their management to enhance avian recruitment. Wildlife Society Bulletin 27(1):75-85.

Organ, J. F. and E. K. Fritzell. 2000. Trends in consumptive recreation and the wildlife profession. Wildlife Society Bulletin 28:780-787.

Phillips, G. E. and A. W. Alldredge. 2000. Reproductive success of elk following disturbance by humans during calving season. Journal of Wildlife Management 64(2):521-530.

Pryor, N. 1997. History of Washington. 1997 Washington State Yearbook, Richard and Charity Yates editors. Olympia, WA 312 pp.

Reiger, J. E. 1975. American sportsmen and the origins of conservation. Winchester, New York, New York, USA.

Smith, J. L., W. A. Michaelis, K. Sloan, J. Musser, and D. J. Pierce. 1994. An analysis of elk poaching losses, and other mortality sources in Washington using biotelemetry. Washington Department of Fish and Wildlife Publication, Olympia. 79pp.

Strictland M.D., H.J.Harju, R. McCaffery, H.W. Miller, L.M. Smith, and R.J. Stoll. 1994. Harvest management, pages 445-473 T.A. Bookhout, ed in Research and Management Techniques for Wildlife and Habitats. Fifth ed. The Wildlife Society, Bethesda, Maryland.

Trefethen, J. B. 1975. An American crusade for wildlife. Winchester, New York, New York, USA.

U.S. Department of Interior and Department of Commerce. 1998. 1996 National Survey of fishing, Hunting, and Wildlife-Associated Recreation-Washington. Washington D.C. 47pp.

Warren, L. E. 1997. The hunter's game: Poachers and conservationists in twentieth century America. Yale University, New Haven, Connecticut, USA.

CHAPTER 4

ELK

I. POPULATION STATUS AND TREND

Elk (*Cervus elaphus*) have been present in Washington for 10,000 years (McCorquodale 1985, Dixon and Lyman 1996, Harpole and Lyman 1999). Although complete prehistoric distribution and densities are not fully understood at this time, it is known that some form of elk was present in western Washington, on the Olympic Peninsula, on both sides of the Cascade Crest, in northeast and southeast Washington as well as the relatively arid Columbia Basin (McCorquodale 1985, Dixon and Lyman 1996, Harpole and Lyman 1999).

Both Roosevelt elk (*C. e. roosevelti*) and Rocky Mountain elk (*C. e. nelsoni*) are native to Washington (Murie 1951, Bryant and Maser 1982, Spalding 1992). Roosevelt elk are found on the Olympic Peninsula and in portions of southwestern Washington. Based on preliminary genetic work conducted by WDFW, Roosevelt elk on the west slope of the Cascade Crest have interbred with Rocky Mountain elk introduced in the early 1900s. Elk occurring in central and eastern Washington are Rocky Mountain elk that either avoided extirpation or were reestablished by reintroductions of elk originating from Montana and Wyoming (Washington Dept. of Fish and Wildlife 1996).

Elk were hunted regularly, but not always extensively, by Indian tribes in both eastern and western Washington (McCabe 1981). As European settlement expanded into this region, elk exploitation increased dramatically. By the beginning of the 1900s, most if not all of the elk in eastern Washington had been eliminated. Small populations of Roosevelt elk persisted in southwestern Washington and on the Olympic Peninsula (Washington Dept. of Fish and Wildlife 1996).

By the beginning of the last century Roosevelt elk were greatly reduced in numbers as well, but due to denser forests with more escape cover, small groups of Roosevelt elk were able to persist. Efforts to re-introduce Rocky Mountain elk were conducted from as early as 1912 through the 1930s (Washington Dept. of Fish and Wildlife 1996). Elk populations peaked in Washington in the late 1960s and early 1970s mostly due to habitat conditions and forest management practices. A recent marked reduction in timber harvest, especially west of the Cascade Crest, and an increase in the human population in Washington has reduced the overall carrying capacity for elk in Washington compared to decades past. The Washington Department of Fish and Wildlife (WDFW) currently recognizes 10 major elk herds totaling approximately 56,000 animals.

II. RECREATIONAL OPPORTUNITY

In Washington, elk are hunted from September through December with some special permit hunts to address agricultural damage taking place as late as February. Hunting seasons for

archery, muzzleloader, and modern firearms are currently available to both resident and non-resident hunters. There are currently no quotas on general elk season licenses sold. Hunters are required to choose one weapon type and declare whether they will hunt east side or west side elk. Antler point restrictions are spike-only with branch-antlered bulls by limited permit-only in eastern Washington. West side elk restrictions are usually 3-point minimum or greater. Some "any elk" hunting opportunities exist in parts of northeast, south central, and southwest Washington where expansion of elk populations is discouraged. In a recent public opinion survey of hunters in Washington, elk hunters indicated that they prefer less restrictive hunting seasons with more opportunities to harvest a legal animal and with more days available to hunt elk than are currently available (Duda et al. 2002a).

III. DATA COLLECTION

Elk populations are assessed for a variety of characteristics, often including herd composition and population size. Herd composition is an estimate of the proportions of various age and sex classes occurring in the population such as the number of calves per 100 cows, the number of bulls per 100 cows, or the number of spike bulls per total bulls. These data are collected using a variety of techniques, depending on data needs and local conditions. Common tools used to assess elk populations include:

- Surveys conducted by personnel on the ground.
- Aerial surveys with and without visibility (sightability) corrections.
- Mark-resight population estimates from air or ground surveys where a known number of animals are marked using neckbands or paintballs and then subsequent surveys are conducted and the number of marked and unmarked animals observed are entered in statistical formulas (models) to estimate the total population.
- Population modeling using aerial survey and/or harvest data and population reconstruction (Bender and Spencer 1999).

IV. ASSESSMENT OF CURRENT MANAGEMENT OF ELK

The Department is currently developing management plans for each of the ten elk herds in the state. Herd plans specifically address the unique conservation challenges that face each herd. Elk herd plans, which come under the overall management guidance of this Game Management Plan (GMP), also facilitate cooperative management with tribes. Existing herd plans are an important resource used in development of this GMP and are designed to be revised and updated every three to five years.

In April 2001, WDFW contracted with an external, independent panel of scientists to evaluate the current elk management program. That evaluation addressed 1) the effectiveness of using post-hunt bull:cow ratios as management objectives; 2) the effects of hunting elk during the rut; 3) the effects of late season elk hunting, especially from a disturbance and caloric expenditure standpoint; and 4) the genetic consequences of using post-hunt bull:cow ratios as management objectives. This evaluation culminated in an assessment report on elk management in Washington (Peek et al. 2002).

V. ELK MANAGEMENT GOALS

The statewide management goals for elk are:

1. Preserve, protect, perpetuate, and manage elk and their habitat to ensure healthy, productive populations.
2. Manage elk for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, subsistence, cultural and ceremonial uses by Native Americans, wildlife viewing, and photography.
3. Manage elk populations for a sustainable annual harvest.

VI. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Population Management

Background: The primary goal is to manage for viable and productive elk populations with desirable population characteristics using the best available science. The Department measures elk populations using a variety of techniques. Techniques that work well in the more open habitats of eastern Washington may be of little value in areas that are densely forested. Population objectives defined in this plan are consistent with objectives defined in the respective elk herd plans. A realistic approach to the management of wild animal populations does not rely on round numbers and pinpoint accuracy. Therefore, the preferred target population objectives for each elk herd are presented as an acceptable range of plus or minus 5% of the population objective (Table 1). Consistent with the primary goal, the secondary goal is to provide recreational opportunity and sustainable annual harvests that fluctuate somewhat due to weather conditions, hunter participation, the number and density of available legal animals, the number of special permits issued for a particular GMU, etc. Hunting seasons are designed to limit extreme fluctuations in sustainable harvests from year to year, although some aspects are out of the control of the Department.

The Washington Fish and Wildlife Commission shall attempt to maximize the public recreational game fishing and hunting opportunities of all citizens, including juvenile, disabled, and senior citizens (RCW 77.04.012).

The secondary goal can be met as long as it doesn't impinge on the population objectives for total population numbers and population composition and a viable, productive elk population defined as the primary goal. Population composition is typically measured as a ratio of bulls per 100 cows and calves per 100 cows. In some elk populations these surveys are conducted prior to the hunt and then post-hunt ratios are projected using harvest information. In some populations both pre-hunt and post-hunt information is gathered. In a limited number of GMUs, a large enough number of elk are radio-marked to allow biologists to estimate annual mortality rates for different age classes and sex classes (Table 2). There are no elk herds in Washington where all of the parameters listed in Table 2 are collected. Different information is collected for different elk herds that live in different habitats and under differing circumstances. Two or more of the

parameters in Table 2 are collected for most elk sub-populations that are monitored. Mature bulls are defined as being older than four years, which is usually equated to having antlers with at least six tines on one side. Antler points are used as an index of age because it is a characteristic that is readily visible when conducting aerial surveys. WDFW will explore the possibility of using a different number of antler points to define mature bulls if average age correlations or other circumstances warrant.

The parameters collected in Table 2 function as guidelines for biologists to make management decisions. The challenge presented to managers is to interpret parameters and guidelines that are not in complete agreement. Pre-hunt bull:cow ratios may be high for a particular population but post-hunt bull:cow ratios could be very low. Post-hunt bull:cow ratios may be acceptable while bull mortality rates may be higher than desired. These parameters are typically averaged over a 3-year period before changes are implemented, except for extreme cases when immediate action is required. These guidelines are not a rigid prescription. Oftentimes extenuating circumstances will dictate whether management changes will be made and what direction those changes might take. Unhunted elk populations have shown bull-to-cow ratios ranging from 30 to 45+ bulls per 100 cows (Biederbeck et al. 2001, Houston 1982, Flook 1970).

Issue Statement: An effective strategic plan for managing wild animals allows a certain degree of flexibility for field staff to decide if changes are warranted. Biologists must take all of the parameters available for a particular elk population into account and use their professional judgment when making management decisions.

Table 1. Population estimates and population objectives with (+/- 5 %) acceptable range for 10 elk herds in Washington.

ELK HERD	CURRENT POPULATION ESTIMATE	POPULATION RANGE OBJECTIVE
Yakima	10,460[a]	9,025 to 9,975[a]
Olympic	8,620[b,c]	10,782 to 11,918[c]
Colockum	4,500	4,275 to 4,725
North Rainier	1,845[b]	2,660 to 2,940
South Rainier	2,100	2,850 to 3,150
North Cascades	425[b]	1,852 to 2,048
Selkirk	1,450	1,377 to 1,523
Willapa Hills	7,600	7,600 to 8,400
Mount St. Helens	13,350[d]	14,250 to 15,750
Blue Mountains	4,400	5,320 to 5,880

a: Does not include GMUs 372 and 382
b: Estimate made in 2000.
c: Does not include Olympic National Park.
d: Mean estimate from 1996 to 1999.

Table 2. Parameter guidelines that affect decisions pertaining to hunting season structure and which class of animals would be impacted by a change in season structure.

Criteria	Class of Elk Targeted by Season Change	Consider Liberalizing Season	Acceptable Range	Consider Restricting Season
Pre-hunt Bull:Cow Ratio	Antlered & Antlerless	Greater than 35 bulls:100 cows	15 to 35 bulls:100 cows	Less than 15 bulls:100 cows
Post-hunt Bull:Cow Ratio	Antlered & Antlerless	Greater than 20 bulls:100 cows	12 to 20 bulls:100 cows	Less than 12 bulls:100 cows
Total Bull Mortality[a]	Antlered	Less than 40 %	Less than or equal to 50 %	Greater than 50 %
Percent Mature[b] Bulls In the Post-hunt Bull Sub-Population	Antlered	Greater than 10 %	2 to 10 %	Less than 2 %
Population Objective	Antlerless	Above Objective	At Objective	Below Objective

a: Total mortality from all sources including state hunting, tribal hunting, predation, winter kill, disease, etc.
b: Mature bulls are defined as having antlers with at least six tines on one side.

Objective 18: Maintain elk populations that are consistent with Tables 1 and 2.

Strategies:

a. Conduct aerial surveys to estimate populations, estimate indices, or to estimate composition ratios of bulls, cows, and calves.
b. Manage for cow elk sub-populations that are consistent with the desired rate of increase or rate of decline that will allow the population objective to be met for that elk herd (Table 2).
c. Manage for a post-hunt bull:cow ratio range of 12 to 20 bulls:100 cows (Peek et al. 2002, Biederbeck et al. 2001, Noyes et al. 1996, Squibb et al. 1991, Squibb 1985, Houston 1982, Prothero et al. 1979, Flook 1970,).
d. Manage for pre-hunt bull cow ratio range of 15 to 35 bulls:100 cows (Peek et al. 2002, Biederbeck et al. 2001, Noyes et al. 1996, Squibb et al. 1991, Squibb 1985, Houston 1982, Prothero et al. 1979, Flook 1970,).
e. When bull mortality is measured for a population, manage for a total bull mortality rate of less than or equal to 50% averaged over three years.
f. Manage for a post-hunt mature bull (at least six antler points on one side) percentage of 2% to 10% of the bull sub-population (Table 2).
g. Manage for herd composition and population goals at the Population Management Unit (PMU) level.
h. Manage for minimal disturbance and selective harvest of older bulls during the peak breeding period of September 15-30.

Issue Statement: Low recruitment in the Colockum elk herd may be the result of the elk herd exceeding the habitat's carrying capacity.

Objective 19: Explore the possibility that the Colockum elk herd may be above carrying capacity, which may be contributing to lower recruitment.

Strategies:

a. Monitor annual recruitment.
b. Assess the strength of correlations between antlerless elk harvest and juvenile survival for years 2003 and 2004.
c. Monitor body condition of elk using ultrasonography or carcass fat indices to detect any correlations between elk population density and changes in individual elk body condition for years 2002 through 2004.
d. Monitor forage quantity and quality annually to detect any habitat changes in response to changes in elk population density.
e. If necessary, starting in the fall of 2005 incrementally increase the antlerless portion of the harvest each year for three years or until a new population objective is met and then maintain the new population objective.

Issue Statement: Elk are currently managed at the Population Management Unit (PMU) level. To be an effective tool in elk management and season setting, PMUs must have some biological relevance in terms of populations, sub-populations, and how elk physically use the landscape through all seasons of the year.

Objective 20: Develop a report that assesses if the current PMU structure system is the most relevant grouping for elk populations and sub-populations by 2005.

Strategies:

a. Determine the status of the current PMU system through a review of the current PMU data and a mapping and GIS inventory of the current PMU structure.
b. If necessary, radio-collar elk within a PMU and determine annual movements, migrations, and seasonal use of available habitat types.
c. Determine annual and seasonal use within and outside the designated PMU. Compare area use between hunting season, winter, the calving period, summer, and transitional periods. As data becomes available, consider the possible genetic influences on PMU delineation.
d. Redefine PMUs where necessary.

Issue Statement: Data on elk population size and composition often are collected using helicopter surveys. Age ratios or sex ratios by themselves are inadequate in detecting population growth or decline (Caughley 1974, 1977). The use of sightability models has improved population estimates derived from helicopter surveys by accounting for sighting biases (Samuel et al. 1987). Segregation between males and females can potentially bias aerial surveys during certain times of the year. However, the assumption that mixing of the sexes in the fall significantly reduces or eliminates gender-based sighting biases remains untested as well. The assumption that sightability models eliminate visibility differences (statistical biases) associated with different age classes and sex classes (i.e., juveniles, adults, males, females, breeders, non-breeders) should be tested. The benefits of surveying elk at times when they are freely intermixing could be outweighed by lower overall sightability during summer-fall. These effects on the accuracy and precision of parameter estimates should be explored further (Lancia et al. 1996, 2000).

Objective 21: Evaluate summer and fall aerial surveys and evaluate and refine the use of winter helicopter surveys to estimate population size, population indices and population composition of

Washington elk by 2005. Continue efforts to standardize and improve survey protocols to provide reliable data on the size and structure of Washington elk herds.

Strategies:

a. Assess current protocols for winter helicopter surveys of elk and refine where necessary. Identify populations that are most effectively monitored with winter helicopter surveys. Develop herd-specific models where appropriate.
b. Refine current data collection protocols and explore the development of new approaches to monitor elk populations and the effects of management strategies on elk populations (Bender and Spencer 1999).
c. Expand efforts to monitor elk populations with summer and fall surveys where appropriate.
d. If necessary, conduct sightability experiments to assess bias and precision associated with summer/fall helicopter surveys for elk.
e. If necessary, construct new sightability bias models for elk on summer and fall range in Washington.
f. Validate sightability models used in Washington.

Issue Statement: Sex-age-kill population models and other modeling techniques are currently used to assess some elk populations in Washington (Bender and Spencer 1999). Input data for these models have generally been obtained from check stations, harvest reporting, and aerial survey composition counts. Although the approach is sound if input data are statistically unbiased and precise, the relative impact of statistically biased input parameter estimates on sex-age-kill model output has not been rigorously addressed.

Objective 22: Improve the reliability of population estimates derived from the sex-age-kill model.

Strategies:

a. Assess the population modeling approaches currently being used by WDFW and evaluate the need for new models and/or applications of population modeling.
b. Assess the input parameters used in sex-age-kill modeling. Compare model output using both statistically unbiased estimates of sex-age-kill model input parameters and those routinely used in sex-age-kill modeling. Conduct this work on two separate elk populations by 2008.

Recreation Management

Issue Statement: Eighty-thousand Washington elk hunters harvest approximately 7,000 elk annually from an estimated population of approximately 56,000. Washington has more elk hunters per elk than any other western state and has no quotas or limits on the number of elk licenses sold. Subsequently, success rates for hunters are low and without 3-point minimum or spike only antler point restrictions, the male sub-population would be over-harvested. Under the guidelines adopted by the Fish and Wildlife Commission for the hunting season setting process (see page 6), guideline number four states, "*Hunting seasons should be consistent with species planning objectives and provide maximum recreation days while achieving population goals*."

Considering all of the guidelines as well as the Department's legislative mandate, it becomes clear that the primary goal of the Commission is to achieve the population objectives of managed game species. The secondary goal is to provide the most opportunity possible without compromising the primary game population objectives. Opportunities to hunt and spend time afield must be balanced against achieving or maintaining elk population objectives.

Objective 23: Maintain a sustainable annual elk harvest that is consistent with Tables 1 and 2.

Strategies:

a. Maximize season length where possible while maintaining or approaching elk population objectives.
b. In those eastern Washington GMUs that currently have spike-only hunting seasons, retain spike-only seasons and adjust branch antlered bull permit levels to achieve bull ratio objectives. Retain any bull and any elk seasons in northeastern Washington as long as population objectives are being met or have a reasonable likelihood of being met.
c. Retain 3-point restriction in western Washington as long as population objectives are being met or have a reasonable likelihood of being met over time.
d. If necessary, develop cooperative road access restrictions or limited permit only units to achieve bull ratio objectives in western Washington.
e. Design and implement harvest strategies based on the best available information collected for those specific elk populations and sub-populations.
f. Unless extreme circumstances warrant, allow at least three years to determine effectiveness of regulation changes designed to achieve population objectives.

Objective 24: Maintain overall stability of elk hunting season regulations as provided during the last three years if possible, while still targeting the objectives in Tables 1 and 2.

Strategies:

a. When feasible under budget and staffing restrictions, document recruitment and mortality rates for elk populations under a wide variety of conditions such as weather, human access, range condition, supplemental feeding, and herd densities.
b. Adjust hunting season regulations to achieve the desired population characteristics.
c. Monitor elk population responses to various harvest strategies.
d. Develop population models that simulate various harvest strategies before implementation.
e. Validate results of population modeling efforts using abundance, composition, mortality, recruitment, and harvest data collected annually.
f. Implement an adaptive harvest strategy based on the past season harvest, composition counts, and/or population estimates or population indices available for each population or sub-population.

Issue Statement: Elk are an important watchable wildlife species. Elk provide a wide variety of viewing and photographic opportunities for the citizens of Washington.

Objective 25: Increase opportunities for viewing and photographing elk when consistent with the health and viability of elk populations.

Strategies:
a. Develop one new elk-viewing site by 2008.
b. Improve one existing elk viewing site by 2008.
c. Develop an internet site that promotes elk viewing by 2006.

Issue Statement: Not all elk hunters have the same expectations (Duda et al. 2002a). Some hunters want a high probability of harvesting an elk every year. Other elk hunters will accept a lower probability of success if they have a chance to take a mature bull. Still others just want the opportunity to recreate outdoors with some chance of harvesting an elk. Meeting the needs of all hunters requires a variety of harvesting schemes across the landscape. Five of the six WDFW administrative regions provide some level of elk hunting. However, the types of elk hunting opportunities vary by location. Depending upon the type of elk hunting opportunity one is interested in, a hunter may have to travel across the state to participate in a desired type of hunt.

Objective 26: Provide more than one type of elk hunting opportunity within an administrative region, allowing elk hunters to select a GMU or group of GMUs that best fits their preferred style of hunting.

Strategies:
a. Identify elk population management units that currently attract or could attract higher hunter numbers by 2005. Less focus on hunter success would be placed on these GMUs. Hunter *opportunity* (maximum days) would be the priority in these units.
b. Identify elk population management units by 2005 that can be managed for, or are currently being managed for, higher levels of hunter success without focusing on mature bull harvest. Hunter success rates would be the priority in these units.
c. Identify population management units by 2005 that can be managed for, or are currently being managed for, lower success rates but with a better chance to harvest older age class bulls. Opportunity for mature bull harvest would be the emphasis in these units.
d. Determine by 2008 if a variety of elk hunting opportunities can be provided within each of the administrative regions that have elk hunting.

Issue Statement: Annual harvest data are used as an index to elk population abundance and herd health and to monitor impacts of changing regulations.

Objective 27: Improve the accuracy and precision of harvest data to monitor elk populations and the effects of various management strategies.

Strategies:
a. Continue to implement and improve the mandatory harvest reporting system.
b. Explore the possibility of expanding efforts to collect age-at-harvest data from elk teeth collected from successful hunters.
c. Explore the possibility of collecting data on elk body condition from harvested elk at check stations or using other sampling strategies.

Issue Statement: Historically hunters and managers have been conservative in harvesting antlerless elk. The philosophy is based on a desire for ever-increasing elk populations. With

some populations at or exceeding population goals, antlerless harvest could be expanded to match recruitment.

Objective 28: Increase antlerless harvest opportunities in elk populations that are at or above population goals.

Strategies:
a. Monitor annual recruitment and population response to increased or decreased harvest.
b. In stable populations meeting population objective, develop harvest strategies to approach but not exceed recruitment of new animals into the population minus estimated annual, non-harvest mortality.
c. In populations above population goals, incrementally increase antlerless hunting opportunity and antlerless harvest each year until the population stabilizes within the preferred population range.

Management of Crop Damage and Nuisance Problems

Issue Statement: Elk provide a sustainable annual harvest, but they also contribute to agricultural damage in some cases. Some herds that are at or below population objective can still contribute to agricultural damage.

Objective 29: Identify areas of elk damage and minimize the number of damage incidents if possible.

Strategies:
a. Provide information and advice to landowners regarding techniques to prevent elk damage. Reduce elk damage using non-lethal means in elk herds below population objective.
b. Increase antlerless harvest in specific damage areas that target elk causing damage. Use site-specific lethal means in elk herds at or above population objective. Identify and map areas that will not be managed for elk and provide liberal harvest opportunities in those areas.
c. Increase any elk harvest in certain situations where localized bull herds are causing depredation problems.
d. Address site-specific damage situations by utilizing "hot spot" hunts, landowner preference tags, or issuing kill permits.
e. Consider damage-related elk harvest data in management and harvest recommendations.
f. Investigate the impacts of vehicle collisions on elk populations and explore options to mitigate some of those impacts.

Habitat Management

Issue Statement: Elk habitat in Washington state is declining due to human population expansion, changes in timber management practices, progression of successional age of habitat, and competition with domestic livestock. The biggest threat to the sustainability of elk populations is loss of quality habitat. To effectively manage elk in Washington, certain priority

lands must be set aside with the management of elk habitat identified as the primary activity on those lands.

Objective 30: Maintain, enhance, and acquire habitat for Rocky Mountain and Roosevelt elk.

Strategies:

a. Identify and prioritize important elk habitat that is at risk of being lost to other land use practices. Identify highest priority elk ranges to target for acquisition or conservation easements.
b. Identify lands that fit financial and biological criteria consistent with WDFW's elk management program.
c. Identify and access funding sources to complete acquisitions and easements that will benefit elk.
d. Where habitat condition or quantity limits herd productivity, identify and implement large-scale habitat conservation and enhancement projects.
e. Improve habitat condition where possible, by implementing habitat enhancements and coordinating with land management agencies and private landowners to improve elk habitat quality where those opportunities exist.
f. Establish cooperative cost share projects with U. S. Forest Service, Washington Department of Natural Resources, U. S. Fish and Wildlife Service, Tribal Governments, Rocky Mountain Elk Foundation, Safari Club International and other entities to improve elk habitat.
g. Manage for elk herd distribution within tolerance limits of landowners.
h. Take a more active role with county governments in Growth Management Planning to prevent human encroachment on important elk habitat.
i. Take a more active role with USFS and DNR in timber stand management that provides better elk habitat. Provide advice to USFS, DNR, and the private timber industry on pre-commercial thinning and commercial thinning that would improve elk habitat. Provide advice to DNR and private timber industry regarding reduced herbicide treatments of understory plants that are important elk forage. Work with state, federal, and private land managers to explore the best size and spacing for clear-cuts that will benefit elk.
j. Secure private lands with valuable winter range in GMU 368 (Yakima Herd).
k. Secure in-holdings in the Wenas Wildlife Area in GMU 342 (Yakima Herd).
l. Acquire important elk habitat in the Skookumchuck and Naneum Basins (Colockum Herd).
m. Purchase, lease, acquire easements and use other incentives to protect and enhance critical elk habitat located along the North Fork of the Lewis River (Mount St. Helens Herd).
n. Secure important elk habitat in the Lick Creek unit GMU 175 (Blue Mountains Herd).
o. Secure important elk habitat in the Tumalum Drainage of the Tucannon unit, GMU 166 (Blue Mountains Herd).
p. Secure elk winter range in the Mountain View unit, GMU 172 (Blue Mountains Herd).
q. Secure important elk habitat in the bottomlands along the Upper Cowlitz River (South Rainier Herd).
r. Purchase, lease, acquire easements and use other incentives to protect and enhance critical elk winter ranges located along the Skagit River bottomlands (North Cascades Herd).
s. Purchase, lease, acquire easements and use other incentives to protect and enhance other key areas identified in future elk herd plans.

Issue Statement: Elk in the Mount St. Helens herd suffer some winter mortality even during mild winters. It is possible that elk from this herd are going into winter in less than prime condition due to poor summer and fall forage quantity and quality.

Objective 31: Determine by 2008 if available summer and fall forage is predisposing Mount St. Helens elk to higher than normal winter mortality.

Strategies
a. Measure body condition of Mount St. Helens elk before and after winter.
b. Correlate body condition with current vegetation information that's being collected or collect new vegetation information to assess available forage quantity and quality.
c. If necessary, develop cooperative projects with USFS, DNR, and Rocky Mountain Elk Foundation to improve elk habitat for Mount St. Helens herd.

Information and Education

Issue Statement: Washington citizen's want to know more about elk and their natural history (Duda et al. 2002b).

Objective 32: Inform and educate all portions of the general public regarding elk biology and elk issues impacting the state of Washington. Provide the general public with additional information about elk.

Strategies:
a. Expand educational opportunities pertaining to elk on the agency web site and develop brochures for direct mailing by 2008.
b. Develop a brochure that informs the public how to best enjoy elk without adding undue stress during critical times of the year (e.g., winter, calving, breeding).
c. Publish two news articles per year regarding viewing opportunities.
d. Update and improve the Department's current brochure on "Identification and Age Determination of Washington Deer and Elk" by 2005.
e. Investigate the possibility of writing and publishing a book about the deer and elk of Washington using outside cooperators and outside funding sources. Determine feasibility of the project by 2008.

Winter Feeding

It is the policy of the Washington Department of Fish and Wildlife that wildlife should exist under natural conditions supported by suitable habitat. Although artificial feeding may assist in wildlife winter survival, it should not be considered a substitute for lost habitat and feeding shall be done only in limited situations as prescribed by Department policy.

The Department maintains some supplemental feeding operations for wildlife where adequate winter habitat is not available. The Department also recognizes that extreme winter conditions

sometimes necessitate implementation of emergency feeding operations. Both supplemental and emergency feeding of wildlife introduce an artificial food source. Feeding also results in the concentration of animals, which can make them more susceptible to disease, predation, and poaching.

The Department will attempt to identify methods designed to balance the size of populations with available winter habitat. Winter feeding will not occur in areas where species can be hunted for recreation while feeding activities are underway. The Department will periodically evaluate the need to continue winter feeding operations.

Issue Statement: Supplemental Feeding is defined by the Department as the regular winter feeding operations to provide feed to wildlife where adequate winter habitat is not available and feeding is necessary to support the population level as identified in a management plan, or for specific control of deer or elk damage.

A large percentage of what is considered to be historic elk winter range prior to European settlement has been removed due to agriculture and housing development. At current population levels, some elk in Washington must be fed every winter due to inadequate winter range. To prevent elk in the Yakima herd from causing agricultural damage, elk fencing and a winter feeding program was established. The average amount of hay fed annually from 1981 to 2001 was 1,302 tons (range 320 to 5,100 tons). Elk winter feeding programs can be problematic. They are expensive and cause elk to congregate at high densities, where they have a higher potential for spreading diseases. Elk that are fed in the winter also can have extreme impacts on shrubs, trees, and riparian zones near feeding sites. Winter feeding programs may allow elk populations to exceed the carrying capacity of the available winter range, which can often be one of the most important factors in determining the size of an elk population that the landscape can support.

Objective 33: Evaluate the current elk feeding program. Reduce the dependency on supplemental feeding if possible.

Strategies:

a. Evaluate the current Yakima elk feeding program by 2005.
b. Using data generated from the Yakima elk herd study (see Research Section), report on the costs, benefits, and impacts on range condition of managing for different Yakima elk herd sizes by December 2007.
c. Using the data generated from the Yakima elk herd study, determine if the Yakima elk herd population objective needs to be adjusted by December 2008. If the population objective is changed, determine what impact that will have on the surrounding environment, hunting opportunities, viewing opportunities, and the current feeding program.
d. Identify which feeding sites are essential to meeting Yakima elk herd management objectives.
e. Identify areas where elk feeding efforts might be reduced. Eliminate some elk feeding sites if possible.

f. Evaluate alternatives to the current feeding program such as diversionary forage plots, additional winter range acquisition, mineral supplements, or any other approaches that help redistribute elk activity.

Issue statement: Emergency feeding is defined as the occasional feeding of wildlife, which the Department implements because of extreme winter conditions or a disaster such as fire or drought. Emergency feeding operations will be implemented when the Director or the Director's designee determines that an emergency exists in a specific location of the state, using the emergency factors below. The factors evaluated to determine if an emergency exists include weather conditions and forecast, concentration and distribution of wildlife, access to natural forage, the nature of the disaster and its impact on wildlife, the physical condition of the wildlife in question, and designation by the Governor.

Objective 34: Assess whether current winter-feeding policy is appropriate and being implemented.

Strategies
a. Identify all locations where emergency feeding and supplemental feeding of wildlife is taking place by 2004.
b. Ascertain whether winter feeding policy is being followed in all locations of Departmental feeding by 2005.
c. Make recommendations for those sites that are not adhering to policy to bring them into compliance.
d. Look for alternatives to supplemental and emergency feeding whenever possible. Determine if salt or mineral supplements would be a useful tool in improving body condition, recruitment of young, reducing parasite loads, or disease management.

Disease

Issue Statement: Wild elk suffer from a wide variety of diseases. Some diseases are commonplace and have very little impact at the population level. Other diseases can be far more serious, have major impacts at the population level and have severe economic consequences.

Objective 35: Monitor the health and disease status of wild elk in Washington.

Strategies:
a. Take blood and tissue samples when elk are captured and tested for diseases common to elk.
b. Sample hunter harvested elk for chronic wasting disease.
c. Follow U. S. Department of Agriculture and Washington Department of Agriculture guidelines for reporting and action when a disease is detected.

Research

Issue Statement: The Yakima elk herd is one of the largest in the state, and herd characteristics have responded well to management strategies designed to increase bull:cow ratios and the survival of adult bulls. Recruitment during recent years has typically been below the long-term average, similar to other regional elk populations. Much of the historical winter range for ungulates is now under agricultural and rural development. Much of the potential winter range is used for high-value agriculture. Fences and artificial feeding are used to control elk distribution and movements on the very limited winter range. The U.S. Forest Service (USFS) has questioned whether the size of the current elk population can be maintained without damage to sensitive habitats, such as wet and dry meadows, on spring-summer-fall range. Better information is needed on the relationship between the size of the Yakima elk herd and the habitat supporting that herd.

Objective 36: Determine the appropriate population size for the Yakima elk herd given the number of environmental, social, recreational, and economic values assigned to this herd by various user-groups.

Strategies:

a. Detailed analysis of habitat condition and trend is needed to better define a population goal that protects other values, including environmental, social, and economic values of this region.
b. Conduct intensive remote sensing data collection and GIS analyses.
c. Use radio-telemetry to define elk use of sensitive habitats.
d. Use radio-telemetry to define movements of elk between specific summer and winter ranges.

Issue Statement: The Blue Mountains elk herd has historically provided considerable recreational hunting opportunity and supported subsistence and ceremonial needs for Native Americans. Like many other regional elk herds, the Blue Mountains herd has exhibited declining recruitment in the past decade. The herd is below population objective. Although spike-only hunting has improved bull elk survival, limited, hunting opportunities for branch-antlered bulls continues in some areas. The lack of documentation of tribal harvest impacts has complicated management of this elk herd. In some units, high poaching losses have contributed to a reduction or elimination of mature bull hunting opportunity. Estimates of both adult and yearling bull survival as well as adult cow survival need to be improved for this elk herd. The overall impact of human-caused mortality is known only in very general terms.

Objective 37: Identify research questions to be answered regarding elk ecology and management and design experiments and studies that address those questions. Estimate total mortality for adult elk in the Blue Mountains. This project would focus on estimating survival for male elk, but information on female elk survival would also be useful to managers. Partition the total mortality as accurately as possible among all sources of mortality. Complete the project by 2008.

Strategies:

a. Quantify total mortality for adult elk for one or more PMUs in the Blue Mountains. To accomplish this, a large-scale telemetry project is needed to obtain defensible survival estimates.
b. Quantify the impact of human-caused mortality on elk in the Blue Mountains, particularly the impacts of various sources of hunting mortality on adult and yearling bull elk.
c. Quantify the impacts of unreported mortality, such as tribal harvest, wounding losses, damage hunt loss, and poaching losses.
d. Address the management implications of those various sources of mortality.

Issue Statement: The Colockum elk herd has long been plagued by low bull:cow ratios, and calf:cow ratios have also declined precipitously during the last decade. In 1994, spike-only hunting was adopted for general license holders. This regulatory change occurred throughout eastern Washington and was designed to increase bull survival, increase the ratios of adult bulls to adult cows, and to promote early, synchronized breeding. In the Yakima elk herd, the effect on bull:cow ratios was rapid and dramatic. A similar response has not occurred in the Colockum herd. Bull survival apparently remains low. Bull:cow ratios have generally remained below objective. Branch-antlered bull hunting has essentially been eliminated. No positive effects have been seen in recruitment patterns in the Colockum herd as well. Habitat condition also appears to be generally poor in some concentrated use areas, such as the Coffin Game Reserve. There are a number of potential factors that may be impacting elk recruitment, including poor nutrition, predation, and low numbers of breeding adult bulls. Defensible estimates of yearling bull survival and calf survival are needed.

Objective 38: Ascertain the population dynamics of the Colockum elk herd by 2008.

Strategies:

a. Determine adult and juvenile elk survival for the Colockum elk herd.
b. Determine the cause of poor recruitment, including an assessment of body condition dynamics of adult cow elk.
c. Analyze habitat conditions and trends at the landscape scale using remote sensing and ground-truthing.

Issue Statement: Forage enhancement areas were created to mitigate elk habitat loss associated with construction of the Wynoochee Reservoir. No assessment of the realized value of these areas to elk has been done. It is unclear if the costs of such mitigation efforts are warranted or if the enhancement areas actually benefit elk relative to the background habitat mosaic. The efficacy of this and similar mitigation projects compensating for elk habitat loss is unknown.

Objective 39: Quantify the differences in body condition, productivity, and recruitment for two elk sub-populations, one having access to mitigation enhancement fields and one that does not.

Strategies:

a. Using telemetry, evaluate elk use of the Wynoochee forage enhancement fields.
b. Assess the effect of use of the fields on elk body condition and productivity.
c. Monitor demographics in both elk sub-populations.

d. Monitor body condition in both sub-populations and relate body condition scores to elk landscape use, including use of the forage enhancement fields.

Issue Statement: Movements and population dynamics of elk and deer in the upper Kittitas Valley are poorly understood. Elk-landowner conflicts have been increasing on private lands in the upper Kittitas valley. Specific movement patterns for this sub-population of elk are poorly understood and abundance is unknown. Development continues to change the landscape of the upper Kittitas valley and the planned community will increase elk-human interaction. Management of elk numbers and distribution can be anticipated to become increasingly complicated. This area is also the study area for Project CAT, a large-scale cougar ecology project. The goal of Project CAT is to better define the movements and behavior of cougars in human occupied landscapes such as the I-90 corridor. It will be difficult to fully understand how cougars use this landscape without better knowledge of the movements and landscape use of their primary prey, elk and deer.

Objective 40: Gain a better understanding of the population dynamics and habitat use of elk in the upper Kittitas Valley.

Strategies:
a. Gather specific information on elk and deer movements, landscape use, and population dynamics in the upper Kittitas Valley.
b. Collect data on deer and elk in a dynamic landscape where managing human-wildlife interactions can be expected to become increasingly complex.
c. Coordinate project with staff conducting the Project CAT effort.
d. Explore possible elk management options despite the presence of a large private land refugium. Explore management options for small and large private landowners to improve habitat for elk.
e. Enhance the specific project objectives of the on-going cougar project.

Issue Statement: Other herds including the North Rainier, South Rainier, Selkirks, North Cascades, and Willapa Hills will require additional study as funding and staff time become available.

Objective 41: Determine aspects of elk populations that require further scientific investigation.

Strategies
a. Identify new questions to be answered for elk populations.
b. Conduct a literature search and develop study plan proposals that address the identified issues.
c. Explore internal and external funding opportunities for additional studies pertaining to the identified elk issues.
d. Develop study proposals in preparation for subsequent planning processes.

VII. LITERATURE CITED

Bender, L. C. and R. D. Spencer. 1999. Estimating elk population size by reconstruction from harvest data and herd ratios. Wildl. Soc. Bull. 27:636-645.

Biederbeck, H. H., M. C. Boulay, and D. H. Jackson. 2001. Effects of hunting regulations on bull elk survival and age structure. Wildl. Soc. Bull. 29:1271-1277.

Bryant, L. D. and C. Maser. 1982. Classification and distribution. Pages 1-60 *in* J. W. Thomas and D. E. Toweill eds., Elk of North America: ecology and management. Stackpole Books, Harrisburg, PA.

Caughley, G. 1974. Interpretation of age ratios. J. Wildl. Manage. 38:557-562.

Caughley, G. 1977. Analysis of vertebrate populations. John Wiley and Sons, London. 234 pp.

Dixon, S. L. and R. L. Lyman. 1996. On the Holocene history of elk (Cervus elaphus) in eastern Washington. Northwest Science 70:262-272.

Duda, M. D., P. E. DeMichele, M. Jones, S. J. Bissell, P. Wang, J. B. Herrick, W. Testerman, C. Zurwarski, and A. Lanier. 2002a. Washington hunters' opinions on and attitudes toward game species management. Responsive Management, Harrisonburg, VA. 380pp.

Duda, M. D., P. E. DeMichele, M. Jones, W. Testerman, C. Zurawski, J. DeHoff, A. Lanier, S. J. Bissell, P. Wang, J. B. Herrick. 2002b. Washington residents' opinions on and attitudes toward hunting and game species management. Responsive Management, Harrisonburg, VA. 168 pp.

Flook, D. R. 1970. Causes and implications of an observed sex differential in the survival of wapiti. Canadian Wildl. Serv. Rep. Series, No. 11. 71 pp.

Harpole, J. L. and R. L. Lyman. 1999. The Holocene biogeographic history of elk (Cervus elaphus) in western Washington. Northwest Science 73:106-113.

Houston, D. B. 1982. The northern Yellowstone elk: ecology and management. Macmillan Publ. Co., Inc., New York, NY. 474 pp.

Lancia, R. A., J. D. Nichols, and K. H. Pollock. 1996. Estimating the number of animals in wildlife populations. Pages 215-253 *in* T. A. Bookhout, ed. Research and management techniques for wildlife and habitats. Fifth ed., rev. The Wildlife Society, Bethesda, Md.

Lancia, R. A., C. S. Rosenberry, and M. C. Conner. 2000. Population parameters and their estimation. Pages 64-83 in S. Demarais and P. R. Krausman, eds. Ecology and

management of large mammals in North America. Prentice-Hall, Inc., Upper Saddle River, NJ.

McCabe, R. E. 1981. Elk and Indians: historical values and perspectives. Pages 61-123 *in* J. W. Thomas and D. E. Toweill eds., Elk of North America: ecology and management. Stackpole Books, Harrisburg, PA.

McCorquodale, S. M. 1985. Archaeological evidence of elk in the Columbia Basin. Northwest Science 59:192-197.

Murie, O. J. 1951. The elk of North America. Stackpole Co., Harrisburg, PA and Wildl. Manage. Institute, Washington, D.C.

Noyes, J. H. B. K. Johnson, L. D. Bryant, S. L. Findholt, and J. W. Thomas. 1996. Effects of bull age on conception dates and pregnancy rates of cow elk. J. Wildl. Manage. 60:508-517.

Peek, J. M., M. S. Boyce, E. O. Garton, J. J. Hard, and L. S. Mills. 2002. An Assessment of risks involved in current management of elk in Washington. Wash. Dept. of Fish and Wildl., Olympia. 99 pp.

Prothero, W. L., J. J. Spillett, and D. F. Balph. 1979. Rutting behavior of yearling and mature bull elk: some implications for open bull hunting. Pages 160-165 *in* M.S. Boyce and L. D. Hayden-Wing, eds. North American elk: ecology, behavior and management. Univ. of Wyoming Press, Laramie.

Samuel, M. D., E. O. Garton, M. W. Schlegel, and R. G. Carson. 1987. Visibility bias during aerial surveys of elk in north-central Idaho. J. Wildl. Manage. 51:622-630.

Spalding, D. J. 1992. The history of elk (*Cervus elaphus*) in British Columbia. Contributions to Natural Science, Royal British Columbia Museum, Victoria, B.C., Canada. 27 pp.

Squibb, R. C. 1985. Mating success of yearling and older bull elk. J. Wildl. Manage. 49:744-750.

Squibb, R. C., R. E. Danvir, J. F. Kimball Jr., S. T. Davis, and T. D. Bunch. 1991. Ecology of conception in a northern Utah elk herd. Pages 110-118 in A. G. Christensen, L. J. Lyon, and T. N. Lonner eds. Proc. of the elk vulnerability symposium. Montana State Univ., Bozeman. 330 pp.

Squibb, R. C., J. F. Kimball, Jr., and D. R. Anderson. 1986. Bimodal distribution of estimated conception dates in Rocky Mountain elk. J. Wildl. Manage. 50:118-122.

Washington Department of Fish and Wildlife. 1996. Final environmental impact statement for the Washington State management plan for elk. Wildl. Manage. Prog., Wash. Dept. Fish and Wildl., Olympia. 217 pp.

DEER

I. POPULATION STATUS AND TREND

Black–tailed deer (*Odocoileus hemionus columbianus*), mule deer (*O. h. hemionus*), and white-tailed deer (*O. virginianus*) are all native to the state of Washington. The total deer population in the state numbers approximately 300,000 to 320,000 (Washington Dept. of Fish and Wildlife 2001). White-tailed deer populations are stable or increasing. Mule deer populations in northeastern Washington are below historical levels. Other mule deer populations in central and eastern Washington are growing in response to recent mild winters. Black-tailed deer populations seem to be stable or declining across their range. The goal set by the Washington Department of Fish and Wildlife (WDFW) for the management of black-tailed deer, mule deer, and white-tailed deer populations in Washington is to maintain numbers within habitat limitations. Landowner tolerance, a sustainable harvest, and non-consumptive deer opportunities are considered within the land base framework.

II. RECREATIONAL OPPORTUNITY

Deer are hunted in Washington from September to December. State regulations provide for archery, muzzleloader, and modern rifle seasons. Historically about 45% of Washington's deer harvest was black-tailed deer, 35 % mule deer, and 20 % white-tailed deer. Due to expanding white-tailed deer populations, recently depressed mule deer populations and conservative hunting seasons for mule deer, white-tailed deer have outnumbered mule deer in the harvest for the past few years (Table 1). For the 2001 hunting season, initial estimates suggest that mule deer and white-tailed deer harvest each total approximately 10,500 animals or 31% of the harvest respectively.

White-tailed deer hunting seasons have remained consistent for the last few years, except in northeastern Washington where the white-tailed deer antlerless opportunity has gradually increased. Beginning in 1997, youth, senior, and disabled hunters were allowed to take antlerless white-tailed deer during general buck seasons in northeast Washington.

Eastern Washington mule deer seasons have been much more restrictive since 1997, although some mule deer opportunity is being reestablished in areas where mule deer herds are recovering. Some of the restrictive measures include a three-point minimum restriction for all mule deer in eastern Washington and a shortened deer hunting season for most hunters. Antlerless hunting opportunities are offered mostly by special permit only. The 2001 hunting season provided some additional antlerless opportunity as well as some any-deer opportunity for youth and disabled hunters.

Throughout western Washington, black-tailed deer harvest has remained relatively stable in recent years in terms of total numbers harvested. However success per unit of effort has decreased in southwest Washington black-tailed deer regions. Black-tailed deer still provided most of Washington's 2001 deer harvest with initial estimates at 13,200 or approximately 38.5%

of the total deer harvest. The average annual harvest of black-tailed deer over the past seven years was 14,875.

Table 1. Estimated Washington deer harvest by deer type for 1995 through 2001.

Year	Black-tailed Deer	White-tailed Deer	Mule Deer	Total
1995	17,048	9,800	10,971	37,765
1996	14,808	11,600	13,034	39,442
1997	15,875	9,700	6,566	32,141
1998	13,966	8,960	7,327	30,253
1999	15,268	11,007	9,232	35,507
2000	13,932	15,161	11,883	40,976
2001	13,226*	10,574*	10,519*	34,319

* Initial estimates not finalized.

III. DATA COLLECTION

WDFW conducts composition surveys from the air and on the ground to index buck, doe, and fawn ratios. Depending on the species, location and terrain involved, deer composition surveys are conducted in the spring, the summer, early fall (pre-hunt), and early winter (post-hunt) before the deer shed their antlers. Population estimates are also conducted for mule deer using the visibility bias model initially developed in Idaho for elk (Samuel et al. 1987). Variants of the model have been developed for a variety of other species including mule deer. All survey work is restricted by budget and staffing constraints.

In western Washington, black-tailed deer surveys are coupled with hunter check station information and harvest data to model populations. Sex ratios, age ratios, and survival rates are reconstructed using harvest information and those vital statistics are then entered into a sex/age/kill (SAK) population model to estimate population size (Bender and Spencer 1999).

Pre-hunt and post-hunt surveys are conducted in eastern Washington for both white-tailed deer and mule deer. Deer populations in selected areas are surveyed again in March and April to assess winter survival and recruitment.

White-tailed deer are surveyed in summer to determine pre-hunting season fawn and buck ratios and again in spring to determine recruitment – those fawns that have survived their first 10 or 11 months and will likely reach their first birth date alive. Hunter check stations and harvest report cards are used to monitor age distribution of whitetail bucks in the harvest.

IV. DEER MANAGEMENT GOALS

The statewide management goals for deer are:

1. Preserve, protect, perpetuate, and manage deer and their habitat to ensure healthy, productive populations.
2. Manage deer for a variety of recreational, educational, and aesthetic purposes including hunting, scientific study, cultural, subsistence, and ceremonial uses by Native Americans, wildlife viewing, and photography.
3. Manage statewide deer populations for a sustainable annual harvest.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Population Management

Deer population management goals are to maintain relatively stable growth for both white-tailed deer and black-tailed deer populations. The population goal for mule deer management is an increase in populations within the limitations of available mule deer habitat, landowner tolerance, and extreme weather events (i.e., summer and fall drought, catastrophic fire, protracted winters with deep snow). Recreation management for deer is directly tied to population management. The recreation goal for deer is to maintain or increase hunting opportunity, improve hunting quality, and be responsive to landowner conflicts (see below). The general, post-hunt goal for buck:doe ratios in Washington is greater than 15 bucks per 100 does for most populations, although this may vary depending on the location, species, or subspecies. Recruitment rates and mortality rates also vary substantially depending upon species, subspecies, and location.

ALL DEER

Issue Statement: Deer in Washington are currently managed at the Population Management Unit (PMU) level by WDFW. Most PMUs are made up of more than one Game Management Unit (GMU). Hunting season dates and bag limits are set at the GMU level with the understanding that total harvest will affect the deer population at the PMU level.

Objective 42: Determine by 2008 if the current PMU designations for Washington deer populations are representative from a biological standpoint.

Strategies:

a. Review the current information available for Washington deer including the primary literature, WDFW reports, federal reports, tribal reports, university research, and contractual reports. Investigate the current information seasonal movements, migrations, critical areas, home range sizes, etc.
b. Maintain those PMUs that adequately represent deer populations.
c. Modify those PMUs that do not currently represent deer population movement, activity, and harvest.

BLACK-TAILED DEER

Issue Statement: Of the three types of deer hunted in Washington, black-tailed deer have historically provided the highest number of deer harvested. Black-tailed deer are difficult to survey due to the type of habitat they occupy, making it difficult to detect population changes. Age ratios or sex ratios by themselves are inadequate when trying to detect population growth or decline (Caughley 1977, 1974). Nonetheless it is incumbent to the process of setting deer harvest objectives to have some estimate or index of the number of animals in the population available for harvest.

Objective 43: Determine how well existing survey protocols for black-tailed deer are working by 2005.

Strategies:

a. Conduct a literature search for existing population estimate and population index techniques that would be appropriate for black-tailed deer.
b. Document and/or standardize existing survey protocols for black-tailed deer.
c. When necessary, develop and standardize new survey protocols for black-tailed deer.
d. Determine key parameters to monitor for black-tailed deer. Incorporate those parameters in population models. Validate the parameters.

Issue Statement: Black-tailed deer habitat has been reduced in western Washington due to a reduction in timber harvest and the natural progression of aging timber stands (succession). Annual harvest reports indicate that black-tailed deer numbers are remaining fairly static, however, the number of days per harvested animal would suggest that black-tailed deer may have declined somewhat over the past two decades. To complicate matters further, hunting regulations have varied quite a bit over the years. Because of the terrain they inhabit and the difficulties involved with surveying them, there are still many unknowns about black-tailed deer population dynamics that have yet to be revealed.

Objective 44:

i. Maintain black-tailed deer population numbers within habitat limitations.
ii. Maintain greater than 15 bucks:100 does after the hunting season.
iii. Maintain both antlered and antlerless opportunity for black-tailed deer at appropriate levels.

Strategies:

a. Review the current information available for black-tailed deer including the primary literature, WDFW reports, federal reports, tribal reports, other state agency reports, university research, and contractual reports.
b. When appropriate, conduct post-hunt population surveys to ascertain population size or index.
c. When appropriate, conduct post-hunt population survey or conduct mortality studies to ascertain buck survival through the hunt period.
d. When appropriate, conduct pre-hunt surveys in summer and early fall to measure productivity and to measure the ratio of bucks per does and the ratio of legal bucks per does.

e. When possible, influence federal, state, and private landowners to manage western Washington deer habitat to benefit black-tailed deer.

MULE DEER

Issue Statement: Mule deer population levels are closely tied to severe winter events and are susceptible to over-harvest. Depending on the district, mule deer may be surveyed after the hunting season, before the hunting season, or during the spring green-up. Some mule deer populations may be surveyed more than one time during the year.

Objective 45:
i. Maintain greater than 15 bucks: 100 does in post-hunt surveys.
ii. Define which Population Management Units (PMUs) or Game Management Units (GMUs) will be managed for older age structure in the buck sub-population.
iii. Increase both antlered and antlerless hunting opportunity for all user groups when appropriate.
iv. Maintain mule deer populations within tolerance of landowners.

Strategies:
a. Conduct post-hunt population surveys to ascertain population size or index.
b. Conduct post-hunt population survey to ascertain buck survival through the hunt period.
c. Conduct spring "green-up" surveys to determine winter survival of adults and juveniles and use this information to set special permit quotas and antlerless seasons for the coming fall hunting season.
d. Conduct pre-hunt surveys in summer and early fall to measure productivity and to measure the ratio of bucks per does and the ratio of legal bucks per does.

Issue Statement: Another measurement that can be used for deer in North America is a body-condition score measure using ultrasonagraphy. Body-condition scores provide a measure of the deer's energy stores reported as a percentage of body fat. Body-condition scores represent the quantity and quality of forage available to deer and directly relates to their ability to survive and produce young. As part of the cooperative mule deer research study (see research section), federal, state, tribal, utility, and university cooperators and WDFW are developing body-condition baseline scores that will allow this technique to be used for mule deer. This effort is time consuming and very expensive. However, if successful, this technique may also be developed and established for other deer in Washington.

Objective 46: Develop a baseline set of measurements using body condition ultrasonagraphy for mule deer.

Strategies:
a. Complete cooperative mule deer research study.
b. As part of the cooperative mule deer study, report on the development of a body condition score that can be used for Washington mule deer.
c. If feasible, implement body condition scoring to assess overall health of mule deer and mule deer range.

Issue Statement: Mule deer populations are more amenable to population surveys than the other two types of deer in Washington. Currently, not all mule deer populations in all parts of the state are being surveyed (Mayer et al. 2002).

Objective 47: Improve and expand the survey protocols for mule deer by 2008.

Strategies:
a. Conduct a literature search for existing population estimation techniques that would be appropriate for mule deer.
b. Document and/or standardize best-case survey protocols for mule deer throughout the state.
c. When necessary, develop and standardize new survey protocols for mule deer.
d. Validate existing survey protocols for mule deer.

WHITE-TAILED DEER

Issue Statement: White-tailed deer population levels are closely tied to severe winter events. White-tailed deer have the highest potential maximum rate of increase of all North American ungulates due to the type of habitat they occupy, their age at first reproduction when on a high nutritional plane, and their ability to successfully recruit twins into the population (McCullough 1987). Compared to mule deer, white-tailed deer are less susceptible to overharvest. The antlerless component of white-tailed deer populations are often under utilized. Age ratios or sex ratios by themselves are inadequate when trying to detect population growth or decline (Caughley 1977).

Objective 48:
i. Maintain greater than 15 bucks:100 does in post-hunt surveys.
ii. Maintain antlered and antlerless hunting opportunity for all user groups if possible.
iii. Maintain white-tailed deer populations within the tolerance of landowners.

Strategies:
a. Conduct post-hunt population surveys to ascertain population size or index.
b. Conduct post-hunt population surveys to ascertain buck survival through the hunt period.
c. Conduct spring "green-up" surveys to determine winter survival of adults and juveniles and use this information to set special permit quotas for the coming fall hunting season.
d. Conduct pre-hunt surveys in summer and early fall to measure productivity and to measure the ratio of bucks per does and the ratio of legal bucks per does.
e. Develop an issue paper that identifies the optimum range of mature bucks in the standing population and in the harvest. The paper will review the current scientific literature and incorporate population-modeling efforts designed specifically for white-tailed deer, and public involvement. The paper will be completed by 2005.

Issue Statement: Like black-tailed deer, white-tailed deer populations are difficult to estimate in Washington (Roseberry and Woolf 1991, Lancia et al. 1996, Lancia et al. 2000, Mayer et al. 2002). Age ratios or sex ratios by themselves are inadequate when trying to detect population growth or decline (Caughley 1977).

Objective 49: Improve and expand the existing survey protocols for white-tailed deer by 2008.

Strategies:
a. Conduct a literature search of existing techniques.
b. Consult with statisticians at various universities for latest developments in population estimation.
c. Document and/or standardize best-case survey protocols for white-tailed deer throughout the state.
d. Validate existing survey protocols for white-tailed deer.
e. If necessary, develop a new survey protocol for a population estimate or a population index for white-tailed deer in eastern Washington.
f. Determine key parameters to monitor white-tailed deer. Incorporate those parameters in population models. Validate the models.

Issue Statement: Habitat quality and herd health can be expressed through a variety of proxy measurements. One measurement used for white-tailed deer in other parts of North America is the live weight or the dressed, carcass weight of 1.5 year-old males. In those GMUs that allow any buck hunting, carcass weights of field dressed 1.5 year-old males can be readily obtained through check station data collection. Live weight estimates can be made using known conversion factors or measuring chest girth of the animal. Lower than desired 1.5 year-old male weights can be an indicator of deer densities that are too high and may suggest a more aggressive harvest strategy.

Objective 50: Explore the possibility of using 1.5 year-old male weights as a measurement of herd health or habitat condition in those GMUs that allow any buck hunting for white-tailed deer.

Strategies:
a. If possible, develop a range of standardized weights that indicate whether a 1.5 year-old buck is in good, fair, or poor condition.
b. If necessary, conduct hunting season check stations and collect data on yearling buck carcass weights.
c. If feasible, correlate yearling buck carcass weights to deer population density and quality of available forage.

Recreation Management

ALL DEER

Background: The recreation goals for deer management are to maintain hunting opportunity, improve hunting quality when possible, provide recreational viewing opportunity when possible, and be responsive to landowner/deer conflicts.

Issue Statement: Deer hunters do not all have similar expectations (Duda et al. 2002a). Some hunters want a high probability of harvesting a mature buck. Others want a high probability of harvesting a legal deer. Meeting the needs of all hunters requires a wide diversity of hunting

opportunities spread across the landscape. In some areas of the state, where escape cover for deer is extensive, some any buck opportunities are still available. An example would be some black-tailed deer units west of the Cascades. Other units in western Washington have less escape cover and are in close proximity to high-density human populations. Still other units have more open terrain and less escape cover. An example would be units with 3-point minimum antler restrictions for either mule deer or white-tailed deer in central and eastern Washington.

Objective 51: Maintain a variety of deer hunting opportunities within each administrative region. Increase antlerless hunting whenever possible.

Strategies:
a. Increase the number of days in the general hunting season when appropriate.
b. Increase or decrease the number of antlerless special permits when appropriate.
c. Increase or decrease the number of any deer opportunities when appropriate. Allocate opportunity according to general strategies identified in Chapter 3 under Hunter Regulations.

Research

MULE DEER

Issue Statement: In the 1990s mule deer exhibited declines across most of the western United States. The public, the press, and wildlife scientists have postulated a variety of theories to explain this decline. Major contributors to the decline in mule deer numbers in Washington were deterioration of mule deer habitat due to successional progression and also high winter mortality due to the severe winter of 1996-97. As a result of this decline, the Department invested in a multi-cooperator, long-term mule deer research project.

Objective 52: Determine the relationship between habitat, predation, body condition and other factors as they relate to Washington mule deer survival and recruitment.

Strategies:
a. Complete Mule Deer Cooperative Study.
b. Provide information summaries and technical reports to the public.
c. Present results for the study in a variety of public forums.
d. Publish the results of the study in the primary, scientific literature.

BLACK-TAILED DEER

Issue Statement: For several years, black-tailed deer in western Washington have been observed with a condition known as hair loss syndrome. Deer suffering from this condition have both internal and external parasites that affect their health. The internal parasite is a muscle worm. The external parasite is a common louse that often affects deer. Deer become hypersensitive to the lice and groom excessively, removing and breaking off hairs. Some deer are affected severely by this condition and die of hypothermia from the hair loss or from verminous pneumonia caused by the larvae of the internal parasite residing in the lungs. Other deer survive

the condition and grow new hair the following summer after shedding what is left of their winter coat. Because black-tailed deer are so difficult to monitor, it is unclear whether the mortalities resulting from this condition are having a major impact on the black tailed deer population.

Objective 53: Determine the population level impact to black-tailed deer of hair loss syndrome by 2008.

Strategies:
a. Identify areas with black-tailed deer populations that have a high incidence of hair loss syndrome and populations with low or no levels of hair loss syndrome.
b. Initiate comparative studies on black-tailed deer populations with high levels of hair loss syndrome and those at lower levels to determine differences in fawn and doe survival.

Issue Statement: The total mortality rate on male black-tailed deer in hunted populations has been, for the most part, unknown. The Department initiated studies on buck mortality in both Region 4 and Region 6 from 1999 through 2001 (WDFW unpubl. data). Initial work suggests that buck mortality in black-tailed deer is quite variable, both between years and between sites. Further work on this topic would help the Department better understand black-tailed deer mortality rates at various locations and under various hunting season regulations.

Objective 54: Develop a better understanding of mortality rates in adult, male black-tailed deer.

Strategies:
a. Identify new locations to conduct black-tailed deer buck mortality studies.
b. If funding is available, continue the black-tailed deer buck mortality studies initiated in 1999.

WHITE-TAILED DEER

Issue Statement: Due to changes in land use practices and habitat condition, white-tailed deer seem to be expanding in some parts of the state. A substantial amount of speculation is occurring about the impacts of an expanding population of white-tailed deer. There are some questions about the impact of white-tailed deer populations in areas that were formerly inhabited by mule deer. There are also questions about the impact of increasing white-tailed deer populations on large predator populations.

Objective 55: Explore the possibility of conducting white-tailed deer research in areas that have increasing white-tailed deer populations and declining mule deer populations.

Strategies:
a. Identify areas that have declining populations of mule deer and increasing populations of white-tailed deer.
b. Explore the possibility of investigating the impact of expanding white-tailed deer populations on mule deer populations.
c. Explore the possibility of investigating the impact of expanding white-tailed deer populations on large predator populations.

Habitat Management

BLACK-TAILED DEER

Issue Statement: Foraging habitat for black-tailed deer is being lost due to changes in forest practices and the ecological succession of younger aged habitat.

Objective 56: Try to maintain or enhance black-tailed deer foraging habitat.

Strategies:
a. When funding permits, acquire critical black-tailed deer habitat or conservation easements on critical black-tailed deer habitat.
b. Work with state, federal, and private land managers to conduct pre-commercial thinnings and commercial thinnings that will benefit black-tailed deer.
c. Work with state, federal, and private land managers to explore the best size and spacing for clear-cuts that will benefit black-tailed deer.
d. Work with county government growth management planners to prevent the loss of black-tailed deer habitat.

MULE DEER

Issue Statement: Mule deer habitat is being lost throughout the western United States due to urban/suburban sprawl, expansion of agriculture into mule deer habitat, fire suppression, and ecological succession of younger aged habitat.

Objective 57: Try to maintain or enhance mule deer habitat including forage and security cover. Direct the Department's focus toward mule deer habitat improvement and protection.

Strategies:
a. Acquire critical mule deer habitat or conservation easements on critical mule deer habitat.
b. Work with state, federal, and private land managers to conduct prescribed burns that will benefit mule deer.
c. Work with county government growth management planners to limit the expansion of human development on mule deer range.
d. Work with the Mule Deer Foundation to conduct projects that improve winter range for mule deer.

WHITE-TAILED DEER

Issue Statement: White-tailed deer habitat is expanding due to human development, agricultural expansion, and changes in forest practices.

Objective 58: Try to maintain current status of white-tailed deer habitat.

Strategies:

a. Work with state, federal, and private land managers to conduct prescribed burns that will benefit mule deer and not expand white-tailed deer habitat.
b. Work with county government growth management planners to limit the expansion of white-tailed deer habitat due to human development.

Information and Education Goal

ALL DEER

Issue Statement: The general public has an interest in deer from more than a consumptive standpoint (Duda 2002b). Information for the general public pertaining to deer needs to be expanded.

Objective 59: Provide more information regarding deer biology and deer issues to the general public.

Strategies:

a. Interact with local outdoor groups to discuss deer management topics.
b. Produce new informational handouts for black-tailed, white-tailed, and mule deer on deer biology and natural history. Provide this information to the general public and the regional offices and headquarters.
c. Incorporate deer information in WDFW's Go Play Outside program.
d. Update and continue to produce the chronic wasting disease (CWD) handout, fact sheet, and web site.
e. Publish two news articles regarding watchable deer opportunities.
f. Update and improve the Department's current brochure on "Identification and Age Determination of Washington Deer and Elk" by 2005.
g. Investigate the possibility of writing and publishing a book about the deer and elk of Washington using outside cooperators and outside funding sources. Determine feasibility of the project by 2008.

Damage and Depredation Goal

ALL DEER

Issue Statement: Deer cause agricultural damage. Expansion of agricultural operations on deer range has increased in the last 20 years. Conflicts between deer and the agricultural community will continue to grow as human activity expands across traditional deer habitat.

Objective 60: Reduce damage caused by deer.

Strategies:

a. Identify priority areas for deer caused damage.
b. Focus more attention on prevention of damage to reduce the number of lethal removals and the number of cash payments made by the Department.
c. Increase antlerless harvest in damage areas using all three major weapon groups (archery, muzzleloader, and modern firearm) when appropriate.
d. Offer early and late season hunts specific to damage areas for muzzleloader and modern rifle hunters.
e. Increase harassment factor in chronic damage areas using archery hunters.
f. Explore the possibility of using more hunters with disabilities to deal with damage problems.

Disease

ALL DEER

Issue Statement: Wild deer suffer from a number of diseases. Some can have severe but localized impacts on a sub-population.

Objective 61: Monitor deer for disease and reduce the risk of disease when possible

Strategies:

a. Continue to monitor for chronic wasting disease (CWD).
b. Develop a prevention plan by December 2002 to reduce the risk of CWD entering Washington.
c. Enforce the current regulations that prevent the captive farming of native deer and elk in Washington.
d. Develop a contingency plan by December 2002, in the event that CWD is ever found in Washington.
e. Continue to monitor for epizootic hemorrhagic disease (EHD).
f. Continue to monitor for adenovirus hemorrhagic disease (AHD).
g. Continue to monitor for tuberculosis.
h. Continue to monitor the affects of hair loss syndrome on black tailed deer populations (see research section).

VI. LITERATURE CITED

Bender, L. C. and R. D. Spencer. 1999. Estimating elk population size by reconstruction from harvest data and herd ratios. Wildl. Soc. Bull. 27:636-645.

Caughley, G. 1974. Interpretation of age ratios. J. Wildl. Manage. 38:557-562.

Caughley, G. 1977. Analysis of vertebrate populations. John Wiley and Sons, London. 234 pp.

Duda, M. D., P. E. DeMichele, M. Jones, S. J. Bissell, P. Wang, J. B. Herrick, W. Testerman, C. Zurwarski, and A. Lanier. 2002a. Washington hunters' opinions on and attitudes toward game species management. Responsive Management, Harrisonburg, VA. 380pp.

Duda, M. D., P. E. DeMichele, M. Jones, W. Testerman, C. Zurawski, J. DeHoff, A. Lanier, S. J. Bissell, P. Wang, J. B. Herrick. 2002b. Washington residents' opinions on and attitudes toward hunting and game species manageme nt. Responsive Management, Harrisonburg, VA. 168 pp.

Lancia, R. A., J. D. Nichols, and K. H. Pollock. 1996. Estimating the number of animals in wildlife populations. Pages 215-253 *in* T. A. Bookhout, ed. Research and management techniques for wildlife and habitats. Fifth ed., rev. The Wildlife Society, Bethesda, Md.

Lancia, R. A., C. S. Rosenberry, and M. C. Conner. 2000. Population parameters and their estimation. Pages 64-83 *in* S. Demarais and P. R. Krausman, eds. Ecology and management of large mammals in North America. Prentice-Hall, Inc., Upper Saddle River, NJ.

M. S. Mayer, T. K. Fuller, R. D. Deblinger, and J. E. McDonald Jr. 2002. Can low-precision population and survival estimates of deer be accurate? Wildl. Soc. Bull. 30:440-448.

McCullough, D. R. 1987. The theory and management of *Odocoileus* populations. Pages 535-549 *in* C. M. Wemmer, ed. Biology and management of the *Cervidae*. Smithsonian Institution, Front Royal, VA.

Roseberry, J. L., and A. Woolf. 1991. A comparative evaluation of techniques for analyzing white-tailed deer harvest data. Wildl. Monogr. 59 pp.

Samuel, M. D., E. O. Garton, M. W. Schlegel, and R. G. Carson. 1987. Visibility bias during aerial surveys of elk in north-central Idaho. J. Wildl. Manage. 51:622-630.

Strickland, M. D., H. J. Harju, K. R. McCaffery, H. W. Miller, L. M. Smith, and R. J. Stoll. 1996. Harvest management. Pages 445-473 *in* T. A. Bookhout, ed. Research and management techniques for wildlife and habitats. Fifth ed., rev. The Wildlife Society, Bethesda, Md.

Washington Department of Fish and Wildlife. 2001. 2001 Game status and trend report. Wildlife program, Wash. Dept. of Fish and Wildl., Olympia, WA, USA.

BIGHORN SHEEP (*Ovis canadensis*)

I. POPULATION STATUS AND TREND

Washington State has approximately 1,100 bighorn sheep distributed in 16 herds. Of those, 11 herds are California bighorn sheep and five are Rocky Mountain bighorn sheep. Average herd size is 69 sheep, and ranges from 24 to 173 sheep. Populations are stable to increasing in 11 herds and declining in five herds, where diseases and parasites are the primary causes for decline.

II. RECREATIONAL OPPORTUNITY

Currently, only California bighorn sheep are hunted in Washington, as populations of Rocky Mountain bighorns are still recovering from the *pasteurella* die-off. In Washington, hunters typically pursue mature rams. Therefore, harvest thresholds are based on total population size, sex structure, and the number of mature rams in a herd. Hunting opportunity is allocated by permit drawing and is a once in a lifetime opportunity (except for raffle and auction permit holders). The number of controlled hunt applications received annually ranges from 1,000-4,500, which averages approximately 151-applications per bighorn sheep hunting permit. Statewide, permit levels have ranged from 9-22 and hunter success is high (92%).

Figure 1. Bighorn sheep herds in Washington, 2002.

III. DATA COLLECTION

The Department surveys each herd one or two times annually, using either aerial or ground surveys. Surveys typically are conducted during lambing or rutting periods and data are used to estimate lamb recruitment, sex ratio, adult survival, population size, and percentage of mature rams in the population. In addition to surveys, individuals from selected herds are screened for disease and parasites during winter captures or feeding operations.

IV. BIGHORN SHEEP MANAGEMENT GOALS

The statewide goals for bighorn sheep are:

1. Preserve, protect, perpetuate, and manage bighorn sheep and their habitats to ensure healthy, productive populations.
2. Manage bighorn sheep for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography.
3. Manage statewide bighorn sheep populations for a sustained yield.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Habitat Management

Issue Statement: Habitat quality influences bighorn sheep reproduction, survival, and abundance. Unfortunately, habitat conditions are deteriorating in many bighorn herds, primarily due to the spread of noxious weeds, poor forage growth, and forest encroachment. To improve habitat quality for bighorn sheep, there is a need to conduct various habitat improvement projects, as the need and opportunity arises, in several herds.

Objective 62: Conduct habitat improvement projects on $\geq$10% of the habitat in bighorn ranges in Vulcan Mountain, Swakane, and the Blue Mountains.

Strategies:

a. Inventory and map habitat conditions.
b. Conduct controlled burns to improve habitat quality.
c. If not detrimental to other habitat or wildlife objectives, consider distributing fertilizer and herbicides to improve forage quality.
d. Distribute mineral blocks to supplement forage quality.
e. Distribute water sources to improve habitat quality.
f. Pursue other activities that enhance desirable native plant communities.

Population Management

Issue Statement: Washington's bighorn sheep populations are few in number, isolated, and relatively small. To address these concerns, relocation is used as a tool to increase sheep abundance and link populations. With this comes the need to prioritize potential relocation areas, while considering funding limitations, availability of sheep, social-economical concerns, and biological merit.

Objective 63: Develop a prioritized list of potential bighorn sheep relocation areas by January 2003.

Strategies:

a. Prioritize potential relocation areas using a geographical information system (GIS), coupled with various landscape variables (e.g., forage, cover, and anthropogenic activities), and a meta-population analysis.
b. Prioritize potential relocation areas based on cooperative agreements, collaborations, and funding availability.
c. Prioritize potential relocation areas using on-the-ground habitat evaluations.

Issue Statement: Relocation is used as a tool to establish new populations and augment existing ones. This, in turn, increases the long-term viability of bighorn sheep by increasing total population size, increasing the number of populations, and providing linkages between populations for the exchange of individuals and genetic material (Bailey 1992).

Objective 64: Establish two new bighorn sheep herds by 2008.

Strategies:

a. Relocate sheep from existing herds in Washington or out-of-state herds.
b. Allow the establishment of new herds through natural colonization of bighorn sheep.
c. Re-establish the Tucannon herd as Rocky Mountain bighorns instead of California bighorns.

Issue Statement: To better manage bighorn sheep populations, managers strive to maintain sustainable and healthy populations of bighorns, while at the same time maintain sheep at levels that minimize the risk of disease and reduce agricultural damage on private lands.

Objective 65: Maintain bighorn sheep population size as indicated in Table 1.

Strategies:

a. For herds that are exceeding population goals, trap and relocate sheep to an alternate area.
b. For herds that are exceeding the desired population size, establish ewe harvest opportunities as indicated in *Objective 68, Strategy g*.
c. For herds that are below the desired population size, consider restricting harvest (see *Objective 68, Strategy d*) and augmenting the population.

Table 1. Population size objectives for specific bighorn sheep herds.

Herd	Population Size	
	Current	Desired[b]
Hall Mountain[a]	29	40-70
Asotin Creek[a]	38	50-60
Black Butte[a]	80	300
Wenaha[a]	65	140
Cottonwood Creek[a]	27	50-60
Tucannon	27	60-70
Vulcan	24	80-110
Mt. Hull	65	55-80
Sinlahekin	30	50
Swakane	53	50-60
Quilomene	165	250-300
Umtanum(+Selah Butte)	173	250-300
Cleman Mountain	156	140-160
Lincoln Cliffs	95	60-70
Lake Chelan	46	100-150
Tieton River	37	75-150
Total	**1,110**	**1,750-2,130**

[a] Rocky Mountain bighorn sheep

[b] Based on biologists estimates of habitat capacity, including forage, escape cover, and water sources

Issue Statement: Bighorn sheep populations are sensitive to over-exploitation because of their low population growth rate and low population size (Berger 1990). As such, assessing the status of each bighorn population annually is necessary to ensure sustainability.

Objective 66: Monitor bighorn sheep herds at a level where a 20% change in population size can be detected within 3-years or less.

Strategies:

a. Estimate minimum number of sheep, ram:ewe ratio, and ewe:lamb ratio annually for each herd.
b. Develop a sightability correction factor to estimate population size from annual surveys (Bodie et al. 1995).
c. Use radio collared sheep to enhance sightability of sheep during surveys.
d. Use population models to estimate changes in population size.

Issue Statement: Certain types of *Pasteurella* spp. are pathogenic and produce acute bacterial pneumonia in bighorn sheep (Foreyt and Jessup 1982). The occurrences of lethal strains of *Pasteurella* in bighorns are most commonly associated with overlapping ranges of bighorn and domestic sheep; as *Pasteurella* is commonly found in domestic sheep. There are many uncertainties about the mode of transmission, vulnerability, and other epidemiological factors of *Pasteurella* (Martin et. al 1996). However, given the present state of knowledge, the current management practice used throughout North America to prevent the disease in bighorn sheep is to eliminate interactions between domestic sheep and bighorn sheep (Schommer and Woolever 2001).

Objective 67: Eliminate interactions between domestic sheep and bighorn sheep in the Swakane herd, Hells Canyon herds, Cleman Mountain, and areas identified for repatriation of bighorn sheep.

Strategies:
a. Maintain at least a 9-mile buffer between domestic sheep and bighorn sheep (BLM 1998).
b. Pursue the purchase of grazing leases and conservation easements.
c. Develop physical or habitat barriers between domestic and bighorn sheep.
d. Work with livestock producers to reduce transmission of disease and parasites from domestic sheep to bighorns.

Recreation Management

Issue Statement: The demand for bighorn sheep hunting opportunity exceeds the allowable harvest for sustainable populations. Therefore, the Department restricts bighorn sheep harvest to a level compatible with long-term sustainability of each herd. With bighorn sheep, hunters typically select the largest, hence oldest, rams in the herd. Consequently, the Department manages sheep as a high quality hunting opportunity and takes precautionary steps to ensure that ample numbers of mature rams are left in the population. The result is a relatively high harvest success (mean = 92%) and post-season ram: ewe ratios that are favorable for healthy bighorn sheep populations.

Objective 68: Provide recreational hunting season opportunities for individual bighorn sheep herds where harvest success averages ≥85% over a 3-year period, while at the same time bighorn population size remains stable or increasing.

Strategies:
a. Conduct bighorn sheep hunts by permit only and allow harvest of any ram.
b. Do not hunt transplanted animals for at least five years after initial release to ensure success of the transplant.
c. Survey herds annually for at least two years prior to being hunted to determine size, composition, and trend.
d. Set ram permit levels as indicated in Table 2 below:

Table 2. Permit levels for all bighorn sheep herds (see example below).

	…when the herd has…			
	Population	**Ram:ewe**	**Number rams with…**	
Permit level is…	**Size [a]**	**ratio**	**≥½ curl [b]**	**≥ ¾ curl [c]**
20% of the mature rams[d]	≥30	>50:100	8	2
15% of the mature rams[d]	≥30	25-50:100	8	2
10% of the mature rams[d]	≥30	<25:100	8	2

[a] Total population size, excluding lambs. Population must be stable or increasing.
[b] Used as a measure of >3-year-old rams.
[c] Used as a measure of >6-year-old rams.
[d] Rams ≥½ curl.

For example, the permit level for herd X is 15% of the mature ram population because the total population size is >30 sheep, the ram:ewe ratio is between 25-50 rams per 100 ewes, and the number of rams with ½ curl is >8 and at least 2 of those 8 rams are >¾ curl.

e. Adjust permit levels for herds bordering other states and provinces to account for management activities of these other areas.
f. Consider reducing permit levels or terminating all permits (depending on population size and rate of decline) for herds declining due to disease or high parasite loads.
g. Use trap and relocation as the primary method of reducing overpopulated herds. Consider ewe harvest as a secondary method, with the following conditions:
   - Ewe permits should not exceed 10-20% of the adult ewe population.
   - A harvested ewe would not count toward the one sheep a hunter can harvest in a lifetime.

Issue Statement: The number of bighorn sheep applications/permit makes the odds of drawing a permit low (151 applications/available permit). As such, there is a need for a fair and equitable approach for allocating permits while maintaining a quality hunt experience.

Objective 69: Distribute recreational opportunity to as many individuals as possible, compatible with high quality sheep hunting experiences and the biological status of bighorn populations.

Strategies:
a. Allow bighorn sheep hunting by permit only.*
b. Allow "once-during-a-lifetime" opportunity for bighorn sheep hunters.*
c. Consider developing a preference point system consistent with deer and elk systems.
d. Consider other alternatives to reduce crowding.

*Strategy currently is implemented.

Issue Statement: Bighorn sheep claim a strong aesthetic value throughout most western states. However, because bighorns have a relatively small range in Washington, viewing opportunities are limited. Where viewing opportunities do exist, they have proven to be extremely popular with the public.

Objective 70: Develop viewing opportunities for two bighorn sheep herds.

Strategies:
a. Develop vehicle tour and education board for bighorn sheep viewing areas.
b. Develop a web-cam viewing opportunity for bighorn sheep.

Information and Education

Issue Statement: Bighorn sheep were extirpated from Washington by the early 1900s. However, by securing critical habitats and transplanting sheep, bighorns have slowly recovered. As bighorns continue to do well in Washington, it's important to inform the public about the biology and management of bighorn sheep, as well as their ecological role in the ecosystem.

Objective 71: Provide educational information on bighorn sheep to at least 50,000 people annually and emphasize contribution of hunters to bighorn sheep recovery.

Strategies:

a. Develop a brochure describing bighorn sheep ecology and management, threats from disease, as well as their history in Washington.
b. Develop educational viewing opportunities for bighorn sheep (see Objective 69).
c. Discuss bighorn sheep management at public forums.
d. Develop segment for Wild About Washington video.

Enforcement

Issue Statement: There are only about 1,100 bighorn sheep in Washington. So any illegal harvest or harassment has the potential to impact populations. Unfortunately, the rarity and majestic nature of mature rams (i.e., their horns) makes them likely targets for illegal take.

Objective 72: Account for all known bighorn sheep mortalities.

Strategies:

a. Permanently mark the horns of all dead bighorn sheep rams that are recovered from the field.*
b. Require mandatory reporting for all bighorn sheep hunters.*

* Strategy currently is implemented.

Research

Issue Statement: Bighorn sheep are vulnerable to many parasites and diseases that significantly impact population levels. In addition, small population sizes create situations where predators and genetic inbreeding can cause impediments to population growth.

Objective 73: Acquire biological information that aids in bighorn management.

Strategies:

a. Investigate parasite outbreak in the Vulcan Mountain herd.
b. Investigate the recovery of bighorn sheep from *pasteurella* in Hells Canyon.
c. Investigate the impacts of predation on recently established herds or herds with fewer than 100 animals.
d. Investigate the probability of interactions between bighorn sheep and domestic sheep in areas where the two overlap.
e. Investigate inbreeding effects among bighorn sheep.

LITERATURE CITED

Bailey, J. A. 1992. Managing bighorn habitat from a landscape perspective. Biennial symposium of northern wild sheep and goat council. 8:49-57.

Berger, J. 1990. Persistence of different-sized populations: an empirical assessment of rapid extinctions in bighorn sheep. Conservation biology 4:91-98.

Bodie, W. L., E. O. Garton, E. R. Taylor, and M. McCoy. 1995. A sightability model for bighorn sheep in canyon habitats. Journal of Wildlife Management 59:832-840.

Bureau of Land Management. 1998. Revised guidelines for management of domestic sheep and goats in native wild sheep habitats. Instruction Memorandum No. 98-140.

Foreyt, W. J. 1989. Fatal *Pasteurella haemolytica* pneumonia in bighorn sheep after direct contact with clinically normal domestic sheep. American journal of veterinary research. 50:341-344.

_____, and D. A. Jessup. 1982. Fatal pneumonia of bighorn sheep following association with domestic sheep. Journal of Wildlife Diseases 18:163-168.

Martin, K. D., T. Schommer, and V. L. Coggins. 1996. Literature review regarding the compatibility between bighorn and domestic sheep. Biennial symposium of northern wild sheep and goat council. 10:72-77.

Schommer, T. and M. Woolever. 2001. A process for finding management solutions to the incompatibility between domestic and bighorn sheep. Forest Service. Washington D.C., USA.

MOUNTAIN GOAT (*Oreamnos americanus*)

I. POPULATION STATUS AND TREND

Mountain goat populations have been on the decline in Washington for many years. Historically, goat populations may have been as high as 10,000 animals. Today goats likely number fewer than 4,000. Hunting opportunity has decreased accordingly, and current permit levels are conservative and represent 4% of the known population in herds that are stable to increasing. Despite reductions in hunting opportunity many local goat populations continue to decline. However, a few populations are doing well. Goat populations along the southern Cascades, the north shore of Lake Chelan, and the Methow region appear to be stable to slightly increasing.

II. RECREATIONAL OPPORTUNITY

Mountain goats have been hunted in Washington State since 1897, when hunters could harvest two goats annually (Johnson 1983). Following several years of over hunting, seasons were restricted in 1917, and all hunting closed by 1925. Later, goat populations rebounded and hunting resumed in 1948. Since 1948 mountain goat hunting opportunity has been limited by permit.

Figure 2. Historic mountain goat distribution and current hunting units for goats.

Unfortunately, goat abundance has decreased dramatically over the last decade. As such, hunting opportunity has declined from 218 permits in 1991 to 26 permits in 2001 – about a 9% decline/year. The number of permit applications received annually tends to range from 2,000 to 4,200, which averages about 42-applications/mountain goat permit. The hunting season for mountain goat is generally about 47 days (September 15 to October 31) and harvest success averages 63% (n = 9 years).

Currently, mountain goat hunting is an once-in-a-lifetime opportunity. Hunters may harvest any adult goat with horns $\geq$4 inches, although hunters are urged not to harvest a nanny and it's unlawful to harvest a nanny accompanied by kids. During the 2001 season, only a fraction of the mountain goat range was open to hunting, with 24 permits in 11 goat units (Fig. 1).

III. DATA COLLECTION

For many years, funding limitations greatly reduced the Department's ability to conduct thorough and consistent surveys. However, during the last three years, funding from cooperative grant sources, and auction and raffle revenue, allowed the Department to survey all goat units

open to hunting. All surveys were conducted using a helicopter and generally occurred between July and September. Because the funding level hasn't been enough to survey all goat units, hunted units have been the priority. As such, no consistent survey effort has been accomplished during the last five years for goat units closed to hunting.

IV. MOUNTAIN GOAT MANAGEMENT GOALS

The statewide goals for mountain goats are:

1. Preserve, protect, perpetuate, and manage mountain goats and their habitats to ensure healthy, productive populations.
2. Manage mountain goats for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography.
3. Enhance statewide mountain goat populations and manage goats for a sustained yield.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Habitat Management

Issue Statement: Mountain goat populations typically occur as meta-populations scattered across the landscape on "habitat islands" where structural and vegetative characteristics are suitable for goats. The sizes and distribution of these islands of suitable habitats are largely unknown in Washington. Understanding the juxtaposition and quality of these habitats and their potential carrying capacity is critical for sustainable management of mountain goats.

Objective 74: Develop a document identifying the locations and quality of suitable mountain goat habitat in Washington.

Strategies:

a. Map goat habitats from a review of historic distribution and local expertise of all mountain goat sub-herds.
b. Conduct surveys to determine locations and quality of suitable goat habitats.
c. Develop a GIS model predicting quality and locations of suitable mountain goat habitats.
d. Develop cooperative partnerships for mapping suitable goat habitats.

Population Management

Issue Statement: Mountain goat populations are sensitive to over-exploitation because of their low population growth rate and relatively low densities (Cote et al. 2001, Gonzales-Voyer et al. 2001). As such, assessing the status of each mountain goat population annually is necessary to ensure sustainability.

Objective 75: Monitor population demographics of mountain goats at a level where a 20% decline in population size can be detected within 3-years or less.

Strategies:
a. Survey all goat populations annually to estimate minimum population size and recruitment.
b. As a supplemental data source, estimate goat population trends annually through hunter reports.
c. Develop a sightability model to estimate population size from annual surveys.
d. Re-define goat unit boundaries if spatial use patterns of distinct populations are inconsistent with current unit boundaries.

Recreation Management

Issue Statement: In most native mountain goat populations, recovery from population reductions is relatively slow (Cote and Festa-Bianchet 2001). This is the result of the low reproductive potential, extended parental care, low juvenile survival, and older age of sexual maturity in mountain goats. Given these demographic characteristics, the population growth rate of goats is sensitive to exploitation. As a result, harvest levels for mountain goats should be restricted to levels that approximate recruitment and the status of goat populations should be evaluated annually (Cote et al. 2001).

Objective 76: Provide recreational hunting opportunities in individual mountain goat herds where harvest success averages $\geq$50% over a 3-year period, while at the same time goat population size remains stable or increasing.

Strategies:
a. Goat populations will be surveyed annually beginning at least three years prior to being hunted to determine population size, herd composition, and trend.
b. For populations to be hunted, surveys must indicate:
   - Population size of at least 50 goats (Oldenburg 1991).
   - Average production ratio of at least 25 kids: 100 non-kids over a 3-year period.
c. For herds meeting the above criteria, permits shall be issued to limit the goat harvest to 4% of the estimated local population (excluding kids) (Hebert and Turnbull 1977, Kuck 1977, Cote et al. 2001).
d. For each hunted population, nanny harvest will be maintained at or below 30% of the total harvest. This will be accomplished by:
   - Requiring all goat hunters to view an educational video on mountain goat sex identification.
   - Restricting hunting opportunity for populations with excess nanny harvest for three years of a 5-year period.
e. Populations declining due to disease or high parasite loads may still be hunted but harvest generally will be reduced or possibly terminated depending on population size and rate of decline.

Issue Statement: The number of goat applications/permit has steadily increased from 11 in 1992 to 182 in 2001. There is a need for a fair and equitable approach for allocating goat permits while maintaining a quality hunt experience.

Objective 77: Distribute recreational opportunity to as many individuals as possible, compatible with high quality goat hunting experiences and the biological status of goat populations.

Strategies:
a. Allow mountain goat hunting by permit only.*
b. Allow "once-during-a-lifetime" opportunity for mountain goat hunters.*
c. Consider other alternatives to reduce crowding.

*Strategy currently is implemented.

Issue Statement: Mountain goats are intriguing to many people. However, goats are a species that occur in low densities and typically occur in areas far from human disturbances. Nonetheless, some mountain goat populations are visible from roads, but viewing opportunities are limited.

Objective 78: Develop one viewing opportunity for mountain goats.

Strategies:
a. Develop a web-cam viewing opportunity for mountain goats.
b. Develop vehicle tour and education board for mountain goat viewing areas.

Information and Education

Issue Statement: The public is not engaged in the recovery of declining goat populations. The public either is not aware of the status of mountain goats or lacks the necessary information to make informed decisions.

Objective 79: Provide educational information on mountain goats to at least 50,000 people annually.

Strategies:
a. Develop a brochure describing mountain goat ecology and history of Washington's populations and their locations.
b. Develop an educational viewing opportunity and information website.
c. Discuss management of mountain goats at public forums.
d. Develop segment for Wild About Washington video.

Enforcement

Issue Statement: Mountain goats naturally occur as bands of relatively low-density meta-populations. The scattered nature of these bands, plus the marginal status of some specific

mountain goat populations make illegal harvest or harassment a potentially critical factor. To ensure the sustainability of specific sub-populations, and the long-term existence of the entire meta-population, it's important to document all mortalities, and minimize illegal harvest and harassment of mountain goats.

Objective 80: Develop a procedure to account for all mountain goat harvest mortalities.

Strategies:
a. Require reporting of all harvested mountain goats.*
b. Permanently mark all mountain goat mortalities.

* Strategy currently is implemented.

Research

Issue Statement: Mountain goat abundance has declined steadily over the last decade throughout much of their historic range. Little is known about the cause of the decline or the necessary steps to reverse the trend.

Objective 81: Develop a peer-reviewed publication that describes at a minimum, why mountain goat populations are declining, how to reverse the decline, and how to monitor goat populations.

Strategies:
a. Conduct a mountain goat research project investigating the cause of the goat decline.
b. Solicit funding to sustain a five-year research project.
c. Encourage partnerships with interested stakeholders to fund and participate in mountain goat research projects.

VI. LITERATURE CITED

Cote, S. D. and M. Festa-Bianchet. 2001. Reproductive success in female mountain goats: the influence of age and social rank. Animal Behavior

_____, and K. G. Smith. 2001. Compensatory reproduction in harvested mountain goat populations: a word of caution. Wildlife Society Bulletin 29:726-730.

Gonzales-Voyer, A., K. G. Smith, and M. Festa-Bianchet. 2001. Efficiency of aerial censuses of mountain goats. Wildlife Society Bulletin 29:140-144.

Hebert, D. M., and W. G. Turnbull. 1977. A description of southern interior and coastal mountain goat ecotypes in British Columbia. Proceedings of the International Mountain Goat Symposium 1:126-146.

Johnson, R. L. 1983. Mountain goat and mountain sheep of Washington. Washington State Game Department W-88-R. Biological Bulletin No. 18.

Kuck, L. 1977. The impact of hunting on Idaho's Pahsimeroi mountain goat herd. Proceedings of the International Mountain Goat Symposium 1:114-125.

Oldenburg, L. 1991. Species management plan 1991-1995: Moose, sheep, and goat. Idaho Department of Fish and Game.

MOOSE (*Alces alces*)

I. POPULATION STATUS AND TREND

The number of moose in Washington has increased from about 60 in 1972 to 850-1,000 in 2002, corresponding to about a 9.6% annual increase in population size (Poelker 1972, Zender, pers. Commun.). This increase is the result of both increased moose density in prime habitats and colonization of moose into new areas. Today, moose occur in the northeastern counties of Ferry, Pend Oreille, Stevens, and Spokane (Figure 1). Moose are occasionally spotted in Lincoln, Whitman, Okanogan, and Whatcom Counties, and a few dispersing animals have been documented in surrounding areas.

II. RECREATIONAL OPPORTUNITY

Moose hunting in Washington began in 1977 with three permits in the Selkirk Mountains. Since then, moose populations have increased and expanded and the number of permits has increased accordingly. Since 1977, moose hunting has been limited by permit and the demand for moose hunting is high. The number of applications for moose permits has ranged from 1,214–8,623, corresponding to about 63–152 applications/permit (1992–2001 seasons).

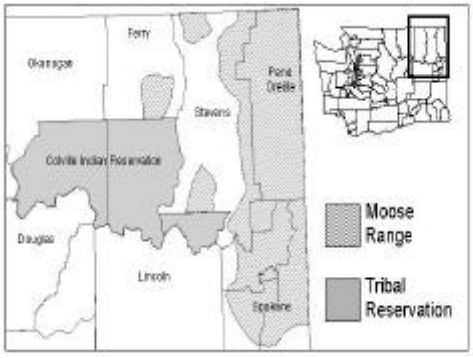


Figure 1. Occupied moose range in Washington, 2002.

Currently, moose hunts are by permit only and, if drawn, it is an once-in-a-lifetime opportunity (except youth-only antlerless hunts). Hunting season dates are October 1 - November 30 and hunters may use any legal equipment. Moose hunts are either “any moose” or “antlerless only”. In “any moose” hunts, the majority of the harvest is adult bulls. Antlerless only hunts are typically associated with population control efforts near suburban areas. Hunters typically see seven moose/day and, as such, harvest success is high (mean = 91%; 1992–2002). All moose hunters are required to report their hunting activities, regardless of whether they harvest a moose or not.

III. DATA COLLECTION

The Department conducts aerial surveys of all moose populations once every 1 to 3-years. Surveys typically are conducted during early winter and data are used to estimate calf recruitment, sex ratio, and trend. In addition to surveys, the Department monitors trends in harvest data, including number of hunters, total harvest, days hunted/kill, harvest success, moose seen while hunting, antler spread (if harvested a bull), and age of harvested moose.

IV. MOOSE MANAGEMENT GOALS

The statewide goals for moose are:

1. Preserve, protect, perpetuate, and manage moose and their habitats to ensure healthy, productive populations.
2. Manage moose for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography.
3. Manage statewide moose populations for a sustained yield.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Habitat Management

Issue Statement: Moose are expanding both in abundance and range in Washington. However, the quantity and quality of moose habitat has not been evaluated or mapped. Therefore, the potential density and range expansion of moose is unknown.

Objective 82: Develop a document that identifies the distribution and quality of moose habitat in Washington State.

Strategies:

a. Conduct literature review on moose habitat requirements.
b. Conduct a survey to assess the quality of moose habitats.
c. Develop a GIS model to predict moose range and the quality of moose habitats.
d. Develop cooperative partnerships to assess the quality of moose habitats.

Population Management

Issue Statement: Currently, the status of moose populations is estimated through aerial surveys that are conducted on a three-year rotation (i.e., all units surveyed once every three years). The efficacy of the data collected to serve as an indicator of population sustainability is unknown and has not been quantified.

Objective 83: Monitor population demographics of moose at a level where a 20% decline in population size can be detected within three years.

Strategies:

a. Conduct helicopter surveys for all moose population annually to estimate minimum abundance, bull:cow ratios, and cow:calf ratios.
b. Develop a sightability correction factor to estimate relative moose density from aerial surveys.
c. Develop an index (e.g., snow track or pellet group) to estimate moose density.

d. As a supplement data source, develop a mechanism to estimate moose population trends through hunter reports and public sightings.

Recreation Management

Issue Statement: The demand for moose hunting opportunity exceeds the allowable harvest for sustainable moose populations. As such, the Department restricts moose harvest to a level compatible with long-term sustainability. In doing so, the Department manages moose harvest as a high quality hunting opportunity, with moderate densities of moose and ample numbers of mature bulls. The result is a relatively high harvest success (mean = 91%) and post-season bull: cow ratios that are favorable for healthy moose populations.

Objective 84: Provide recreational hunting opportunities in individual moose herds where harvest success averages ≥85% over a three year period, while at the same time moose population size remains stable or increasing.

Strategies:
a. Moose populations will be surveyed annually beginning at least two years prior to being hunted to determine size, composition, and trend.
b. Moose harvest will be prescribed as follows:
   - Maintain ≥90% adult bulls in total harvest (Boer and Keppie 1988).
   - Maintain 10-30% antlerless moose in total harvest in areas where moose present a threat to human safety or property damage (Boer and Keppie 1988).
c. Consider liberalizing or restricting moose hunting opportunity as indicated below:

Table 1. Moose harvest guidelines.

	Harvest		
Parameter [a]	**Liberalize**	**Acceptable**	**Restrict**
Average bull:100 cow ratio	>75 bulls	60-75 bulls	<60 bulls
Average calf:100 cow ratio[b]	>50 calves	30-50 calves	<30 calves
Median age of harvested bulls	>6.5 years	4.5-5.5 years	<4.5 years

[a] Averaged over a 3-year period
[b] Modified from Courtois and Lamontagne 1997

Issue Statement: Since 1991, the average number of moose applications/permit was 104 (range = 63–152). Given the high demand for hunting moose, there is a need for a fair and equitable approach for allocating moose permits while maintaining a quality hunt experience.

Objective 85: Distribute recreational opportunity to as many individuals as possible, compatible with high quality moose hunting experiences and the biological status of moose populations.

Strategies:
a. Allow moose hunting by permit only.*
b. Allow "once-during-a-lifetime" opportunity for moose hunters (except youth-only antlerless moose hunts, and auction and raffle hunts).*
c. Consider developing a preference point system consistent with deer and elk systems.

d. Consider other alternatives to reduce crowding.
*Strategy currently is implemented.

Information and Education

Issue Statement: The Department has limited information available for the public on moose ecology, population status, and management. To encourage public involvement in moose, there is a need for additional educational materials.

Objective 86: Develop educational document for moose in Washington.

Strategies:
a. Develop a brochure describing moose ecology and management in Washington.
b. Expand WDFW's website on moose to include basic biology, population statistics, management.

VI. LITERATURE CITED

Boer, A. H., and D. M. Keppie. 1988. Modelling a hunted moose population in New Brunswick. Alces 24:201-217.

Courtois, R., and G. Lamontagne. 1997. Management systems and current status of moose in Quebec. Alces 33:97-114.

Poelker, R. J. 1972. The Shiras moose in Washington. Technical Report. Washington Department of Fish and Wildlife, Olympia, Washington.

BLACK BEAR (*Ursus americanus*)

I. POPULATION STATUS AND TREND

Washington State has an abundant and healthy black bear population. Statewide, there are an estimated 25,000-30,000 bears and regional populations are likely stable to slightly increasing (Washington Dept. of Fish and Wildlife 1997). For management purposes, the state is divided into nine black bear management units (BBMUs) (Fig. 1). Harvest levels vary between BBMU depending on local population dynamics and conditions. To maintain stable bear populations, modifications to harvest levels are made on a three-year rotation. The percentage of females in the total harvest and median ages of males and females are used as indicators of exploitation (Beecham and Rohlman 1994) (Table 1).

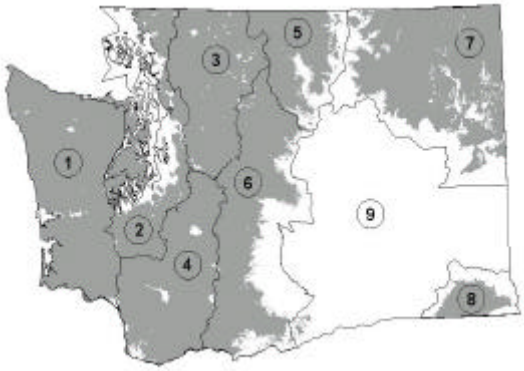


Figure 1. Black bear distribution and black bear management units (BBMU) in Washington, 2002.

II. RECREATIONAL OPPORTUNITY

Black bear seasons have changed considerably over the last 10 years. Washington voters passed Initiative 655 (which banned the use of bait and dogs for hunting black bear) in the November 1996 general election. Therefore, the use of bait and hounds for the hunting of black bear became illegal for the 1997 season. In an effort to mitigate the anticipated decrease in bear harvest, as a result of I-655, 1997 bear seasons were lengthened and the bag limit was increased in some areas. Legislation also was passed that provided the authority to the Fish and Wildlife Commission to reduce costs for black bear transport tags; an effort to increase the number of bear hunters and, therefore, bear harvest. As a result of these efforts, the post I-655 black bear harvest has stabilized similar to previous levels.

Table 1. Statewide black bear harvest, hunter effort and median age information, 1991 - 2000.

								Median Age		
Year	Male	Female	Total	# hunters	Success	Hunter Days	Days per kill	Males	Females	% females
1991	876	503	1,379	10,839	13%	84,771	61	3.5	4.5	36%
1992	921	521	1,442	13,642	11%	98,434	68	4.5	4.5	36%
1993	986	521	1,507	12,179	12%	102,558	68	3.5	5.5	35%
1994	654	419	1,073	11,530	9%	110,872	103	3.5	4.5	39%
1995	850	368	1,218	11,985	10%	102,859	84	3.5	4.5	30%
1996	951	359	1,310	12,868	10%	104,431	80	4.5	5.5	27%
1997	546	298	844	11,060	8%	97,426	115	4.5	5.5	35%
1998	1,157	645	1,802	20,891	9%	216,456	120	4.5	5.5	36%
1999	757	349	1,106	37,033	3%	481,319	435	4.5	5.5	32%
2000	777	371	1,148	37,401	3%	296,849	259	4.0	6.0	32%

III. DATA COLLECTION

No formal surveys are conducted in Washington for black bears. In the recent past, Washington Department of Fish and Wildlife conducted bait station surveys as an index of relative bear abundance. However, an analysis of statistical power indicated that at the level of survey intensity (limited by funding), managers would not be able to detect a change in bear abundance using bait stations (Rice et al. 2001). As such, the survey technique was discontinued. Ideas for future survey efforts are being planned and will likely focus on monitoring adult female survival and capture-recapture via DNA or resight methods.

IV. HUMAN-BEAR CONFLICT

Bears and humans are often in conflict given the distribution of bears in Washington and their adaptability to suburban environments. Approximately 300-600 human-bear interactions are documented annually (Washington Dept. of Fish and Wildlife 2001). There is a tendency to equate levels of human-bear interactions with bear abundance. However, bear nuisance and damage activity may not be a good indicator of population status, but more likely reflects the variability of environmental conditions. For example, in 1996 human-bear complaints were at an all time high, the same year Washington experienced a late spring with poor forage conditions for black bear, followed by a poor fall huckleberry crop.

V. MANAGEMENT

Washington has a unique and challenging situation when it comes to management of our black bear population. Washington is the smallest of the 11 western states, yet has the second highest human population; a population that continues to grow at record levels. Washington also has one of the largest black bear populations in all of the lower 48 states. Given that approximately 75% of the black bear habitat is in federal or private industrial ownership, a large portion of core black bear habitat is relatively secure. This means that the long-term outlook for black bear is generally good.

VI. BLACK BEAR MANAGEMENT GOALS

The statewide goals for black bear are:

1. Preserve, protect, perpetuate, and manage black bear and their habitats to ensure healthy, productive populations.
2. Minimize threats to public safety and property damage from black bears, while at the same time maintaining a sustainable and viable bear population.
3. Manage black bear for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography.
4. Manage statewide black bear populations for a sustained yield.

VII. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Population Management

Population Status

Issue Statement: Managers often use sex and age structure data of harvested bears as an index to population growth (Pelton 2000). However, examining just sex and age structure may provide misleading interpretations (Caughley 1974, Bunnell and Tait 1981, Garshelis 1991, Clark 1999). That is, the age structure of a declining bear population can be the same as the age structure in an increasing population. In addition to this shortcoming, there is often a time lag between when a population begins to decline and when that decline is evident in sex and age structure data (Harris 1984). In some cases, by the time a decline is detected, bear numbers may have been reduced to a point where it could take as long as 15-years to recover the population. However, detecting a decline early can enable managers to make a quicker recovery or retain stability.

Sensitivity analyses of bear populations indicate that adult female and cub survival are the most influential parameters to population growth rates (Clark 1999). As such, managers should focus survey efforts on improving the estimates of these parameters, while at the same time evaluating harvest data to assess long-term trends (Clark 1999).

Objective 87: Monitor population demographics of black bears at a level where a 20% change in population size can be detected within three years or less.

Strategies:

a. Develop a survey method to estimate female and cub survival of bears in BBMUs where declines are suspected (excluding BBMU 9).
b. Estimate population growth using population reconstruction and modeling.
c. Use sex and age ratio's of harvest bears as secondary indicator of population change.

Sources and Sinks

Issue Statement: Black bear population size is not constant throughout all areas of Washington State. Factors that influence bear populations, such as food availability and human-induced mortality, vary from region to region and certain areas of the state may act as bear "source" or "sink" areas. "Sources" are those areas where food availability is relatively high and bear mortality is low. As a result, the area acts as a source population for bears to migrate out of and into surrounding habitats. "Sinks" are those areas where food availability is relatively low and bear mortality is high. As a result, the area acts as a sink where bears that migrate into the area have a low chance of surviving (Clark 1999).

The distribution and effects of source and sink areas are important for managing black bears. The existence of source and sink areas, and the potential effects, has not been investigated in Washington State.

Objective 88: Identify black bear habitats that act as a population source or sink.

Strategies:
a. Evaluate and map food availability in each BBMU.
b. Identify lands where food availability and bear survival are high.
c. In BBMU where population declines are suspected, evaluate bear survival.
d. Identify priority areas where management changes may be necessary.

Recreation Management

Public Opinions
Issue Statement: Public support for hunting black bears is lower than support for hunting several other big game animals (Duda et al. 2002). Recognizing public and hunter attitudes, WDFW faces challenging decisions about balancing hunter opportunities and public safety with public attitudes.

Objective 89: Implement management strategies that are consistent with the biological status of black bear and public attitudes, respectively.

Note: Some of the following strategies correspond to specific objectives within the Plan.

Strategies:
a. Maintain current black bear hunting programs to the extent possible.
b. Provide strategies to mitigate problem bears that correspond to methods supported by the public (see objective 92).
c. Focus bear hunting efforts on those areas and situations that address human safety, protection of pets, livestock and property, and recovery of listed species (see objectives 90, and 92-93).
d. In the annual Status and Trend report, publish the results of strategies implemented under the population objectives and public safety objectives.
e. Conduct a public opinion survey of black bear management by 2007.
f. Make any changes to current bear hunting on a gradual basis to promote public involvement.

Harvest Guidelines
Issue Statement: Hunting is the largest source of mortality for hunted bear populations (Bunnell and Tait 1985, Pelton 2000). Coupled with the low reproductive potential of bears, this makes bear populations especially sensitive to over-exploitation. For that reason, managers use a variety of biological and population trend data to assess the impacts of hunting on bear populations. In Washington, managers have used sex and age data from harvested bears as an indicator of exploitation levels (Washington Dept. of Fish and Wildlife 1997). The premise of this method is based on the vulnerability of different sex and age classes of black bears (Beecham and Rohlman 1994). As ages of harvest bears decline, and percentage of females in the harvested population increases, the exploitation level of the bear population is increasing. A drawback of this method is that sex and age data alone are not necessarily accurate measures of population status (see *Issue Statement for Objective 87*). A supplemental measure of population status is needed to better manage bear populations in Washington.

Objective 90: Provide recreational hunting opportunities to harvest 800–1,200 black bears statewide, while at the same time maintaining a sustainable bear population in each BBMU.

Strategies:

a. Provide black bear hunting opportunities in each BBMU, with focused harvest in areas where public safety, property damage, and pet and livestock depredation are evident.
b. Develop harvest criteria that incorporate survey data from monitoring female and cub survivorship.
c. Until more robust harvest criteria are developed, consider liberalizing or restricting bear hunting opportunity in each BBMU as indicated below:

Table 2. Black bear harvest guidelines.

	Harvest		
Parameter	**Liberalize**	**Acceptable**	**Restrict**
% Females in harvest	< 35%	35-39%	> 39%
Median age of harvested females	> 6 years	5-6 years	< 5 years
Median age of harvested males	> 4 years	2-4 years	< 2 years

Note: Thresholds outlined in strategy "c" above are currently implemented.

Issue Statements:

Impacts to black bear populations and other native wildlife. The harvest guidelines above favor a stable and healthy bear population and are consistent with long-term sustainability. The corresponding bear population should remain at or near current levels and it is unlikely it will result in greater impacts to other wildlife species (i.e., deer and elk) or habitat communities.

Black bear harvest impacts on native species. The public has voiced concern about potential impacts of black bear hunting has on grizzly bears. With the prohibition on the use of dogs and bait for recreational hunting of bears, potential impacts to grizzly bears caused by dogs or bait was greatly reduced. However, there is a need to educate black bear hunters on how to identify and distinguish a black bear from a grizzly bear.

Objective 91: Minimize impacts of black bear hunting on grizzly bears.

Strategies:

a. Provide educational materials to black bear hunters that are hunting in areas with a known grizzly bear population.*
b. Consider conducting agency-hunter contacts during black bear hunting season in areas with a known grizzly bear population.*

* These strategies currently are being conducted.

Public Safety

Issue Statement: A primary objective of WDFW is to protect people from dangerous wildlife, including black bears. While guaranteeing that black bears will never negatively impact people is impossible, the Department does implement activities to reduce human-bear interactions.

Objective 92: Minimize negative human-bear interactions so that the "number of interactions per capita" is constant or declining.

Strategies:
a. Conduct "Living with Wildlife" workshops annually.
b. Distribute educational materials to key entities and locations.
c. Evaluate the efficacy of capture-relocation of problem bears for mitigating conflict.
d. Encourage recreational bear harvest in areas with demonstrated human-bear interactions.
e. Utilize agency kill authority and depredation permits for problem bear incidents.

Timber Damage

Issue Statement: Bear foods are scarce during spring, particularly those with a high nutritional value. Consequently, bears often forage on the sapwood of coniferous trees. During spring, sapwood is one of the few foods available to bears and it has a relatively high sugar content compared to other available foods. Trees with the highest sugar content, hence preferred by bears, are those with high growth rates, such as trees on private industrial timberlands. Bear selection for sapwood is so acute that industrial timberlands can experience damage that exceeds one-third of the trees in a given stand. These damage rates can result in economic losses for landowners. For that reason, private landowners of industrial timberlands seek ways to mitigate tree damage caused by bears.

Objective 93: Reduce annual bear damage to <30 trees/stand* on private industrial timberlands.

Strategies:
a. Provide educational information on how to avoid timber damage by bears.
b. Encourage the use of non-lethal methods, such as capture-relocation or aversive conditioning, for responding to timber damage by bears.
c. Provide focused recreational bear hunting seasons in spring to mitigate timber damage by bears (see objective 94).
d. Issue a bear depredation permit when one of the following criteria is met:
   - $\geq$ 30 trees peeled in a spring and trees are in a clumping pattern within a stand.*
   - $\geq$ 30 trees peeled over an ongoing 3-year period and trees in a clumping pattern within a stand* of precommerically-thinned timber, $\leq$ 30 years of age.
e. Collaborate mitigation efforts with state, federal, and private landowners, particularly efforts associated with Private Lands Wildlife Management Areas.

* Efforts will be made to standardize the definition of a "stand" to account for the frequency of damage per unit area.

Objective 94:* Determine the level of public support for spring black bear hunting in those commercial timber areas that receive damage, and evaluate the feasibility of a spring damage hunt.

* See objective 14 in Chapter 2 for issue statement.

Strategies:

a. Conduct extensive public involvement and education prior to recommending spring black bear hunting designed to reduce commercial timber damage.
b. Develop a fact sheet describing the feasibility of trap and relocation efforts prior to implementing spring seasons.
c. Implement localized spring hunts on a limited basis to determine effectiveness prior to recommending expansion.
d. Retain current black bear timber damage management program using contractors.

Enforcement

Issue Statement: In several Asian countries, gall bladders of native Asian bear species are used for food or medicinal purposes (Williamson 2001). The high demand for bear gall has resulted in severe over-exploitation, in both Asiatic and brown bear. This situation has placed greater pressure on North American bears to supply the exorbitant demand for gall bladders. To protect Washington's black bears from this type of commercialization, laws were established to make it illegal to trade, barter, buy, or sell any bear parts. However, the demand for bear gall is so high, that several states have found commercialized poaching rings that specialize in black bears only. Given the economic incentives for poaching bears for galls and the history of offenses in numerous states, it's important to develop a long-term program to assess this form of illegal activity.

Objective 95: Develop a long-term monitoring plan for assessing the level of illegal trading of bear gall bladders.

Strategies:

a. Develop protocols to determine the prevalence of hunters that illegally sell the gall bladders from bears they harvest.
b. Assess the level of poaching by monitoring radio marked bears.
c. Use under cover enforcement operations to prevent over exploitation of black bears on public lands.
d. As opportunities occur, consider incorporating other methods to assess illegal take of black bears.

Habitat Management

Issue Statement: Black bear distribution and habitat use are influenced by a variety of environmental and human factors. It's important to understand and predict how these factors influence bears to better manage bear populations for sustainable harvest, as well as minimizing negative human-bear interactions.

Objective 96: Develop a document and map identifying core habitat areas for black bears.

Strategies:

a. Delineate core habitat areas for black bears using regional staff expertise.
b. Expand habitat preference results from 2001 black bear study final report to entire state.
c. Work cooperatively with state, federal, tribal, and private entities to develop relative habitat use probability model for black bears.

VIII. LITERATURE CITED

Beecham, J. J, and J. Rohlman. 1994. A shadow in the forest: Idaho's black bear. University of Idaho Press, Moscow, Idaho, USA.

Bunnell, F. L., and D. E. N. Tait. 1980. Bears in models and in reality–implications to management. International Conference Bear Research and Management 4:15-23.

_____, and _____. 1981. Population dynamics of bears – implications. Pages 75-98 in C. W. Fowler and T. D. Smith, Eds. Dynamics of large mammal populations. John Wiley and Sons, New York, New York, USA.

Caughley, G. 1974. Interpretation of age ratios. Journal of Wildlife Management 38:557-562.

Clark, J. D. 1999. Black bear population dynamics in the Southeast: some new perspectives on some old problems. Eastern Workshop of Black Bear Research and Management 15:97-115.

Duda, M. D., P. E. De Michele, M. Jones, W. Testerman, C. Zurawski, J. Dehoff, A. Lanier, S. J. Bissell, P. Wang, and J. B. Herrick. 2002. Washington residents' opinions on and attitudes toward hunting and game species management. Harrisonburg, Virginia, USA.

Garshelis, D. L. 1991. Monitoring effects of harvest on black bear populations in North America: A review and evaluation of techniques. Eastern Workshop of Black Bear Research and Management 10:120-144.

Harris, R. B. 1984. Harvest age structure as an indicator of grizzly bear population status. Thesis, University of Montana, Missoula, Montana, USA.

Pelton, M. R. 2000. Black Bear. Pages 389-408 *in* Demarais, S. and P. R. Krausman, Eds. Ecology and management of large mammals in North America. Prentice Hall, Upper Saddle River, New Jersey, USA.

Washington Department of Fish and Wildlife. 1997. Washington State management plan for black bear. Wildlife Management Program, Washington Department of Fish and Wildlife, Olympia, Washington, USA.

_____. 2001. 2001 Game status and trend report. Wildlife Program, Washington Department of Fish and Wildlife, Olympia, Washington, USA.

Williamson, D. F. 2001. In the black: Status, management, and trade of the American black bear (Ursus americanus) in North America. TRAFFIC North America, Washington D.C., USA.: World Wildlife Fund.

COUGAR (*Puma concolor*)

I. POPULATION STATUS AND TREND

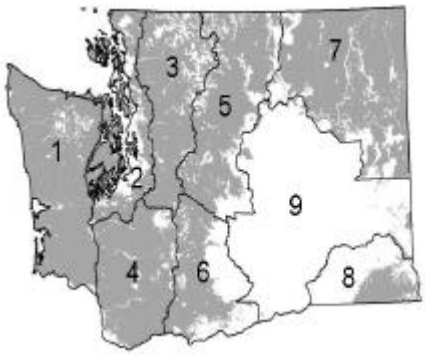


Figure 1. Distribution of cougars (gray) and cougar management units (CMUs) (numbers) in Washington.

Cougar occur throughout most of the forested regions of Washington State, encompassing approximately 88,497 km^2 or 51% of the state (Figure 1). No reliable estimate of cougar abundance is available for Washington. However, two techniques have been used to provide an approximate range of statewide cougar abundance. First, a rough estimate from population reconstruction indicates that the minimum number of cougars in Washington may be around 900 animals. However, this estimate is an under-estimate because it is based on harvested animals only and harvest methods have changed within the last 10 years. Second, a rough estimate based on extrapolation across the state with the highest cougar density reported in the literature indicates that the maximum number of cougars in Washington may be around 4,100 animals. Again, this estimate is probably an over-estimate because it is based on the unrealistic assumption that all of Washington supports a cougar density equal to the highest reported for North America. A more realistic estimate of statewide cougar abundance is about 2,600 animals. This level represents the average density for cougars in North America, and is consistent with quantitative estimates of cougar abundance in Washington that was generated in 1995. For management purposes, the state is divided into nine cougar management units (CMUs)(Figure 1).

Cougars generally are shy, secretive animals and occur throughout a variety of habitat types. Because of their reclusive nature, few people actually encounter a cougar in the wild or have an opportunity to harvest one. As a result, cougar populations can be fairly resilient to moderate-heavy exploitation. This point was demonstrated during the bounty seasons of the early 1900s, when cougar populations persisted during years of widespread persecution.

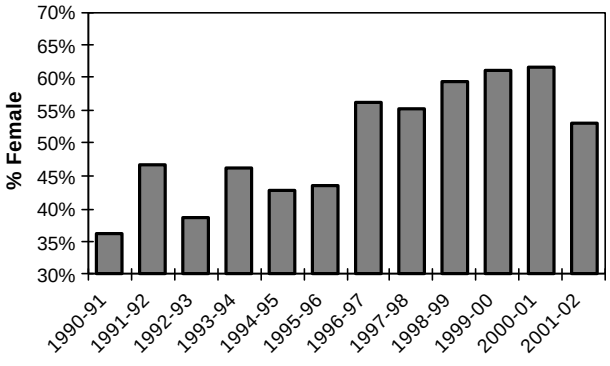


Figure 2. Percent female in statewide cougar harvest, 1990-2002, Washington.

Cougar populations and management emphasis have visibly changed during the past 10 years in Washington State. From 1987 to 1996, cougar harvest was conservative and was controlled by permit only hunting. The majority of the cougars harvested were done so with the aid of dogs. As a result, hunters tended to be selective, harvesting mostly males (Fig. 2)

and older aged animals (Fig. 3). In 1996, Voter Initiative 655 banned the use of dogs for recreational cougar hunting and cougar harvest changed dramatically. Since 1996, the majority of cougars were harvested either as opportunistic encounters by deer-elk hunters and cougars, or using tracking and calling techniques. These harvest methods are not as selective as using dogs. Since 1996, hunters harvested more females (Fig. 2) and younger cougars (Fig. 4).

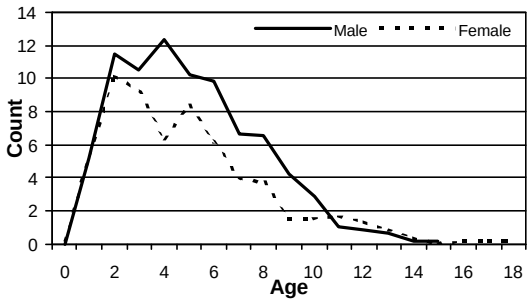


Figure 3. Age structure of harvested cougar using selective harvest methods, 1990-1995, Washington.

The changes in harvest vulnerability for specific sex and age classes of cougars have important implications for cougar populations. Since 1996, the shift to harvesting more females and younger animals (as well as more total animals) likely is causing the statewide cougar population to decline. This decline is supported by analyses of cougar harvest trends, sex and age ratio data from harvested cougar, and population modeling. However, depending on the population objectives for cougars in each CMU, a declining cougar population is not necessarily a reason for concern.

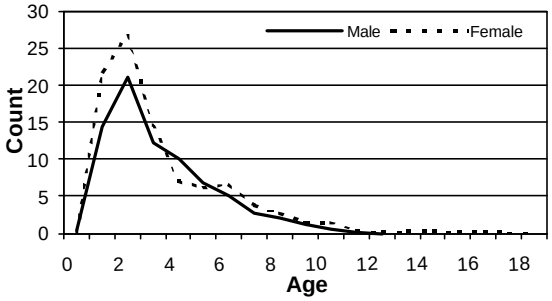


Figure 4. Age structure of harvested cougar using non-selective harvest methods, 1996-2001, Washington.

Since 1996, WDFW has recorded information on human-cougar interactions. Of particular concern is the increasing trend in human safety incidents, and pet and livestock depredations. Recognizing the widespread scope of the issue and its importance to cougars and people in the future, current cougar management goals include maintaining sustainable cougar populations and reducing human-cougar interactions. In some cases, reducing cougar populations to a lower, but sustainable level may help achieve both of these goals.

II. RECREATIONAL OPPORTUNITY

Cougar were classified as a bounty animal in Washington State from 1935-1960. They were reclassified as a predator from 1961-1965, and again as a game animal from 1966-present (Figure 5). The number of hunters purchasing a cougar tag has increased in Washington, largely an artifact of changes in license cost, license structure, bag limits, and season length. As a result of the season structure changes, the number of recreational days open to cougar hunting has increased from a low of 30 days in 1996 to a high of 228 days in 1999. This has, in part, resulted in an increase in the number of cougars harvested annually.

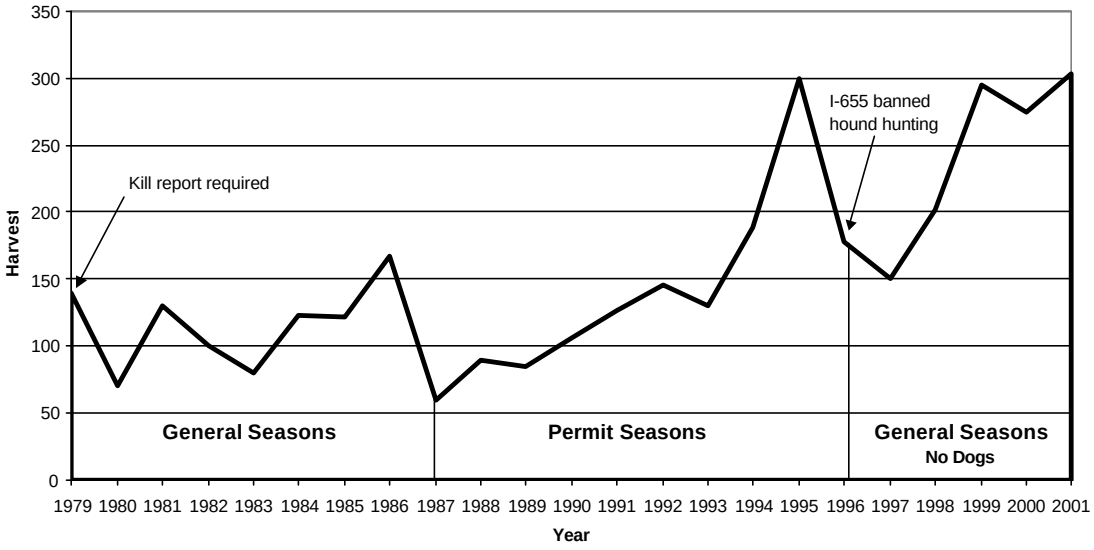


Figure 5. Trends in cougar season structure and harvest in Washington, 1979-2001.

III. DATA COLLECTION

The majority of data collected on cougar is from harvested animals, as no formal surveys are conducted. A mandatory carcass check is required for all harvested cougars, where data samples are collected including; kill date and location, sex, age (from tooth analysis), physical condition, weight, DNA (via tissue sample), and hunter information. From these data the Department monitors kill date and location, total kill, and sex and age composition of the total harvest. In addition, age and sex data are used to develop population size estimates using population reconstruction and modeling.

IV. COUGAR MANAGEMENT GOALS

The statewide goals for cougar are:

1. Preserve, protect, perpetuate, and manage cougar and their habitats to ensure healthy, productive populations.
2. Minimize threats to public safety and private property from cougars.
3. Manage cougar for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography.
4. Manage statewide cougar populations for a sustained yield.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Population Management

Population Objectives

Issue Statement: A fundamental goal of WDFW is to preserve, protect, and perpetuate wildlife populations and their habitats to ensure healthy, productive populations. The starting point for achieving this goal is reliable information on the status of wildlife populations and the potential impacts of particular management actions, such as hunting. Given a variety of limitations, the accuracy and precision of the biological data to assess populations are often lower than biologists would prefer. In these situations, management decisions favor a conservative approach, to reduce the probability of causing significant negative impacts to the wildlife resource.

The only exception to this conservative management approach is for cougar populations in areas with concerns for human safety and protection of property. In these areas, cougar populations are managed to reduce threats to human safety and property damage.

Objective 97: Manage cougar populations within each CMU as indicated in Table 1.

Table 1. Cougar population objectives for each CMU.

CMU		Objective
1	Coastal	Maintain a stable cougar population
2	Puget Sound	Reduce* cougar population to enhance public safety and protection of property
3	North Cascades	Maintain a stable cougar population
4	South Cascades	Maintain a stable cougar population
5	East Cascades North	Reduce* cougar population to enhance public safety and protection of property
6	East Cascades South	Maintain a stable cougar population
7	Northeastern	Reduce* cougar population to enhance public safety and protection of property
8	Blue Mountains	Maintain a stable cougar population
9	Columbia Basin	Unsustainable; not considered suitable cougar habitat

* Implement cougar population reductions over a 3-year period and monitor annually.

Strategy:

a. For each CMU, implement a female harvest guideline that corresponds to a stable and sustainable cougar population, or a reduced and sustainable cougar population, depending on the objective.

Impacts:

Prey impacts on cougar. It is unlikely that cougar populations will be negatively impacted by management strategies for deer, elk, and other prey species. The current population levels for deer and elk populations are compatible with the cougar population objectives for each CMU.

Cougar impacts on prey. The cougar population objectives may impact some prey species. As a result of a lower harvest level of female cougar in some CMUs (Objective 102), cougar populations are expected to stabilize and may increase in some local areas. Any local increases in cougars will result in more predation by cougar on ungulates (primarily deer and elk).

However, if there is an increase in the predation rate, it's unknown whether the increase would be additive (additional prey killed by cougars causing total prey mortality to increase) or compensatory (as predation by cougars increases, another prey mortality source decreases, so total mortality remains constant), or whether the net result would be large enough to detect. While there is evidence that cougar populations can impact a prey population's growth rate, this is typically associated with a small, isolated prey population or a prey population that suffers from other environmental stressors.

Some hunters voiced concerns about the impacts of cougar predation on deer and elk herds. The primary prey species for cougars are deer and elk, and in some cases cougar populations can influence the growth rates of deer and elk populations. Increased cougar harvest is a management action that can be used to increase deer or elk populations. When Washington citizens were asked about their attitudes about managing cougars to increase deer and elk populations, support was low (Fig. 6). Recognizing the role of cougars in the ecosystem and public attitudes, WDFW does not put emphasis on increasing deer and elk herds as a management objective for cougar. However, cougar management objectives and strategies do include some flexibility to address the recovery of low prey populations. In these situations, local cougar populations can be managed to enhance recovery efforts of prey species as long as the total cougar harvest within the respective CMU stays within the female harvest guidelines in Table 2.

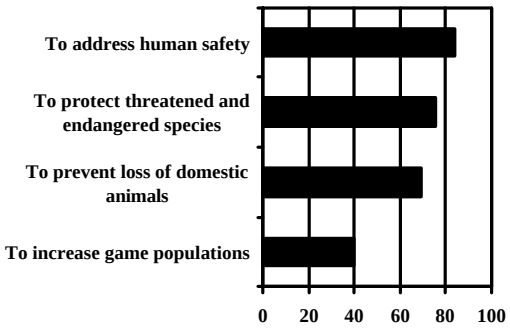


Figure 6. During a general public survey, the percent of respondents that supported reducing predator numbers for specific purposes (Duda et al. 2002).

Population Status

Issue Statement: Historically, trends in sex ratios and ages of harvested cougar were used to evaluate the impact of cougar harvest on long-term sustainability. However, trend analyses are only useful when the parameters being monitored are proven to be valid indicators of population status, and when the collection methods are constant overtime (Caughley 1977). Today, neither of these two requirements have been satisfied for cougars in Washington. The lack of a valid population indicator, coupled with limited biological data, results in many uncertainties about cougar populations in Washington, including:

- The number of cougars in each CMU.
- The trend in cougar population size.
- The rate of population increase or decrease.
- The age and sex structure of the living cougar population.
- Cougar population responses to harvest.
- Age and sex specific survival rates.
- The effects of hunter harvest and how that relates to natural mortality.

Given these uncertainties, there is a critical need for the collection of accurate and precise biological data on cougar populations, and the development of a robust population indicator.

Objective 98: For each CMU, monitor population demographics of cougar at a level where a significant change in population size can be detected within three years or less.

Strategies:
a. To ensure population sustainability, mark and monitor cougars in CMUs where the objective is to reduce the cougar population.
b. Estimate cougar population size using data from marked cougar, capture-recapture experiments, and population modeling.
c. Develop inventory and monitoring protocols for cougar.
d. Evaluate the utility of age structure and sex ratio as indicators of relative population size.
e. Estimate the impacts of harvest on cougar populations through modeling.

Predator-prey dynamics
Issue Statement: Cougar populations exist within a complex balance between prey availability, habitat quality and quantity, social behaviors, dispersal, natural mortality, and human-induced mortality and disturbance. Of these, the relationship between cougars and ungulates is central to cougar population dynamics. Cougars are effective and efficient predators and average about one deer kill (or deer equivalent) every 10 days (Ackerman et al. 1986). This has important implications when considering an ungulate population's ability to support cougars and the impacts of cougars on ungulate populations. The intricate details of the predator-prey relationship are critical for managing cougars and several questions remain, including: how carry capacity for cougars change as ungulate densities fluctuate, the impacts to ungulate populations when cougar abundance is high or low, the role of habitat quality, fragmentation, and connective corridors on the cougar-ungulate relationship. By understanding these relationships wildlife managers will be able to manage cougars with greater scientific certainty.

Objective 99: Develop a report that describes at least one component of the cougar-ungulate relationship.

Strategies:
a. Investigate the impacts of changing white-tailed deer availability on cougar.
b. Develop statewide models investigating the correlation between deer and elk abundance and cougar population dynamics.

Sources and Sinks
Issue Statement: Cougar population size is not constant throughout all areas of Washington State. Factors that influence cougar populations, such as prey densities and human-induced mortality, vary from region to region and certain areas of the state may act as cougar "source" or "sink" areas. "Sources" are those areas where prey densities are relatively high and cougar mortality is low. As a result, the area acts as a source population for cougars to migrate out of and into surrounding habitats (Lindzey et al. 1988, Spreadbury et al. 1996, Spencer et al. 2001). "Sinks" are those areas where prey densities are relatively low and cougar mortality is high. As a result,

the area acts as a sink where cougars that migrate into the area have a low chance of surviving (Clark 1999, Logan and Sweanor 2001).

The distribution and effects of source and sink areas are important for managing cougars, particularly if they are counter to the population objectives for the surrounding area. The existence of source and sink areas, and the potential effects, have not been investigated in Washington State.

Objective 100: Identify cougar habitats that act as a population source or sink.

Strategies:
a. Evaluate and map relative prey densities for key CMUs.
b. Identify key lands where prey numbers and female survival are high.
c. Evaluate cougar survival rates in areas that appear to be problematic or where population objectives are not being met.
d. Identify priority areas where management changes may be necessary.

Recreational Opportunity

Public Opinions

Issue Statement: Public support for hunting cougars is lower than support for hunting several other big game animals (Duda et al. 2002). Recognizing public and hunter attitudes, WDFW faces challenging decisions about balancing hunter opportunities and public safety with public attitudes.

Objective 101: Implement management strategies that are consistent with the biological status of cougars and public attitudes, respectively.

Note: Some of the following strategies correspond to other objectives within the Plan and are noted as such.

Strategies:
a. Implement a public education program on cougar management and public safety (see objective 103).
b. Provide strategies to mitigate problem cougars that correspond to methods supported by the public (see objective 103 and 105).
c. Focus cougar hunting efforts to those areas and situations that address human safety, protection of pets and livestock, and recovery of listed species (see objective 102).
d. In the annual Status and Trend Report, publish the results of strategies implemented under the population objectives and public safety objectives.
e. Conduct a public opinion survey of cougar management by 2007.

Harvest Guidelines

Issue Statement: In general, cougars are managed to protect human safety and property, and provide recreational hunting opportunities, while at the same time ensuring long-term sustainability. To accomplish this cougars are managed geographically in nine CMUs and the management needs vary based on the biological and public safety issues in each CMU.

To enhance this type of management system, harvest guidelines for female cougars were established for each CMU (Ross and Jalkotzy 1996). These harvest guidelines were developed using a combination of three quantitative methods: 1) by evaluating data on past harvest and age-sex structure of harvested cougar, 2) developing a population reconstruction model, and 3) developing a science based population growth model to evaluate the impacts of harvest on cougar populations. For CMUs where the objective is to reduce the cougar population, the guideline corresponds to a female harvest necessary to gradually reduce the population over 3-years. For the remaining CMUs, the guidelines correspond to a female harvest necessary to achieve a stable and sustainable cougar population at current levels (Ross and Jalkotzy 1996, Logan and Sweanor 2000).

Objective 102: Provide recreational opportunities to target the harvest of 111 female cougars statewide, while at the same time maintaining a sustainable cougar population in each cougar management unit (excluding CMU 2 and 9).

Strategies:

a. Establish recreational hunting seasons that target the harvest guidelines identified in Table 2.
b. Update harvest guidelines every three years, corresponding to the three year hunting season package.
c. Provide educational materials to all public safety cougar removal participants to minimize interactions with lynx.

Table 2. Female cougar harvest guidelines [a] by Cougar Management Unit (CMU).

CMU	Objective	Female Harvest Guideline	Average Female Harvest 1999-2001
1. Coastal	Stable	10	12
2. Puget Sound	Reduce	No limit	11
3. North Cascades	Stable	10	9
4. South Cascades	Stable	7	8
5. East Cascades North	Reduce	32	32
6. East Cascades South	Stable	4	6
7. Northeastern	Reduce	40	66
8. Blue Mountains	Stable	8	16
9. Columbia Basin	Unsustainable	No limit	1
Statewide		**111**	**161**

[a] Guidelines are based on current biological information and harvest levels during the past 3-years; guidelines include recreational harvest, depredation kills, and public safety cougar removals. However, guidelines may be exceeded for depredation kills and public safety cougar removals.

Impacts: The public has voiced concern about impacts of cougar hunting on non-target species (i.e., lynx or grizzly bear). With the prohibition on the use of dogs for recreational hunting on all native cats and bears in 1996, potential impacts to non-target species caused by dogs was greatly reduced. The only exception to this is the potential impacts to lynx or grizzly bears during public safety cougar removals, when it's lawful to use dogs to pursue cougar. However, the potential for an encounter between dogs and these listed species is low given the narrow geographical focus of the removals, lynx, and grizzly bears, and the relatively low number of participants. In addition, the timing of the cougar removals (Dec.–Mar.) corresponds to the winter dormancy

period for bears, thereby greatly diminishing any potential impact to grizzly bears. Recognizing that there is some potential to encounter a lynx, specific educational materials that outline steps to minimize impacts to lynx will be provided to all cougar removal participants.

Public Safety

Issue Statement: A primary objective of WDFW is to protect people from dangerous wildlife, including cougars. While guaranteeing that cougars will never negatively impact people is impossible, the Department does implement activities that attempt to minimize human-cougar interactions in areas with a demonstrated history of conflict (Conover 2001).

Objective 103: Minimize cougar-human interactions to fewer than 11 confirmed complaints annually in each Game Management Unit (GMU).

Strategies:
a. Conduct "Living with Wildlife" workshops annually.
b. Distribute educational materials to key entities and locations.
c. Consistent with Agency policy, consider capture-relocation as a tool for managing problem cougar (see Research strategies).
d. Encourage recreational cougar harvest in areas with demonstrated human-cougar interactions.
e. Utilize agency kill authority and depredation permits for problem cougar incidents.
f. Conduct public safety cougar removals in GMUs with demonstrated history of human-cougar interactions.

Impacts: The public safety objectives and strategies are designed to increase public safety in specific areas. Objectives 102 and 103 outline a flexible harvest strategy for areas with a demonstrated history of human-cougar interactions. In addition, objective 103 and 105 include an enhanced educational program and research activities aimed specifically at gaining information to better manage cougars in suburban versus rural environments.

Enforcement

Issue Statement: To properly manage cougar populations for sustainability, prevent over harvest, and achieve public safety goals, it's imperative to know how many animals are lethally removed each year, the kill location, and biological data related to the animal (e.g., age, sex, weight).

Objective 104: Account for all human related cougar mortalities.

Strategies:
a. Require mandatory carcass check of all harvested cougar.*
b. Mark all harvested cougar with a unique pelt identification tag.*
c. Collect biological information from all harvested cougar.*

* These strategies currently are implemented.

Research

Issue Statement: Cougars and people live in close proximity to each other in several areas of the state, making the potential for conflict high. Unfortunately, little information is known about cougar populations, particularly in suburban environments. Understanding cougar dynamics in these environments is critical, as the potential for conflict will likely increase as human populations continue to increase and expand into rural environments (Spencer et al. 2001).

Objective 105: Develop a report that describes the demographic and behavioral differences between cougar populations in suburban versus rural environments.

Strategies:
a. Initiate a cougar research project investigating cougar behavior and populations in rural and suburban environments.
b. Evaluate the efficacy of capture-relocation of problem cougars for mitigating conflict.
c. Investigate the role of corridor design for facilitating or discouraging cougar movements.

Habitat Management

Issue Statement: The density of cougars is not uniform across the landscape. Cougar densities likely vary based on prey abundance, vegetation conditions, human disturbances, and other factors that influence cougar habitat. To properly manage cougar populations (e.g., harvest, public safety), it's important to identify core and peripheral habitats so management decisions can be adjusted accordingly.

Objective 106: Develop a map identifying core habitat areas for cougar.

Strategies:
a. Conduct literature review on cougar habitat requirements.
b. Identify distributions of important prey species.
c. Develop a model identifying relative habitat suitability for cougar.
d. Incorporate data from past and current studies.
e. Identify habitats secured for prey species that also benefit cougar populations.

VI. LITERATURE CITED

Ackerman, B. B., F. G. Lindzey, and T. P. Hemker. 1986. Predictive energetics model for cougar. Pages 333-352 *in* S. D. Miller and D. D. Evertt, eds. Cats of the world: biology, conservation, and management. Natl. Wildl. Fed., Washington D. C., USA.

Caughley, G. 1977. Analysis of vertebrate populations. John Wiley and Sons, New York, New York, USA.

Clark, J. D. 1999. Black bear population dynamics in the Southeast: some new perspectives on some old problems. Eastern Workshop of Black Bear Research and Management 15:97-115.

Conover, M. R. 2001. Resolving human-wildlife conflicts: the science of wildlife damage management. Lewis publishers. Boca Raton, Florida, USA.

Duda, M. D., P. E. De Michele, M. Jones, W. Testerman, C. Zurawski, J. Dehoff, A. Lanier, S. J. Bissell, P. Wang, and J. B. Herrick. 2002. Washington residents' opinions on and attitudes toward hunting and game species management. Harrisonburg, Virginia, USA.

Lindzey, F. G., B. B. Ackerman, D. Barnhurst, and T. P. Hemker. 1988. Survival rates of mountain lions in southern Utah. Journal of Wildlife Management 54:664-667.

Logan, K. A., and L. L. Sweanor. 2000. Puma, *in* Ecology and management of large mammals in North America. Editors Demarais, S. and P. R. Krausman. Prentice Hall, New Jersey, USA.

_____, and _____. 2001. Desert puma: evolutionary ecology and conservation of an enduring carnivore. Island Press, Washington D. C. USA.

Ross, P. I., and M. G. Jalkotzy. 1996. The quota system of cougar harvest management in Alberta. Wildlife Society Bulletin 24:490-495.

Spencer, R. D., D. J. Pierce, G. A. Schirato, K. R. Dixon, and C. B. Richards. 2001. Mountain lion home range, dispersal, mortality, and survival in the Western Cascades Mountains of Washington. Final Report. Washington Department of Fish and Wildlife, Olympia, Washington, USA.

Spreadbury, B. R., K. Musil, J. Musil, C. Kaiser, and J. Novak. 1996. Cougar population characteristics in southern British Columbia. Journal of Wildlife Management 60:962-969.

WATERFOWL (Family *Anatidae*)

I. POPULATION STATUS AND TREND

Washington provides wintering habitat for approximately 850,000 ducks, 125,000 geese, and 8,000 swans annually. In addition, the state provides habitat for approximately 160,000 breeding ducks and 50,000 breeding geese each spring and summer. The Pacific Flyway waterfowl population contains almost six million ducks, geese, and swans, and many of these birds pass through the state during fall and spring.

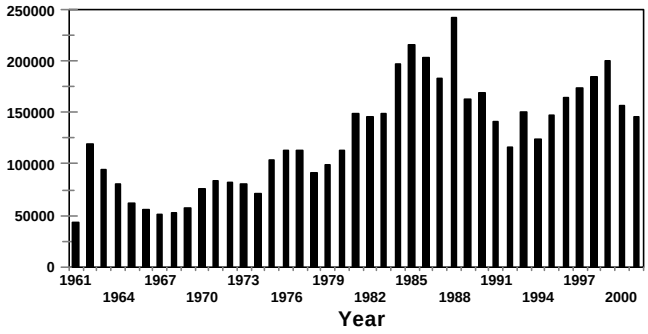


Figure 1. Eastern Washington breeding ducks.

Duck management programs are complex, due to the wide variety of species that occur here. Ducks are classified in the subfamily *Anatinae*, and the 27 species occurring in Washington belong to 4 tribes and 12 genera. The most common duck species in the winter, in the harvest, and during breeding season is the mallard.

Management of Washington's geese and swans is also complex. Geese and swans are classified in the subfamily *Anserinae*, and Washington's 8 species belong to 2 tribes and 4 genera. Canada geese found in Washington include 7 subspecies. The most common goose during the breeding season and in the harvest, is the western Canada goose. The most common swan using Washington wintering habitats is the tundra swan.

II. RECREATIONAL OPPORTUNITY

Waterfowl are hunted from September's youth hunt through special damage hunts in March. Seasons are based on frameworks established by U.S. Fish and Wildlife Service (USFWS), in conjunction with the Pacific Flyway Council (composed of wildlife agencies from the 11 western states). Over 40,000 hunters harvest 500,000 ducks and 70,000 geese each year in Washington, providing over 400,000 days of recreation annually.

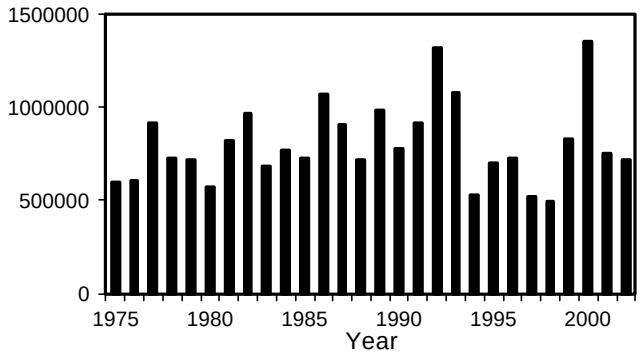


Figure 2. Washington mid-winter waterfowl inventory.

Washington ranks second among the 11 Pacific Flyway states and in the top ten states in the U.S. based on waterfowl harvested and number of hunters.

III. DATA COLLECTION

The Department conducts a variety of activities to estimate the size of the waterfowl population, production, movement, and harvest. Breeding surveys are completed in April and May to measure status of the breeding population; duck production surveys are conducted in July to measure recruitment; migration counts are completed in October-December; and winter index counts in January, completed cooperatively with USFWS. Duck and goose harvest is estimated using a mail questionnaire and special card survey completed in May.

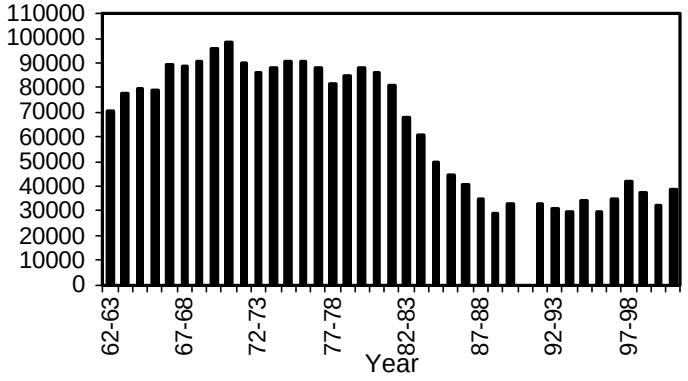


Figure 3. Western Washington waterfowl hunters.

IV. MANAGEMENT

This section describes the management direction of the waterfowl program on a statewide basis. Management of Washington waterfowl is linked to numerous long-term interagency and international management programs. Although the USFWS has nationwide management authority for migratory birds, effective management of these resources depends on established cooperative programs developed through the Pacific Flyway Council and North American Waterfowl Management Plan (NAWMP) Joint Ventures. Goals and objectives described in this plan follow interagency and other cooperative planning efforts. Strategies identified in this plan will guide work plan activities and priorities, and must be accomplished to meet the goals and objectives.

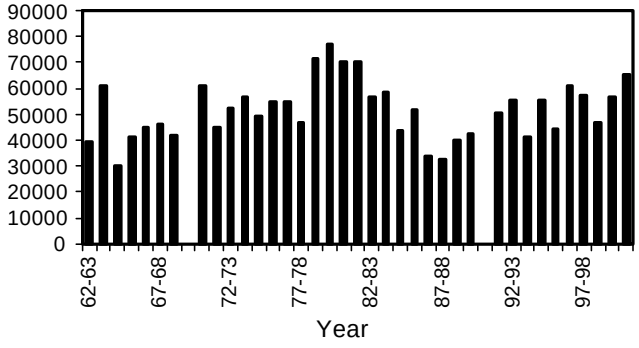


Figure 4. Washington Canada goose harvest.

V. WATERFOWL MANAGEMENT GOALS

The statewide goals for waterfowl are:

1. Manage statewide populations of waterfowl for a sustained yield consistent with Pacific Flyway management goals.
2. Manage waterfowl for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography.
3. Preserve, protect, perpetuate, and manage waterfowl and their habitats to ensure healthy, productive populations.

VI. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Habitat Management

Issue Statement: Wetlands and other waterfowl habitats are being lost throughout Washington due to development and conversion to other uses.

Objective 107: Quantify and reduce habitat loss to achieve Joint Venture objectives.

Strategies:

a. Update or develop habitat management guidelines and map recent habitat losses by 2008.
b. Provide resource information to other agencies and organizations to influence land use decisions (ongoing).
c. In cooperation with other agencies, track critical habitat status and trends (e.g., freshwater wetlands) (ongoing).

Objective 108: Provide funding through state migratory bird stamp/print revenues and the Washington Wildlife and Recreation Program to protect/enhance 1000 acres of new habitat annually for all migratory birds. This acreage target was selected based on past annual accomplishments of the migratory bird stamp/print program.

Strategies:

a. Determine habitat protection and enhancement needs considering Joint Venture plans, literature, and regional expertise.
b. Solicit project proposals from regional staff and external organizations.
c. Develop a stamp/print expenditure plan before the start of each new biennium, using an evaluation team from a statewide cross-section of Department experts.
d. Provide emphasis on projects to increase waterfowl recruitment in eastern Washington, wintering habitat and access in western Washington.
e. When allocating migratory bird stamp funds, consider fund allocation goals presented to the Legislature when the program was established:
   - Habitat acquisition 48%
   - Enhancement of wildlife areas 25%
   - Project administration 18%
   - Food plots on private lands 9%

f. Monitor effectiveness of habitat projects through focused evaluation projects before and after implementation.

Objective 109: Interact with other agencies and organizations to leverage migratory bird stamp funding by at least 100% annually. This percentage target was selected based on past annual accomplishments of the migratory bird stamp/print program.

Strategies:
a. Participate in organizations designed to deliver habitat improvements via multi-organization partnerships (e.g., Pacific Coast Joint Venture, Intermountain West Joint Venture).
b. Seek outside funding sources to leverage state revenues, through habitat improvement grants (e.g., National Coast Wetlands Grant, North American Wetlands Conservation Act).

Population Management

Issue Statement: Documentation of population size, movements, and mortality factors is difficult due to the highly migratory nature of waterfowl species.

Objective 110: Manage waterfowl populations consistent with population objectives outlined in Table 1, developed considering NAWMP, Pacific Flyway Council, and Joint Venture plans.

Table 1. Waterfowl population objectives (3-yr averages, unless noted).

Species / subsp. / pop.	Area	Current Index (2002)	Population Objective	Measure
Mallard	N. America	7.5 million (annual)	8.7 million (annual)	breeding index
Pintail	N. America	1.8 million (annual)	6.3 million (annual)	breeding index
Western Canada goose	W. Wash.	1,705	1,500	nest index
Western Canada goose	E. Wash.	2,340	2,000	nest index
Cackling Canada goose	Flyway	166,986	250,000	breeding index
Dusky Canada goose	Flyway	16,665	16,000	winter index
Canada goose	L. Col. R. / W.V.	137,010 (annual)	reduce 133K 107K	winter index
Wrangel Island snow goose	Skagit/Fraser	54,354	35,000	winter index
Wrangel Island snow goose	Flyway	103,000	120,000	spring index
Black brant	Flyway	132,177	150,000	winter index
Black brant	Wash. Bays	5,256	13,000	winter index
Western High Arctic brant	Skagit/Fraser	7,255	12,000	winter index
White-fronted goose	Flyway	381,843	300,000	breeding index
Tundra swan	Flyway	78,541	60,000	winter index
Trumpeter swan	Flyway	17,551 (every 5 yr.)	13,000 (every 5 yr.)	breeding index

Strategies:
a. Monitor annual status and trends of waterfowl populations through coordinated surveys with other agencies, including USFWS, flyway states, and Puget Sound Action Team (PSAT).
b. Work with other agencies to improve estimates of waterfowl in other areas of the flyway important to Washington, by 2004.
c. Provide ongoing training for new observers in waterfowl population estimation techniques.
d. Evaluate surveys to optimize accuracy and precision, including review of current literature and peer review, by 2004.

Objective 111: Maintain regional populations in accordance with Joint Venture population objectives.

Strategies:
a. Evaluate needs for modifying waterfowl distribution in major concentration areas every five years.
b. Evaluate needs for game reserves and closure areas near other habitat components every five years.
c. Annually publish results in game status reports.

Objective 112: Document distribution, movements, and survival in accordance with flyway management goals.

Strategies:
a. Band a minimum of 500 mallards each year to provide survival estimates.
b. Participate in annual dusky Canada goose banding and observation programs to estimate distribution, survival, abundance, and derivation of harvest.
c. Conduct focused banding emphasis on select species (e.g., harlequins-2008, seaducks-2002, lesser Canada geese-2003, dark Canada geese-ongoing, and western Canada geese-annually).

Objective 113: Minimize mortality due to disease and contaminants.

Strategies:
a. Conduct surveillance monitoring to identify sources of disease and contaminants associated with mortality events (e.g., lead shot mortalities of swans in Whatcom County) (ongoing).
b. In cooperation with other management agencies, (e.g., National Wildlife Health Research Center, USFWS) take corrective action to minimize exposure to disease and contaminant sources (ongoing).

Recreation Management

Issue Statement: Federal harvest management strategies are not specific to Washington duck populations, although states are given more flexibility in developing goose harvest management strategies.

Objective 114: Increase accuracy of surveys to measure harvest, number of hunters, and effort, accurate to ±10% at the 90% CI for each management unit.

Strategies:
a. Participate in federal Harvest Information Program (HIP) for migratory birds.
b. Provide supplemental estimates to determine regional differences in harvest (e.g., hunter questionnaire, daily card survey, snow goose harvest reports, brant color composition).

Objective 115: Continue current policies to maximize duck hunting recreation consistent with USFWS Adaptive Harvest Management (AHM) regulation packages, considering duck availability during fall and winter.

Strategies:

a. Establish regulations to maximize effective season days and bag limits, locating most season days later in the framework period:

Table 2. AHM Regulation Packages and Washington Season Timing.

Regulation package	EASTERN WASHINGTON Days	Limit total/mall/ mall	Season Timing*	WESTERN WASHINGTON Days	Limit total/mall/ mall	Season Timing*
Liberal	107	7/7/2	mid-Oct. thru late Jan.	107	7/7/2	mid-Oct. thru late Jan.
Moderate	93	7/5/2	mid-late Oct. – 9 days; remainder early-Nov. thru late-Jan.	86	7/5/2	mid-late Oct. – 9 days; remainder mid-Nov. thru late-Jan.
Restrictive	67	4/3/1	mid-late Oct. – 9 days; remainder mid-Nov. thru mid-Jan.	60	4/3/1	mid-late Oct. – 9 days; remainder mid-Nov. thru early-Jan.
Very Restrictive	45	4/3/1	mid-Nov. thru early Dec.; late Dec. thru mid-Jan.	38	4/3/1	mid-Nov. thru early Dec.; late Dec. thru early-Jan.

* USFWS rules on duck season timing:
1. Washington zones (2) – E. Washington and W. Washington
2. Season dates must be the same within each zone
3. Seasons may only be split into 2 segments
4. Youth days in addition to above days, except for liberal package

b. Assist in refining USFWS duck harvest management programs to reflect regional population differences (e.g., western mallards) by 2003.

c. Maintain state harvest restrictions, in additional to federal frameworks, on waterfowl species of management concern in Washington (e.g., harlequin ducks, scoters), depending on population status.

Objective 116: Maximize goose hunting recreation consistent with Pacific Flyway Council plans, considering goose availability during fall and winter.

Strategies:

a. Continue to establish regulations to follow flyway and state harvest thresholds (see Table 1 for current population indexes).

Table 3. Flyway and State Harvest Thresholds (3-yr. averages unless noted)

Goose	Area	Flyway Harvest Thresholds	Additional WDFW Harvest Thresholds	Measure
Western Canada goose	W. Wash.	Restriction level: 800 Liberalization level: 1,500	<800: reduce days/limit <1,500: eliminate Sept. season	nest index
Western Canada goose	E. Wash.	Restriction level: 1,300 Liberalization level: 2,000	<1,300: reduce days/limit <2,000: eliminate Sept. season	nest index
Dusky Canada goose	Flyway	Closure level: 6,500 Restrict level 1: 6.5-8K = 70 quota Restrict level 2: 8-16K = 85 quota Liberalization level: 16,000	>85 quota: increase limit/days	winter index
Cackling Canada goose	Flyway	Closure level: 80,000 Reopening level: 110,000	None	nest index
Wrangel Island snow goose	Flyway	No closure level Liberalization level: 120,000	<120,000: Skagit end date Jan.8	spring pop.

	Skagit	None	Closure level: 30,000 / 3 yr. <10% juv. Reopening level: 35,000	winter index + % juveniles
Brant	Flyway	Closure level: 90,000 Restrict level 1: 90-110K Restrict level 2: 110-135K Liberalization level: >135K	None	winter index
	Skagit	None	Closure level: 6,000 (annual)	winter index
	Others	None	Closure level: 1,000	winter index
White-fronted goose	Flyway	Closure level: 80,000 Reopening level: 110,000	None	nest index

b. Utilize recreational harvest as the primary method to address depredating / nuisance goose populations above management objectives (e.g., implement Pacific Flyway SW Wash. / NW Oregon Goose Depredation Control Plan).

Objective 117: Distribute harvest evenly over public hunting areas.

Strategies:
a. Evaluate needs for modifying waterfowl distribution in one of the six major harvest areas each year.
b. Evaluate and establish game reserves and waterfowl closures every five years to maximize harvest opportunity.
c. Develop map of reserves and closures and some measure of harvest or use in surrounding areas by 2005.

Objective 118: Maintain hunter numbers between 35,000-45,000 and recreational use days between 300,000-500,000, consistent with population objectives.

Strategies:
a. Periodically (e.g., every three years) survey hunter opinion to determine and recommend optimal season structures within biological constraints, to reduce the percentage of hunters who are very dissatisfied with waterfowl hunting to less than 15%.
b. Work with USFWS to simplify hunting regulations and minimize annual hunting regulation changes.
c. To reduce confusion, minimize closed periods within seasons, maximize overlap between duck and goose seasons, and reduce the number of zones with different season structures.
d. Provide special opportunity for youth by providing special recreational opportunities separate from regular seasons (e.g., youth hunts two weeks before regular season opener).
e. Modify regulations to reduce crowding and increase hunt quality on wildlife areas (e.g., shell limits, limited entry, established blind sites, limited open days), without reducing total use days.
f. Utilize habitat funding in combined programs to provide hunter access to private lands with emphasis in western Washington.
g. Work with local governments to maintain opportunity in traditional hunting areas, minimizing or finding alternatives to no shooting zones.
h. Maintain diversity of recreational hunting and viewing opportunities.

Research

Issue Statement: Additional information is needed to manage populations and harvest more effectively.

Objective 119: Generate or support at least one publication every year regarding waterfowl research or management.

Strategies:
a. Support and/or conduct research investigating limiting factors influencing duck recruitment.
b. Support and/or conduct research investigating factors related to waterfowl wintering distribution and carrying capacity.
c. Support and/or conduct research investigating duck survival.
d. Support and/or conduct research investigating genetic relationships of goose subspecies/populations.
e. Support and/or conduct research investigating goose distribution and survival.
f. Develop current list of research needs to guide additional research emphasis.

Information and Education Goal

Issue Statement: Members of the general public and recreational users are sometimes uninformed about management issues and waterfowl hunting opportunities.

Objective 120: Generate at least five information and education products each year to improve transfer of information to public.

Strategies:
a. Increase public awareness through brochures, news releases, internet, and pamphlets (ongoing).
b. Provide materials to assist waterfowl identification in the field by 2003.
c. Provide information to improve hunter proficiency by 2003.
d. Obtain outside review of hunting pamphlet annually to improve clarity (ongoing).
e. Continue to discuss waterfowl population management at public meetings and select sports group forums (ongoing).
f. Develop materials describing waterfowl hunting opportunities in Washington by 2004.

Enforcement Goal

Issue Statement: Compliance with regulations is low in areas where regulations are not enforced at adequate levels, due to inadequate numbers of enforcement personnel.

Objective 121: Ensure a 90% compliance rate for waterfowl hunting regulations (i.e., 90% of hunters checked are in compliance with regulations).

Strategies:

a. Develop annual enforcement priorities to target regulations affecting population status (e.g., dusky Canada goose reporting requirements) and changes in select species bag limits (e.g., pintail).
b. Provide adequate training of enforcement officers in waterfowl identification and regulations.
c. Conduct emphasis patrols to determine nontoxic shot compliance in Skagit and Whatcom counties.

VII. LITERATURE CITED

North American Waterfowl Management Plan, 1998. USFWS, Washington DC.

Pacific Coast and Intermountain West Joint Venture Management Plans, USFWS, Portland, OR.

Pacific Flyway Council Management Plans for Pacific Population of Western Canada Goose, Cackling Canada Goose, Dusky Canada Goose, Wrangel Island Snow Goose, Brant, White-fronted Goose, Tundra Swan, Pacific Coast Population of Trumpeter Swans, USFWS, Portland, OR.

MOURNING DOVE, BAND-TAILED PIGEON, COOT, AND SNIPE

I. POPULATION STATUS AND TREND

Washington provides habitat for a variety of migratory game birds other than waterfowl. This includes mourning doves, band-tailed pigeons, coots, and snipe. Mourning doves and band-tailed pigeons are monitored by cooperative breeding surveys in Washington, which provide indices but not estimates of actual abundance. Coots and snipe population trends are monitored by U.S. Fish and Wildlife Service (USFWS) standardized surveys on breeding areas.

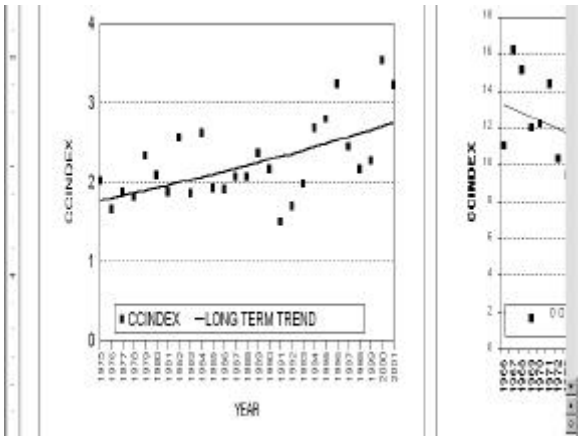


Figure 1. Band-tailed pigeon survey information, Washington, 1975-2001.

II. RECREATIONAL OPPORTUNITY

Mourning doves, hunted during a September season, provide the majority of recreational opportunity for this group of species. Seasons are based on frameworks established by USFWS, in conjunction with the Pacific Flyway Council (composed of wildlife agencies from the 11 western states). Approximately 9,000 hunters harvest 90,000 doves annually in Washington.

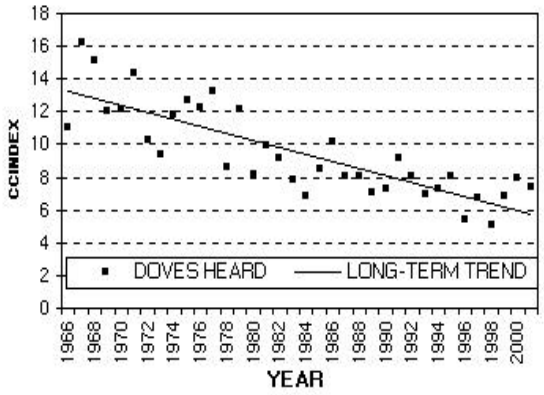


Figure 2. Mourning dove survey information, Washington, 1966-2001.

III. DATA COLLECTION

The Department maintains two surveys to estimate the size of dove and band-tailed pigeon populations. Dove call-count surveys are completed in May and band-tailed pigeon call-count surveys are conducted in June/July. Winter index counts for coots are completed with waterfowl surveys in January, in cooperation with USFWS. Harvest of these species is monitored by a variety of state and USFWS questionnaire surveys.

IV. MOURNING DOVE, BAND-TAILED PIGEON, COOT, AND SNIPE MANAGEMENT GOALS

This section describes the statewide management direction for mourning doves, band-tailed pigeons, coot, and snipe. Management of these species in Washington is accomplished through the Waterfowl Section of WDFW. Although the U.S. Fish and Wildlife Service (USFWS) has nationwide management authority for migratory birds, effective management of these resources depends on established cooperative programs developed through the Pacific Flyway Council. Goals and objectives described in this plan follow interagency and other cooperative planning efforts. Strategies identified in this plan will guide work plan activities and priorities, and must be accomplished to meet the goals and objectives.

The statewide goals for mourning doves, band-tailed pigeons, coots, and snipe are:

1. Manage statewide populations of mourning doves, band-tailed pigeons, coots, and snipe for a sustained yield consistent with Pacific Flyway management goals.
2. Manage mourning doves, band-tailed pigeons, coots, and snipe for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography.
3. Preserve, protect, perpetuate, and manage mourning doves, band-tailed pigeons, coots, and snipe and their habitats to ensure healthy, productive populations.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Habitat Management

Issue Statement: Habitats for mourning doves, band-tailed pigeons, coots, and snipe are being lost throughout Washington due to development and conversion to other uses.

Objective 122: Quantify and reduce habitat loss by developing habitat maps and management guidelines.

Strategies:

a. Provide resource information to other agencies and organizations to influence land use decisions (e.g., WDFW Priority Habitats and Species (PHS) management guidelines for band-tails) (ongoing).
b. In cooperation with other agencies, track critical habitat status and trends (e.g., mineral sites, freshwater wetlands) (ongoing).

Objective 123: Provide funding through state migratory bird stamp/print revenues to protect/enhance 50 acres of habitat annually for doves, pigeons, coots, and snipe.

Strategies:

a. Determine habitat protection and enhancement needs considering literature and regional expertise.
b. Solicit project proposals from regional staff and external organizations.

c. Develop expenditure plan before the start of each new biennium, using an evaluation team from a statewide cross-section of Department experts, to fulfill funding requirements for non-waterfowl migratory birds specified in legislation.
d. Monitor effectiveness of habitat projects through focused evaluation projects before and after implementation.

Population Management

Issue Statement: Documentation of population size, movements, and mortality factors is difficult due to the highly migratory nature of dove, band-tailed pigeon, coot, and snipe species.

Objective 124: Meet Pacific Flyway Council goals for mourning doves (15 calls/route in flyway) and band-tailed pigeons (1980-84 call-count index in Washington).

Strategies:
a. Monitor annual status and trends of doves and band-tailed pigeons through coordinated breeding ground surveys with other agencies, including USFWS and flyway states.
b. Monitor annual status and trends of coots through the midwinter inventory, coordinated with other agencies including USFWS and flyway states.
c. Provide training aids for new observers in population estimation techniques, particularly for call-count surveys, by 2004.
d. Participate in focused banding projects to answer specific management questions (e.g., dove reward band study in 2002-2003).

Objective 125: Minimize mortality due to disease and contaminants.

Strategies:
a. Conduct surveillance-monitoring studies to identify sources of disease and contaminants associated with mortality events (ongoing).
b. In cooperation with other management agencies (e.g., National Wildlife Health Research Center), take corrective action to minimize exposure to disease and contaminant sources (e.g., trichomoniasis in band-tailed pigeons) (ongoing).

Recreation Management

Issue Statement: Management of limited populations requires refined harvest estimates.

Objective 126: Increase accuracy of surveys to measure statewide harvest, number of hunters, and effort, accurate to ±10% at the 90% CI.

Strategies:
a. Participate in federal Harvest Information Program (HIP) for migratory birds, including new focus on providing estimates for lightly harvested species (e.g., snipe).

b. Provide supplemental measures to refine harvest estimates (e.g., band-tailed pigeon harvest report).

Objective 127: Maximize recreational opportunities consistent with population status.

Strategies:
a. Establish state harvest regulations for mourning doves in consideration of federal frameworks and population status in Washington.
b. Maintain restrictive dove season length until significant increase in 10-year call-count index trend is observed (no significant trend present for 1992-2001 index).
c. Maintain opening/closure level for band-tailed pigeons based on 3-year average call-count, in consideration of Pacific Flyway plan population objective.

Issue Statement: Traditional hunting areas are being lost to development or no shooting ordinances.

Objective 128: Maintain a minimum of 5,000 hunters and current recreational use days between 90,000-110,000, consistent with population status.

Strategies:
a. Utilize habitat funding in combined programs to provide hunter access to five new private land holdings.
b. Work with local governments to maintain opportunity in three traditional hunting areas, minimizing or finding alternatives to no shooting zones.

Information and Education

Issue Statement: Members of the general public and recreational users are sometimes uninformed about management issues and hunting opportunities.

Objective 129: Generate at least one information and education product each year to improve transfer of information to public.

Strategies:
a. Increase public awareness about management issues through brochures, news releases, Internet, pamphlets (ongoing).
b. Develop materials describing hunting opportunities for other migratory game birds in Washington (ongoing).

Research

Issue Statement: Additional information is needed to manage populations and harvest more effectively.

Objective 130: Generate or support at least one publication every five years regarding research or management of doves, band-tails, coots, or snipe.

Strategies:

a. Investigate habitat use around mineral springs.
b. Investigate optimal survey and timing for band-tailed pigeon trend analysis.
c. Investigate band-tailed pigeon distribution and survival.
d. Investigate limiting factors affecting mourning dove populations in Washington.
e. Investigate maximum sustainable harvest for mourning doves.
f. Investigate snipe habitat use, survival, effects of harvest, and incidental take of other species.
g. Develop current list of research needs to guide additional research emphasis.

VII. LITERATURE CITED

Pacific Flyway Council, Management Plans for Band-tailed Pigeons and Mourning Doves, USFWS, Portland, OR.

WILD TURKEY (*Meleagris gallopavo*)

I. POPULATION STATUS AND TREND

Efforts to introduce wild turkey, which are not native to Washington, occurred as early as 1913. However, these early release efforts (1913–1959) did not result in established populations. In 1960, 12 wild-trapped Merriam's turkeys from New Mexico were released in Klickitat County. This release resulted in establishment of Washington's largest, most stable turkey population from 1960 through 1990. In addition, 15 Merriam's turkeys were released in 1961 in the Rice area of Stevens County and a population became established. From the mid 1960s through the early 70s, turkeys were released in several Washington counties, including Okanogan, Chelan, Whitman, Pend Oreille, Kittitas, Ferry, Spokane, Clallam, Thurston, San Juan, and Lewis. Many of these releases did not result in established populations.

From 1984 through 2001, major transplant projects were undertaken to establish wild turkey populations in eastern and southwestern Washington. Wild turkeys trapped in Texas, South Dakota, Missouri, and Pennsylvania were brought into the state and released in suitable habitats in eastern and southwestern Washington. By the early 1990s wild turkey populations in eastern Washington had increased to the point that the WDFW began to transplant Washington birds into other suitable habitats within several eastern Washington counties. Western Washington wild turkey populations also received additional augmentation in the 1990s when several hundred wild-trapped birds from Iowa were released in Thurston, Lewis, Cowlitz, and Grays Harbor counties.

According to harvest trend information, most turkey populations in Washington are increasing with Stevens County having the highest population density. Other eastern Washington counties, such as Ferry, Lincoln, Pend Oreille, and Columbia, also have substantial turkey populations. Wild turkey populations in western Washington are not experiencing the same level of expansion as northeastern Washington, however, there are areas in Thurston, Cowlitz, Mason, and Grays Harbor counties that support huntable populations of the eastern sub-species of wild turkey.

II. RECREATIONAL OPPORTUNITY

Hunting seasons for wild turkeys have varied from a 2-day fall season in 1965 to the current 31-day spring season statewide and 5-day fall permit-only seasons. The statewide, April 15 to May 15, spring season was established in 1994 and a fall season has existed since 1965. At one time, the fall season was in late November, but in 2000, fall hunting was changed from a general season to a permit-only hunt by drawing and the hunt dates were moved from late November to early October to avoid overlapping other seasons.

Statewide harvest and hunter numbers have increased each year since 1991 (Figure 1). In 2000, 1,615 turkeys were taken and 19,209 tags were purchased. Prior to turkey augmentation activity in the late 1980s, hunter numbers fell to a low of 428 (1987) and turkey harvests averaged 65 birds per year (1983-1987).

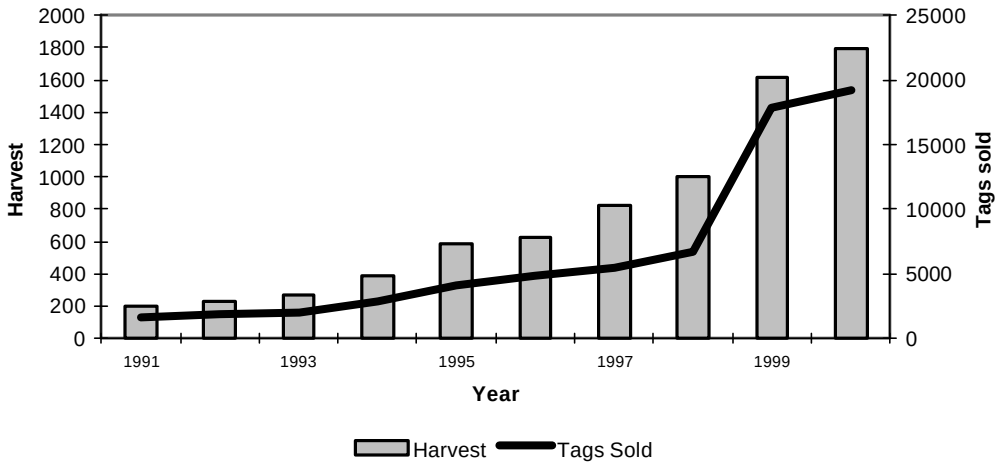


Figure 1. Trend in turkey harvest and number of tags sold in Washington, 1991-2000.

III. DATA COLLECTION

The largest amount of data collected on wild turkeys has been estimated harvest and hunter effort. Some limited radio tracking has been done in Pend Oreille, Yakima, Chelan, and western Washington counties to help estimate survival and production of recently released birds. Future efforts to collect these types of data are described in the management section below.

IV. WILD TURKEY MANAGEMENT GOALS

The statewide goals for wild turkeys are:

1. Preserve, protect, perpetuate, and manage wild turkeys and their habitats to ensure healthy, productive populations.
2. Manage wild turkeys for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, wildlife viewing cultural and ceremonial uses by Native Americans, and photography.
3. Manage statewide wild turkey populations for a sustained harvest.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Population Management

Issue Statement: Wild turkeys have been introduced in Washington State since 1960. Since the late 1980s, WDFW has been more aggressive in transplanting turkeys into suitable habitats in much of the state. An evaluation of past activities and a plan for future activities is needed.

Objective 131: Develop a population management plan by December 2003.

Strategies:
a. Develop criteria for evaluating past wild turkey releases.
b. Evaluate past translocations within each WDFW region on a district-by-district basis.
c. Evaluate reintroduction focus area criteria and make modifications to primary wild turkey population areas as necessary.
d. Develop criteria that help identify areas where turkey populations are not desired (e.g., environmentally sensitive, urbanized, and depredation or nuisance areas).
e. Conduct an assessment of potential release areas for habitat suitability, potential negative impacts, as well as public and agency support.
f. Restrict release of turkeys into unoccupied areas until a population management plan is completed.
g. Develop a population management plan.

Issue Statement: Turkey populations in some areas of eastern Washington have expanded substantially over the past five years. WDFW is receiving a considerable number of damage complaints from residents in some of these areas.

Objective 132: Develop a damage response plan by December 2003.

Strategies:
a. Document locations of complaints.
b. Evaluate WDFW responses to past complaints.
c. Determine major factors relating to damage complaints.
d. Develop a plan that addresses major factors and incorporates multiple methods of addressing the issues. Possible methods may include, but are not limited to, liberalized hunting seasons, deterrent activities, habitat enhancements, removal through trapping, and depredation permits.

Issue Statement: Turkey populations need to be monitored to help determine appropriate hunting seasons and identify population management needs.

Objective 133: Monitor turkey populations in primary ma nagement zones of the state on a yearly basis.

Strategies:
a. Identify areas within the state that have population monitoring needs.
b. Evaluate potential monitoring tools and develop a recommended monitoring protocol.
c. Implement a recommended turkey population monitoring protocol.

Recreation Management

Issue Statement: Turkey populations in some portions of Washington have increased to the point that expanded hunting opportunities need to be evaluated.

Objective 134: By December 2003, develop a fall hunting opportunity recommendation for Fish and Wildlife Commission consideration.

Strategies:
a. Define population indexes for turkey populations.
b. Evaluate the potential impacts of season options (including open season, increased season length, and increased permits).

Issue Statement: Members of the public have contacted WDFW and expressed a desire to eliminate inclusion of a turkey tag with the purchase of a small game license. In response, hunters were asked whether they would like to see the turkey tag separated in the hunter opinion survey conducted in January 2002. Survey results show that 57% of turkey hunters oppose separating the tag (48% strongly opposed) while 39% support separating the tag (24% strongly support).

Objective 135: By December 2002, determine if a turkey transport tag should be included with the purchase of a small game license.

Strategies:
a. Survey and/or discuss the subject with hunters and hunting groups to determine their position.
b. Evaluate what impacts including or not including the tag may have on recreational opportunity.
c. Develop a recommendation by 2003.

Issue Statement: Turkey hunters and district biologists report that turkey-hunting opportunities in some areas of eastern Washington are limited due to large acreage owned by private landowners. Private land access has also been identified as an important issue in hunter opinion surveys conducted by WDFW.

Objective 136: Over the next five years, increase the number of acres of private land available for public turkey hunting by 10% within priority turkey range.

Strategies:
a. Identify the priority turkey range.
b. Increase public access to private lands through the efforts of WDFW's Upland Restoration Program.
c. Investigate paying private entities for public hunting access to private property (e.g., block management, landowner incentives).

Issue Statement: A definitive method of determining when a hunting season change would be appropriate does not currently exist.

Objective 137: By April 2005, develop a set of criteria that, when met, would direct a change in season structure or hunting opportunity.

Strategies:
a. Continue to collect harvest information via mandatory reporting.
b. Define turkey population indexes for the different areas of the state.
c. Develop and/or implement a method of monitoring turkey populations and harvest that includes triggers for adaptive management.

Habitat Management

Issue Statement: Opportunities to enhance wild turkey habitat exist on private and public lands throughout areas supporting turkey populations. Improving habitat conditions for turkeys also has additional values to other wildlife species that utilize the same resources.

Objective 138: Enhance wild turkey habitat within the primary turkey management zone.

Strategies:
a. Utilize available enhancement grants (e.g., guzzlers for gobblers) to improve habitats utilized by wild turkeys.
b. Facilitate habitat enhancement projects on private and public properties within the primary turkey management zone.
c. Develop habitat enhancement projects to help address issues related to winter nuisance complaints.

Public Education

Issue Statement: The public is not well informed of turkey management history or practices in Washington and does not support introduction of non-native wildlife.

Objective 139: Create educational pamphlets and news releases describing past management activities and future management objectives on a yearly basis.

Strategies:
a. Produce a publication that provides information about non-native wildlife and inter-specific competition issues related to turkeys in Washington.
b. Create a wild turkey pamphlet that describes past and future WDFW management activities and watchable wildlife opportunities.
c. Produce timely news releases that cover substantial new management activities.
d. Create an informational web page that addresses common concerns or interests surrounding wild turkeys.

e. Develop a pamphlet or flyer that addresses the potential negative effects of feeding turkeys and guidelines describing how to avoid negative turkey interactions.

Research

Issue Statement: Research on wild turkeys in the western United States is not common. If research were to be done in western habitats, managers would have a better tool to use when managing the species.

Objective 140: Initiate, participate in, or support research projects that increase our knowledge of wild turkeys in western habitats.

Strategies:
a. Conduct a literature review of western U.S. wild turkey research.
b. Identify and prioritize research needs.
c. Cooperate with public and private entities (e.g., National Wild Turkey Federation) to develop research projects in Washington.
d. Develop and/or participate in inter-specific competition research projects funded through the National Wild Turkey Federation and other public entities.
e. Should research definitively show competition with native and or listed species, then plans to address the issues will be developed and implemented.

Enforcement

Issue Statement: Illegal activities such as trespass are becoming a problem in some areas of the state, especially in parts of northeastern Washington where turkey hunter numbers are rising annually.

Objective 141: Concentrate efforts on illegal harvest, public education, and landowner relations during appropriate times of the year.

Strategies:
a. Increase enforcement patrols in areas where turkey hunters are concentrated.
b. Work with landowners to address their concerns/needs.

MOUNTAIN QUAIL (*Oreortyx pictus*)

I. POPULATION STATUS AND TREND

Historically, mountain quail are thought to have existed in western Washington and along the southern border in eastern Washington. However, mountain quail populations in Washington have been low for several years. While there are a few areas in western Washington that hold birds, eastern Washington populations have all but disappeared. The last known mountain quail populations in eastern Washington were in southeastern Asotin County. The current status of this, and other eastern Washington populations is largely unknown but is assumed to be minimal at best.

II. RECREATIONAL OPPORTUNITY

Mountain quail hunting season extends from October 6 through November 30 in western Washington; however, there have been no hunting seasons for mountain quail in eastern Washington since 1997. The 2000 mountain quail harvest was likely less than 200. Mountain quail do not represent a major recreational opportunity in the state of Washington.

III. DATA COLLECTION

To date, only incidental data on mountain quail populations in Washington have been collected. These data suggests that mountain quail are limited in distribution and abundance. Future data collection may be focused on monitoring reintroduction efforts in eastern Washington.

IV. MOUNTAIN QUAIL MANAGEMENT GOALS

The statewide goals for mountain quail are:

1. Preserve, protect, perpetuate, and manage mountain quail and their habitats to ensure healthy, productive populations.
2. Manage mountain quail for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, wildlife viewing cultural and ceremonial uses by Native Americans, and photography.
3. Manage western Washington mountain quail populations for a sustained harvest.

V. MANAGEMENT ISSUES, OBJECTIVES, AND STRATEGIES

Habitat Management

Issue Statement: Little is known about mountain quail habitat in eastern Washington. Historic distribution has been estimated, but suitability and ability to sustain mountain quail populations is largely unknown.

Objective 142: Determine distribution of potential mountain quail habitat in Washington and conduct an evaluation of key areas of native range by 2008.

Strategies:
a. Develop a map showing potential mountain quail habitat.
b. Evaluate potential habitat areas in southeastern Washington to determine the most appropriate areas for reintroduction efforts.
c. Conduct an evaluation of eastern Washington mountain quail habitat conditions and suitability based on results from monitoring released quail. Identify potential habitat enhancement projects based on the evaluation.

Population Management

Issue Statement: Mountain quail occupy little of their historic range in eastern Washington.

Objective 143: Re-establish mountain quail populations in historic range in eastern Washington by 2006.

Strategies:
a. Secure funding for a reintroduction project.
b. Enter into a cooperative project with Oregon and Idaho designed to address mountain quail reintroduction in southeastern Washington, northern Oregon and western Idaho.
c. Support and/or conduct trapping of wild mountain quail in Oregon and release into identified areas of southeastern Washington.
d. Implement a post-release monitoring program for quail as part of reintroduction efforts.
e. Evaluate the need to close California quail hunting seasons in areas targeted for reintroduction.

Recreation Management

Issue Statement: Harvest of mountain quail in western Washington is not well understood. To date, mountain quail harvest has been reported as part of general quail harvest and cannot be reliably separated.

Objective 144: By 2007, determine what proportion of the reported western Washington quail harvest is mountain quail.

Strategies:
a. Develop a wing collection survey to estimate mountain quail harvest in western Washington.

b. Develop a telephone survey to sub-sample quail hunters who report harvest in counties supporting mountain quail populations.
c. Recommend requiring mountain quail hunters to possess an authorization permit and report harvest annually.

Issue Statement: Recreational hunting opportunities in western Washington are still available, but are limited in distribution.

Objective 145: Maintain a limited hunting season for mountain quail in western Washington unless harvest declines by greater than 30% over 3 years.

Strategy:
a. Recommend the use of a mandatory mountain quail harvest report and authorization card to maximize accuracy of harvest estimates.

FOREST GROUSE (Blue (*Dendragapus obscurus*), Ruffed (*Bonsa umbellus*), and Spruce (*Falcipennis canadensis*))

I. POPULATION STATUS AND TREND

Forest grouse in Washington include blue (*Dendragapus obscurus*) and ruffed grouse (*Bonsa umbellus*), which occur throughout the forested lands in Washington, and spruce grouse (*Falcipennis canadensis*) that are closely tied to higher elevation spruce/fir habitats. Statewide biological surveys designed to estimate forest grouse populations have not been conducted in Washington. For many years, population monitoring has been based on the long-term harvest trend (Figure 1). This trend shows an apparent decline in forest grouse populations, however, it is difficult to draw concrete conclusions because harvest estimation methods have changed over time and other factors such as hunter effort and access to private lands may be biasing results.

From 1984 to 2000, harvest estimates were conducted using a three wave mailed hunter survey (as opposed to a one-mailing survey in prior years). The harvest trend during that time shows a moderate decline ($P = 0.0464$). In 1999, the small game survey was conducted differently than other years, which may explain the extremely low estimated harvest. If that data point is removed from the analysis, then the decreasing trend from 1984 to 2000 is not statistically significant ($P = 0.1535$).

A wing collection study in 1997 revealed that hunters did not accurately report the species of grouse harvested. Since hunters have not been able to accurately report the species harvested, evaluating harvest, and thus population trends for individual species is very difficult. Current grouse populations are thought to be relatively healthy, however, loss of habitat to urban expansion and changes in forest management techniques may impact population status over time.

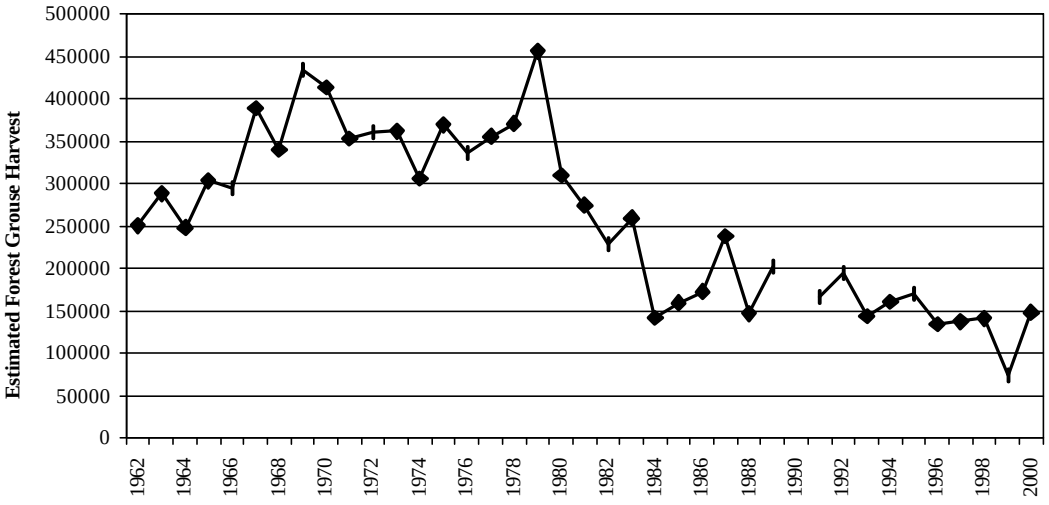


Figure 1. Estimated forest grouse harvest in Washington State from 1962 to 2000.

II. RECREATIONAL OPPORTUNITY

The current Sept. 1 to Dec. 31 hunting season, which is similar to forest grouse seasons in Oregon (Sept. 1 – Jan. 6) and Idaho (Sept. 1 – Dec. 31), has been in place since 1987. The daily bag limit of three of any species (mixed or straight bag) has not changed since 1952. Estimated hunter numbers slowly declined from the late 1980s through 1997, but then fell sharply in 1998 and 1999 (Figure 2). The decline seen in 1999 may be a result of sampling difficulties that made data collection inconsistent with previous and subsequent years. Hunter numbers rebounded in 2000, but are still below historic levels.

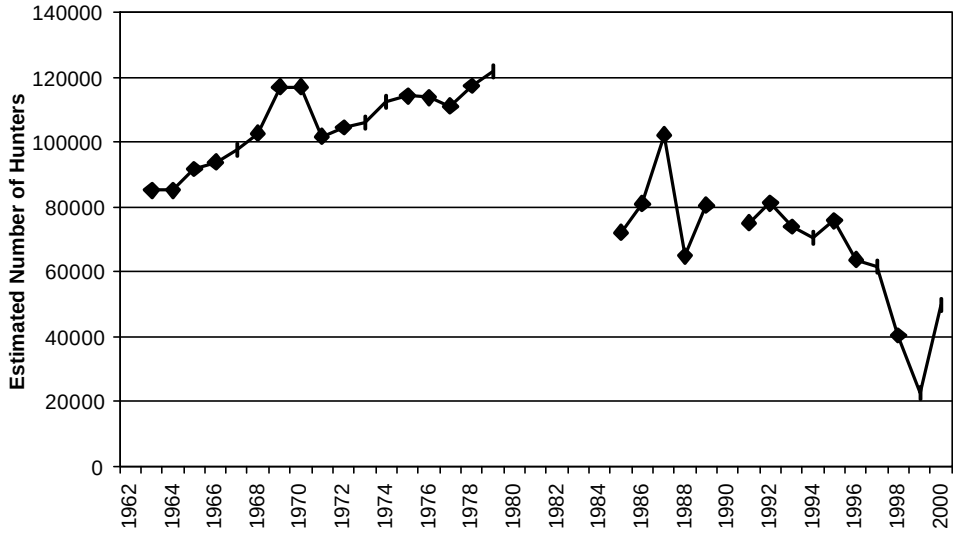


Figure 2. Estimated number of forest grouse hunters in Washington from 1963 to 2000.

III. DATA COLLECTION

Statewide population surveys for forest grouse have not been conducted. However, forest grouse wings were collected in 2000 by placing barrels in strategic locations in north-central Washington where hunters voluntarily deposited one wing from each grouse killed. Wings were classified as to species, sex, and age.

Statewide wing collections from 1993-95 provided several pieces of important information, such as, more than 70% of forest grouse harvest occurs in September and early October, before modern firearm deer seasons. Therefore, current seasons that extend through December probably have very little impact on grouse populations. In addition, there is a tendency for hunters to misidentify grouse species, which has resulted in forest grouse species being combined for current harvest survey purposes.

The most extensive data set held for forest grouse is harvest estimation, which has been collected since 1963. Data was collected by surveying approximately 10% of hunting license buyers. These data are reported in the annual WDFW Game Harvest Report.

IV. FOREST GROUSE MANAGEMENT GOALS

The statewide goals for forest grouse are:

1. Preserve, protect, perpetuate, and manage forest grouse and their habitats to ensure healthy, productive populations.
2. Manage forest grouse for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, wildlife viewing, cultural and ceremonial uses by tribes, and photography.
3. Manage statewide forest grouse populations for a sustained harvest.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Habitat Management

Issue Statement: Forest grouse habitat quality is tied directly to forest management strategies implemented on public and private lands. As new information about forest grouse management becomes available, it is important to make that information available to forest managers.

Objective 146: Develop one additional habitat management publication by 2008.

Strategies:

a. Review forest grouse literature concerning forest management techniques.
b. Update existing or create additional forest grouse habitat management guidelines.
c. Make guidelines available to forest landowners and encourage them to incorporate management practices that benefit forest grouse.

Population Management

Issue Statement: Current harvest estimation, which is used as an indicator of population trend, is not adequate to detect significant changes in forest grouse harvest at a local geographic level.

Objective 147: Improve harvest estimation to detect a 50% decline over a 3-year period at the WDFW regional level.

Strategies:

a. Analyze harvest report data to include estimation at the WDFW regional level.
b. Develop a statistical model of harvest that includes the effects of weather and hunter effort.
c. Investigate the potential to report grouse harvest on the WDFW website and implement if appropriate.

Objective 148: When harvest estimates at the WDFW regional level show a decline of 50% over a 3-year period, focus management efforts on determining the causes for decline.

Strategies:
a. Determine whether large-scale habitat changes have occurred in areas of concern.
b. Determine if changes in forest grouse habitat and populations correlate with changes in timber management practices.

Issue Statement: Having population trend data that is independent of harvest estimation available would help in monitoring population trends.

Objective 149: Track forest grouse populations in key areas of Washington and report the results in the annual Game Status and Trend Report.

Strategies:
a. Identify key areas for monitoring populations.
b. Develop and/or implement a method to track population trends independent of harvest and compare the trends to trends in harvest estimation.

Recreation Management

Issue Statement: Some grouse hunters and other members of the public have questioned the ethics of hunting forest grouse with a center-fire cartridge firearm. The main issues are ethical fair chase, wastage, and respect for the species being hunted.

Objective 150: Develop a recommendation for the Commission regarding regulating legal firearms and ammunition for forest grouse hunting by December 2003.

Strategies:
a. Determine level of hunter support for greater firearm or ammunition restrictions and evaluate the rationale behind their opinion.
b. Work with hunters to develop firearm and ammunition use alternatives.

Objective 151: Develop a method to identify harvest of forest grouse species and report findings in the annual Game Status Report by 2008.

Strategies:
a. Develop a species distribution map.
b. Use wing collection data to create a correction factor to adjust hunter species composition reports.
c. Develop and distribute educational materials that identify the differences between forest grouse species.

Objective 152: Develop a report on hunting season impacts on grouse populations by 2008.

Strategy:

a. Conduct a literature review targeting grouse hunting season impacts on forest grouse populations and assimilate results into a report with recommended management actions if appropriate.

UPLAND GAME BIRDS: Pheasant (*Phasianus colchicus*) California Quail (*Callipepla californica*), Chukar (*Alectoris chukar*) and Hungarian Partridge (*Perdix perdix*)

I. POPULATION STATUS AND TREND

According to harvest estimates, (used as an index of population densities), pheasant populations in Washington have been declining since the early 1980s (Figure 1). Harvest estimation techniques did not change between 1984 and 2000, so estimates made during that time should be comparable. In addition, crowing count surveys and brood index surveys conducted between 1984 and 1998 also indicate a decrease in pheasant populations in many areas of eastern Washington (Cliff Rice, pers comm.). Interviews with hunters and biologists support the theory that pheasant populations have decreased over time. The cause of the decline is not definitively known, although several factors are thought to have contributed, including loss and degradation of habitat.

The cause of the increase in pheasant harvest from 1995 to 1997 may be an artifact of the Eastern Washington Pheasant Enhancement Program. Since rooster pheasants were released in the fall between 1997 and 2000, harvest estimates may be artificially high when compared to harvest estimates between 1992 and 1996 when no pheasants were released in eastern Washington. Current populations do not appear to be significantly higher than periods prior to 1997.

Upland game bird fall population densities, and related harvest, are often dependent on spring weather conditions and available cover since chicks have a difficult time thermoregulating in cold, wet weather conditions. In addition, chicks need high protein diets in the spring and cold, wet springtime weather often decreases insect availability (Offerdahl and Fivizzani, 1987). Although variable from year to year, harvest estimates for quail, chukar and Hungarian partridge (Huns) have not dropped below 1993 levels. Currently, harvest levels are at or near the 17 year high for quail and Huns, but chukar harvest is 60% lower than the 17 year high (Figure 2). In general, biologist opinions of upland game bird populations correlate with the harvest trends, or lack thereof, seen in Figures 1 and 2.

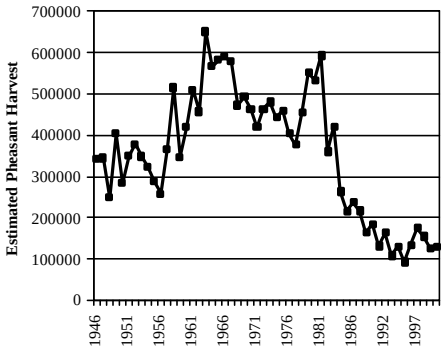


Figure 1. Estimated pheasant harvest for Washington, 1946 - 2000.

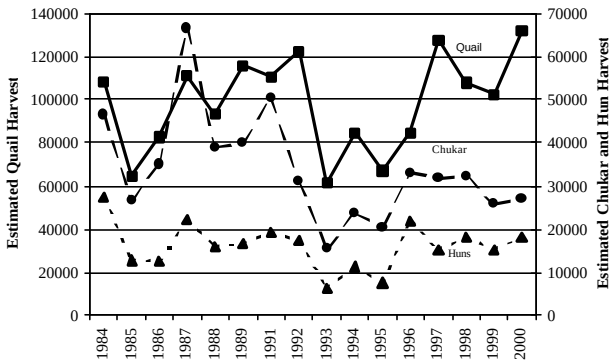


Figure 2. Estimated quail, chukar and Hungarian partridge harvest for Washington, 1984-2000

II. RECREATIONAL OPPORTUNITY

Pheasant season timing in Washington State has varied only slightly over the past 10 years, usually starting in mid-October and lasting through December. For many years, pheasant hunters have been able to hunt for 11 or 12 weeks, depending on the year, with a daily bag limit of three roosters. In 2000, an estimated 35,789 people hunted pheasant in Washington. For nine out of the last 10 years, fewer than 40,000 people hunted pheasants, down from an estimated high of 142,000 in the early 1950s and a more recent high of 109,000 in 1979 (Figure 3). The spike in hunter participation in 1997 may have been due to the initiation of the Eastern Washington Pheasant Enhancement Program that year. In 2000, hunters spent over 233,000 days pursuing pheasant.

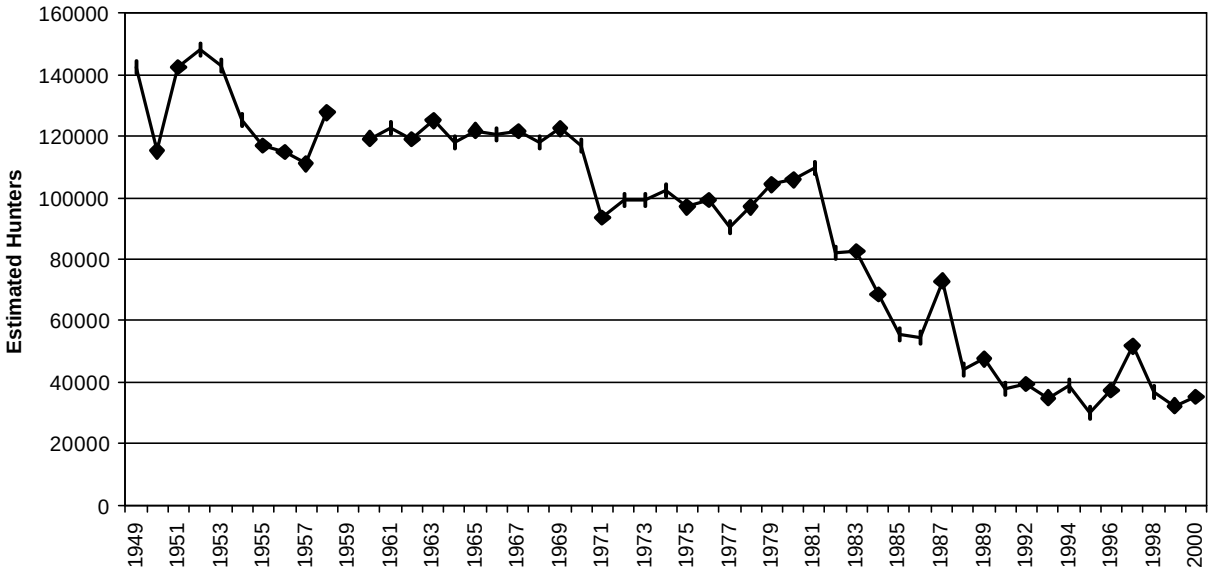


Figure 3. Estimated pheasant hunter participation in Washington State, 1949 to 2000.

Hunting seasons for other upland game birds have also varied in length over the years. During the 1960s and 70s, the chukar season was split into early and general seasons, depending on geographic area. In 1997, the early-general season was eliminated in favor of a standardized season running from early October to mid-January, which is the current regulation. The bag limit for chukar was reduced after the population crash in the early 1980s, from 10 birds per day to six. Currently, the daily bag limits for chukar and Huns are six of each species and quail has a bag limit of 10. In 2000, an estimated 17,317 people hunted quail, 7713 hunted chukar, and 6979 hunted Huns. Hunters spent over 159,000 days afield pursuing these upland birds.

III. DATA COLLECTION

Three types of pheasant surveys were conducted up until the mid to late 1990s in most areas of the state; 1) sex ratio counts in February and March, 2) crow counts (a male pheasant population index) in late April and early May, and 3) production counts in late July and August. In addition, population surveys for quail and chukar were completed through the late 1990s. All of these surveys were discontinued mainly due to the limited time and funding for district biologists considering all game species priorities.

Data are still collected annually in the irrigated farmland portions of Grant and Adams counties to provide indices of breeding population size and production of chicks. The population index is useful in determining long-term trends and major short-term population changes. The production index is a good predictor of hunting prospects and may provide information useful in determining reasons for annual changes in population size. In addition, a post-season mail survey of hunters is conducted to estimate harvest and hunter effort.

IV. UPLAND GAME BIRD MANAGEMENT GOALS

The statewide goals for upland game birds are:

1. Preserve, protect, perpetuate, and manage upland game birds and their habitats to ensure healthy, productive populations.
2. Manage upland game birds for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, wildlife viewing cultural and ceremonial uses by Native Americans, and photography.
3. Manage statewide upland game bird populations for a sustained harvest.

V. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Habitat Management

Issue Statement: Pheasant habitat in eastern Washington has been lost, altered or degraded over the past 50 years. This is considered to be a major factor in the decline in pheasant populations (Flaherty 1979).

Objective 153: By 2008, increase the quantity and quality of pheasant habitat in select WDFW districts within identified key pheasant management areas.

Strategies:

a. Inventory current pheasant habitat and identify and prioritize key areas for improvement.
b. Define quality pheasant habitat.
c. Develop specific strategies for enhancing pheasant habitat.
d. Purchase high priority pheasant habitat acreage using funds from the sale of western Washington land holdings identified for that purpose.
e. Work with public and private landowners and funding agencies (e.g. United States Department of Agriculture (USDA)) to increase quality pheasant habitat acreage through

programs like the Conservation Reserve Program (CRP), and the Wildlife Habitat Incentives Program (WHIP).

f. Improve pheasant habitat quality by funding habitat improvement projects through the Eastern Washington Pheasant Enhancement Program (EWPEP).
g. Integrate pheasant habitat improvements and priorities with native species needs (e.g. sharp-tailed grouse and salmon).

Issue Statement: The WDFW has been involved with improving upland wildlife habitat through the Upland Wildlife Restoration Program and various federal government sponsored programs such as CRP. Maximizing future involvement in federal and state programs is critical to increasing pheasant populations in eastern Washington in the future.

Objective 154: By 2006, develop a report that evaluates past upland habitat program involvement and identifies those that are most effective.

Strategies:

a. Evaluate the impacts of USDA programs and develop recommendations on how to best support these programs in Washington.
b. Evaluate past acquisitions for their contribution to pheasant population densities.
c. Support or conduct a thorough literature review and/or study to help determine the value of guzzlers to upland game species.

Population Management

Issue Statement: Harvest and survey trends indicate that pheasant populations have declined over the past 50 years.

Objective 155: Monitor population status and trend within the key areas identified for habitat improvement and document results in the annual Game Status Report by 2006.

Strategies:

a. Develop and/or adopt a standardized method to monitor pheasant population status.
b. Consistently monitor pheasant populations to provide a gauge of how habitat improvements are affecting population trends.

Recreation Management

Issue Statement: Hunters and district biologists report that upland game bird hunting opportunities in some areas of eastern Washington are limited due to large acreage owned by private landowners. Private land access has also been identified as an important issue in hunter opinion surveys conducted by WDFW.

Objective 156: By 2008, increase the number of acres of private land available for hunting by 10% and provide a variety of hunting opportunities within the areas identified as priorities.

Strategies:

d. Utilize the WDFW Upland Restoration Program to increase public access to private lands.
e. Investigate paying private entities for public hunting access to private property (e.g., block management).
f. Investigate alternatives to replace the loss of access to Snake River mitigation properties.
g. Publicize where public hunting access is available.
h. Develop limited entry areas, marked sites, walk-in sites, or other restrictions to reduce crowding and provide quality hunting areas.

Issue Statement: Estimated harvest figures show that there has been a decline in pheasant and chukar harvest over the past 18 years and other upland game birds have experienced large fluctuations in harvest. Harvest estimation data are used as an indicator of overall harvest, and population status as well as hunter effort and are the best long-term data set held by WDFW.

Objective 157: Monitor upland game bird harvest on a yearly basis.

Strategies:

a. Continue to collect harvest information on a yearly basis such that it is comparable to previous seasons.
b. Evaluate harvest data to estimate trends in population status.
c. Develop a method to collect eastern Washington pheasant release harvest data (e.g., an additional box on the hunter questionnaire) by 2004.

Issue Statement: Some upland game birds exist in areas where sharp-tailed grouse and sage grouse can be found. Concerns over misidentification of game birds have been expressed and it is important that hunters know the differences between upland game birds and non-game upland wildlife.

Objective 158: Provide educational materials to hunters that describe the differences between upland game species and non-game upland birds.

Strategies:

a. Include information describing the differences between pheasants and sharp-tailed grouse and sage grouse and include it in the annual upland bird hunting pamphlet.
b. Post signs notifying hunters of sage or sharp-tailed grouse being present in areas where upland game bird hunting occurs.

Public Education

Issue Statement: Broad distribution of information regarding the biology and management of upland game birds will increase public understanding of management activities implemented by the WDFW.

Objective 159: Provide information to the public on a yearly basis that increases the public's understanding of upland game bird management in Washington.

Strategies:

a. Produce timely news releases when substantial developments in upland game bird management occur with an emphasis on youth hunting opportunities.
b. Produce pamphlets or other informational material that addresses upland game bird biology, emphasizing the impact of weather on annual population density.
c. Enter into cooperative educational ventures with resource-oriented groups such as Pheasants Forever.
d. Produce news releases and/or pamphlets that explain the potential impacts of lead shot on Washington's wildlife.

Research

Issue Statement: Pheasant populations in Washington have declined over the past 50 years and the causes for the decline are not known with confidence.

Objective 160: By 2008, develop a report that identifies the factors limiting pheasant populations in Washington and provides management recommendations.

Strategies:

a. Conduct a literature review to identify potential factors and related research needs.
b. Conduct studies that identify factors that are limiting pheasant populations in eastern Washington if needed.
c. Compare brood count/crow count data with population decline and habitat change data.

Issue Statement: Noxious weeds such as yellow star thistle and knapweed may be impacting habitat quality for upland birds, especially Huns and chukar.

Objective 161: Evaluate the effects of noxious weeds on chukar and Hun habitat and help develop and implement noxious weed control efforts in high priority areas.

Strategies:

a. Support and/or conduct activities that document habitat distribution and current noxious weed distribution for high priority chukar and Hun areas.
b. Complete a report that provides weed management recommendations for high priority upland bird areas.
c. Participate in activities that identify and secure additional funding to aid in noxious weed control in high priority chukar and Hun areas.

Eastern Washington Pheasant Enhancement Program (EWPEP)

Issue Statement: The EWPEP was developed "to improve the harvest of pheasants by releasing pen-reared rooster pheasants…and by providing grants for habitat enhancement…". It is not

known if the program is achieving its objectives. Also, the program should be implemented to achieve the objectives in this plan.

Objective 162: Evaluate the EWPEP and develop recommendations for any needed changes for legislative action in 2003.

Strategies:
a. Review and analyze past EWPEP funded pheasant releases and develop a summary document that evaluates the success of the program and provides recommendations for future action.
b. Work with conservation organizations, such as Pheasants Forever, to develop recommendations.
c. Focus habitat enhancements in identified key management areas.

Western Washington Pheasant Program

Issue Statement: In 1997, the WDFW closed the Whidbey Island game farm to increase the efficiency of the program. Since that time, the program has gone from being 61% self-funded to 78% with the remainder being paid for by general hunting license revenue. It is important that this program become 100% self-funded since it is a recreational program serving a specific group of hunters and it is appropriate to ensure the program does not have a financial impact on general hunting license revenues. In addition, being self-funded helps maximize the chances that the program can continue to operate.

Objective 163: Evaluate the current funding mechanism for the western Washington pheasant program and identify new ways to create a self-funded budget by June 2003.

Strategies:
a. Work with hunting public to determine the best way to increase revenue.
b. Determine what percentage of small game license buyers hunts strictly western Washington pheasants.
c. Identify cost saving efficiencies in pheasant production.

Issue Statement: Hunter crowding and safety at several existing western Washington pheasant release sites are becoming more common.

Objective 164: Develop and implement a plan to reduce hunter crowding by 2004.

Strategies:
a. Identify and secure access to additional pheasant release sites.
b. Evaluate need for even/odd regulation at additional release sites.
c. Coordinate with western Washington pheasant program volunteers to develop crowd reduction recommendations.

Issue Statement: Returned pheasant harvest permits have been used to help allocate pheasants to the different release sites. However, a very low number of these permits are returned every year making accurate allocation difficult.

Objective 165: Develop a more effective method to appropriately allocate pheasants to pheasant release sites by September 2003.

Strategies:
a. Visit release sites and document hunter use on high participation weekends.
b. Integrate landowners supporting a release site into the decision making process.

Issue Statement: Lead shot is known to be toxic to wildlife species that ingest pellets. In 2000, WDFW required non-toxic shot to be used at several western Washington release sites. Members of the general public, and some hunters and wildlife professionals have suggested that all western Washington release sites should go to the non-toxic shot requirement due to the high level of use release sites receive.

Objective 166: Determine if non-toxic shot should be required on all western Washington release sites by 2008.

Strategies:
a. Test lead content and availability in the soils of select western Washington release sites.
b. Survey hunters and other wildlife enthusiasts to help determine appropriate actions.
c. Conduct a literature search and compile lead density, availability, and risk information found in other states.

Enforcement

Issue Statement: Protecting the resource from illegal exploitation and working together with landowners is important.

Objective 167: Concentrate efforts on illegal harvest, public education, and landowner relations.

Strategies:
a. Maintain a field presence in areas of high hunter density.
b. Work with landowners to address their concerns/needs.

VI. LITERATURE CITED

Flaherty, D.C. 1979. Phasianus c. and the Farmer. State of Washington Water Research Center Publication. 17pp.

Offerdahl, S.D. and A.J. Fivizzani. 1987. The Development of Thermoregulation in Gray Partridge Chicks. In Proceedings of Perdix IV: Gray Partridge Workshop. 155pp.

SMALL GAME, FURBEARERS, AND UNCLASSIFIED SPECIES

I. CLASSIFICATION

In Washington, there are approximately 31 mid-to-small sized mammals or mammal groups that can be hunted or trapped for recreational purposes (Table 1). Of these, 6 species are classified as game species (including 3 cross-classified as furbearers) and can be hunted (RCW 77.12.020; WAC 232-12-007). Eleven of the 31 species or groups are classified as furbearers (indicating that their hide has a commercial value in the fur industry). These 11 species can be trapped but not hunted unless seasons have been established (i.e., 3 species cross-classified as game species). The remaining species or species groups are "unclassified", and can be trapped or hunted year-around.

Table 1. Mid-to-small sized mammals that can be hunted or trapped in Washington.

Species	Genus species	Classification	Trapped	Hunted
Cottontail rabbits	*Sylvilagus spp.*	Game animal		X
Snowshoe hare	*Lepus americanus*	Game animal		X
Bobcat	*Lynx rufus*	Game animal & furbearer	X	X
Raccoon	*Procyon lotor*	Game animal & furbearer	X	X
Red fox	*Vulpes vulpes*	Game animal & furbearer	X	X
American beaver	*Castor canadensis*	Furbearer	X	
Badger	*Taxidea taxus*	Furbearer	X	
Ermine	*Mustela erminea*	Furbearer	X	
Long-tailed weasel	*Mustela frenata*	Furbearer	X	
Marten	*Martes americana*	Furbearer	X	
Mink	*Mustela vison*	Furbearer	X	
Mountain beaver	*Aplodontia rufa*	Furbearer	X	
Muskrat	*Ondatra zibethicus*	Furbearer	X	
River otter	*Lutra canadensis*	Furbearer	X	
Coyote	*Canis latrans*	Unclassified	X	X
European rabbit	*Oryctolagus spp.*	Unclassified	X	X
Gophers	*Thomomys spp.*	Unclassified	X	X
Gray and fox squirrels [a]	*Sciurus spp.*	Unclassified	X	X
Ground squirrels [b]	*Sperophilus spp.*	Unclassified	X	X
Mice	*Mus, Onychomys, Reithrodontomys, Peromyscus, Perognathus, Zapus spp.*	Unclassified	X	X
Moles	*Scapanus spp.*	Unclassified	X	X
Nutria	*Myocastor coypus*	Unclassified	X	X
Virginia opossum	*Didelphis virginiana*	Unclassified	X	X
Porcupine	*Erethizon dorsatum*	Unclassified	X	X

Rats	*Dipodomys, Neotoma, Rattus spp.*	Unclassified	X	X
Shrews	*Sorex, Neurotrichus spp.*	Unclassified	X	X
Spotted skunk	*Spilogale gracilis*	Unclassified	X	X
Striped skunk	*Mephitis mephitis*	Unclassified	X	X
Voles	*Clethrionomys, Lemmiscus, Micotus, Phenacomys spp.*	Unclassified	X	X
Yellow-bellied marmot	*Marmota flaviventris*	Unclassified	X	X

[a] Except western gray squirrels (*S. griseus*) are protected and cannot be hunted or trapped.
[b] Except golden-mantled ground squirrels (*S. saturatus* and *S. lateralis*) and Washington ground squirrels (*S. washingtoni*) are protected and cannot be hunted or trapped.

II. POPULATION STATUS AND TREND

The abundance of individual small game animals, furbearers, and unclassified wildlife is largely unknown. However, because these animals typically have high population growth rates and often experience compensatory mortality, the risk of over-exploitation is low. Nonetheless, because biological data on individual species populations are limited, harvest levels are generally managed at conservative levels.

III. RECREATIONAL OPPORTUNITY

A combination of hunting and trapping seasons are provided for small game and furbearing animals, respectively. Hunting seasons for small game animals typically extend from late fall to early spring of the following year. Combining all species, an average of 7,038 hunters harvest 18,436 small game animals per year, which averages about 1–6 harvested animals per hunter (Table 2). The majority of the harvest is cottontail rabbits (64%), followed by raccoons (20%), snowshoe hares (13%), and bobcats (3%).

Trapping season for furbearers are generally through the winter months. Combining all species, an average of 475 trappers take 14,207 furbearers annually (Table 3). The majority of the take is muskrat (44%) and beaver (37%), followed by raccoon (6%), river otter (6%), mink (4%), and bobcat (2%); other species represent less than 1% of the total trapping harvest.

Unclassified wildlife can be hunted or trapped year-around and no bag limits are set. Harvest pressure is low for the majority of these animals, as there is little to no documented harvest for 12 of the 16 species or groups. Those that are harvested or trapped are usually associated human-wildlife conflict and lethal take is a mitigating tool for nuisance or damage activities.

Table 2. Harvest trends for small game mammals, 1991-2000, Washington.

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Cottontail rabbit										
Harvest	15,528	17,706	12,574	14,944	13,619	12,704	7,304	8,203	7,065	7,203
Hunters	5,954	6,354	4,411	5,101	4,883	5,178	3,502	2,809	2,409	3,485
Snowshoe hare										
Harvest	2,017	4,488	3,793	3,110	2,826	2,533	1,042	1,463	483	2,398
Hunters	1,744	2,207	2,013	1,638	1,948	1,405	1,113	991	729	1,270
Raccoon										
Harvest	3,418	3,792	3,843	8,329	4,632	4,985	1,759	1,838	2,776	2,008
Hunters	1,255	1,261	1,076	1,787	1,551	1,408	484	794	504	1,117
Bobcat										
Harvest	675	1,026	661	565	1,074	1,227	152	140	253	206

Table 3. Trapping trends for furbearers and unclassified wildlife, 1991-2000, Washington.

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Furbearers										
Bobcat	218	257	245	262	485	691	365	180	296	59
Raccoon	1,172	833	950	1,105	810	1,273	1,307	832	571	250
Red fox	9	0	0	0	0	0	0	0	0	0
Badger	30	20	17	40	6	11	14	2	13	7
Beaver	5,036	3,785	5,968	7,347	5,163	7,456	8,116	4,558	4,819	642
Mink	732	624	640	720	375	596	607	424	462	101
Marten	246	140	67	176	52	74	80	14	140	18
Muskrat	9,275	4,420	6,005	6,056	5,335	11,028	10,924	4,117	3,572	1,159
River otter	482	597	564	798	1,368	2,070	772	656	727	83
Weasels	66	78	2	78	49	49	49	47	87	44
Unclassified wildlife										
Coyote	1,875	1,610	2,341	2,288	1,770	1,864	1,606	922	838	503
Nutria	0	0	289	365	320	923	1,116	486	712	267
Skunks	0	0	146	204	79	225	127	164	175	16
Number of Trappers	492	445	435	537	451	562	601	488	473	261

IV. DATA COLLECTION

There are no formal population surveys for small game mammals, furbearers, or unclassified wildlife. Rather, WDFW examines trends in total harvest and catch-per-unit-effort, which are collected annually using a hunter questionnaire or mandatory "Trapper's report of catch" form.

Data are also collected when any of these species are in conflict with humans. For bona fide human-wildlife conflicts, the species, location, number of animals, sex and age information, and fate of the animals are recorded. These data are used to help assess trends in wildlife populations and identify species distributions at the local scale.

V. SMALL GAME, FURBEARERS, AND UNCLASSIFIED WILDLIFE MANAGEMENT GOALS

The statewide goals for small game mammals, furbearers, and unclassified wildlife are:

1. Preserve, protect, perpetuate, and manage species and their habitats to ensure healthy, productive populations
2. Manage wildlife species for a variety of recreational, educational and aesthetic purposes including hunting, trapping, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography.
3. Manage statewide populations for a sustained yield.

VI. ISSUE STATEMENTS, OBJECTIVES, AND STRATEGIES

Population Management

Issue Statement: There is little documentation on the current distribution and relative densities of individual small game and furbearer species in Washington.

Objective 168: Revise the distribution map for all small game and furbearer species by 2008.

Strategies:

a. Revise the distribution maps using Priority Habitats and Species (PHS) protocols.
b. Revise the distribution maps from harvest and trapping data, sightings, and regional biologist interpretations.
c. Revise the distribution maps from survey and ground truthing activities.

Issue Statement: Managers typically define and organize species populations by geographical units (e.g., Game Management Units). Management prescriptions are then applied according to the status of the population within each unit. This approach helps distribute sustainable populations evenly across the species range.

Currently, furbearers are managed at a relatively large geographical scale; that is, eastern and western Washington. Because of this, the densities of individual furbearer species probably fluctuate widely, making local management of nuisance activity and sustainability problematic.

Objective 169: Develop furbearer management units by 2008.

Strategies:

a. Develop furbearer management units based on species biology and populations dynamics.
b. Develop furbearer management units based on nuisance activity.

Issue Statement: Accurate information on the status of furbearer populations is absent; as a result harvest levels are conservative. A more rigorous method of assessing animal populations is needed in order to ensure population health, maximize recreational opportunities, and suppress nuisance problems.

Objective 170: Develop quantitative protocols for assessing the population status of small game and furbearing species by 2005.

Strategies:
a. Develop quantitative methods for assessing population status from harvest data (e.g., catch-per-unit-effort, population modeling).
b. Develop and implement survey methods to quantitatively assess population status.
c. Improve the precision of current harvest estimates.
d. Develop management criteria that address damage and nuisance problems on private property while ensuring long-term sustainability of populations on public lands.

Recreation Management

Issue Statement: Information on the status of individual populations is necessary to accurately prescribe a harvest level that is compatible with maintaining sustainable and healthy populations. In the absence of such information, managers typically set conservative harvest levels, thereby minimizing the potential for over-exploitation.

Objective 171: Until *Objective 170* is completed, use at least two methods to assess the impacts of harvest on populations, and then set harvest levels based on the more conservative method.

Strategies:
a. Assess harvest impacts from three-year trends in total harvest, catch-per-unit-effort, or nuisance activity.
b. Assess harvest impacts using population modeling (e.g., population viability analysis, sensitivity analysis).
c. Assess harvest impacts using survey data, research findings, or other biological information.

Issue Statement: Currently, there is no harvest reporting mechanism for unclassified wildlife, except those that are reported as non-target or nuisance captures on trapper's report of catch forms. Moreover, the trappers report of catch form is problematic in terms of ease of reporting and data utility.

Objective 172: Develop a web based reporting system for furbearers and unclassified wildlife.

Strategies:
a. Phase in a web-reporting system for the trapper's report of catch forms.
b. Provide a mechanism for reporting capture of non-target species.
c. Develop web-reporting system in collaboration with Washington Trappers Association.

Issue Statement: One of the public's concerns about trapping is that trapping is non-discriminating to some extent. That is, non-target species can inadvertently be trapped and killed. With the prohibition on the use of body-gripping traps for recreational trapping in 2001 of all furbearers and unclassified wildlife, potential lethal impacts to non-target species caused

by trapping was eliminated. Nonetheless, public support for trapping is still relatively low to date compared to other recreational hunting opportunities. Therefore, efforts should be made to shape trapping opportunities based on public attitudes, while at the same time fulfilling the Agency's mandate to maximize recreational hunting and trapping opportunities.

Objective 173: Implement management strategies by 2008 that are consistent with the biological status of furbearers and public attitudes, respectively.

Strategies:
a. Incorporate best management practices for trapping and trap types in Washington.
b. Consider revising trap check times for lethal trap types.
c. Require all new trappers to take a trapper education course prior to being issued a trapping license.*
d. Consider restricting hunting or trapping opportunities that greatly impact the viability or distribution of other native species.
e. Publish management and trapping information in WDFW's annual Game Status and Trend Report.

*Strategy currently is implemented.

Issue Statement: Coyotes are categorized as "unclassified" wildlife, and can be hunted or trapped year-round. In the event that wolves become established in Washington State, the public has voiced concern about the chance for misidentification between coyotes and wolves.

Objective174: If wolves colonize or become established in Washington, minimize the negative impacts of coyote hunting/trapping on wolves.

Strategies:
a. Consider restricting coyote harvest opportunities if appropriate in areas occupied by wolves.*
b. Distribute educational information to hunters in areas occupied by wolves.*

*Strategy currently is implemented.

Problem wildlife management

Issue Statement: In the last two years, approximately 26% of Washingtonians have experienced problems with wild animals or birds. Of these, over half the problems were associated with small game mammals, furbearers, and unclassified wildlife (Duda et al. 2002). This accounts for nearly 425,000 negative human-wildlife interactions annually.

Objective 175: Minimize negative human-wildlife interactions so that the "number of interactions per capita" is constant or declining.

Strategies:
a. Develop limited hunting seasons for appropriate furbearer species.

b. Simplify special trapping permits via Enforcement Program to resolve damage caused by furbearers.
c. Increase recreational harvest (trapping and hunting) in areas prone to furbearer complaints.
d. Develop educational package with tips on how to avoid furbearer damage and nuisance activity.
e. Develop educational partnerships for informing the public on how to avoid furbearer damage and nuisance activity.
f. Develop contracts with private wildlife control specialists for managing individual furbearer species involved in damage and nuisance activities.

Issue Statement: Washington's fauna includes wildlife species that are not native to the state. Some of these include nutria, Virginia opossum, and eastern gray squirrel. Non-native species can potentially impact native wildlife through competition, predation, habitat manipulations, and other ecological processes. However, major impacts have not been observed, so no management actions have been conducted that specifically target non-native species. Nonetheless, an indicator mechanism is needed to detect major negative impacts to native wildlife caused by non-native species.

Objective 176: Develop a mechanism to assess the impacts of non-native species on native wildlife and habitat communities.

Strategies:
a. Provide a reporting process for hunters and trappers to report lethal take of non-native species.
b. Assess the impacts of non-native species by annually evaluating the problem wildlife complaint database.
c. Coordinate monitoring efforts of non-native species with federal, state, tribal, county, and private organizations

Public Education

Issue Statement: Hunters may misidentify game species of rabbit or unclassified wildlife with a protected, non-game species or furbearer.

Objective 177: Develop at least 2 publications or products that describe the differences between game, non-game, or furbearer species that may be easily mistaken.

Strategies:
a. Develop publications, in conjunction with WDFW diversity division staff, describing the differences between similar game and non-game species, including ground squirrels and western gray squirrels.
b. Develop simple identification materials for use in hunting pamphlets.
c. Develop pygmy rabbit/cottontail rabbit informational signs and post areas where pygmy rabbits exist.

Issue Statement: Washington State is home to approximately five million people and one-half million furbearers. Both people and furbearers exert pressures on one another (such as encroachment and habitat modification) and these pressures will likely increase in future years. Therefore, it's important the public understands the role of habitat for both conserving furbearer species and minimizing human-furbearer conflicts.

Objective 178: Provide educational information on furbearer habitat that reaches 100,000 people annually.

Strategies:

a. Develop a website describing proper habitat management for maintaining furbearer populations while at the same time minimizing human-furbearer conflicts.
b. Develop a viewing opportunity demonstrating proper habitat management for maintaining furbearer populations while at the same time minimizing human-furbearer conflicts.
c. Develop a brochure describing proper habitat management for maintaining furbearer populations while at the same time minimizing human-furbearer conflicts.

VII. LITERATURE CITED

Duda, M. D., P. E. De Michele, M. Jones, W. Testerman, C. Zurawski, J. Dehoff, A. Lanier, S. J. Bissell, P. Wang, and J. B. Herrick. 2002. Washington residents' opinions on and attitudes toward hunting and game species management. Harrisonburg, Virginia, USA.

APPENDIX A

RCW 77.04.012

Mandate of department and commission.
Wildlife, fish, and shellfish are the property of the state. The commission, director, and the department shall preserve, protect, perpetuate, and manage the wildlife and food fish, game fish, and shellfish in state waters and offshore waters.

The department shall conserve the wildlife and food fish, game fish, and shellfish resources in a manner that does not impair the resource. In a manner consistent with this goal, the department shall seek to maintain the economic well-being and stability of the fishing industry in the state. The department shall promote orderly fisheries and shall enhance and improve recreational and commercial fishing in this state.

The commission may authorize the taking of wildlife, food fish, game fish, and shellfish only at times or places, or in manners or quantities, as in the judgment of the commission does not impair the supply of these resources.

The commission shall attempt to maximize the public recreational game fishing and hunting opportunities of all citizens, including juvenile, disabled, and senior citizens.

Recognizing that the management of our state wildlife, food fish, game fish, and shellfish resources depends heavily on the assistance of volunteers, the department shall work cooperatively with volunteer groups and individuals to achieve the goals of this title to the greatest extent possible.

Nothing in this title shall be construed to infringe on the right of a private property owner to control the owner's private property.

[2000 c 107 § 2; 1983 1st ex.s. c 46 § 5; 1975 1st ex.s. c 183 § 1; 1949 c 112 § 3, part; Rem. Supp. 1949 § 5780-201, part. Formerly RCW 75.08.012, 43.25.020.]

APPENDIX B

Resident Hunting License, Deer and Elk Tag Fee Changes Since 1901

Year	State Hunt & Fish	State Hunt	County Hunt & Fish	Deer Tag	Elk Tag
1901	NA*	NA	$1,00		$20 additional for killing a male elk
1905	NA	**$5.00**	$1,00	NA	NA
1913	**$5.00**	NA	$1.00	NA	NA
1921	**$7.50**	NA	**$1.50**	NA	NA
1929	$7.50	NA	$1.50	NA	**$5.00****
1933	**$3.00**	NA	$1.50	NA	$5.00
1948	**$5.00**	NA	**$2.50**	NA	$5.00
1953	$5.00	NA	$2.50	**$1.00**	**$5.50**
1954	**$7.00**	**$4.00**	**$3.00**	$1.00	$5.50
1956	$7.00	$4.00	**$3.50**	$1.00	$5.50
1957	$7.00	$4.00	$3.50	$1.00	**$7.50**
1958	**$8.00**	**$4.50**	**$4.25**	**$2.00**	$7.50
1966	**$9.00**	**$5.50**	**$5.25**	$2.00	$7.50
1971	**$12.00**	**$6.50**	**$8.00**	**$3.00**	**$10.00**
1975	$12.00	$6.50	$8.00	**$5.00**	$**11.00**
1976	**$14.00**	**$7.50**	**$9.00**	$5.00	$11.00
1981	$14.00	$7.50	$9.00	**$10.00**	**$15**.00
1982	**$20.00**	**$10.50**	**NA**	$10.00	$15.00
1985	**$24.00**	**$12.00**	NA	**$15.00**	**$20.00**
1992	**$29.00**	**$15.00**	NA	$15.00	$20.00
1999	**NA**	**NA**	NA	**$36 deer only. $28 with elk.**	**$36 elk only. $28 with deer.**

* Not Applicable

** Bold Indicates change from previous year.

APPENDIX C

Summary of 1999 Public land ownership and use (acres) in Washington State.

Landowner/ Agency	Outdoor Recreation, Habitat, Environmental Protection.	Resource Production and Extraction	Transportation and Utilities Infrastructure	Other Government Services and Facilities	Unknown Upland Uses	Total Upland Acres	Total Aquatic Acres	Grand Total
Federal								
US Forest Service	6,887,490	2,115,089	82,703	531	18,560	9,104,373	85,045	9,189,418
National Park Ser.	1,831,274		9			1,831,283	0	1,831,283
B. of Reclamation			468,808			468,808	11,341	480,149
US Army				404,313		404,313	0	404,313
Bureau of Land Mgt.	74,154	318,429				392,583	3,346	395,929
US Dept. Energy	162,879		1,094	198,723		362,696	916	363,612
Corp of Engineers	1,098		84,916	4		86,018	5,764	91,782
All Other Federal	186,567	2,032	9,798	36,787	162	235,345	1,905	237,250
Federal Total	9,143,462	2435,550	647,328	640,358	18,722	12,885,421	108,317	12,993,738
State								
Natural Resources	82,474	2,830,167	18,211	3,523	40,762	2,975,136	2,407,000	5,382,136
Fish and Wildlife	456,289	4,677	8	62		461,036	540	461,576
Transportation			150,561	1,903		152,464	0	152,464
Parks	107,608			11		107,619	0	107,619
All Other State	2,127	1,850	70	29,307	5	33,359	11,689	45,048
State Total	648,498	2,836,694	168,850	34,806	40,767	3,729,614	2,419,229	6,148,843
Local								
Counties	46,930	45,596	90,683	14,278	15,581	213,068	4,054	217,122
Cities/towns	167,044	14,981	119,897	12,049	2,691	316,661	3,189	319,850
Port Districts	4,032	2,836	18,170	16,779	176	41,993	3,849	45,841
All Other Local	19,033	2,491	14,185	24,153	781	60,643	15,489	76,132
Local Total	237,038	65,903	242,935	67,259	19,229	632,365	26,580	658,945
Total Public	10,028,998	5,338,147	1,059,113	742,424	78,718	17,247,400	2,554,126	19,801,526
Tribal	47,358	205,980	1,502	10,415	2,412,026	2,677,281		2,677,281
Total Public/Tribal	10,076,356	5,544,127	1,060,615	752,839	2,490,744	19,924,681	2,554,126	22,478,807
Total Private Lands								20,821,193

APPENDIX D

NOTE: *Many comments listed in this appendix refer to specific objectives listed in the DEIS. Comments marked with an * are from the SEIS. Many of the objective numbers have changed due to changes in the plan.*

Also, many comments received are related to the development of the three-year hunting season package. Those comments will be considered during the development of options for the package. Options for the package will be available for comment in January 2003.

GAME MANAGEMENT PLAN PUBLIC COMMENT AND WDFW RESPONSE

PUBLIC COMMENT	**WDFW RESPONSE**
GENERAL COMMENTS	
* The Draft Supplemental Environmental Impact Statement is well done and informative and I suppose necessary.	Thank you for your comment.
* Pg. ii, 1st paragraph, 3rd line: Add the following after public support for, "hunting with education to the public by utilizing hunting education classes as essential means of education;	The intent of the statement is to provide education to non-hunters. Non-hunters do not typically enroll in hunter education classes.
* Pg. iii: Management of migrating birds. Why? No mention of mourning dove hunting. Present season not acceptable.	No significant changes are proposed for mourning doves, so this was not included in the executive summary.
* Chapter one, Commission and Department Authorities. Items 5-9 addressing resource allocation, season setting for the archers, muzzleloader and modern rifle hunters and allocating permits should continue as the cornerstone for fair allocation of the deer and elk resources in Washington.	Thank you for your comment.
1. Chapter 1 Introduction, Pg . 1, 1st paragraph, 4th line: Add "wildlife related, harvest, recreational…. 2. Pg. 2 commission and department authorities, 2nd bullet. The department shall conserve the wildlife resources with the use of wildlife habitat management…. 3. Pg 2 line 2. The commission Shall…. 4. Pg 2 line 3: protection of wildlife and habitat resources… 5. Pg 3 #7, 2nd line: comment period and for public…. 6. Pg 3 # 8 addition: firearm hunters without having interactive……. 7. Pg 3 #10 Hunting equipment restrictions shall…. 8. Pg 3 #12, 2nd line: shall be given consideration…. 9. Pg 3 #14: establish migratory bird regulations (small game is not a federal concern). 10. Pg 3 # 15: poison restrictions shall be based…. 11. Pg 7, 1st section: Explain the PR federal aid funding source in detail. 12. Pg 9, last pgh, line 3: of the land for ~~commercial~~ most uses…. 13. Pg 9, last pgh. line 4: livestock rangelands and crop lands….	1. Harvest is part of both recreation and wildlife protection. 2. This is state statute and would require legislative change. 3-10. These guidelines have been previously adopted by the Commission and are not subject to edit in this plan. 11. Pittman Robertson Act funding is explained in background and setting section of the plan. 12. Current wording includes many uses. 13. This is a quote from another source. It cannot be altered.
* Pg 10, 4th paragraph: The Tri-Cities needs to be mentioned.	There are many towns, including Tri-Cities, that could be mentioned here. However, due to limited space, not all can be mentioned.
• Pg 10 Industry, 2nd pgh. 2nd line: cheap electric power and water for irrigation resulted…. • Pg 10, 3rd pgh., 3rd line: should be valued high….	This is a quote from another source. It cannot be altered. WDFW considers farmlands in general to be of high value.
*Land Use and Ownership • Page 11, 2nd pgh. line 1, second sentence; public land 41% is owned and managed by…. • Line 2: Omit: representing about 41% of the total public lands • Line 5: tribal lands account for about 15% of public lands.	This section was modified for clarification.

PUBLIC COMMENT	WDFW RESPONSE
*Pg. 12 Washington Hunters 1st pgh. Last sentence: This statement is not true as there was a strong downward trend if trends are used in accordance with population trends.	This has been clarified.
*Pg. 14 Resource Allocation: change weapon to equipment	While WDFW agrees in principle that terms other than weapon should be used when appropriate, there are times when "weapon" is the clearest way to describe specific hunting equipment.
* Pg. 15, Hunter Access: • Pgh 3: programs for both the private…. • Line 3, Strike "have yet to be fully evaluated and add are not yet known…. • Pgh 4, explain: Market base programs. • Pgh 4, line 3 strike "on the other hand"	This has been clarified under the hunter access section.
• Pg 16 Economics, pgh. 2: show the amount as a result of license fee increases. • Funding Charts: show a break down of each fund and how the fund was spent in detail. Comment: The overhead in the offices should be reduced, to be shifted to the field for habitat, law enforcement, and biological studies, to increase the protection of animal herds, trespass of private property, hunter rights, and law offenders. Any person not interested in the survival of animals and hunting rights, to manage animals instead of hunters should be removed from employment.	Fee increases are only proposals at this point. This recommendation is beyond the scope of the Game Management Plan.
*Pg. 18 General management issues 1. Scientific/professional management of hunted wildlife. add: and its habitat. 2. Pgh 1, line 5: change to read: decisisons, political concerns the only factor poorly rated. 3. Pgh 2, line 2: add of all wildlife and associated habitat… 4. Pgh 2, line 4 add other wildlife and its habitat. 5. Pg. 19, objective 1 (b): other wildlife and habitat 6. Pg. 19, objective 2 new (h) Increase public awareness regarding wildlife issues.	1. As described in the document, WDFW has limited authority over habitat for game species. 2. The reference to this comment cannot be found. 3. The reference to this comment cannot be found. 4-6. The last three comments have been incorporated into objectives 1 and 2.
* How much will be spent on the process from start to finish for the GMP?	It is difficult to estimate staff costs, but the entire process likely exceeds $200,000.
*There is a lack of any useful mechanism to make changes to the GMP, should they occur. Some areas are written broadly enough to allow for needed alterations, but the only way to amend the GMP is cumbersome and difficult, making it an unchangeable document.	With new information, a supplemental EIS to modify the plan can be completed in 60 days. In addition, language was added to the introduction section regarding the dynamic nature of the plan and modification of options.
* Push the dates back and get someone to take a look at the people they have working on this plan and realize it is bogus as it stands right now. You need to have the support of the people this affects and I truly don't believe you have it.	Thank you for your comments.
* How much input do you get from outside entities?	The vast majority of the comments on this list were received were from outside the agency.
* After the 1st draft what are the * and initials after the names on many of the recipients of the GMP EIS draft.	Some individuals requested an Executive Summary (ES) or both and FEIS and ES.
* What types of concerns are generated by the Draft?	The comments generated by the DEIS and SEIS are listed in this appendix.
We are opposed to the inclusion of ideas from the orchestrated propaganda campaigns of the anti-hunting animal rights movement….	All Washington citizens have a stake in wildlife management. WDFW appreciates your support in working together and informing the public so that good decisions can be made.

PUBLIC COMMENT	WDFW RESPONSE
*Many of the strategies listed are existing activities that are presently funded within the Agency. However, a number of the strategies are not funded. The final EIS should include a budget section outlining funding strategies, alternatives, and options for implementing the GMP.	At the end of the economic section in chapter 1, there is a brief description of how the plan will be funded. Funding for new activities will be actively solicited by agency staff. As the introduction states, "….the plan will direct the development of WDFW Game Division workplans and budget proposals." Priority activities have been identified during the comment periods and low priority activities have been deleted.
*Numerous strategies are listed, but none have been identified as preferred, which is the usual practice for an EIS. It is unclear how this plan will be used. It appears that the plan will be implemented in its entirety. If so, the budget piece is all the more important of a component.	The introduction explains the preferred strategy variance and how the plan will be used.
*WDFW Hunting Season Guidelines #10 should give more consideration; "allow wide latitude for individuals to make equipment choices."	These guidelines have been previously adopted by the Commission and are not subject to edit in this plan.
*The goals for Resource Allocation should be updated through expansion, though they have yet to be met.	Resource allocation has been identified by the Fish and Wildlife Commission as something that will be retained, therefore changing the goals is not necessary.
* Pg. 1. There is no specific data presented in the SEIS or GMP on the effect any factor has on game populations. A lot of research has been conducted and is available describing the role habitat, predation, roads, disturbance, and hunting have on populations yet these issues are glossed over without specific numbers or references. We recommend that there be more discussion on the role various factors play, their specific effects that have been reported in the literature, their likely influence on game animals in Washington, and hypothesized effects and results under different management scenarios.	This has been modified.
* Pg. 1. There is not discussion on the mitigation proposed when it has been documented that predation is causing deer and elk numbers to decline, even in the absence of hunting.	Mitigation measures are in the deer and elk sections.
* Pg. 2. Unlimited general season hunting for 3 point or better bulls will not increase the number of older bulls in a herd because it is these that are targeted. Hunting continues to truncate the age structure with this type of regulation. Mature bull and well developed age structure management is best achieved by spike-only hunting, with spike defined as 1x1, and limited branch-bull hunting by permit only.	Refugia , road management, and dense forest characteristics of western WA are helping achieve age structure objectives in most areas. Exceptions must be identified and corrective actions taken.
* Pg. 10. What population level is considered "healthy?" The WDFW has decided the existing cougar and black bear populations are desired but there has not been any rigorous analysis of predator-prey relationships to determine if the prey base can continue to support the current level. Predator population objectives set by WDFW may not be realistic, compatible with existing prey levels, or a level considered acceptable to other user groups and Tribes.	Population objectives in Chapter 4 meet WDFW's definition of healthy and cougar objectives have been modified.
* Pg. 11. Considerable evidence exists contrary to the statement, "Sect. 3.1 "managing game species has no significant negative impact on natural conditions or processes on soils or substrates."	Impacts to vegetation or "range" are discussed on page 13 under 2.5 plants. That section has been modified to include state and Federal Parks.
*Pg. 13. Add to issues, "Study the effect of the loss of native plants used by wildlife for food and shelter due to fire control, invasive species and habitat modification."	This is a lower priority than other objectives and with limited funding, will not be completed.
A definition of game vs. non-game animals is needed. Game appears to be confined to mammals and exclude fish.	We have clarified by using the term "hunted wildlife" in the Introduction.
It is absolutely critical that the following statement be included in the introductory remarks for each species. "The issues and options for this species are based on current management information. If additional information becomes available, they may be modified or other more appropriate options may be developed."	This has been included in the Introduction Section of Chapter 1 of the plan.

PUBLIC COMMENT	WDFW RESPONSE
Fact sheet, Section B – The Tribes may not have been adequately consulted as co-managers.	Several meetings and discussions have been held with the Tribes. This plan is not intended to limit state-tribal cooperation in any way. Rather it contains strategies designed to facilitate future cooperation and agreements between interested Tribes and the state.
Page vi. – While there is an attempt to estimate cougar numbers, this is basically a best guess. There has not been a detailed analysis if the prey base can support the level of cougar predation likely experienced by the objective cougar population. Cougars appear to be favored while attempting to "…provide maximum recreation days…" for elk and deer. The objectives are not necessarily compatible.	The method for estimating the cougar population has been added to the Cougar Section of the plan. The goal for cougar as well as for elk management is to manage for healthy populations and a sustained harvest. On a local basis, these goals may need to be more carefully balanced and the plan allows for that.
Page vi. – Increase harvest of antlerless animals assumes population at or beyond objective, and assumes density-dependent effects will result in better production with fewer antlerless animals.	Yes, that is the intent.
Page vi – Deer Management: First sentence states "factors that determine population levels beyond the control of state wildlife managers such as weather, wild fires, disease, and timber harvest." I find this statement inaccurate. I agree that climatic conditions are unpredictable, but timber harvest and to a limited degree wildfire and disease are more predictable and therefore allow for management opportunities. Presently there is a WDFW representative setting on the WA State Forest Practices Board who could provide input into timber management practices on private and state lands. This group needs to be put back on track and once again thinking of how to provide for and linking functioning watersheds.	Some predictability is possible, but management still tends to be responsive. A discussion of how managers may "influence" forest practices is described in population level changes in chapter 2.
Page vi. – WDFW proposes to increase elk bull:cow ratios to 18:100 and beyond, but bucks only at 15. The mating system of deer is less polygamous and consequently more male deer are needed to breed the same number of females than for elk.	Thank you for your comment, the buck objective now reads greater than 15. Please see the deer Section of the plan.
Page vii. – While the idea of a cougar protection area is nice on paper in reality cougars are highly effective obligate carnivores that have the potential of significantly limiting their prey and consequently their own numbers. Over the long term cougar reserves will not function as reserves because their prey will have been reduced to where few cougars exist in the reserve.	Cougar reserves have been removed from the plan.
Hunting Season Guidelines: - Item 15, Hunting season closures. Are closures warranted when manageable factors other than hunting are shown to have a more significant impact? Action should be directed toward those other factors as well as hunting season closures.	Depending on the population level and the situation, hunting closures may be warranted. Closures will be weighed on a case by case basis.
Page 4. Native American Section should be reviewed by tribal cultural folks.	This second draft includes a number of changes recommended by tribal reviewers.
Page 4. The statement, "the State of Washington has been inhabited for at least 9,000 years." Should be specific as to whom it is referring to. It should read inhabited for at least 9,000 years by Native Americans.	This change has been made in the Native Americans Section of Chapter 1.
Page 4. This chapter needs to be expanded slightly to help educate individuals of state and tribal relationships. I think it would be useful to list all of the Federally recognized Tribes of the state and those that may be affected by this plan	The plan has been modified in this section to reference all of the Tribes with reservations, whether they are part of a treaty or not.
Page 5. We disagree with the term sedentary as meaning people who did not travel. In fact, all of the in the State of Washington traveled for subsistence purposes.	The reference to sedentary was removed.

PUBLIC COMMENT	WDFW RESPONSE
Page 5. Concerning discussion of differences between west side and east side . We offer the following: "the Cascade Mountain range splits Washington State into two distinctive environments; the dry desert-like conditions of the east and the rain forested areas of the west. Native Americans relied on the conditions of their environment, the changing seasons and knowledge of their land in order to provide shelter, hunt, fish, gather, and interact with their neighbors. A network of trails and ability to navigate the river systems gave Native Americans mobility. This mobility increased with the introduction of the horse."	The language of this section was changed to include a number of these suggestions.
Page 5. Concerning assimilation of Native Americans. The sentence should be changed to include "white" settlement into the area, as it was already settled by a people that had been here for centuries. Also, "encourage" is not the term for the assimilation and placement onto Reservations. We would view this as forced assimilation.	The text has been changed to remove the word encourage.
Note that the appendices are lettered and not numbered as written in the text.	Thank you for your comment. It has been fixed
Note: Appendix B columns are not aligned.	Thank you for your comment. It has been fixed.
Page 7. The Social Environment: The State of Washington is extremely diverse in many respects and it would be helpful to regionalize information accordingly. This regionalized concept needs to be applied throughout the plan respectively.	Your point is well taken. The goal of this plan is to develop a statewide approach and then develop regional plans that implement the statewide approach.
Page 9. Figure 1 and text. There is a tendency to address populations as total numbers rather than % when discussing population growth i.e., a fall in sale of hunting and fishing licenses as a population has grown amplifies the negative impact population growth is having on wildlife preservation in general, as well as game, and may be a particular problem when it comes to justify general funds. This assumes the general population cares and wants to contribute to its preservation at a time that the contents of our states general fund continues to decrease.	Thank you for your comment.
Do as much as you can to encourage youth to enter the sport of hunting.	Thank you for your comment. Youth opportunity is addressed in the plan.
The document is generally well written and is quite comprehensive in scope.	Thank you for your comment.
There is no description of how this document is to be used, and how the alternatives relate to the issues. Some of the alternatives seem to be in conflict while in other cases all alternatives could be implemented.	Conflicting alternatives have been removed. The description of how the plan is in the Introduction.
I assume that one or more of the alternatives would be selected for action. How would this be accomplished? Are you asking for identification of preferred alternatives at this time?	Yes. You are correct about selection of alternatives. We have clarified how selections have been made to form the whole package of the plan. This information has been included in the FEIS as well as the introduction to the plan.
The plan is extremely ambitious, and I question whether the Department has the resources to implement the plan.	The accomplishment of many of the strategies will depend on available funding and partnerships. We will actively seek funding for these strategies.
I would like to express my support for the Washington State Game Department (WDFW) with their planning for the management of game resources in this state.	Thank you for your comment.
Impact statement needs to be written to reach grass roots people, especially in wording more common to hunters and fishers. Legalistic, scientific nomenclature, biological references, etc are not common amongst most user groups.	Thank you for your comment. We will continue to work at using common terms.
Impacts of certain strategies are not listed. Please also note impacts can be positive as well as adverse.	The impacts are identified within the issue statements and in the SEIS.
Impact statement needs to address that majority of funds raised to manage WDFW comes from people who buy a license to hunt or fish. Rules, regulations, and management strategies that are not simplified, logical, or favorable to license paying users will have a considerable economic adverse impact toward funding the mandate.	Funding information was added to the Economics Section of Chapter 1. We agree that many actions to manage wildlife can have economic impacts on the agency. However, the welfare of wildlife and achieving the population objectives are the priority.

PUBLIC COMMENT	WDFW RESPONSE
The EIS doesn't address that anti-fish/hunt sentiments from Wildlife commissioners appointed by the Governor and/or employees hired by the Department also impact sales of licenses.	Thank you for your comment.
The public involvement process is poorly explained. Additional information would be helpful such as the process of soliciting public involvement	The Public Involvement Section of the plan was expanded to better explain the process.
An appendix should be added to the document showing public comment and response by WDFW.	This is required in the SEPA process for the Final EIS and will be done.
The primary concern of the Makah Tribe pertains to the major changes in the direction of elk management by WDFW. The Makah Tribe has provided comments for use in finalizing this EIS. However, additional dialogue between the Tribe and WDFW will be required and welcomed in the future to ensure proper management of wildlife resources on the Olympic Peninsula.	Additional discussions with the Tribe are welcome. In addition, the bull:cow objectives have been modified to address the concerns.
In the Introduction Section, amend the WDFW Hunting Season Guidelines, by replacing the word "should" with "shall."	The existing language was carefully considered and adopted by the Commission in 1999. It provides guidance for the development of the plan.
Page 8. 3rd paragraph. & Table 2. This is a key item that gets lost in the rest of the document dealing with deer and elk. We noted a potential loss of deer and elk habitat capacity of 70% or more from impacts of Late Successional Reserve HCP for central Cascades of Washington for Plum Creek Timber. This would also affect bear and grouse.	We agree and added language to the Deer Section under Habitat Management.
I am concerned with the way the State and other jurisdictions go about obtaining land. If the state plans to take land or land rights they should pay market value and assure that taxation and zoning aren't used to diminish property values and usages.	WDFW pays appraised value when purchasing land and pays property taxes after purchase.
Page 8, 5th paragraph. US Forest Service does not "own" any land. It manages public lands for the public good. Delete "owned and"	You are correct. The change has been made.
Page 11, 3rd paragraph. Actually hunter allocation limited primitive weapon opportunity over time, as many of the initial seasons were eventually eliminated, as I understand the system, you cannot hunt in modern firearm seasons with a primitive weapon. The latter is a tremendous reduction in opportunity.	You may be correct that hunter allocation limited some primitive weapon opportunity over time. However, you can still hunt in modern firearm seasons with a primitive weapon, but you must have a modern firearm tag and wear hunter orange. You cannot crossover by tag type.
Page 11, in the list of questions: You should add, "Should fairness be a combination of opportunity (days) and success?"	The agency is striving for equitability between users so that trying to provide both opportunity days and success is difficult at this time. We will continue to look at options that might accommodate this suggestion in the future.
Page 16, "b", and "c". at top of page: Why is greater harvest success a problem. This should be re-written to say, "only restrict those that result in over-harvest". If you want to eliminate all items that increase success, what about riflescopes, duck calls, binoculars, etc.? What is wrong with increased success if the harvest is regulated? Alternative "d" would seem to be the best option.	We have revised the strategies to focus on public opinion of "fair chase".
Research dollars are limited and can take away from other needs. The plan should contain a section identifying ALL proposed research projects and assign each a priority for funding. The WDFW will never have enough funds to conduct all identified research needs, and could use the priority listing to address the most needed problems and market the plan to potential research partners (other agencies, industry, universities, etc.). All research needs should be prioritized for funding.	We agree with your comments about limited funds and plan to seek funding with many partners to accomplish the research identified. This has been clarified in the plan.
I understand that if this 6-year EIS is accepted by the Commission, that as an EIS, it cannot be changed for 6 years and all strategies will become law (set in stone) for all the species mention. It is unbelievable that there is no mention of considerations for any of the species, where environmental impact is (drought, fire, flood, pestilence, predation, acts of God, or other calamities) factored in.	The strategies are designed to be flexible, but the EIS process also allows for changes by either an Addendum to the Final EIS or writing a Supplemental EIS.

PUBLIC COMMENT	WDFW RESPONSE
I believe the Commission should not consider this very flawed 6-year plan. It should instead look at and ask for assistance outside the F&W Department. WDFW needs to listen and work with those that are financing them. WDFW has always used a 3-year plan, so now why the 6-year attempt?	Thank you for your comment. WDFW is currently working on development of their first game management plan. We set hunting seasons on a three-year basis.
Page 12. The Private Lands Wildlife Management Area (PLWMA) program almost seems like the state is selling wildlife for the benefit of private landowners and may seem that way to the general public.	The incentives given to landowners are primarily directed to improve their land for wildlife and provide hunter access.
Page 13. The Tribes should have been in on developing the management plan, not reviewing a draft.	This plan and process is mainly designed to solicit input from the non-tribal population on the direction they would like to see game management move in the future. The plan contains strategies designed to facilitate future cooperation and agreements between interested Tribes and the State. There was a level of tribal involvement, but this was not designed to be a joint document.
*The plan is so long and involved that the average person will not read it therefore the public will not attend meetings.	The plan is long but we have had good participation and interest.
*The plan had no local newspaper coverage so no one became involved even those who had access to the plan did not get around to doing it, as it took too much time.	We sent news releases to the major newspapers around the state. In addition, copies were sent to those interested individuals that have shown interest in game issues in the past. We are required by WAC 197-11 (SEPA Rules) to send out copies to agencies of jurisdiction (county, state and federal), Tribes, and any individual that requests a copy. SEPA Rule requires that Dept. of Ecology place notification of the environmental document on their register. We have also posted it on our SEPA website as well as on Wildlife Program's website.
*Only 10 percent of the hunting public are on-line and only some of those visit the WDFW web page so most of the hunters never even knew of the plan.	We sent news releases to the major newspapers around the state. In addition, copies were sent to those interested individuals that have shown interest in game issues in the past. We are required by WAC 197-11 (SEPA Rules) to send out copies to agencies of jurisdiction (county, state and federal), Tribes, and any individual that requests a copy. We sent copies to our regional offices, and the State Library. SEPA Rule requires that Dept. of Ecology place notification of the environmental document on their register. We have also posted it on our SEPA website as well as on Wildlife Program's website.
*It is time for your agency to cut….to cut managers, to cut programs, to cut staff, and to recognize that all planning efforts like this one, are unneeded, unwanted, and wasteful exercises that further reduce WDFW's limited agency funds.	Thank you for your comment.
HUNTER EDUCATION/SAFETY TRAINING	
Have all new hunters regardless of age take the hunter education course.	Thank you for your comment. This is beyond the scope of this EIS.
The image projected here is that firearms are only important in hunting and omits the importance of general firearm safety. The current program needs to expand to firearm safety for everyone not just hunters.	While we agree that general firearm safety is important, this issue is outside our legal authority and beyond the scope of this EIS.
Find ways to increase the hunter education courses or drop the requirement.	Thank you for your comment. We are working on recruiting additional instructors.

PUBLIC COMMENT	WDFW RESPONSE
Loaded gun in a vehicle should no longer be a game violation.	This is beyond the scope of this EIS. However, a loaded gun in a vehicle is a significant safety hazard and has resulted in numerous accidents. Because of these accidents, the agency feels it is acting responsibly.
*Pg. 14. It is readily apparent that the Hunter Ed/Safety Training program(s) are the poor stepchildren of the Department, lacking in emphasis, direction, resources, and results. What a place for what should be a significant building block for the Department.	Thank you for your comment.
* Hunter education by enforcement personnel on hunter ethics, and safety, along with understanding of regulations, will go a long ways to help the public's perception of hunters, especially by those fence riders that could lean either way in support of hunting.	Thank you for your comment.
* There is a need to institute special certification of bow hunters due to high wounding rate (29%). This could also be addressed by reducing the length of both the early and late bow seasons, or by eliminating the late season altogether.	There currently is a WDFW program available for special archery hunting safety education.
STATE ENVIRONMENTAL POLICY ACT & PROCESS	
The game management plans draft environmental impact statement is grossly inadequate, and fails to comport with even the most basic requirements set forth in the SEPA rules and regulations.	Please see the FEIS document, several changes have been made.
The objectives and alternatives contained within the DEIS do not represent the interest of a majority of Washington citizens. Thus WDFW has failed to adequately identify game management plan priorities.	Thank you for your comment. We conducted significant public involvement leading up to this draft plan and believe we have represented the interests of Washington's citizens. The EIS is designed to set game management for 6 years. It was not the purpose to set management for all resources.
SEPA requires that an EIS be prepared prior to the implementation of agency actions likely to significantly impact the environment.	That is correct. Please see the new FEIS document, several changes have been made. Action will not occur until at east 7 days after the FEIS is released.
EIS's may be combined with agency plans or may be issued as a separate document, but they should include a detailed statement regarding (i) the environmental impact of the proposed action/ (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented; (iii) alternatives to the proposed action [WAC 197-11-440(5)]; (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.	Please see the FEIS document, several changes have been made.
The agency is required to consult with and obtain the comments of any public agency that has jurisdiction by law or special expertise with respect to an environmental impact involved.	This has been done, with comments and responses incorporated in the FEIS.
Copies of such statement and the comments and views of the appropriate federal, province, state, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the governor, the department of ecology, the ecological commission, and the public.	Requirements of SEPA Rules were amended in 1984. WAC 197-11-460 (4) states that sending two copies to the Dept. of Ecology satisfies the statutory requirements of availability to the Governor and ecological commission.
The implementing regulations set forth the content requirements for an EIS. WDFW must comply with these regulations.	Please see the new SEIS document, several changes have been made.
An EIS cannot be quickly adapted to meet changing needs. Game management isn't a rigid set of rules; it must be able to be changed as conditions change. Therefore, I think implementing an EIS that will govern game management plans is a HUGE mistake.	The strategies are designed to be flexible and adaptable, but the EIS process also allows for changes by either an Addendum to the Final EIS or writing a Supplemental EIS. We also added language to the Introduction in Chapter 1 to better describe future modification.

PUBLIC COMMENT	WDFW RESPONSE
The EIS must contain a fact sheet, table of contents, summary of the contents, and discussion of alternatives, a discussion of how the proposed action affects the environment, significant impacts, and mitigation measures.	Please see the FEIS document, several changes have been made.
The department's decisions and/or recommendations regarding environmental impacts are not "clearly identifiable."	Please see the FEIS document, several changes have been made.
The EIS must include a summary of the proposal as identified in WAC 197-11-440(4).	Please see the FEIS document, several changes have been made.
Disregard of public opinion regarding sport hunting. Rather than incorporating the public's opinion into the management plan, the Department has identified ways in which to circumvent or change the public's values in order to gain acceptance for activities and practices from which the Department profits.	The language in Public Support for Hunting Section of the plan has been clarified.
Blatant disregard for the public interest is found in Objective 2 concerning trophy hunting. It is unclear whether alternatives "b" and "c" would result in the reduction or elimination of trophy hunting and contest hunts or whether they are intended to allow such activities to continue…	The language in Public Support for Hunting Section of the plan has been clarified.
It would seem that if the publics at large as well as a large number of hunters object to trophy hunting and contest hunts, the Department should offer an alternative that would prohibit all trophy and contest hunts.	The language in Public Support for Hunting Section of the plan has been clarified.
Trophy hunting and hunting contests are probably not something that the Tribes would like to see promoted. Shooting animals for their horns or antlers is not a good thing to promote.	The language in Public Support for Hunting Section of the plan has been clarified.
Way too much emphasis has been put on conforming to public concerns and not enough to science. It is the Department's duty to manage the wildlife to maintain the population and maximize recreation even when that conflicts with the general public opinion. Management should never be based on public opinion from an uninformed, emotional public.	We agree that science is the core value for managing wildlife. We have modified the section on Scientific/Professional Management of Hunted Wildlife to clarify our intent. Science and population objectives can be attained in many ways. Public opinion helps us determine those ways.
The Alternative Strategies listed under Objective 5 is listed out of order, appearing on page 13 before Objectives 1 through 154.	Thank you for your comment. It was corrected in Objective 5.
Even if citizen advisory councils are formed, public meetings are held, and opinion surveys conducted, there is no guarantee that the public, particularly the non-consumptive public's interest, will be considered since most commissioners overwhelming represent the views of hunters, trappers, and other consumptive wildlife users.	Thank you for your comment. All comments and opinions were considered.
We urge the Division to address unequal representation on the Fish and Wildlife Commission by adding a section in the strategic plan that represent the interests of non-consumptive wildlife users and of non-game wildlife.	This suggestion is beyond the scope of this plan and the EIS.
API recommends no new hunting programs.	Thank you for your comment, however your views may be in conflict with the agency's mandate. Please see page 5 of the FEIS.
Investigate new funding sources for wildlife and habitat preservation that could be generated from non-consumptive wildlife users.	We have been very active at seeking additional fund sources.
The active inclusion of hunters and the overt exclusion of non-hunters from wildlife management decisions violate the Division's responsibility to both wildlife and the public at large, and is an affront to this country's democratic process.	We have incorporated or addressed both non-hunters as well as hunters into our planning decisions as we proceeded through our EIS analysis. We also contracted with a non-agency consulting firm to perform a random survey of Washington's citizens.
Holding a public meeting only six days prior to the comment deadline is ridiculous. Insufficient time was allowed for public comment.	Based on the concern that there was not enough time to comment a Supplemental EIS and revise Game Management Plan was developed.
Inadequate opportunity for public comment, and a lack of public understanding as to the magnitude of the effect of the plan on hunting opportunities, particularly with elk.	Based on the concern that there was not enough time to comment a Supplemental EIS and revise Game Management Plan was developed.

PUBLIC COMMENT	WDFW RESPONSE
*When the Department chooses to make changes and get their agenda through, they sneak behind the public back and push their agenda in a quick timetable. This develops a lack of trust and demands immediate attention.	This planning effort has gone through a longer process of identifying issues, conducting hunter and public surveys and conducting public meetings. This issues were driven by public input and science.
*Non-hunters should have no voice in this plan. One must be mindful that this is a Game Management Plan and not a wildlife plan!	All Washington citizens have a stake in wildlife management including game management. It is clear that when ignored by managing agencies, the initiative process is used to set wildlife policy. By legislative mandate and conservation legacy, hunting recreation is a priority. It is WDFW's role to try to balance the sometimes competing interests of the public.
There is a need for a format to establish how the outcome of the proposed actions will be determined.	Selection of preferred alternatives is described in chapter one.
This whole public process has been a fouled up mess and should be stopped and redone correctly so the public can make well-informed decisions. The mess: 1) The PSA's did not reach many media sites and did not include any mention of such a major change to elk mgmt. 2) The mailing list to individuals was not the one with the currently most interested people or organizations. 3) The cited Peek report was not available. 4) The comment period was only 4 days after last public meeting until it was extended. 5) The GMP's were not available at some regional offices.	Based on the concern that there was not enough time to comment a Supplemental EIS and revise Game Management Plan was developed. Additional meetings were also scheduled. In addition, the mailing list went out to the hunting (and fishing??) community and other special interest groups, as well as to all counties, Tribes, and federal and state agencies with jurisdiction or interest as required by SEPA Rules (WAC 197-11). We included those individuals who attended both sets of our meetings, and any requests we received by e-mail, telephone or mail. The DEIS and SEIS was listed on Ecology's SEPA Register, WDFW's SEPA website and on the agency's Wildlife site. We also sent out public notices to major state newspapers. The SEPA process is for decision makers to use in order to make well-informed decisions, based on the analysis in the EIS and comments received from the commenting public.
*The entire public process continues to be flawed. When the process was extended the word games continued with PSA saying "public comment" will be taken instead of public meeting as we requested and commission instructed. We ended up with 4 meeting sites, not the original 7, leaving an entire segment of the population out of the process.	The supplemental EIS and revised Game Management Plan was mailed to everyone who attended the first set of meetings or commented on the plan in writing.
GENERAL GAME MANAGEMENT ISSUES	
The state desperately needs to use our hunting and fishing management dollars for big game and upland birds and not for songbirds, reptiles, and non-huntable species.	Thank you for your comment, please refer to the expanded Economic Section of the plan.
Our "game dollars" are being misused. Migratory birds receive the most attention while upland birds get very little and big game gets almost none (around a .05% return).	Thank you for your comment, please refer to the expanded Economic Section of the plan. Much of the funding for migratory bird management comes from the sale of migratory bird stamps and from the general fund not the wildlife fund.
Evaluate the new study in the Journal Science, Researchers at Stony Brook University, New York suggest bigger fish be allowed to live, and the species may double in size and number and produce offspring that are bigger. Consider the implication and then explore the possibility that those dynamics may work for all other wildlife and then reduce the harvest of the biggest species.	Some of those same ideas related to productive portions of wildlife populations are incorporated in management efforts and in the strategies in this plan.

PUBLIC COMMENT	WDFW RESPONSE
The plan starts with the assumption that the only possible way to control wild animal populations are via hunting and killing the animals. There are other ways to control animal populations that should be explored as alternatives.	The legislative mandate for the agency specifies attempting to maximize hunting recreation. Therefore hunting is the primary tool used to manage population levels. Although there are situations where hunting may not be feasible and other alternatives are used to control populations.
The rights of the people of Washington to petition, vote on initiatives, and have them upheld should never be abridged.	Thank you for your comment. Legislative decisions are outside the scope of this EIS.
We are particularly concerned about how WDFW manages resources adjacent to national park service areas, especially those that seasonally use habitats within the parks.	We are committed to continued coordination with other agencies, which is described in several areas of the plan.
We request that WDFW consult with individual park managers prior to management activities that would be likely to affect the abundance and diversity of species within nearby park ecosystems. Obviously, we would not like to see non-native species introduced on lands adjacent to or near National Park Service areas.	We are committed to continued coordination with other agencies, which is described in several areas of the plan.
*Pg. 15 Economics. Recommend that the GMP include a expanded and detailed accounting of the expenditures and contribution to local economies made by the hunting community.	The plan has been revised and economics included.
SCIENTIFIC AND PROFESSIONAL MGMT. OF HUNTED SPECIES	
Yakama Nation recommends management must be based on science to succeed in the long run. The State needs to make concerted efforts to educate the public and especially the Fish and Wildlife Commission on these issues.	Thank you for your comment, please see expanded section on Scientific/Professional Management of Hunted Wildlife.
The GMP should be based upon fact and data, not opinion. Several comments appeared to be opinion, not objective discussion. The data should be presented in the document so the reader can assess the rationale behind WDFW's management direction.	We do attempt to provide the rationale within the background information and the issue statements. Please refer to the documents identified in the FEIS Fact Sheet. What we have tried to do is review the literature as contained in the Fact Sheet, utilize our biologists' expertise, review each comment along with agency policies and then analyze where management changes can be made based on this analysis.
Management should be conservative – there is a problem with cougar and prey and we feel that cougar management may not be conservative with respect to prey protection.	Specific local situations can be addressed within the parameters of the strategies in the plan. Please refer to population management within the Cougar Section.
Management should be flexible and adaptive.	The strategies are designed to be flexible and adaptable, but the EIS process also allows for changes by either an Addendum to the Final EIS or writing a Supplemental EIS. We also added language to the Introduction in Chapter 1 to better describe future modification.
* Pg. 18 objective 1 strategies (b & c). WDFW needs to improve its' record on getting public input for management plans, environmental impact statements, etc. Too many times in the past input on hunting seasons has been solicited in the fall when many hunters find it difficult to provide input because of the obvious conflict. I object to leaving it entirely up to WDFW managers to determine if "outside peer review is needed." If management is to be based on science by professionals then outside peer review should be part of the process every time.	Public involvement is initiated in the fall for hunting seasons, but continues into winter and spring with a decision by the Commission in April. Outside review of every action wuold be cumbersome and possibly expensive. Some actions are not controversial and do not need extensive review.
* Pg 19 objective 2 strategies (a-g). I support all of these strategies that will improve participation for stakeholders to provide input.	Thank you for your comment.
*Pg. 15 Economics. Recommend that the GMP include a expanded and detailed accounting of the expenditures and contribution to local economies made by the hunting community.	That information has not been developed at the local scale, but could be incorporated into future publications (e.g., fact sheets and news articles) when developed.

PUBLIC COMMENT	WDFW RESPONSE
Objective 5. All alternatives are important. Alternative "c" should be expanded to include more public meetings on important issues and use of WDFW web site as a public comment vehicle.	Thank you for your comments. We will continue to expand the use of the Department website for these types of issues.
Objective 5. We recommend that the composition of citizen advisory councils should be limited to hunters/general public with no rabid anti-hunting element.	Thank you for your comment. The underlying concept of these advisory groups is to provide a cross-section of ideas on wildlife management.
Objective 5. Public opinion surveys should be conducted so that extreme anti-hunting views are identified and discounted so as not to bias the survey.	Opinion surveys are conducted to be representative of the population and be un-biased.
*pg 19 objective 2 strategy (d). Conduct public opinion surveys annually.	Public opinion surveys are very expensive. We conduct surveys as frequently as we can to address current issues.
*pg 19 objective 2 strategy (g). Set up programs for Advanced Hunter Educaion graduates to take part in activities to collect data.	This objective encourages all citizens to participate, including AHE graduates.
The citizen advisory council needs to be more diverse than present group and reach out to public hunting segment of the public.	We are always looking for members; interested citizens should contact WDFW.
It is the experience of this membership that the WDFW use citizen advisory councils as a cover and there is little follow through.	Thank you for your comment. We have been working to improve the function of the councils.
Page 17, This section should be moved to the start of the chapter. There is little "science" in the section, and the section seems to defer all management to political concerns. This may be my bias, but I think the section should clearly state that scientific principals are primary and political concerns are secondary. Perhaps this section should be renamed Public Involvement, as all alternatives deal with those issues, and have nothing to do with scientific or professional management.	The Scientific/Professional Management Section has been modified to clarify the issue you raised.
Use hunting public user-group comments from WDFW web page as usable input, not just interesting reading.	We carefully consider public input from all sources. Comments sent via e-mail or through our web page were reviewed and used when feasible.
Conduct hunting public opinion surveys every two years not five years.	Funding limitations restrict how frequently formal surveys can be conducted.
Science is always the deciding factor and this plan lacks the obvious scientific allowances for natural occurrences along with finding and maintaining accurate species numbers. It is the Department's job to educate the public and gain their approval when making decisions.	Thank you for your comment. We have referenced the citations used that helped guide our decisions.
Get the politics out of WDFW. Take Commission and WDFW power away from the Governor and try this one too…tell the public the truth.	The structure of WDFW is beyond the scope of this plan.
All species should be managed on a sustainable yield, scientific methodology, not according to political whim. The department should cease using the phrase "trophy" hunting.	Thank you for your comment.
*I would hope that there would be a way to manage game populations by science rather than initiative.	Thank you for your comment.
PUBLIC SUPPORT FOR HUNTING AS A MANAGEMENT TOOL	
Many studies indicate that sport hunting does not result in an overall population decrease of targeted predators, reduction in wildlife-human conflicts, or an increase of prey species.	Other studies and our data suggest that hunting can and does impact wildlife population levels, complaint levels, and at times can result in increased prey species.
*Though correct in its intent, Public Support for Hunting as a Management Tool, should not be the ultimate driving force of decision making.	Thank you for your comment.
* There are many references to hunting as a game management tool in the plan. While hunting is most definitely an effective and cost efficient management tool, it is much more than that. We ask that a statement referring to hunting as a priority recreational activity be incorporated into this GMP. We do not want hunting be reduced to a simple "management" tool by failing to acknowledge the purely recreational aspects of the activity.	The importance of hunting recreation is emphasized in the introduction under the legislative mandate; it was restated in the hunting season regulations section.
* Have regional offices forward additional stories & photos to the print press locally involving human interest stories with hunters that show positive efforts by hunters and others to improve wildlife and habitat.	Thank you for your comment. Objective 3, strategy e and objective 6, strategy e address this suggestion.

PUBLIC COMMENT	WDFW RESPONSE
*Pg. 21 objective 3 (d) Educate the public and emphasize hunting….	Covered in strategy "a"
Page 14. Public support for hunting as a management tool. Data needs to be provided from WDFW's questionnaire (surveys) so that one can see how strongly issues were supported and were not supported. How was the random sampling performed?	The results of the opinion surveys are available from WDFW's Olympia office. The reports are very comprehensive and would take up too much space in the Game Mgmt Plan.
Page 14. Issue Statement: - The first bullet statement needs some data, some references, some facts, some questionnaire results (along with confidence intervals) to back it up. How did WDFW come to this opinion? There should be supportive data in the appendices so the reader can be assured that this statement is true.	The Fact Sheet for the FEIS provides a list of the supporting documents which are available from WDFW. The reports are very comprehensive and would take up too much space in the Game Mgmt Plan.
Micro-managing predators won't increase deer populations or aid ecosystem health.	Thank you for your comment.
Build a new legacy. There is no need to turn the general public into hunters (or even pro-hunting). They need to understand the management purpose and rationale for harvesting. They need to be assured that harvesters have the skills, values and knowledge that will allow them to be effective management tools. Once consumptive recreation's stigma is erased (itself a predictable result of unrestrained, unethical slaughter and waste which preceded formal wildlife management) WDFW can carry out its wildlife mission.	Thank you for your comment. The language in Public Support for Hunting Section of the plan has been clarified.
Trophy hunting is not acceptable to our organization. The harvest and consumption of game is not a waste of wildlife. To kill an animal for the horns and cape or any other small collectable part and leave the majority of the animal to rot is not a viable option in this new century. Harvest of wildlife must include the responsibility of ensuring that the animal is treated with respect after it is harvested.	Thank you for your comment. The language in Public Support for Hunting Section of the plan has been clarified.
Hunting for the purpose of harvesting a trophy animal will only continue to affirm the public perception that hunting is bad. Possibly WDFW should be promoting the cultural and traditional ties to hunting rather than over emphasizing recreational harvesting of animals for sport.	Strategy a under Objective 4 is designed to determine what constitutes trophy hunting and what steps need to be taken to make hunting in general viewed in a better light.
The Department has a responsibility to Washington's citizens to manage large carnivores in a biologically sound, ethical, and humane manner that emphasizes these keystone species ecological importance rarely than merely their utility as a "resource."	We agree and we think the plan represents those concepts along with the concept of human use of wildlife resources, including hunting (please see the bear and cougar sections for further clarification).
The time, money, and energy required to manage predators for hunting would be better spent educating the public about the important ecological role of predators and how to prevent human/predator conflicts.	We think this plan will help us successfully accomplish both hunting and education.
Readdress the issue of the explosion of the cougar population as a result of the initiative passed banning the use of dogs in hunting cougars and bears.	Cougar population management is described in the plan.
Objective 1. Rather than management of non-native species, we should strive to eliminate them and prevent further introductions.	Several desirable non-natives (e.g. pheasants and quail) are successfully managed in this state without apparent significant impacts to the environment.
Objective 1. WDFW should develop a fact sheet on predator impacts-how many deer and elk can a cougar eat, what the potential impacts are on prey populations, discussion of additive versus compensatory mortality, depensatory effects, and lost hunting opportunity (reduced success, reduced hunter satisfaction, and reduced recreation days).	We have developed cougar fact sheets, however they provide more general information. The plan does not preclude addressing specific situations and educational materials as necessary.
Objective 1 is completely flawed and should be withdrawn. It is not the place for WDFW to try to shape public opinion; rather, the WDFW should shape its policies based on public opinion.	This objective (now #3) has been modified.
Your agency has violated the public trust and it is extremely difficult to support your agency in any way because it does not manage wildlife for the public, but rather the mighty $$.	Thank you for your comment.
Objective 1. I would rather see tax dollars spent on exploring non-lethal wildlife population management tools rather than on increasing public support for hunting.	Thank you for your comment.

PUBLIC COMMENT	WDFW RESPONSE
Objective 1. Change focus to understanding what needs to occur in wildlife management rather than increase public support.	Different parts of the plan incorporated both wildlife management needs as well as the needs of the public. Balancing the sometimes divergent public opinions is conducted when possible. This objective (now #3) has been modified.
Objective 1. The agency should strive for public approval, but science should determine management of our wildlife. Under no circumstances should any percentage of an uneducated, often emotionally guided public determine management of wildlife resources, whether controversial or not? Education of the public so they understand the reason for actions that may be taken, whether they agree or not, is a key agency responsibility.	Thank you for your comment. We have incorporated education into many portions of the FEIS.
WDFW currently has strong support of the public for the use of hunting as a management tool. It would be cumbersome, expensive, and time-consuming to poll the public each time WDFW contemplates an action, and establishing a policy that only favorable and politically-correct actions would be implemented could potentially fly in the face of science-based management and professional judgment. Keep the biological objectives foremost, not public opinion.	Thank you for your comment.
Given the results of the public opinion survey, it shouldn't take WDFW until 2006 to develop a policy either supporting or not supporting trophy hunting and hunting contests and modifies their regulations accordingly.	Thank you for your comment. Actions will be implemented throughout the 6-year management planning period
Tangentially the WDFW has restricted bird dog training and field trial by confining field trials to a few, specific areas.	Thank you for your comment. Bird do training seasons are part of the season setting process that begins in December, 2002.
Please continue to provide youth hunting opportunities. These hunts are ideal for youngsters.	Thank you for your comment. Youth hunting is addressed in strategy 3 of Objective 15.
Objective 1. Need to increase public support by 20% not 10%. Keep problem animal logs like the Department use to do in order to prove to general public the need.	The language for this objective has been modified to make it more clear, but specific percentages have been removed. This is now objective 3.
Objective 1 strategy "a" – The general public comments on what is controversial only means that the Department is not sure or afraid of its authority to manage wildlife. Get the facts first and then back them. You do not need to wait for 55% general public approval all the time. You are not doing the job our license money is paying for.	This strategy has been modified to clarify WDFW's intent and the percentages have been deleted. This is now objective 3.
Objective 1. Strategy "a" is too restrictive.	This strategy has been modified to clarify WDFW's intent and the percentages have been deleted. This is now objective 3.
Objective 1. Strategy "b" Publicize 6 stories per year to show value of hunting.	The strategies under this objective have been modified and the number of articles is not defined. This is now objective 3.
Objective 1. We believe that an aggressive program attempting to engender support for hunting/trapping needs to be initiated. Strategies 'b" and "f" are steps in the right direction, but much more effort on a continual basis is required, particularly in urban areas. Success in increasing public support for hunting may allow more forthright approaches in strategies "c" and "d".	These strategies have been modified to clarify WDFW's intent. Strategies c and d have been dropped. This is now objective 3.
Objective 1. Eliminate alternative strategy "c".	Thank you for your comment, we have eliminated strategy c. This is now objective 3.
Objective 1. Strategy "c". Need to be honest and not run "under the radar."	Thank you for your comment, we have eliminated strategy c. This is now objective 3.
Objective 1. Strategy "c" Drop this one, instead implement school programs for biological and social studies in elementary, middle and high school classes emphasizing hunting as a tool of wildlife management.	Thank you for your comment, we have eliminated strategy c. School programs are being provided by non governmental organizations that emphasize hunting as a tool. This is now objective 3.
Objective 1. Strategies "c" & "d"; are equally absurd to this objective.	Thank you for your comment, we have eliminated strategies c and d. This is now objective 3.

PUBLIC COMMENT	WDFW RESPONSE
Objective 1. Strategy "d" Drop this one.	Thank you for your comment, we have eliminated strategy d. This is now objective 3.
Objective 1 a strategy that expands "f" that includes the director speaking directly to urban audiences on the public values of regulated hunting and "hunter recruitment."	Thank you for your comment. While we did not include your suggestion in the strategy, we will consider implementing it. This is now objective 3.
*Pg. 20 objective 3. The public's concept of hunting is based on misrepresentations and lies of the animal rights fanatics. To base regulations and management decisions on the opinions of individuals who are not knowledgeable or have any direct stake in the activity of hunting or trapping is wrong. It is the role of the Department and Commission.	The language in strategy "a" references education prior to seeking opinion, rather than after a decision is made.
* Pg. 20 objective 3 (d). Hunting for black bear, cougar and furbearers should be based on management for sustainable populations the same way as deer and elk are. This is proactive management that keeps public safety, pet loss, depredation, T & E species and property damage issues to a minimum. The reactive approach cost taxpayers more money in the long run.	Thank you for your support.
*pg. 21 objective 4. Add the statement "if it is determined that such practices are detrimental to the affected species."	The preponderance of public comment was that electronic devices need to be regulated regardless of whether they are detrimental to afffected species.
*pg 21 strategy (b). Add the statement "inform and educate the public why such practices can be allowed when appropriately regulated."	In balancing public opinion, we chose not to include this suggestion.
*pg 21 strategy (c). Recommend regulation modifications to the Fish and Wildlife Commission based on the impact and needs of the affected species.	This language has been modified to closely align with your suggestion.
Objective 2. You are blatantly ignoring what the public is telling you.	Thank you for your comment, we will listen to what the public is saying and the plan . This is now objective 4 and the strategies have been modified.
* Trophy Hunting. This GMP still contains language referring to "Trophy "hunting. Hunting for the head and horns of an animal and wasting the meat has been illegal for decades in Washington. Do no confuse a hunter's goal of harvesting a large specimen as trophy hunting. Those who routinely harvest a mature animal are regarded as skilled and experienced outdoor people. Just as a bowler who throws many strikes is highly regarded by their peers. Are top-notch bowlers referred to as "Trophy Bowlers?" Some would have the public believe that the slaughter of mature bull elk in this state by POACHERS is "Trophy Hunting." It is not hunting anymore than bank robbery is banking. Delete this archaic reference from the GMP.	The idea of this strategy is to determine if there is a public concern about current regulations being considered as "trophy hunting". The strategies call for educating the public regarding concerns and changing regulations if necessary.
Objective 2. Trophy hunting may be inconsistent with the bull:cow ratio goal of 18:100 if the goal is to draw out the age structure and allow older bulls to breed.	In some situations, you may be right. Objectives in the Elk chapter address herd management issues. This is now objective 4.
Objective 2. Should either be removed or rewritten to say "by 2006, modify regulations associated with trophy hunting and hunting contests to more closely match public opinion."	This objective has been modified to clarify WDFW's intent. This is now objective 4.
Objective 2. Strategies "b", "c" and "d" should be deleted.	These strategies have been deleted. This is now objective 4.
Objective 2. Add the following strategy: Eliminate hunting contests. The survey shows an overwhelming 73% opposition to hunting contest. There is no reason for these contests to remain legal.	These strategies have been modified, please see objective 4.
Public surveys shouldn't affect game policy. Ask the hunters!	Thank you for your comment. Wildlife, including game, are resources of all citizens in this state. Our agency strives to balance the needs of all citizens of the State of Washington.
I think the WDFW should try to get the legislature to overrule all these "activists" initiatives and take over the game management.	Thank you for your comment.
It is important to try and educate and generate support for the use of hunting as an effective game management tool. I think hunting is especially important to effectively manage predators such as cougars and bears.	Thank you for your comment.

PUBLIC COMMENT	WDFW RESPONSE
I am concerned with an apparent disparity of values, goals, and actions between the public and the WDFW. The public seems to expect the WDFW to act as caretakers for our wildlife while the WDFW appears to be run as a recreational hunt club for the benefit of hunters who dominate the board and their meetings.	Thank you for your comment. The objective under Public Support for Hunting has been modified to clarify WDFW's intent.
It is a sad commentary when the biggest threat to our wildlife appears to come from the very Department that should be their first line of defense.	Thank you for your comment.
Again, note under predator management on page 20 the same indifference and hostility to the public mandate (you apparently feel you do not work for the public but rather the hunting special interests).	Managing wildlife frequently requires balancing differing public opinion on preferred actions.
I would suggest your priorities are clearly misplaced here and need to be corrected to reflect the public and wildlife interest and not just those of recreational and commercial interests.	Thank you for your comment. The objective under Public Support for Hunting has been modified to clarify WDFW's intent.
Pay off the commercial interests if you must (though they are the intruders), apprehend and prosecute the poachers, and restrict hunting and takings to only that allowed that can be reasonably (scientifically) substantiated.	Thank you for your comment. This FEIS is based on science and biological opinion.
Despite public survey results, the DEIS has objectives that focus on increasing public support for hunting of cougar, black bear, and furbearers and public acceptance of trophy hunting and hunting contests. This is difficult to understand. WDFW should implement law and protect the wildlife of the state, not attempt to mold public opinion.	Thank you for your comment. The objective under Public Support for Hunting has been modified to clarify WDFW's intent.
* I am a strong proponent of "Project Wild" as a way of educating the public and providing proactive educational programs so informed opinions and decisions can be made.	Thank you for your comment. Education is important and there are many areas of education targeted throughout this plan.
HUNTER ETHICS AND FAIR CHASE	
I would prefer a ban on all sources of artificial motion in hunting decoys. A plain decoy that sits on the water and does absolutely nothing. Hunters do not need more efficient ways to kill ducks. The reverse does hold true however; ducks need more protection from humans.	Thank you for your comment.
Harassment of hunters in the field by animal rights groups should be made a criminal act with a stiff fine.	There is a law against hunter harassment.
Expanding technologies are hurting hunting, in my opinion.	Thank you for your comment.
The archery regulation changes that were made during the 2000-2002 hunting season package were bad changes. We need the 400-grain minimum arrow weight to ensure adequate energy delivery. A compromise would have been 350 grains. The current regulation, allowing a 240-grain arrow, is woefully lacking in the ethics Department.	Thank you for your comment. This issue is likely to come forward in the next regulation package for hunting seasons.
Objective 3. Please add, "To develop and modify regulations for the use of electronic and mechanical equipment for hunting.	At this point, we have chosen to stay with electronic equipment to remain consistent with Commission direction. This is now objective 5.
Objective 3. Strategy "a" is ethically completely unacceptable and strategy "d" is contrary to the hunting season guideline to "provide maximum recreation days."	These strategies have been deleted. This is now objective 5.
The concept of making hunting easier by allowing more and more shortcuts to success is sickening. Put the "primitive" back into hunting in this state. Imagine hunters who give their quarry every advantage…That's the heart and soul of hunting.	Thank you for your comment.
Objective 3. Eliminate strategies "a" through "e".	Thank you for your comment. These strategies have been re-written. This is now objective 5.
Objective 3. Eliminate strategies "d", "e", and "f". Restrictions should be based on research and science not on the opinions of the urban public in the Puget Sound area.	Thank you for your comment. These strategies have been re-written. This is now objective 5.
Objective 3. Develop and modify regulations for use of electronic equipment for hunting. The EIS needs to address what is an advantage and if so according to last 10 years of deer harvest with more advanced equipment why than is the previous 10 years of deer harvest not much different if not more. EIS needs to see what other states are doing that has a successful hunting/management program.	This is now objective 5. The use of electronics is a fair chase issue, not a biological one. Regulations on season length, timing, antler points, etc., could be used to mitigate any increased success from electronic equipment.

PUBLIC COMMENT	WDFW RESPONSE
Objective 3. Electronic devices used for hunting purposes have been in use for many years. In the past 5-10 years many new such devices have been developed and are in common use. WDFW figures show no significant increase in hunter harvest, which would lead one to believe that electronic devices have no significant impact. It is not necessary for WDFW to study this issue. Use our FTEs and dollars for other purposes.	Thank you for your comment. See impacts in FEIS. This is now objective 5.
Objective 3. Alternative "c" We disagree, use our precious funds to create more game. Alternative "d" - Totally disagree with this one.	Thank you for your comment. These strategies have been re-written. This is now objective 5.
1. Pg. 21 pgh 1, line 1: closely related to the previous ~~one~~ issue …. 2. Issue statement, line 6: replace with equipment. 3. Line 8: The most recent debate was…. 4. Pg. 22 Objective 5: remove (a) whole paragraph beginning with conduct public outreach….	1. This comment was incorporated. 2. The term weapon is more clear. 3. Incorporated. 4. This strategy is important to many hunters and the public.
* Pg. 21 objective 5. Establish the simple standard that any electronic hunting technology that does not utilize natural ambient light, SHALL BE UNLAWFUL.	This comment is addressed in the strategies under objective 5.
*Pg. 22, Objective 5. Delete strategy a. (basing any management strategy on uninformed public opinion does not meet your legislative mandate) and replace with "Study effect of electronic devices and/o bating of wildlife on hunter success rates and restrict any that increase success rates by greater than 10.%"	Public comments on the previous draft suggested than WDFW should not spend money on this type of study.
* Pg. 22 How will the issue of electronic calls/devices being authorized for snow goose hunting be addressed?	The Commission can modify regulations as needed to address population objectives.
*pg 22, strategy (a) Delete entire statement. It furthers the concepts of "ballot box" and "management by popular opinion." This approach is wrong.	Thank you for your comment.
*pg 22, strategy (b). Change as follows; Regulate season length, timing, bag limits, and other restrictions as needed to address any increased harvest success from electronic devices *that are* not restricted *or from other harvest practices.*	"That are" was added for clarity.
*pg 22 strategy (c). Delete – This is a Pandora's Box and will create animosity between members of the hunting community, the public, agency and commission.	The needs and health of hunted wildlife can be accommodated in many ways.
*pg 22 strategy (d). Delete – Exceptions to hunting regulations for the disabled already exist.	This strategy was clarified to include "new" equipment restrictions.
There seems to be an assumption that greater harvest success is a negative thing, yet there are numerous places that the plan indicates greater harvest may be desirable. Increased harvest opportunity may also provide WDFW an opportunity to address the demand for alternative weapons and/or certain electronic equipment. Suggesting the restricted use of ALL electronic devices is too vague.	Thank you for your comment. These strategies have been re-written. This is now objective 5.
We believe that the current allowable utilization of advances in equipment technology is more than enough to permit hunters to succeed in their pursuit of game. We do not support the approval for in-field use of additional advances in equipment, electronic or otherwise. The time and funding spent in modifying/developing regulations for use of equipment advances would better be spent on other programs.	Thank you for your comment. These strategies have been re-written.
Our life and world around us is filling up with gadgets to aid in all aspects of living, the hunting and fishing world included. It does not matter whether an electronic device aids in the harvest numbers of game or not. If hunting is to continue to have public support, then devices like laser sights, distance finders, and radio collars for hunting dogs, mechanical decoys, or other such aids must be banned to keep the element of fair chase for wildlife. Wildlife needs a sporting chance in a world that already is coming at them with a rifle, as opposed to a bow and arrow or muzzleloader that was the only option 150 years ago. Keep electronics or other high tech aids out of hunting, if for no other reason than to keep public support for hunting. After all, it is the public that really determines what "fair chase" means.	Thank you for your comment. See discussion in FEIS under Impacts.
*Objective 5 (d). There is No room for exceptions to rules, regulations, or ethics even for hunters with disabilities!!!!!	This language has been modified to address new restrictions. Many feel this is important
Objective 6. All very good statements which should be given priority.	Thank you for your comment.

PUBLIC COMMENT	WDFW RESPONSE
*objective 5 and its strategies have added "baiting of wildlife." NWEA disagrees that there is any concept of fair chase when baiting of wildlife is used. Please remove this illegal activity from the GMP.	Baiting for many species is currently legal. Adding the subject of baiting to this objective facilitates further discussion on current baiting activities.
HUNTER BEHAVIOR/ETHICS	
I don't see the need for more F&G officers in the field; it only increases costs.	Thank you for your comment.
Objective 4. Use all the strategies. The WDFW should enforce the laws, but use good judgment as to the true intent of the regulations; abuses have occurred in the enforcement of the laws.	Thank you for your comment. Some of these strategies have been modified for clarification. This is now objective 6.
Objective 4. Delete strategies "d" and "e". It is not the job of WDFW to help improve the image of hunters.	Thank you for your comment. WDFW feels that hunting is a valuable wildlife management tool and should be retained. A positive public image of hunters helps retain hunting as a management tool. This is now objective 6.
Objective 4 should have some quantifiable target. The survey results indicate that public expects 100% compliance; therefore alternative "e" doesn't seem to be a practical approach. Strategies that increase field presence would do more to show the public that WDFW has the same expectation of 100% compliance and zero tolerance for offenders.	Thank you for your comment. At this point, it is difficult to objectively quantify compliance rates. This is now objective 6.
Objective 4. Hunter compliance can only be improved with increased numbers of actual agent contacts. Wildlife and poaching are not confined to schedules and cannot be handled within defined days and hours of work. Agents must have the latitude and freedom to do the job as they see fit in their particular areas of assignment. Furthermore, the number of agents now enforcing wildlife regulations is grossly inadequate.	Thank you for your comment. This is now objective 6.
*pg 22 objective 6 strategy (c). WDFW personnel need to be in the field for **all** hunting seasons. Actually make stops at caps in the field and chat/check licenses etc.	Thank you for your comment.
* Pg. 22 objective 6. Better feedback and follow-up to citizen tips concerning illegal activity, poaching, etc., is needed. Currently, the citizen witness does not hear back from the Department concerning the resolution of the complaint. This can create apathy by the public in regard to reporting these incidents, and better follow-up by the WDFW on these tips is needed as well.	Thank you for your comment. Your suggestion will be forwarded to WDFW's Enforcement Program.
*Pg. 22 objective 6. Add strategy, "Educate WDFW employees to call game violators poachers or criminals, rather than hunters."	Thank you for your comment.
Objective 4. Strategy "f". - This is a major need. You are not using your website as much as could be done to improve hunter understanding and ability to access regulations effectively. Delete strategies "b" and "c".	Thank you for your comment. We do feel that concentrated enforcement of laws is important as well as education and simplifying the laws. Objective "b" has been modified. We will make efforts to increase the effectiveness of our website. However, not all hunters have access to the web, so other methods will also be used to provide public involvement. This is now objective 6.
We believe that the single most important thing that could be done to improve hunter behavior in the field would be to greatly increase the number of enforcement officers.	Thank you for your comment. Funding limitations are the greatest problem for increasing officer numbers. Enforcement staffing is outside of the scope of this EIS.
Enforce the regulations with the intent they were written.	Thank you for your comment. Enforcing regulations is outside of the scope of this EIS.
Seriously crack down, arrest, and jail all Indian violators.	Thank you for your comment. This is not within the scope of this document.
*The plan needs to include language that is in response to public input that the Department is committed to maintaining or enhancing its current enforcement effort.	This strategy has been added to Objective 6.
I strongly support Objective 4 strategy (f).	Thank you for your support. This is now objective 6.

PUBLIC COMMENT	WDFW RESPONSE
* Hunter Behavior objective 6 (c). Can there be discussion of adding the Reserve Officer program for DFW enforcement officers be added to the Advanced Hunter Education curriculum and incorporated for those interested.	Similar programs are currently available.
* The plan states "A majority of the general public think that a lot of hunters violate hunting laws." Increased enforcement by both uniformed and non-uniformed personnel has to be part of the solution for the future. A strong uniformed presence is necessary to deter violators.	Thank you for your comment.
* All hunting guides and outfitters should be licensed by the state. There are currently outfitters and guides that continue to violate fish and wildlife regulations and are involved in unethical practices.	The licensing of guides does not seem to have much impact on overall behavior of hunters. The correlation between improved behavior of hunters and guides with a license requirement is difficult to make. Typically in other states, once you license guides they feel justified in requesting special considerations for hunting seasons, dedicated permits, and changes to out of state hunter regulations. These considerations are designed to help their business. Other than license income, there seems to be little to gain with a guide license requirement.
• Pg. 22 add the following strategies: • (i) Remove regulations of dubious value. • (j) Improve hunter education by improving quality of student materials, volunteer instructor training, and WDFW interaction with volunteers. • (k) Increase funding for hunter education, (at present no WDFW funds are used all funds are from Pittman-Robertson and volunteers). • (M) Provide hunter education students with copies of the wildlife brochures proposed on this management plan. • (n) All game law violators shall by mandate attend a refresher hunting safety class such as drunk driver rehabilitation, whether a past gun safety class student or not. Cost of the full class at the expense of the violator.	Incorporated in strategy "f" of Objective 6. J, K and M condensed and incorporated in strategy "i" of Objective 6. Incorporated in strategy "h" of Objective 6.
PRIVATE LAND PROGRAMS AND HUNTER ACCESS	
Continue to provide incentives for landowners to create beneficial habitat for wildlife and allow outdoorsman to utilize their land for outdoor sports. Promote partnerships between outdoorsmen and landowners.	Thank you for your comment. That is the intent of developing private land programs.
Follow the model of other states, who have discovered that light and sporadic cutting of timber provides a food source for deer.	Thank you for your comment. In the habitat portion of the Deer Section, we added this strategy.
Objective 6. Alternative "d" should provide more workshops in several locations and tied to existing landowner groups (timber, cattlemen, etc) and coordinated with their scheduled meetings.	Thank you for your comment. We do plan to involve all of these groups in discussions and development of a private lands program. This is now objective 7.
Objective 6. Delete strategies "a" – Publicity alone isn't the answer. And "b" – Survey alone won't work; need to do "c", "d" and "e". Add strategy – To allow landowner to receive habitat incentives without having to post as open access by permission or otherwise.	Hunter access has been very important because the funding has come from hunting license fees or federal excise taxes on hunting equipment. This issue will be addressed by the stakeholder group identified under this objective. This is now objective 7.
Objective 6. The sooner the better. Many of us are both hunters and landowners and consider the hunting permit system in need of revamping. Consider the Idaho system.	Thank you for your comment. This is now objective 7.
Objective 6. EIS needs to address payments to private landowners for wildlife damages should be offset with permission to hunt to keep these damages down, and hunter access needs to increase by 20% if we are going to keep up with wildlife populations.	Thank you for your comment. We increased the percent of access to 25 to address your comment. This is now objective 7.
Objective 6. Alternative "f" Offer money incentives similar to Montana Block Management Program. Alternative "g" - Offer money incentives for damages only if permission for hunting is given.	Thank you for your comment. The stakeholder group identified in strategy e will address this issue. This is now objective 7.

PUBLIC COMMENT	WDFW RESPONSE
Objective 6. Do all solutions need to be found to minimize damage claims?	No, but it is important to have several options. This is now objective 7.
Objective 6. This objective needs to address the fact that hunters, in general, need to improve their behavior on, and respect for, private lands. Otherwise, we'll see access opportunities decrease rather than increase. Many of those clamoring for WDFW to facilitate increased access behave like pigs when out in the woods.	Thank you for your comment. The stakeholder group identified in strategy e will address this issue. This is now objective 7.
Before consideration of approaching private land owners for hunter access, it would be prudent to look at which private lands are refugia for maintaining game populations on open-to-hunting lands. Some private lands may be the source areas for hunting opportunity on huntable lands. To open the currently closed lands might jeopardize the hunting opportunity as a whole. Areas not jeopardizing a particular population might be opened for additional hunting opportunity. The incentives to do so should be balanced by the conservation of all species on those lands.	Thank you for your comment. We agree that refugia is an important consideration, this issue was addressed in many other areas of the plan including the section on Road Management.
To encourage owner cooperation develop an access permitting system similar to the access permit currently purchased with licenses and tags and direct the proceeds to the private owners to help defray expenses for security, vandalism, garbage collection, etc.	Thank you for your comment. The stakeholder group identified in strategy e will address this issue. This is now objective 7.
Start negotiations with Weyerhaeuser now to open up their lands for hunting. Weekend access during the general firearm season is not enough.	We have discussed access with major timber owners and will continue to do so.
We would like to see a regulation saying that hunters can only enter private land if they have a written statement giving them the right to do so. Make hunters take the responsibility of seeking access first.	Thank you for your comment.
Page 12, 5th paragraph. How does the state lose control in the PLWMA process? The entire process is controlled by WDFW and seasons set are agreed to by WDFW, and annual monitoring is required. Also, the potential for over-exploitation is no greater under a PLWMA plan than in a general open season, and in most cases would be less of a risk.	The statement about loss of control was from an opinion survey. This is a common concern expressed by hunters. The concern seems to come from the influence the private landowner has on season development.
Page 12, last paragraph. This paragraph ignores the long tradition of paid hunting in duck clubs. Many duck clubs in Washington state go back decades or even to the early 1900s. The change is in forestland and other uplands. Hunting on private clubs on private lands is a very old tradition in the USA.	You are correct regarding duck clubs. The statement in the mgmt plan is more general in nature and is intended to cover a variety of hunter access opportunities.
*Pg 14 Hunter Access. Develop a supplemental Access Permit or coupon that a license buyer purchases with his license. The license buyer presents the coupon to a participating landowner and at the end of the season the respective landowner redeems the coupons for payment. There would be no limit on the amount of Access Permits that a license buyer could purchase, so multiple opportunities could be exercised.	Objective 7, Strategy d, describes the development of a stakeholder group to review many ideas like this suggestion to revamp WDFW's private lands programs.
*Timber lands access. In concert with the Habitat Division, Enforcement Program personnel should work with local timber companies to identify potential areas where road closures could be liberalized during hunting seasons.	Thank you for your support. We recommend working with Wildlife Program staff as well, to help determine which roads probably should remain closed for escapement reasons
*Public lands. Develop Department Regional maps that consolidate State and Federal ownerships open to hunting opportunities and sell maps both through the Internet and Regional offices of WDFW.	The Department of Natural Resources already sells public lands maps, although they are not on the Internet yet. Page 57 of the hunting pamphlet provides hunters with that information. In addition, we will have new GMU maps available for the 2003 hunting season that use the DNR public lands map as the base. Those maps are intended to be available on the Internet.
*Pg. 23 objective 7. change "25%" to "5%" per year.	This objective will be difficult to achieve even at 25% in six years.
*Pg. 23 objective 7. Partnerships with private landowners are essential, and yet, the department dedicates less than a page on this subject and offers little creative or innovative thinking about these relationships.	Thank you for your comment.
*Pg. 23 objective 7. The key program for the future of Washington's fish and wildlife is the Private Lands Wildlife Management Area program. WDFW should seek to expand the PLWMA program ten fold in the next six years.	Direction on the PLWMA program is expected to come from objective 7, strategies c and d.

PUBLIC COMMENT	WDFW RESPONSE
* The Department needs to work with timber companies to improve habitat and determine the impacts of spraying on wildlife.	The Department continues to work with private timber companies and other landowners to protect and enhance wildlife habitat.
* Objective 7 (e). How do private entities such as the Inland Northwest Wildlife council, become members of the task group?	Either by expressing an interest to the Department or by the Department asking someone to participate.
*Pg. 23 There should be created additional cooperative incentives between the state and private landowners by enacting rules that encourage and allow logging through selective thinning.	Forest practice rules typically only address state and federal listed species. Loggin to enhance game species is not likely to be addressed.
*Pg. 23, Objective 7. If 4 wheeler (Quads) are not legal to operate on USFS roads/land, more enforcement needs to happen (Yakima/Nile area).	Thanks for your comment. This is mainly a USFS issue to enforce and is outside the scope of this EIS.
*Pg. 23, objective 7. Add strategy, "Be in the field and post signs and print in game phamphlet that it is illegal to drive four wheeled motorcycles on USFS roads.	It would be impractical to print all agency restrictions in the hunting pamphlet.
ROAD MANAGEMENT	
A voluntary road closure system would not work well in the majority of the state due to the general lack of compliance with current closures on public lands. Gates and other vehicle blocking devices are necessary to keep roads closed, especially during high use times like hunting seasons. The red dot, green dot system would only work with gates and other road blocking devices.	Thank you for your comment. Strategy c supports your statement.
Reduce road densities on all state lands, and then reduce them some more.	Thank you for your comment. This is outside the scope of this EIS.
When the state enters into a cooperative road closure system, all cooperators need to be notified and have the opportunity to participate in the process. A process needs to be created for informing Tribes of road closures.	Thank you for your comment. We will attempt to improve coordination with the Tribes on road mgmt issues.
Road management has a place in protecting game populations but it must not be biased against Indians. Cooperative road management must be a process involving all co-managers at the local level. There should not be unwarranted prohibited access from areas protected by Treaty.	Thank you for your comment. We will attempt to improve coordination with the Tribes on road mgmt issues.
WDFW needs to work with WSDOT on high impact areas studies. High kill areas need to be identified and management strategies need to be developed for those areas.	This is addressed in the Elk Section of the plan under Objective 29, strategy f.
The overwhelming support by the hunting public (>70%) is not well known to the general public. The roads issue comes up as a concern by the public in a number of natural resource and recreation programs. This support by the hunting community needs to come to the general public's attention in the natural resource debate.	Thank you for your comment.
Another issue statement/objective/alternate strategy section should be developed to deal with wildlife/vehicle deaths, particularly for deer and elk.	This is addressed in the Elk Section of the plan under Objective 29, strategy f.
Objective 7. An explanation is needed as to why road management plans in SW Washington and the central Cascades area are identified. It gives the impression road management is less important or does not exist elsewhere. Some explanation is offered in Objectives 8 & 9, but it should be moved to correspond with Objective 7. A target date should be established to measure achievement of this objective.	The issue statement in this section has been modified to explain the rationale. In the absence of dates, the objective is to accomplish the plans by the end of the plan (2008). This is now Objective 8.
Objective 7. Delete strategy "d' and "e", if we want to have an environment conducive to maintaining a viable wildlife habitat, hunters will have to sacrifice. Give private landowners more incentive to produce quality habitat that includes public access limitations.	Strategies d and e were deleted. Thank you for your comment. This is now Objective 8.
Objective 8 seems to indicate that WDFW does not know if there is a problem or not, about hunter acceptance and understanding of road closures. It does not provide a quantifiable way to measure success as stated.	Objective 8 (now 9) has been modified to better describe WDFW's intent. Completion of the plan is the measure of success.
*Objective 8. At the present time, private landowners, the DNR, and the Federal forest service are closing roads at an alarming rate. Now is not the time to create a WDW program to reduce road density.	Many hunters support road management. The plan identified in strategy a, should provide a balance of closures, but retain access overall.

PUBLIC COMMENT	WDFW RESPONSE
*Objective 8. Include sentence d that was deleted to de-emphasize road management in areas dominated by private lands (e.g., Willapa Hills and parts of the Mount St Helens area).	The strategy to develop road management plans may help open roads on private lands to address hunter access.
*Pg. 24 objective 67. I support the Green Dot Cooperative Road Management System. If you lack the level of enforcement to be effective, you should at least seek volunteer help, replace old signs and attempt to block some of the roads not to be used or needed.	Thank you for your comment.
* Pg. 25 objective 10. Change the word maintain in the opening sentence to manage, thus reading –"Manage hunter access opportunities…" This is the thrust of any program undertaken and more accurately describes the efforts undertaken on hunters/recreational users behalf.	Thank you for your comment.
Objective 9 states "maintain" hunter access. This should be stated more quantifiably to measure success. The alternative interjects another element beside more access; landowner problems associated with increased access.	The idea is to determine the current level of access and by addressing landowner problems, increase or maintain access. Clarification has been added to the plan in this section. This is now objective 10.
Objective 9. Strategy "e" delete, leave these alone for a few years so that we can study the benefits. Add, "road density issues need to be addressed by giving incentives to landowners to reduce same – maybe through Timber Fish and Wildlife."	The issue in southwest Washington needs to be addressed. Road density and active roads would be considered in the development of a plan. This is now objective 10.
Page 18, 1st paragraph - Actually, the Smith et al. (1994) report found that the distance to urban centers was the most important factor, and that road closures were a minor issue.	Distance to urban centers is important, but we consider road closures important to prevent poaching as well.
ADA access needs to be addressed for road closures that impact disabled hunters. If we are to have closed roads then they need to be spur roads and not mainline access roads. ADA access (gate keys) needs to be made available to the disabled hunter.	A strategy was added to this section of the plan.
An effort should be made on behalf of the bow hunters to address increased access of timber company lands that are routinely un-gated for other groups to have access. Equal access for all user groups.	We have discussed access for all users with major timber owners and will continue to do so.
* Closing roads to vehicle access seems like an inexpensive and less disruptive strategy compared to closing seasons or going to permit-only hunting. I support road management.	Thank you for your comment.
* If reducing harvest is the goal in southwest Washington, then the timber companies must be pursued to keep more of their gates closed during the modern firearms seasons when the vast majority of the harvest of bull elk is occurring. It does little good to keep the gates locked to keep out archers and muzzleloaders, and then open them all up to the hordes of rifle hunters.	Thank you for your comment.
* Right now the road management plan seems to have less to do with managing animal populations than it has to do with keeping rifle hunters happy.	Thank you for your comment.
*Pg. 24 paragraph 3 line 3: the need to improve the balance… • Objective 8: develop road management plans in southwest, northeast, southeast, and in Central Cascades…. • Strategies, comment item (c). Expanded enforcement would be more effective, and in terms of wildlife management, cheaper.	Incorporated. Incorporated in strategy "a" Actually gates can be funded through outside partners.
*Pg. 25, objective 10: change objective to read: industrial timberland in all Washington areas. • Add (a) landowner surveys in all Washington areas…. • Add (f) develop laws to prohibit violators from hunting in Washington when convicted of a game violation on private lands, for the first conviction of first offense..	Staffing levels and funding limitations require prioritization of areas. This suggestion seems a little harsh for all game violations and it is uncertain of the intended outcome.
*Pg. 25, objective 10. Maintain hunter access in all areas of Washington.	Funding and staff limitations require some prioritization of areas.
*Pg. 25, objective 10 add a strategy (f). Coordinate with landowners to allow hunter access for graduates of Advanced Hunter Education.	This may not be fair to other hunters.
TRIBAL	
The first sentence under the tribal hunting header needs to be cited if this claim is going to be made. Is this opinion or fact?	The statement has been modified.

PUBLIC COMMENT	WDFW RESPONSE
Stop waste of our game by Tribal hunters. I know of one incident where Native Americans killed animals and left them to rot.	WDFW encourages you to report these incidents when you observe them. Wastage is often illegal in tribal law as well as State law.
What is a non-tribal hunter? Call them what they are; "State" authorized hunters, which includes Native Americans.	Non-tribal hunters include everyone who is not hunting as a member of Federally recognized Tribe with rights to hunt either on or off-reservation. As you note there are many Native Americans who do not have tribal hunting rights and who participate in the non-tribal hunting opportunities. Your point on the use of non-tribal is well taken. However, we think that it leads to less confusion than the term state authorized hunter.
*The tribal wordings that WDFW works cooperatively with tribes and WDFW statement "We don't co-manage wildlife in this state with the tribes, we co-manage seasons---needs to be corrected. Federal interpretations of treaties are for co-managing and if the tribes do not agree to support this GMP, it is not going to work.	WDFW agrees that tribal agreement with objectives are critical to implementation of the GMP.
* The document states that the Department will "Maintain elk (and deer) populations within tolerance of landowners". Some landowners have zero tolerance for deer and elk damage and would like to see all deer and elk removed. We would prefer to see a threshold level of damage be the criteria that would trigger damage control efforts. Tribes have a vested interest in the game resource and expects to be included in setting these thresholds.	WDFW agrees. The Yakima Tribe should become a member of the task group to address damage identified in objective 16, strategy b and e.
* Permanent marking of tribally harvested mountain goats and bighorn sheep is not required by the Yakama Nation.	Thank you for your comment.
* There is a need to increase tribal cooperation and accountability where the taking and wounding of game animals is concerned. There is a need to reduce, to a minimum, undocumented tribal kills.	Thank you for your comment.
* Pg. 26 objective 11: Issue statement add: wildlife and habitat management….	The issue is about hunting so the term habitat is not appropriate.
* Pg. 26 objective 12: strategies letter (I) strike: at early plan develop Add: for imperative plan development.	Language clarified.
Research the issue of tribal over harvesting (truckloads) of wildlife.	WDFW follows up on all reports of poaching activities by tribal and non-tribal hunters.
I don't know how anyone could have misinterpreted the native American Treaty rights as badly as they have regarding hunting and fishing.	WDFW is obligated to follow the directions provided by the courts and the treaties.
Regarding the proposal to try and generate support for tribal hunting, I am not sure I agree that it should be included as part of the Game Management Plan.	Understanding and acceptance of the reality of tribal rights is an important step towards developing cooperative approaches that will benefit both tribal and non-tribal hunters.
The tribal hunting paragraph should read as follows: "Tribal enrolled hunters have been increasingly exercising their Treaty Rights to hunt game within their ceded area(s). Native People have a unique tradition, culture, and value related to gathering of traditional foods and medicines. Many Tribes have a inherited reserved right due to the language of Treaties signed with the United States that allows Tribes to harvest and gather game, fish, and other traditional foods and medicines, often with different seasons and reason than non-tribal recreational hunters. This has lead to frustration, anger, and misunderstanding on the parts of both tribal and non-tribal citizens. At the same time limited state-tribal coordination has made it difficult for tribal and non-tribal wildlife managers to do their jobs of managing harvest and protecting game populations."	The language in this section has been modified to include some of these suggestions.
Tribal hunting is an entirely unfair and discriminatory practice. I have to ask how 200 years from now the state is going to determine who is allowed to participate in special exclusive tribal hunts? Are the Tribes going to obtain sovereignty to the degree they determine their own membership? If so, will they then have become nations within our borders who practice the most discriminatory types of admittance? Tribal privilege needs to cease now.	WDFW is obligated to follow the directions provided by the courts and the treaties.

PUBLIC COMMENT	WDFW RESPONSE
More information should be placed in the hunting and fishing guide regarding Tribe Treaties and what they mean to all of us.	This has been included as alternative f under Objective 11.
More education must be given to show how WDFW is working with the Tribes to better increase wildlife for all, hunter and non-hunter.	This will be part of the implementation of alternatives e and f under Objective 11.
Objective 10. Improving public understanding and acceptance of treaty hunting is a very positive step for the Department to take. Tribes should be involved in the process.	We would like to work with tribal groups to help meet this objective. This is now Objective 11.
Objective 10 needs a quantifiable measure to evaluate implementation. Additional outreach to sportsman clubs, outdoor shows, schools, etc should be used.	Additional strategies have been added to this objective. In addition, coordination with the Tribes will be needed. This is now Objective 11.
Objective 10. Add two strategies as follows; "e" Information on tribal hunting and treaty rights need to be included in Hunter Education classes and "f" Joint outreach efforts on tribal hunting, treaty rights, and management needs to occur between the WDFW and Tribes.	This has been included as alternative e under Objective 11.
Objective 10. Improve hunting public's understanding and acceptance of treaty hunting rights. Alternative "a" we disagree. Alternative "d" we disagree unless funding can be had from BIA. Alternative "e" Native American hunting rules should be the same as the State rules for off reservation hunting at least with regards to weapon types, hours, seasons.	It is important to develop a package so that we can communicate with interested citizens about what the rules are for tribal hunting. Alternative d has little or no cost. The legal system has ruled that tribal rules and regulations can be different from non-tribal rules. This is now Objective 11.
Objective 10. Other strategies are to educate hunters when taking hunter safety classes on tribal rights and link the WDFW website to the NWIFC website to view the tribal annual harvest reports.	These are included in strategies d, e, and f of Objective 11.
Objective 10. Include information on the Tribes efforts to manage game including research on collared animals, money invested in such projects, efforts to wisely use the resource with examples of tribal regulations, and examples of tribal enforcement programs and actions.	This information can be included in the implementation of all the strategies under this objective.
Objective 11. "…plans for deer, elk, and/or cougar…" – Does "and/or" mean that there are already 5 plans (S. rainier, N. Rainier, N. Cascade, Yakima, and Olympic) in place and no more need to be completed or that there should be 5 per species?	This section was modified to clarify the intent of this objective. This is now Objective 12.
Objective 11. If possible, a prioritized list of proposed plans should be presented to indicate WDFW focus of effort.	It is too early in our discussions with the Tribes to list the priorities. This is now Objective 12.
Objective 11. Tribal hunting is a critical issue, especially for elk. Management and harvest by all hunters must be coordinated to effectively manage populations.	This is the goal of both objectives 11 and 12.
Objective 11. Strategy "a". – As stated earlier the herd plan process was very interactive and took a long time to arrive at a document that was generally acceptable. But elsewhere in this document it is stated "elk herd plans come under the management directive of this Game Management Plan…" (pg.28) Suggesting that objectives in the GMP supercede the elk herd plans. The GMP elk objectives have not been closely scrutinized by the Tribes and the rationale behind the objectives have not been backed up with available reference material.	We have modified the language to better clarify the relationship between the herd plans and this Game Mgmt Plan. In addition, the herd plans and the GMP are consistent. References are cited in the various sections. This is now Objective 12.
Objective 11. How would these plans relate to the herd management plans? Did the current plans not consider tribal hunting? I am not sure that all "a" to "d" alternatives could not and should not be implemented in all areas at the same time.	We have modified the language to better clarify the relationship between the herd plans and this Game Mgmt Plan. In addition, the herd plans and the GMP are consistent. This is now Objective 12.
* Pg. 26 Objective 12. The goal should be to have ALL Tribal Game Management Plans accomplished by 2003 not 2007	Based on experience, it will take a significant amount of time to develop these plans.
The first sentence under tribal hunting needs to be removed or cited from a specific document. This type of blanket statement is not valid for many of the Tribes in Washington.	The statement has been modified.
We would like to encourage the Department to enter into relationships with Tribes over treaty rights and game management. It would also be wise to advise the public on treaty obligations that the Department works under.	The steps are part of the strategies under this objective. Note the addition of strategies e and f in Objective 11.

PUBLIC COMMENT	WDFW RESPONSE
Very little in the way of management of elk and deer can be accomplished until some sort of common ground is met between tribal and state game managers.	The goal of achieving common ground with tribal managers is reflected in both objectives 11 and 12.
WDFW should review the Bolt and other similar court decisions and then modify their present management strategies to conform to the direction and intent of those decisions.	It is WDFW policy to be in compliance with the legal requirements of treaty requirements.
Tribal wildlife violations committed off-reservation should receive the same treatment as non-tribal violations.	Current WDFW policy is to have tribal violations tried in tribal courts.
*In those instances where tribal relationships are in need of improvement, the state and tribe need to develop agreements that include the collection and sharing of accurate harvest information.	This suggestion is facilitated by objective 12.
* The Muckleshoot Tribe emphasizes the need to work with tribes on setting population and management objectives.	WDFW agrees with most of these general comments and especially with the sharing of information. We also hope to come to agreement with the affected tribes on the establishment of areas where harvest is not appropriate for management purposes. Objective 12 talks about the development of coordinated harvest management plans.
* The Muckleshoot Tribe emphasizes the need to manage both predators and prey to provide sustainable harvest and meet management objectives. We emphasize the need to model predator-prey relationships and to assess whether the prey base can support various levels of predation and hunting concurrently.	We agree. Thank you for your comment.
* The Muckleshoot Tribe emphasize the need to ensure that there is adequate habitat to support the population size proposed in the population objective. We encourage WDFW to pursue habitat improvements and habitat protection in areas where the Tribe has documented elk body condition through our existing studies.	We agree. Thank you for your comment
* The Muckleshoot Tribe support management based upon sound science.	We agree. Thank you for your comment.
* The Muckleshoot Tribe support conducting specific management actions where evidence for those factors responsible for game animals not meeting management objectives has been documented and the action is likely to be effective as well as cost-effective.	We agree. Thank you for your comment.
* The Muckleshoot Tribe will manage game animals for sustainable harvest for subsistence, cultural, and ceremonial uses as hunting rights are reserved under the Treaties of Point Elliott and Medicine Creek. Causes for the failure of populations to meet management objectives will be assessed and management will focus on those manageable factors most responsible for game animals not meeting objectives. Reserves will not interfere with the Tribe exercising its treaty-reserved hunting rights and the Tribe ensuring that there are adequate numbers of game animals available.	Thank you for your comment.
* The Muckleshoot Tribe does not view the GMP as a plan to guide our season-setting regulation process, however, we do consider it necessary to comment on the plan as it does affect resources available for all user groups. Cooperative, prudent management of game resources will ensure long-term sustainability for all user groups.	Thank you for your comment.
* The main reasons for the decline of elk populations on the Olympic Peninsula is attributable to tribal elk hunting and high cougar populations.	Thank you for your comment.
PREDATOR MANAGEMENT	
* I thought I was reading wrong when I discovered an article about the "coyote-derby" in a regional update of an animal protection agency I support. When I realized that this atrocity actually happened I felt a sickness in my stomach. This is an unnecessarily cruel method that devalues life that can't possibly be the way to manage our precious wildlife. Put a stop to this kind of activity.	Thank you for your comment. Hunting contests will be addressed through objective 4 of the plan.
*Pg 26, Predator Management, lst sentence add "public" between "less" and "support."	This modification has been made.
*Predator management is very controversial. There have been good scientific studies on how predators don't necessarily affect game populations and this should be brought to the hunting communities attention. Please consider expanding outreach to the hunting community on this subject.	Thank you for your comment.

PUBLIC COMMENT	WDFW RESPONSE
* Pg. 26 pgh 2, line 3 add: response to the growing human, bear and cougar populations.	WDFW does not agree that the cougar population is growing.
*Pg. 27 Issue Statement. Need to address how the public feels about predator management to prevent excessive predation on wildlife. Especially to the point of threatening sustainability.	Thanks for your comment.
*Pg. 27, objective 13 add strategy, "Conduct research to determine a method of obtaining accurate predator populations.	This comment is addressed in species section.
*Pg. 27, objective 14. Add, "and/or where predation threatens sustainability of wildlife"	This can be facilitated within existing strategies in the black bear section.
* Pg. 27, objective 13: change to: sustaining predator populations in balance with prey species, public safety, social tolerances, and maintain….	This sentence was modified to improve clarity.
* The only justifiable reason to allow hound hunting immediately in King, Pierce, and Snohomish Counties and the rest of the State must have multiple hits prior to calling in the dogs.	The criteria for public safety cougar removal are the same statewide.
* Olympia wants to ban coyote hunting because we're going to kill off the last wolf in Washington?	A restriction on coyote hunting in northcentral Washington has been in effect for several years to protect wolves pioneering from Canada.
Page 20 Predator Management introduction. – The statement "Washington is blessed with healthy population of both cougar and black bear…" are relative terms. Many people may not agree with Washington being "blessed."	The word blessed has been deleted.
Page 20 issue statement, "…and the general public did not support reduction of predators to increase game populations…" – The actual question and survey result data behind this statement must be presented in the Appendices.	This survey document is listed in the FEIS Fact Sheet and is available for public review.
Bears and lions have been feeding heavily on young elk and deer, depleting the states herds in many areas. This along with miss-management has resulted in larger predator populations that need immediate reductions.	As identified in several sections of the plan, we are attempting to maintain a balance of predator and prey populations.
Hunting of cougars and bears is the most reasonable way to solve this increasing problem of public safety.	Thank you for your comment. We have tried to develop strategies that allow flexibility to address management of population levels, especially for human safety, livestock depredation, and property damage.
Predator management should be based on the best science available, which should help sell it to the public. The need for control of predators needs to be clearly delineated and an established protocol needs to be adhered to.	Thank you for your comment. We have tried to develop strategies that allow flexibility to address management of population levels, especially for human safety, livestock depredation, and property damage.
This section seems to side-step the tough issues, such as the role of predators in limiting game populations (hotly debated in professional circles) and the impacts of the initiatives limiting hunting of bear and cougar (e.g., did this species increase as a result).	Population levels and discussion on the impacts of Initiative 655 are provided in the Cougar Section of the plan.
On page 21, 2nd paragraph. The conflict problems seem to be laid entirely on the issue of increased human population and not on an increase in cougars and bears. However, in many cases, problems have increased in rural areas where not great human population growth has occurred, or problems have spread geographically.	The language says "…at least partly in response to the growing human population." We think that is accurate, though we also agree that we have seen increased problems in rural areas as well.
Objective 12. The Tribes were involved with setting elk population goals in the elk herd plan process, however, the Tribes have not been involved with setting cougar population goals. No data has been presented that sustaining predator populations will result in a balance with prey, especially considering meeting other hunting objectives of recreation days, hunter satisfaction, and population objectives. Predator-prey modeling has not been presented that shows whether the prey base is capable of supporting the guesstimated predator population while meeting other objectives. The objective sounds noble, but the alternative strategies may not ensure a balance with prey species.	We hope to resolve these issues and facilitate further discussion on cougar population goals through the harvest management plans identified under Objective 13, strategy a.
Objective 12. An alternative that addresses public education and outreach for all predator management activities, not just those stated in alternative "c" should be included.	Education and outreach for cougar and black bear management are described in those sections of the plan.

PUBLIC COMMENT	WDFW RESPONSE
Objective 12. Harvest numbers need to be more flexible to adapt to problem areas.	The idea is to focus harvest in problem areas rather than across the landscape. We feel this provides flexibility. This is now Objective 13.
Objective 12 does not meet with the mandate given to the Department to enhance game population resource for hunting public. It is the Departments job to educate the public that bears and cougars are not "Walt Disney" characters, and that increased populations impact more than public safety and livestock. The Department has not handled social impacts and education correctly. We don't agree with alternatives "c" or "e". Be more aggressive on "a" and "b".	This is now Objective 13. Strategy c was deleted and e was modified. Education strategies are included in objective 3, strategy a.
Objective 12, la. To require greater than 55% public support before protecting game populations weakened through predation destroys any appearance of scientific game management.	This objective has been modified and the percentages have been deleted. This is now Objective 13.
Objective 12. Strategy "c" should be deleted. Public education on this issue is the biggest problem the WDFW faces.	This strategy has been deleted. After analysis and review of comments, it was decided this strategy was not supported. This is now Objective 13.
Objective 13. WDFW is willing to conduct targeted hunts to protect commercial interests but is unwilling to conduct targeted hunts where it has been documented that predators are having a limiting effect on game populations in the absence of hunting.	There is flexibility with where harvest comes from as long as we manage for sustainable populations within the management units. This is now Objective 14.
Objective 13. There is no need for this action. Timber companies already have the authority to conduct hunts, including with the use of dogs, to alleviate timber damage.	Some companies have requested this option. This is now Objective 14.
Objective 13 and the black bear issue statement completely ignores predation and its effect on deer fawns and elk calves.	There is flexibility with where harvest comes from as long as we manage for sustainable black bear populations within the management units. This is now Objective 14.
Objective 13. Alternative "a" The Department needs to insure public understands that "Smokey" bear strips and kills young trees and 55% public support doesn't pay to control this problem. The licensed hunter does it voluntarily saving the taxpayers a lot of money and time. Alternative "b" Problem bears are not Yogi and Boo Boo. The Department is the expert, do your job and keep politics out. Alternative "d" We agree but on a limited basis try to provide opportunity for non-contract hunters as much as possible.	Thank you for your comments. This is now Objective 14. The document identified in strategy b will also provide public education regarding the effectiveness of trap and relocate.
Objective 13. Is the lack of public support or lack of hunter access (for fall or spring seasons) the limiting factor in developing a spring hunting program? Isn't this closely tied to Objectives 7 and 9?	Yes, timber companies must be cooperative with allowing hunter access for this strategy to be successful.
Objective 13. Alternative "b": I strongly recommend against attempts to demonstrate the feasibility of trapping and transplanting problem bears or other large animals for that matter. The literature is full of evaluations that show this is largely ineffectual, and creates an impression in the public that this is a viable alternative.	This strategy has been modified, the idea is to look at the literature and develop a report on the feasibility. We might also have some opportunity to test the feasibility under current activities.
Concerning trap and relocation efforts, it has been established in other states and probably in Washington, that trap and relocation of bears has a high rate of failure. This approach should be abandoned.	This strategy has been modified, the idea is to look at the literature and develop a report on the feasibility. We might also have some opportunity to test the feasibility under current activities.
Objective 13. Delete strategy "b", it won't work. Concerning strategy "d" allowing so called contractors to deal with the problem can concentrate on problem areas works the best. Also since several landowners supplement feed, allowing boot hunters around feeding stations amounts to baiting, which is illegal.	See previous response regarding strategy b. Timber companies must be cooperative with allowing hunter access and would not be allowed to feed in hunted areas for this strategy to be successful.
* Pg. 27 objective 14. The level of public support for spring black bear hunting should not determine whether or not a hunt should occur. WDFW should not manage a species on public views rather than sound biological principles.	Sound biological principles can often be achieved in a variety of ways and should emphasize those techniques supported by the public if possible.

PUBLIC COMMENT	WDFW RESPONSE
* Pg. 28 objective 14. Please mention the negative affects of commercial timber company bear baiting and the unnatural and biologically unhealthy congregations of bears this causes.	The effects of feeding bears are both positive and negative. It does appear to reduce tree damage.
Public opinion surveys on predator management should be conducted such that extreme anti-hunting input is discounted.	These are random surveys designed to represent the opinions of the overall public.
Predator management should fall under the guise of the regular hunting season for specific species. Where there are substantial problems with cougar or bears not dealt with by public safety removals, hunting seasons should be utilized where actual complaints are numerous.	This suggestion is provided under current strategies in the plan.
Coyotes should have a season versus being open for killing year round. Research on coyotes has shown, unequivocally, that indiscriminate killing only leads to higher population densities.	Thank you for your comment. At this point hunting on a broad scale is having minimal impact on coyote populations. Local flexibility is important to address livestock depredation.
Coyotes are addressed as furbearers and not predators in the GMP. They remain to be a very serious predator problem for ranchers, farmers and land/home owners. More emphasis was placed on whether to mistakenly target wolves instead of coyotes. This is absurd, because there are no wolves in Washington State. Remove wolf/coyote issue from GMP because it is not an issue.	Coyote populations appear to be healthy, but because they are unclassified, there are no restrictions on killing them. The restriction on coyote hunting to protect wolf colonization in north central Washington has been in place for many years; the information was provided in the SEIS in response to public comment. The objective and strategies in the plan merely reflect current management.
Crows should be classified as very opportunistic predators. They need to be managed as predators, to reduce their impact on small game and numerous other wildlife species. Crows predate heavily on game and songbirds. Their population is on the increase while small game and wildlife are in decline.	Crows are classified as predatory and may be killed in the act of depredation any time. In addition, there is a hunting season from Oct. 1 to Jan. 31 each year, consistent with Federal guidelines.
Spring bear hunts, even for supposed timber damage, will probably never be acceptable to the general public. Rather than allow a spring hunt on bears, a better idea would allow the timber companies to feed the bears from food stations. This would get the bears through the post-denning season and prevent the mothers from teaching the young to strip bark for the spring sugar flow to the needles. This has been used in other places to prevent damage to young stands of conifers.	Many timber companies currently feed bears. Feeding costs have grown expensive for timber companies. They are looking for alternatives.
Bears and lions continue to depredate heavily on fawns and calves throughout this state, decreasing herd health and age composition. Very low youth survival rates result in an older overall ungulate herd age. This over predation problem (including poaching and tribal over hunting) creates a situation where older bucks and does and bulls and cows, no longer can breed to sustain herd composition and health. Thus, the herd with very low youth survival can no longer survive and its numbers steadily decrease as is the current problem with most of this states herds.	Thank you for your comment. There may be local situations where predator and prey populations are out of balance. The strategies in the plan would allow flexibility to address those situations and still sustain healthy predator populations within management units.
Predators will continue to move into rural areas becoming a “more than major issue” for wildlife management and possible lawsuits against the state for their lack of proper management. This is a terrible waste of sportsmen’s dollars where they should be used for management and also an unnecessary cost to taxpayers. Non-lethal harassment, using hounds must be utilized to augment (change) cougar behavior.	We are looking for additional information from a recently initiated cougar research project to determine strategies for dealing with the urban interface. The use of hounds to change cougar behavior has not been well documented and is illegal under current state law.
Objective 14, alternative d, pg. 28. I do not believe this practice is currently in use as stated within the GMP and therefore, should be struck from the plan. Department may be referring to contracted hound hunters employed by private commercial timber owners. If so, please clarify this.	This is contracted hound hunters employed by timber companies.

PUBLIC COMMENT	WDFW RESPONSE
Since there has been no recent public discussion in regard to reintroducing wolves the WA and that two groups have only just asked the Federal Government for special protection for them in our state, we find the idea of restricting coyote hunting and trapping not only unnecessary, but also premature. We do support the preparation and distribution of an identification handout as we have done with black and grizzly bears, however.	The restriction on coyote hunting has been in effect in north central Washington for many years. This objective and strategies have been re-written to clarify that this is an option should the Department and Commission determine it is necessary. Thank you.
HUNTING SEASON REGULATIONS	
* I don't agree with the 9 day season for modern firearm deer season in eastern Washington. This causes severe crowding and becomes a safety issue.	Thank you for your comment. The Department is charged with the challenge of balancing hunting opportunities, crowding, and impacts to the wildlife resource. Please provide your comment during the hunting season setting process.
*Pg. 29, strategy 3 (a) 1. There is very little opportunity for disabled deer and elk hunters. I would like to see additional special hunts and access for disabled hunters.	Additional opportunity for antlerless harvest for hunters with disabilities is addressed under objective 15 (3) a. 1.
*Page 21 Hunting Season Regulations (RCW 77.04.012). – Managing for maximum recreational use may be inconsistent with managing populations for other objectives. Larger deer and elk populations mean more recreation days but in some areas predators are having a far greater impact than tribal and state hunters combined.	Thank you for your comment. Agency policies include both management for recreational and sustainable populations.
*Strategies (a) The goal of equal success. This goal results in too much unequal opportunity (time, space). Success should be moderated with reason and fairness, every group deserves a reasonable season regardless of success.	We agree. WDFW will strive to meet hunter desires while ensuring healthy populations of game animals. Thank you for your comment.
*Objective 15, strategy (a) 2. Two new permit only opportunities; the word opportunity should be struck. The ability to apply for a permit does not create opportunity, instead it restricts opportunity to only a few. The words are also much too broad; this section could be used to change the whole West Side to permit only. This section is also in conflict with the statement of not creating permit only hunting and the one, which provides general seasons for everyone.	While there is potential to restrict access in a GMU, there is also the possibility that a permit opportunity could be just during a different time frame.
* Page 29 objective 15 (d). Should be at least 20% rather than 10%.	In most cases, we are already at the less than 20% level.
* Pg. 28, objective 15 (1). Equalizing overall success rates for all 3 weapon users and give AHE graduates special opportunities.	The intent of the AHE program is to help WDFW address sensitive landowner and access issues. AHE opportunities should reflect that intent.
* Pg. 28, objective 15. Add a strategy, "Allow permit holders to use permit throughout the hunting seasons (early & late) or until the tag is filled during legal season (Archery).	Thanks for your comment. This should be under hunting season regulations
* Pg. 28: Issue Statement: line 4: add confining, <u>misleading, confusing and misprints in the law.</u> • Line 5, add: not enough game <u>due to the mismanagement of WDFW to recruit the efficient numbers of law enforcement personnel.</u> • <u>Strategies (a) 1. Replace weapon with equipment</u> • Pg. 28 4(a): Enhance not embrace. • Pg. 29, # 4: Change embrace to enhance. B) all season <u>hunting</u> opportunity strike rather than permit restrictions. C) while <u>striving to</u> achieve population, use other technologies to manage antler points, opening more carcass hunting and for each equipment category statewide d) add: <u>and habitat enhancements.</u>	The survey responses were mostly concerned with fewer restrictions. Thanks for your comment. Sentence modified. Thank you for your comment. b) not incorporated; changes meaning concerned with fewer restrictions. The term striving was added. Habitat issues covered in chapter 4 waterfowl and pheasant sections.

PUBLIC COMMENT	WDFW RESPONSE
This DEIS is incomplete without a thorough set of references to WDFW's enforcement capability, or lack thereof. Sophisticated management efforts are meaningless without adequate enforcement. Restricting of hunting opportunity based on criteria such as elk population tables 1 and 2 simply results in a reallocation of resources to illegal harvesters.	Information about WDFW Enforcement Program is available on the agency Web site. The strategies in the plan are based on current levels of enforcement officers. Illegal harvest rates are being monitored in select areas of the state.
To lessen conflicts between tribal and non-tribal hunters in the ceded area there needs to be more days available in the fall where there are no state hunting seasons in effect. Presently most of the days between September 1st and December 9th are open for either deer or elk in Region 3. Extensive harassment from continual hunting by non-tribal hunters may also lead to poorer condition going into the winter.	Thank you for your comment. The development of harvest mgmt plans between the state and Tribes is the best way to address potential conflicts.
Regulations that require harvest of three-point or better deer or elk contradicts the spike-only hunting in east side elk herds and is not the best science.	Thank you for your comment. WDFW is most interested in achieving population objectives. We think we can do that using a variety of hunting regulations. If we are not able to achieve objectives, we will come back to the public to recommend changing regulations.
The present method of game allocation is very good.	Thank you for your comment.
Hunting success should not be equal for all weapon types. Primitive weapons users should expect lower success rates. Long primitive weapon seasons can over stress big game animals.	Thank you for your comment. This issue was addressed in the Elk Risk Assessment Report available from WDFW.
All hunter types (i.e. Youth, Disabled, Archery, etc.) in a unit, regardless of timing, should have the same antler restrictions.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three-year hunting season package. Options will be available for comment next month.
Has the state ever considered a "primitive" weapons season? It seems like with the way the new muzzleloaders are, and some of the compound bows created today, they really aren't using equipment that is based in the spirit of what archery and muzzleloader hunting are based on. What about grouping re-curved and long bows; flint lock muzzleloader and compound bows; and modern muzzleloaders with modern day rifle?	Please see previous response.
Reduce crowding of popular modern firearm deer areas by providing split seasons similar to primitive weapon users.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are available for currently on the WDFW website and will be open for public comment in January.
At the current price for nonresident deer tags, I feel this state is pricing its way right out of the market.	Thank you for your comment.
Provide quality deer hunting opportunities by providing quality timing of hunts shared by all user groups instead of being monopolized by primitive weapon users.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are available for currently on the WDFW website and will be open for public comment in January.
Provide "early" deer hunting opportunity for all user groups equally.	Please see previous response.
Why, on the late deer hunt do archers get to take a doe if they don't get a buck? Aren't we trying to increase the deer populations in some areas (most areas)?	Antlerless hunting opportunity is provided in areas where we are meeting or exceeding population objectives for deer.

PUBLIC COMMENT	WDFW RESPONSE
Objective 14. Would like to see more even hunting seasons between archery, muzzleloader and modern firearm user groups.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are available for currently on the WDFW website and will be open for public comment in January.
Objective 14. Add strategy to provide more places where hunters with disabilities can get out and use electric scooters in the field.	Please see previous response. Our agency is always interested in ways to accommodate ADA access. This is now Objective 15.
Objective 14. This whole section is hard to follow and unclear. Unrealistic strategies for equal opportunity.	The allocation of hunting opportunity can be confusing and difficult to manage, but we think it is possible to achieve equitable opportunity between the weapon types. This is now Objective 15.
Objective 14. Under alternative "d" the goals of increasing hunter access and reducing crowding seem to contradict each other.	In places where access is currently limited, even low density access would be an increase. In addition, if access is increased, then hunters would have additional places to hunt, thus reducing overall crowding. This is now Objective 15.
Objective 14. Alternative a.1: The plan to "equalize overall success rates by 2005" is in conflict with the original goals of hunter opportunity allocation. I was on some ad hoc committee that reviewed this issue at the time of adoption, and I provided a mathematical analysis of the formulae developed to allocate hunter opportunity. The stated goal was not to equalize success rates, but rather a combination of hunter success and number of days in the field.	The committee worked on permit allocation and days in the field and they were not ultimately used. This is now Objective 15.
Objective 14. Strategy "a" 1. Equalizing success rates is not a good goal. Archers don't expect to have the success rate of a rifleman. Archery hunting was intended to be more difficult.	In opinion surveys, success has been identified as important to many hunters including archers. This is now Objective 15.
Objective 14 - It is difficult to understand the goal of a. 1 & 2. For a. 1., is the objective to equalize the success rate and the number of hunters between archery, muzzleloader, and rifle seasons? For a. 2. I am completely at a loss to understand the goal of this strategy. My best guess is that 10% of the GMUs would have 10% of the harvest comprised of "mature animals". If so it would seem to require permit hunting opportunities to achieve as stated in a. 3.	The goal is to equalize participation rates in each district to mimic statewide levels. This will better distribute opportunity. The goal of success rate equalization is to prioritize where opportunity is added when deer and elk populations are available. Strategy a 2 was deleted. This is now Objective 15.
The goal of having 10% buck and bull harvest over age three in at least 10% of the GMUs seems to be a very limited goal for maintaining older age class males. According to my math this would lead to 1% of these harvested animals being older than 3 years old. More older age class animals are needed for a well functioning population.	In reviewing our data, we are exceeding that objective in most areas and it was deleted from the plan.
Objective 14 needs to state "expand" populations not "maintain." We disagree on strategies "a-3", "c", and partially agree "a-4". On the latter add "Provide hunters antlerless opportunity in lowlands by utilizing weapons restrictions." Amend alternate "e" by replacing "general" public with "hunting" public. Amend alternate "f" by adding "satisfaction and/or dissatisfaction".	Many populations are at objective and should not be expanded. Hunters have asked for a variety of opportunities, which the plan reflects. WDFW considers the views of all citizens and the measure of dissatisfaction incorporates satisfaction. This is now Objective 15.
Objective 14. Strategy "a" 3. (a), is too vague. I am a staunch supporter of increasing opportunity for disabled hunters but only for those with permanent, serious disabilities. A doctor's note won't cut it.	There is a very clear definition of hunters with disabilities in current regulations.
Objective 14. Alternate strategy a.4. States provide general season antlerless harvest opportunities equal to recruitment in PMUs. First, a caveat should be added that states antlerless harvest by permit during general seasons. Second, it would be wrong to base the number of antlerless permits on recruitment at the PMU scale. The correct approach would be to determine the number of antlerless permits on a GMU basis in consultation with Tribes hunting each GMU to ensure that harvest does not exceed recruitment.	The plan's strategies would accommodate your suggestions. However, we think the PMU basis is appropriate for setting the harvest levels with actual permits allocated on a GMU basis. This is now Objective 15.

PUBLIC COMMENT	WDFW RESPONSE
Objective 14 will try to lower the level of hunter dissatisfaction to less than 10%. We feel there is no need to jeopardize the management of any species just so hunter dissatisfaction is below 10%. Base game management on sound science and let the chips fall where they may in regards to hunter satisfaction.	We agree that we would not compromise species management, but feel we can still increase satisfaction. This is now Objective 15.
Objective 14. Why not use disabled hunters for damage control hunts. There is a need for more opportunity for disabled hunters.	The plan's strategies would accommodate your suggestion. This is now Objective 15.
Objective 14 – I would like to see more even hunting seasons between archery, muzzleloader and modern firearm user groups.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are currently available for comment on the WDFW website and will be open for additional public comment in January 2003.
I would like to see the special permits for deer and elk available for dates either before or after the general firearms season. I don't enjoy crowded hunting conditions, particularly elk hunting.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are currently available for comment on the WDFW website and will be open for additional public comment in January 2003.
No crossbows during archery seasons or any season for that matter.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are currently available for comment on the WDFW website and will be open for additional public comment in January 2003.
Archery and muzzleloader hunting should be limited in the amount of technology allowed, these were originally intended to be a way to re-live the past, the primitive way.	Thank you for your comment. The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options will be available for comment next month.
No elk hunting should be allowed during the rut.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are currently available for comment on the WDFW website and will be open for additional public comment in January 2003. This issue was addressed in the Elk Risk Assessment Report available from WDFW. Some hunting during the rut can be accomodated without harm to the population.
*Elk seasons should always be in November and deer seasons about three weekends, not 10 days or less.	Hunting season lengths and timing are based on the available wildlife resources and the amount of hunter participation and harvest expected.
Antlerless elk permits should be completely eliminated except in those areas where orchards and farms are being damaged.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are currently available for comment on the WDFW website and will be open for additional public comment in January 2003.

PUBLIC COMMENT	WDFW RESPONSE
Allow a person to apply for eastern Washington special permit elk hunts, while purchasing a western Washington elk tag for the general season or vice versa. Because the number of special permits given out limits the numbers of hunters, hunter crowding would not be an issue.	There is still a concern about crowding and the number of hunters applying. For some permits would increase, reducing the odds of drawing.
Continue with the 3-point requirement for mule deer in Okanogan County.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options are currently available for comment on the WDFW website and will be open for additional public comment in January 2003.
* Get rid of 3 point restriction for mule deer hunting. It targets your prime breeders.	More prime deer areas are meeting buck escapement goals now, since the 3-point regulation was established. In many palces under current harvest regimes, buck ratio objectives could not be met without the 3-point minimum regulation.
Is the potential for negative impacts to non-game species used as a criterion for determining management actions such as setting a hunting season?	Yes, see section 2.2 in the FEIS.
The Issue Statement needs to drop prediction statement. Also the statement that there isn't enough game should only apply if you are talking about deer in the highland areas.	Thank you for your comment.
Move bow season back to late September/early October.	Thank you for your comment. The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options will be available for comment next month.
The Stella GMU elk numbers are declining. It seems 125 muzzleloader antlerless permits is too many.	Thank you for your comment. The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options will be available for comment next month. This unit is not being managed for elk. The intent of the high permit level is to address elk damage in the Kelso/Longview area.
We need quality elk and deer hunting areas (permit only) west of Interstate 5, in southwest WA. The areas are currently way too crowded.	Thank you for your comment. The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package. Options will be available for comment next month.
*There are too many whitetail deer in northeastern Washington. In unit 124 there are 1200 antlerless deer permits for rifle hunters. This is not enough! I would advocate that you consider having a two-permit quota for archery hunters and opening up the muzzleloader season for either-sex.	Thank you for your comment. There are areas in the state where the Department is trying to encourage an increase in white-tailed deer harvest. Please provide your comments during the hunting season setting process. Also see Objective 50.
*In my opinion, the weapon restriction per species is having a paradoxical effect on habitat and hunters. It creates a scenario where those who might have gone archery and rifle hunting, now confine their pursuit of game to two weeks rather than periodically throughout the fall.	Weapon restrictions were designed to reduce the crowding in the field and it has worked fairly well. If the restriction were lifted, all the unsuccessful archery hunters would be added to the hunters that are hunting during modern rifle season which is already suffering from a high degree of crowding.
*Objective 15 (f). Monitor levels of BOTH satisfaction and dissatisfaction.	That is our intention. Thank you for your comment.

PUBLIC COMMENT	WDFW RESPONSE
*I would like to see the availability of all big game licenses become impossible to obtain after the start of any big game season.	Thank you for your comment. Please provide your comments during the hunting season setting process.
*I would like to see hunters be drawn for a second deer tag with a different weapon of choice than their primary weapon of choice for those areas that the deer population would support such a choice.	Thank you for your comment. Please provide your comments during the hunting season setting process. Also see Objective 50.
*Allow a hunter to purchase any weapon choice and hunt the appropriate deer and elk season until successful.	Thank you for your comment. Please provide your comments during the hunting season setting process.
* Give seniors, disabled the opportunity to take 3pt minimum buck or antlerless.	Thank you for your comment. Please provide your comments during the hunting season setting process.
* Give youth hunters the ability to take any deer.	Thank you for your comment. Please provide your comments during the hunting season setting process.
* I don't agree with the Department's disable, youth and senior hunt without some kind of strategy or limitations. Shooting any deer will not fix the buck/doe ratio problem.	Thank you for your comment. Please provide your comments during the hunting season setting process.
*No place to hunt if and if you can find a place to hunt there are no animals there. All you care about is funding. It seems that what you really want is more preservation tan conservation, it's just that you need the conservation money.	Thank you for your comment.
* I would suggest the Departments objective should be to ease hunting population crowding by offering a split season choice or choose east or west side hunting, apply limitations to special hunts in eastern Washington by permit only for youth and disabled.	Thank you for your comment. Please provide your comments during the hunting season setting process.
* I would like to see modern firearm deer hunting be restricted to 2 pt. minimum for a few years and youth allowed to shoot any buck.	Thank you for your comment. Please provide your comments during the hunting season setting process.
* Early Archery hunting season should be lengthened or started a week later.	Thank you for your comment. Please provide your comments during the hunting season setting process.
GAME SPECIES DAMAGE AND NUISANCE	
*Landowner complaints seem to take precedence over sportsmen's needs and requests. How many landowners are we talking about who complain about damage? What can sportsmen do to help eliminate this problem?	WDFW is trying to balance the needs of both hunters and landowners. Hunters can work with landowners to help them alleviate problems.
* Contact graduates of AHE with opportunities of special hunts – issue special tags for damage control hunts to them.	That is a proposal for 2003. See Hunting Season Recommendations options on the Department Web site.
*Pg. 31. I do not support paying for crop damage and other financial mitigation to landowners whose situation could be resolved by hunting on their land but refuse that option.	State law currently requires landowners to allow public access for hunting prior to being eligible for damage payment.
* Pg. 30: Issue Statement: Explain the wildlife problem on public land with the itemizing the 26% problems. All members of the public as well as the hunter should pay for solving wildlife nuisance and damage.	Thanks for your comment.
Pg. 30 (c). This should be struck as too many loop holes are in the law, permitting land owners to take advantage of the law. And who is able to enforce the public without proper personnel? • Objective 17 (b) add: <u>Landowners to have some habitat and management flexibility.</u> • (d) #4: (Explain in detail meaning of immediate family member.) • #4 line 3: Allows landowner to select (this is a bad policy as it encourages favoritism to family and friends; then shutting down the land to others.) • #7 Pay the landowner for crop damage only after all other methods fail, and the landowner doesn't charge a fee to hunters or only allow family and friends to hunt on his land.	At some levels, this is already being done for nuisance problems using private nuisance wildlife control officers. Thanks for your comment. Thanks for your comment. Thanks for your comment. Again, policy development is covered under objective 16, strategy "e".

PUBLIC COMMENT	WDFW RESPONSE
Objective 15 calls for a new public opinion survey in 2005. Several preceding objectives (1,24,14) call for new surveys to measure progress. Other objectives discuss maintaining specified levels without discussing when it would be re-measured. Is there a need to coordinate these target dates better among the plan's objectives? Shouldn't prevention also be discussed as an alternative?	Where possible, dates have been changed. Prevention is addressed in strategy "d" in Objective 16.
Objective 15. Strategies "a" and "e" – These strategies are too involved and will depend on who specifically are the stakeholders, how much time they have available to work thru this lengthy process.	Thank you for your comment. Selection of willing stakeholders who are committed to the process will be the key to successful implementation of these strategies.
Objective 15. We disagree. Public support is not going to solve this. The Department needs to step up and take charge. Responsible kill harvest is what gets the job done and public education is needed. Alternative "a" we disagree, use past data wisely save the money to do something for a change. Alternative "b" we disagree. Reintroduce damage control agents. Alternative "c" we partially agree. Alternative "d" we disagree, save the money. Alternative "e" we disagree. You already have professionals to do this job. If they are inadequate fire them and get somebody that understands animals.	Gaining public buy in and support is critical to improving how wildlife problems are dealt with. Thank you for your comment.
Objective 16. Delete strategy "c" Let the landowner designate anyone he wants to using any weapon to kill as many deer and elk as necessary.	Thank you for your comment. We think this strategy is important for achieving population objectives. This is now Objective 17.
Objective 16. If hunting is an effective tool in managing this problem, then do it, regardless of public opinion. This is not a popularity contest among the non-hunting public.	Thank you for your comment.
Objective 16. Policy needs to review and interject methods for WDFW enforcement to work with Tribes on damage complaints.	Strategy 6 was modified to address this issue. This is now Objective 17.
Yakama Nation would like to encourage the Department to find a mechanism to allow tribal hunters to harvest deer and elk that are causing agricultural damage on private lands	This can be discussed in development of harvest management plans in objective 12 strategy "a".
Objective 16. To better satisfy problems regarding elk and deer damage, forget about setting a 48-hour time response. Provide the responding agent the latitude and time needed to meet the needs of the situation. In addition many people are offended by an agent who contacts them regarding wildlife damage while displaying their gun, mace and other enforcement items. Leave the guns, etc. in the pickup.	This objective was modified to address your comment. This is now Objective 17.
Objective 16 focuses on resolving deer and elk crop damage through a complaint and resolution process. Also need to discuss methods of prevention.	While not spelled out, that is part of strategy a in Objective 17.
Suggest the Department should include plans for control of overly large populations of deer, including does, in many areas of western Washington. There should be incentives for hunters to hunt does wherever deer populations are too large.	Thank you for your comment. This will be considered during the development of the next hunting package. We encourage you to participate in the public input process for the next three year hunting season package. Options are currently available for comment.
Issue statement is inadequate. Need to explain past history and involvement compared to today. Also need to use data that has been gathered in the past and what is being gathered today.	Data on nuisance complaints have not been collected. Damage payment data has been collected, but fluctuates dramatically depending on severity of winter.
Objective 16. Alternative "a" we agree, but develop brochures utilizing past data. Alternative "c" we disagree. Sometimes an initial harvest once saves hours and actually proves better survival of remaining herd. Alternative "d" we agree, except on "d"-7, pay only if they allow hunting.	We agreed with your comment on strategy and have retained it, but we do feel that strategy c is important to deal with those herds that are below population objectives. This is now Objective 17.
Objective 16. Tribes/Tribal hunters should be considered as an alternative strategy to harvest damage causing animals whenever landowners are agreeable.	Strategy d 6 has been modified to address your suggestion. This is now Objective 17

PUBLIC COMMENT	WDFW RESPONSE
One of the most effective means to prevent wildlife damage to crops and landowners is through education. Another is to visually inspect the damage and make recommendations the untrained landowner may not have seen to prevent further damage	Thank you for your comment. WDFW does evaluate damage claims and provides education and information to help landowners prevent damage.
The Department should develop a legislative strategy to allow the development of professional nuisance wildlife industry in our state. Professional, licensed companies who are regulated by WDFW should deal with many wildlife/landowner problems.	Thank you for your comment. We will consider your suggestion when developing additional legislative strategies.
*Recreational Opportunity, Page 35 ELK, references special permits to address agricultural damage. It is important to remember that addressing agricultural damage is a statutory responsibility of WDFW. While special permits may provide a de facto recreational opportunity, elk damage is actually commercial business. Special permit numbers need to be reviewed annually for effectiveness in eliminating damage rather than for their contribution to recreational opportunity.	Some special permits are issued to address damage concerns. Other special permits are issued to control populations that are at or above population objective but may not necessarily be causing damage. Special permits are reviewed annually for both reasons: addressing damage issues and providing hunting opportunity.
* We request RCW 77.36.040 be amended and or r4evised to allow tree farmers to receive payment for browse and rub damage caused by deer and elk to tree seedlings and small trees.	RCWs are passed or repealed by the legislature, not by the Fish and Wildlife Commission. This request is beyond the scope of this plan.
ELK	
*Elk management goals: The Commission's legislative mandate to maximize recreational hunting opportunity while protecting and perpetuating the species should be inserted as the number one goal. WDFW staff do not have the same mandate as the commission and sometimes staff recommendations for hunting seasons are not in compliance with the commission's legislative mandate.	The Commission's mandate is set by the legislature in RCW 77.04.012. The first paragraph of the mandate states "… shall preserve, protect, perpetuate, and manage the wildlife…". Maximizing hunting opportunity is stated in paragraph four. See Appendix A.
* Elk and in all subsequent references please consider a change in terminology to change public opinion and reinforce actual end results of hunting. Change the word "Recreational" to "Consumptive." I believe this more accurately describes what hunters do and help dispel the public perception that we shoot something just for sport.	Thank you for your comment. Hunters have commented both ways on the term recreational. Some believe that it is very important to express the importance of recreational hunting. We considered your comment but chose not to incorporate it.
Assessment of current management of elk; evaluation #3. – This objective is aimed at late season tribal hunting when it should be more broad-based and assess the caloric expenditure from all forms of winter activities such as skiers, hikers, snowmobiles, and even vehicles traveling to ski destinations through winter range.	Late season hunting is a disturbance that has the potential to impact elk energy stores at a critical time of the year. We think it is important to evaluate the impacts of all late season hunting activities.
Assessment of current management of elk states that elk herds come under the management directive of this Game Management Plan. This statement seems to indicate that the extensive work Tribes have contributed to each elk herd plan in the State are negated by this document. If many of the agreed upon components of the herd plans are negated it is extremely unfair to the Tribes. Tribes had far more opportunity to comment and work directly with WDFW staff on the content of the herd plans than on the Game Management Plan.	Elk herd plans come under the umbrella of the Game Management Plan. The vast majority of the objectives in the GMP are consistent with existing herd plans and draft herd plans. Those that do not will require updating when the elk herd plans are revised. Input gathered through the development of the herd plans has not been lost or disregarded. Elk herd plans are far more specific than the GMP.
Assessment of current management of elk. – Last sentence in first paragraph. What does this mean for our current elk herd plans?	The current elk herd plans were designed to be revisited and revised as developments and circumstances require. Those revisions will be consistent with the Game Management Plan. Herd plans will continue to play an important role in elk management in specific areas.
Elk management goals, #2 for all species should list "…scientific study, uses by Native Americans,…" Recommend drop "cultural and ceremonial" or revise to include subsistence to read "subsistence, cultural, and ceremonial".	"Subsistence" has been incorporated into the list of activities in goal #2.

PUBLIC COMMENT	WDFW RESPONSE
Page 29 Issue Statement. – Predator goals may conflict with the stated elk goals. Desirable is a relative term – there must be a biological rationale or agreed-upon objectives by all user groups to base population characteristics.	Predator and elk goals will need to be balanced. Additional text has been added to this section to clarify the background for subsequent objectives (Page 36).
Tribes had substantial opportunity to provide input to elk herd plans and generally were supportive of the plans. Because of the involvement and extensive review by both staff and policy the Tribe does not see the GMP as superceding the elk herd plan. WDFW has not attempted to bring the GMP to policy as it did with the herd plan. Further interaction with tribes needs to occur before tribal acceptance of the GMP.	Elk herd plans were important resources used in development of the GMP and tribal input from those plans has not been lost. Tribes will continue to be given every opportunity to provide comment to the GMP as the process continues.
WDFW is unable to control hunter numbers using general seasons and the Tribe recommends using permit-only seasons to allow for more control over harvest to meet population and sex ratio goals.	WDFW has conducted a survey of Washington hunters. Results show that hunters are adamant about not losing general season hunting opportunity. The Department feels it can continue to provide general season opportunities for elk using antler point restrictions, season length and season timing adjustments, primitive weapon opportunities, and limited entry antlerless harvest.
Elk herds need to be managed to reduce competition with other species such as deer.	Simple overlap of diets does not, in itself, prove competition in the ecological sense. There is no evidence from our data at this time to indicate that deer and elk are competing. If research showed that elk were preventing deer from meeting population objectives we would attempt to alleviate the problem through hunting season structure modifications and habitat manipulation projects. Competition with other species is something that we are interested in and will continue to look for given research funding and staffing.
Elk winter-feeding issue statement should include concerns for damage to riparian areas caused by concentration of elk. Significant soil erosion and heavy impact to riparian vegetation is occurring around the Oak Creek Wildlife Area. Current conditions along the Tieton River are similar to areas of intensive cattle grazing, and when combined with extensive human use of the area, deplete the value of this environment for other wildlife species (western gray squirrel). I understand that elk feeding has been enormously popular, but this may be a case where sensitive application of science and education could improve condition for both elk, and other wildlife species, without sacrificing public benefits.	This has been done, see objective 33.
At the public meetings we heard that this EIS was only to be used on one or two elk herds (Blue Mountains or Colockum). We have since discovered that this plan will be applied (as it does not state otherwise) to all of the states elk herds. Here is still another example of WDFW not being truthful and also is why there is little or no trust between the Department and the sportsmen.	The intent of the GMP is to address all game species including all elk herds in the state. We regret the misunderstanding.
Why does the Department conduct meetings with the public and make statements like the Peek Report will not apply to the Peninsula Herd, yet the Director in phone conversations with individuals then comes back and says the genetic method of managing will apply to all herds? Why does the Peek Report itself say that it should be used in small, restricted populations, yet we will have it used throughout the whole State?	The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program, which includes an assessment of the genetic consequences of managing elk under the current program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state. Genetic consequences of management decisions will be taken into account whenever possible.

PUBLIC COMMENT	WDFW RESPONSE
Elk are important for the variety of other reasons not explicitly stated in the assessment and goals; elk's importance to healthy predator populations and elk's contribution to scavengers through natural attrition or the bio mass (viscera and other parts) produced through the legal harvest of 7,000 elk annually.	It is true that elk, as well as other species, are very important to the processes of cycling nutrients and energy through a functioning, healthy ecosystem. Space limitations prevent going into that level of detail in this management plan.
The WDFW has created for itself a public relations problem specifically as it relates to the elk management portion of the GMPEIS. There are many elk hunters and concerned sportsman in the state who do not understand the specifics of this plan. The complexity of the information and size and scope for the proposal was not presented in such a fashion that the average Washington citizen would reasonably be expected to understand.	Information has been added to the plan to provide clarification on many issues. Some issues are complex in nature. WDFW staff may be contacted if specific concerns arise.
The WDFW has got to come to grips with, and address, the simple fact that many of their constituents do not trust them.	The Department recognizes a need to do a better job explaining how we manage game species and why we make the decisions we do. When the public understands the rationale for management decisions they often become more accepting and more supportive of the Department's actions. We view this management plan is a step toward improving our communication with the public.
The delivery of this message and discussion should be done by individuals who completely grasp the complexities of this elk plan and who can convey the management principles to the public in a way that can be understood. This was not accomplished in this instance.	Additional information has been added to the plan and additional public meetings were scheduled to provide opportunities for the Department to explain and clarify the rationale behind management actions being proposed.
We strongly suggest that public comment be reopened as it relates to the elk portion of the plan. At this point, it does not matter much what merit this plan actually has, the perception is that it has very little. With this in mind, we believe that the resources of Washington would be better served if this plan were revisited with the public and that the current 3-year plan be extended one year.	The Game Management Plan has been revised and additional public comment was sought through an additional public comment period and several more public meetings. Having a completed GMP that the public has helped shape will make the 3-year season setting process more effective.
Why isn't the effect of cougar and bear predation on elk calves in the Blue Mountains, and maybe other herds, not identified as a problem and addressed?	Elk calf survival is addressed in the specific herd management plans, which have been or are being developed. These plans will fall under the guidance of the Game Management Plan. Copies of these plans can be obtained from WDFW.
We do not support the development of additional elk viewing sites. Funding for this activity would better be used on other programs.	Viewing sites can be very effective information/education tools. Expanding the public's level of understanding of elk and elk biology is a priority for the Department.
The issue statement for elk management seems to indicate that a blanket increase in antlerless harvest would occur statewide. This would be a terrible mistake on the Olympic Peninsula.	This language has been modified to include only populations that are at or above population objective. Except for antlerless special permits issued to address damage problems or for PMUs that are above population objective, the Olympic elk herd would not be affected as that population is below objective. See objectives 18 and 28.
Allow disabled hunters to use ATVs to retrieve game.	The strategies in this section would accommodate your suggestion. We encourage you to participate in the public input process for the next three year hunting season package.
No trophy hunting for bull elk should be allowed from Sept. 15-30.	Your comment is addressed in Objective 18, Strategy h.

PUBLIC COMMENT	WDFW RESPONSE
I do not support increasing bull cow ratios to 18/100.	Your comment has been addressed in Objective 18. The new bull ratio target is a range from 12 to 20 bulls:100 cows.
I feel that the number of bulls/cow ratio objective is too high.	Your comment has been addressed in Objective 18. The new bull ratio target is a range from 12 to 20 bulls:100 cows.
Increase the number of ground surveys you do in the rut to effectively count bull/cow/calf ratios.	The Department will continue to conduct as many surveys, both from the air and on the ground, as is effective given budget constraints.
Stay with the 3-point minimum antler regulation. The big bull-spike only management strategy that is being used on the East Side should be abandoned and should be replaced with the successful three point system.	The Department will retain or incorporate hunting regulations that will best meet herd objectives while maintaining hunting season opportunities (See Objective 23).
I am alarmed by and deeply concerned about the push by the WDFW to implement an elk management program that is based on questionable data and methods. The Peek Report should not be the basis for handling Washington's elk, nor should an EIS!	The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state. The Department will pool all available information to help develop management recommendations. An EIS is required when plans that will set agency policy or actions (WAC 197-11 SEPA Rules).
*Include the "good Parts" of the Peek report. Go slow, try small experiments, and embrace your constituents to help collect data.	The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state. The Department will pool all available information to help develop management recommendations.
* There should be a cessation of hunting cow elk during the late seasons when most of them have been bred and are pregnant. Duh! This would come under "eliminating undue stress during critical times of the year."	Thank you for your comment. If cow elk are being hunted late in the season it is either in response to damage issues, or because that particular population is at or above population objective.
The elk population data contains errors (Olympic herd).	This has been corrected. Please see the Population Management Section.
The 18/100-bull ratio objective will reduce hunting opportunity.	Your comment has been addressed in Objective 18. The new bull ratio target is a range from 12 to 20 bulls:100 cows. See objective18.
The Peak report is totally unproven and should not be implemented on a statewide basis.	The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state.
A plan based on studies that don't have a thing to do with our state cannot be implemented, from a biological or scientific point of view, and certainly not from a game management point of view.	The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state. The Department will pool all available information to help develop management recommendations.

PUBLIC COMMENT	WDFW RESPONSE
This is someone's "pet project" that they are trying to ram down the throats of the public and the Department's own biologist, through fast-track secrecy and misinformation.	In order to increase public participation and encourage public comment, a revised Game Management Plan was released. Additional public input was sought through written comment as well as several public meetings. We encourage public review and participation, now and at future meetings.
In southeastern Washington archery elk hunting seasons should be Sept. 1-21.	Thank you for your comment. We encourage you to participate in the public input process for the next three year hunting season package.
Washington has a problem with its elk management program. After a thorough review of past and present season strategies, habitat variations and hunter/public demands, it is obvious that changes and or modification of today's management concepts are in order.	The Game Management Plan is attempting to address issues associated with elk management. The advantage of developing strategies in a six-year plan is the ability to review new options and make changes where appropriate. Because the plan is flexible and on a six-year time frame, new concepts can be accommodated. If there are specific issues of concern, please contact WDFW staff.
The Peek Report, as submitted to the WDFW, presents an in-depth insight as to possible management adjustments. Whether hunter/public support for management changes of that nature are acceptable remain to be seen.	Thank you for your comment. Additional text was added to the plan to help clarify the issues and objectives (Objective 18).
Reducing overall herd numbers and restricting hunter opportunities may or may not lead to a more productive elk population, but something needs to change and be tried.	Your concerns are addressed in Objectives 18, 23, 24, and 28.
Reduced hunter generated income and loss of public support could lead to undesirable consequences– thus the need for an in-depth, concentrated effort to educate the public and gain their support. This cannot be accomplished over night and lends credence to extending the 3-year plan for one year and doing the job right.	The Department will be conducting the 3-year hunting season setting process for the years 2003 to 2005. Having a completed GMP that the public has helped shape will make the 3-year season setting process more effective.
Washington has the lowest hunter success rate of all the major elk producing states. This would indicate that regardless of the lack of harvest, hunter interest and participation remains high.	Thank you for your comment.
To ensure that mature bulls do the majority of the breeding, restrict elk hunting until after the major breeding period. Again the hunting public must be educated and understand the reason for such a restriction.	This is a topic that will be debated during the 3-year season setting process. Public participation during this process is encouraged.
Antlerless seasons should continue as herd size and available habitat allows. Calf survival has plummeted since I-655 restricted proper management of cougar and bear numbers. Support of sportsmen's efforts to overturn anti-hunting sponsored initiatives would certainly help in getting predator management back to a reasonable level. A few major predators removed from calving grounds before and during critical periods would dramatically improve survival.	All of our state's elk herds receive some predator pressure on calves by black bear and cougar. Some elk herds have average to above average recruitment, while others have lower than average recruitment. Although predators do take elk calves every year, declines in calf recruitment in those herds pre-dated passing of Initiative 655. The Department is doing it's best to balance the management between elk and large predators.
Archery elk seasons should include some antlerless opportunity.	Current hunting regulations include antlerless opportunity.
Relax restrictions on archery equipment such as allowing use of lighted sights.	Thank you for your comment. We encourage you to participate in the public input process for the next three-year hunting season package. Options will be available for comment on the Department's web site and at public meetings.
I recommend cutting if not even temporarily closing the elk harvest in areas where ratios are below 25 bulls per 100 cows.	Population management objectives in the plan address this issue.

PUBLIC COMMENT	WDFW RESPONSE
I would like to see continued transplanting of elk from Hanford.	To maintain the Rattlesnake Hills sub-population at the population objective stated in the Yakima Elk herd Plan, the Department feels that the best population management tool for that group of animals is a limited entry permit hunt. As yet, the U.S. Fish and Wildlife Service will not agree to such a hunt. The Department will continue to work with USFWS to try to resolve this issue.
Elk habitat management section is weak and does not give enough attention to the issue of habitat capacity loss due to changes in forest management.	WDFW does not have the ability to directly influence habitat management on much of Washington's forest lands. However, additional strategies have been identified in Objective 30 to help address habitat loss.
State needs to focus on acquiring more important elk winter range to keep it out of developer's hands.	Objective 30 in the Elk Section outlines the plan for acquiring important habitat.
WDFW needs to make more of an effort to keep timber harvest in balance with elk cover needs on State DNR lands. This may require changes to the Forest Practice Act. There needs to be sufficient coordination of the plan with other federal agencies as well.	WDFW does not have the ability to directly influence habitat management on much of Washington's forest lands. However, additional strategies have been identified in Objective 30 to help address habitat loss.
Elk management goal number 2 - include subsistence for uses by Native Americans. This wording should be included in each section for the species contained in the Game Management Plan.	"Subsistence" has been incorporated into the list of activities in goal #2.
Under population management, table 1 the current population for the Olympic Herd is absolutely wrong. The best available science indicated that the spring population size in 2000 was 8,030 elk. The population is still below the objective and antlerless harvest needs to be either restricted or carefully planned to allow further population growth.	This has been corrected.
The GMP lacks adequate data showing the elk herd populations for the last 15 years. What were the herd totals for the past 25 years? In order for sportsmen to know hat decisions to make, they need an accurate time scale showing past levels to plan long range goals.	Elk population objectives are based on the current conditions of available elk habitat. A comparison with elk numbers 15 or 25 years ago would be misleading because there was more elk habitat due to different forest management practices (logging, timing of rotations, and timber stand ages).
Population Table – Numbers are wrong in some of the sections such as the North Cascades population objective.	This has been corrected.
Create a separate addendum to the plan similar to what Oregon did to deal exclusively with the population management objectives. Hold many public meetings concerning this issue alone. WDFW should look strongly at shelving the current process and implementing a process similar to the one in Oregon.	WDFW has conducted two, separate 30 day periods of public review and comment. We also conducted 11 public meetings throughout the state as well as accepting written comment through the mail and over the Internet. A first draft, a second draft, and the current final draft of the plan have been produced. We feel the public has had adequate time and opportunity to provide input.
Table 1, population objectives for the Yakima Herd should be left at 9,500 and work with farm community to solve their problems. The North Cascade Herd was 1,500 and should strive for permit only in this unit for both tribal and non-tribal hunters.	This has been addressed in the Population Management section.

PUBLIC COMMENT	WDFW RESPONSE
Page 29, table 2 – The criterion for hunting season structure is based entirely on the Peek et al. 2002 document and this is not available at least as an appendix to this document. Furthermore the Peek report was never provided to the Tribes prior to the development to the Game Management Plan nor were they consulted with. The reality is that elk in Washington are under extreme pressure from State and Tribal hunters and the objectives are un-likely to be met.	The criteria in Table 2 have been modified to reflect realistic objectives and ranges. A good number of these objectives are currently being met for many elk herds. The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state.
Table 2 – Are these bull to cow ratio numbers obtainable without radically changing our current hunting seasons?	Yes. Please see Objective 18 in the revised plan. The criteria in Table 2 have been modified to reflect realistic objectives and ranges. A good number of these objectives are currently being met for many elk herds.
* Pg. 38 Table 2 (b). Mature bull definition. Elk as young as 3 years can have 6≥1" tines on a side, yet these animals may not be behaviorally mature.	That is possible. It is also possible that a 5x5 bull could behave and function for all purposes like a mature bull. The six tines on a side designation was a reasonable compromise settled on after much debate among field staff. We need some measure that we can observe when flying aerial surveys, that will serve as a reasonable index of age.
* Pg. 38 objective 18 (c). Biederbeck et al. 2001 is not in the Literature Cited section.	This has been corrected.
Do not shorten the hunting season.	Thank you for your comment. Objective 23 addresses hunting opportunities.
Objective 17. Strategy "b". – The only techniques proposed in this document are harvest management. Cow mortality rate exceeds recruitment in the Green and White River in the absence of antlerless hunting from a variety of causes. When mortality exceeds recruitment and the antlerless season is closed this document does not propose to manage predation, highway mortality, or poaching. On page v it states the focus is on harvest management and those factors that have the greatest effect on game populations. Yet, there is little commitment throughout the document to directly manage those factors, especially when there is enough evidence to warrant such management.	Objective 17 is now Objective 18 in the Final draft. Harvest management is the most direct way for the agency to manage antlerless mortality that is higher than desired. Poaching is a source of mortality that is constantly being addressed by Enforcement. Predation is a source of mortality that always exists for elk. Predator populations are managed for their own population objectives (see sections on bear and cougars) They are not managed to enhance elk populations. Auto collisions with elk are minimized using fencing and signage, often at the request of the Department of Transportation.
Objective 17. This objective entirely ignores the role of habitat and the problems of changes in habitat noted previously (Table 2, page 8). Do the population objectives in Table 1, page 29 recognize the habitat limitations, and if not are they even realistic or are you trying to attain objectives that cannot be attained? How were the population objectives in Table 1 established? Any particular criteria or is this the usual subjective view of the local biologists or regional managers? You need to add an alternative that determines population status and relationship to habitat limitations in each of the elk herd areas.	Objective 17 is now objective 18. Tables 1 and 2 in the elk section have moved to different page numbers. Tables 1 and 2 do take into account habitat limitations and are realistic. The objectives in Table 1 are set by the regional biologists and program managers based on the amount of elk habitat available. Population status is determined by routine surveys every year (see Objective 18 strategy "a" and Objective 21). Better defining the relationships between populations status and habitat is addressed in Objectives 19, 20, 30, 31, 36, and 39.
Objective 17. Delete strategy I and add additional early season archery days and reduce late season archery days in western WA. Give the elk a rest after late November	Objective 17 is now Objective 18 in the Final draft. The Department will try to minimize impacts on elk during the breeding season.
Objective 17. Limit use of tables 1 and 2 criteria to eastern Washington herds. Especially for herds that are below population objectives, minimize hunting activity during the rut by all user groups.	Objective 17 is now Objective 18 in the Final draft. The Department will try to minimize impacts on elk during the breeding season.

PUBLIC COMMENT	WDFW RESPONSE
Objective 17. Manage for an achievable goal with an escalating ratio. Start with 14-16 and then evaluate in mid cycle before proceeding. Eliminate strategy "c" and eliminate the peak and valley issue in the current management plan.	Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
Objective 17. Strategy "c". - Tribes generally agreed upon the objective of 12/100 during the elk herd plan process. The rationale for increasing the objective to 18 is not presented in the text, so there is no way this ratio can be accepted without supportive information. The move to 18 from 12 would reduce hunting opportunity and harvest, something that the Muckleshoot Tribe cannot accept in light of the declining elk herds in the area hunted by the Tribe.	Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
Objective 17. Strategy "c'. – WDFW should first review and analyze different GMUs having similar habitats yet different post-season ratios and different age structures. Looking at the available data first may help understand if there are to be benefits derived from higher ratios. Areas such as the Green, Cedar, and Margaret units might provide insight.	Objective 17 is now Objective 18 in the Final draft. This can be done under the current draft of the plan. If the Department determines this is a priority, it may conduct ~~this~~ the recommended analysis. Although the areas suggested are very limited in size, and based on our field data, unique in their ability to produce elk and meet bull ratio objectives. They also have unique hunting season structures GMUs 485 (Green River) and 490 (Cedar River) are closed to hunting. It would be unfair to compare hunted and un-hunted GMUs.
Objective 17. Strategy "c". – WDFW should outline a study to assess the effects in the future and answer the question of is the trade off worth it. Management in some areas should be directed toward higher ratios while other areas should have lower ratios. Responses should be measured and assessed to their value. Large-scale implementation should not occur without a documented positive outcome.	This has been modified. See objective 18. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
Objective 17. Strategy "c". – limit management efforts to reach the higher ratio objective to areas with healthy calf recruitment, >35 calves:100 cows. We also recommend keeping ratio objectives at 12 for most of the western Cascades GMUs due to generally low observed productivity compared to eastside GMU.	This has been modified. See objective 18. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
Objective 17. Strategy "c". – If there are genetic issues affecting recruitment, these have arose out of the few introduced individuals and genetic drift. If higher bull to cow ratios and older age structure are intended to improve genetics, then translocating bulls among areas may be a suitable solution that would have less impact on hunting opportunity. Poaching of trophy bulls in high ratio areas with older age structure might offset the effort to reach those ratios.	This has been modified. See objective 18. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
Objective 17 now 18. Abandon the fixed elk bull/cow ratio threshold of 12 to restrict seasons and establish a range of 8-18 for bull/cow management.	Your comment has been addressed in Objective 18. The new bull ratio target is a range from 12 to 20 bulls:100 cows.

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Objective 17. Strategy "c". There is no proven need to achieve the bull to cow ratios outlined in this study and probably impossible to do so.	This has been modified. See objective 18. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
Objective 17. Strategy "c" will reduce hunter opportunity right from the start. Please consider a goal of 14:100 post hunt bull to cow ratio as a way of easing into such a plan, then improve on that year by year.	This has been modified. See objective 18. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
The Departments bull ratio objectives has always been on the very low side of maintaining herd health and balance.	This has been modified. See objective 18. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
Objective 17. Strategy "c" – Why is it necessary to manage for a bull:cow ratio of 18-20 when we have been successfully managing for 10-12 and the recruitment in the Olympic Herd has been consistent for over 20 years? Why do we suddenly need to increase the number of bulls surviving if we are not seeing declines at the population level due to low bull:cow ratios? How are you going to measure this strategy?	Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy c has been changed to 12 to 20 bulls:100 cows but not eliminated.
Objective 17. Strategy "d" – How does WDFW propose to measure this statistic?	Please see the background section for objective 18 for an explanation of this metric.
Objective 17. Strategy "e" – Managing for a post-hunt mature bull percentage of 5% of the bull subpopulation is a difficult statistic to measure. According to the Peek report, a 5% mature bull component of the total bull population equals 1 mature bull/100 cows. Will this strategy really do anything to promote breeding by older bulls?	Please see the background section for objective 18 for an explanation of this metric.
Objective 17. Strategy "f" – This strategy to manage for herd composition and population goals at the PMU level and strategy "h" contradict each other with regards to the scale that management will occur. Is management at the PMU or Herd scale the appropriate scale for management? The most efficient and biologically meaningful scale for management is at the GMU level.	The GMU scale is most appropriate for managing hunters and hunting opportunity. The Population Management Unit (PMU) scale has more biological relevance, as many populations will frequent more than one GMU.
Objective 17. Strategy "f" – Objective 17 needs to be completed first. The current PMU aggregation may not be biologically reasonable when herd movements have been documented to be within the designated GMU. Tribal (Muckleshoot) radio-collaring studies can contribute valuable information to this process.	Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Strategy f will help achieve Objective 18.
* Pg. 29 objective 15 ADD (g). "Strive to increase the total number of Washington hunters by 2-5% per year consistent with wildlife population objectives.	Thank you for your comment.
* Pg. 29 objective 15 (f). Should be 5-10%.	Thank you for your comment.
Objective 17. Strategies "g" and "h". There is not data to support the population objectives identified in the report. Putting in set numbers without being able to revise them for 6 years is unwise. In addition, until the tribal issues are resolved and management plans from the State and Tribes are coordinated, achieving the objective will be nearly impossible while maintaining any recreational opportunities.	Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Review the scientific papers cited in Objective 18 for further justification.

PUBLIC COMMENT	WDFW RESPONSE
Objective 17. Strategy "h" – The Olympic Herd is still considerably below the population objective. Management of the Olympic Herd should be targeting to increase the population not maintain the population. Therefore antlerless harvest should be tightly regulated to ensure continued herd growth.	This language has been modified to include only populations that are at or above population objective. Except for antlerless special permits issued to address damage problems or for PMUs that are above population objective, the Olympic elk herd would not be affected as that population is below objective. See objectives 18 and 28.
Objective 17. Strategy "h" Delete, instead address habitat issues to increase population.	Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. Also, see the Habitat Section, Objectives 30 and 31.
Objective 17. Strategy "i" – Pre-rut disturbance can also have an effect. The goal is to allow older bulls to breed without being killed and in relatively undisturbed situation. Rarely is this possible due to a variety of recreational activities taking place on public lands. Eliminate hunting prior to October 1 would need to be a cooperative effort among all user groups, including archery deer hunters.	This has been modified. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season.
Objective 17. Strategy "i" is, in my opinion, a sacred cow. The elk don't breed according to a calendar.	This has been modified. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season.
Objective 17. Strategy "i" – To realistically improve escapement of older age class bulls, hunting pressure should be minimized into October (probably the 10th or the 15th. Consideration should be given to delaying the State muzzleloader season until later in the month of October.	This has been modified. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season.
Objective 17. Please do not base our elk management practices on another species of animal (red deer). Let's take a few years of accurate and specific unit harvest reporting through the WILD system before we jump ship. We haven't had that kind of harvest data in the past, only estimates.	The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state. Citations pertaining to red deer are a very small component of that report and are appropriate large mammal, population dynamics works to reference. The Department will pool all available information to help develop management recommendations.
Objective 17. The elk management plan is an attempt to involve science in the decisions but a very poor attempt. Basing decisions on a study of red deer in Scotland and applying it to be species of Washington elk without regard to the differences in the species or habitat is preposterous.	The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state. Citations pertaining to red deer are a very small component of that report and are appropriate large mammal, population dynamics works to reference. The Department will pool all available information to help develop management recommendations. Review the scientific papers pertaining to elk cited in Objective 18 for further justification.

PUBLIC COMMENT	WDFW RESPONSE
Objective 17. To let the current proposal fly would be a complete travesty. This red staff knucklehead should be sent back where he came from and not paid. How much has this cost us? Good grief guys…use the biologist on the payroll, and try something here that may sound a little off the wall…. Listen to your field agents!!	This has been modified. Objective 17 is now Objective 18 in the Final draft. The new bull ratio target is a range from 12 to 20 bulls:100 cows. The Department will try to minimize impacts on elk during the breeding season. The Elk Risk Assessment report is an independent peer review of WDFW's current elk management program. The report contains recommendations that may or may not be feasible or practical to implement for all elk herds in the state. Citations pertaining to red deer are a very small component of that report and are appropriate large mammal, population dynamics works to reference. The Department will pool all available information to help develop management recommendations. Review the scientific papers cited in Objective 18 for further justification. Review the scientific papers pertaining to elk cited in Objective 18 for further justification.
Objective 17. It needs to be clear that the information presented either does or does not include tribal harvest.	Objective 17 is now Objective 18 in the Final Draft. When possible, tribal harvest is considered in total harvest removals. Aerial surveys and mortality studies document live animals and are independent of the various sources of mortality. Sources of mortality are documented whenever possible.
Objective 17. Alternative "e" Increase 5% to??? (not provided).	This has been modified. Objective 17 is now Objective 18 in the Final Draft. The percentages in Table 2 have been modified. The intent has been clarified in the text of the Population Management section.
Objective 17. Alternative 'h' item 2 implies that bull harvest for the Selkirk herd will be managed under a permit system. Is this under consideration?	Objective 17 is now Objective 18 in the Final Draft. We did not intend that implication. Managing bulls under a permit system is not under consideration for the Selkirk herd at this time. The strategies have been modified in the Final Draft.
* Pg. 39 objective 19 (b). How will juvenile survival be assessed? Pre-season and post-season ratios may not provide a complete picture of juvenile survival and the causes for mortality, especially without pregnancy information. A correlation cannot rely only on 2 data points- this will result in a correlation coefficient ® of 1.0.	Juvenile survival can be assessed in a number of ways. One of the most effective is to put radio-transmitters on calves shortly after birth and follow their fates for the first year of their life. Pregnancy data can be gathered when ultrasound is used to measure body condition (see Strategy "c"). Pregnancy information can be misleading as well. All pregnant cows do not give birth for a variety of nutritional and physiological reasons. We promise not to use only two data points when we develop correlations.

PUBLIC COMMENT	WDFW RESPONSE
* Pg. 39 objective 19 (b) and (c). Strategies b and c assume that there will be changes in population size to evaluate different responses to these density changes, yet it is not clear that there will be a dramatic change in elk density to test this concept. The current population size falls within the population range objective (Table 1) so there should not be any increased harvest to perturb the system. The only change in density proposed is in strategy "e" is to take place in 2005, after "b" and "c" are supposedly assessed. Their needs to be a much clearer discussion of how density will be manipulated to understand how juvenile survival and body condition relate to density.	Strategies "a", "b", and "c" are intended to provide baseline data and do not necessarily require that the population densities change dramatically. Strategy d will be conducted throughout the investigations. Strategy "e" will function as the population perturbation if the Dept. determines that step will be taken. All of these concepts are still in the developmental stages. Protocols and study designs will receive peer review before they are finalized.
Objective 18. Strategy "a" – Increasing the antlerless harvest may be justified when it has been documented that habitat is regulating productivity and survival. Tread lightly and explore all scenarios before taking action because mistakes are extremely costly.	Objective 18 is now Objective 19. These strategies have been modified. Habitat analysis will be conducted before herd reduction decisions are finalized. Also see Objective 28.
Objective 18. Strategy "a" – This strategy to incrementally increase the antlerless harvest each year should not be implemented unless the specific goal is to lower the population. It appears when reading the other Strategies of this objective that there is a concern that the population is energetically limited. More effort should be directed at habitat conditions and elk physiological condition prior to increasing antlerless harvest to determine if increasing the cow harvest is a sound solution. Other factors such as predation may be affecting elk numbers.	Objective 18 is now Objective 19. These strategies have been modified. Habitat analysis will be conducted before herd reduction decisions are finalized. Also see Objective 28.
Objective 18. You need to add an alternative to address the issue of habitat limitations, rather than just monitoring. Any opportunities for habitat enhancement?	Objective 18 is now Objective 19. These strategies have been modified. Habitat analysis will be conducted before herd reduction decisions are finalized. The intent was to have the habitat recover on it's own by reducing the density of elk. Habitat enhancements are part of elk management and can be found in Objective 30.
Objective 18. Use as a test for the 6-year cycle, then implement a plan.	The "test" is a strategy within the plan. Objective 18 is now Objective 19. These strategies have been modified. Habitat analysis will be conducted before herd reduction decisions are finalized.
We would like to see cow mortality managed for the desired rate of increase or decrease of the herd, depending on forage and range condition, landowner concerns, or maximizing herd numbers. If changes in the hunting seasons need annual adjustment, the department must be flexible enough to take these to the commission. Waiting the 3 years for changes to occur with the harvest numbers or seasons when conditions warrant could spell big setbacks to herd numbers.	This is done every year through the special permit adjustments for antlerless elk.
The non-hunting public would like opportunities to view elk, if and where the viewing does not interfere with human safety or elk security. If herd numbers could be increased where feasible, public viewing could lead to better public support for wildlife in general and better hunting opportunities.	Expanding viewing opportunities is part of the objectives, regardless of the number of animals. Expanding viewing opportunities does not necessarily require increases in elk populations. See Objectives 25 and 32.
Objective 18. Why specify the technique at this level of planning?	We included the specific technique to help address potential questions that would arise. Objective 18 is now Objective 19. These strategies have been modified. Habitat analysis will be conducted before herd reduction decisions are finalized.

PUBLIC COMMENT	WDFW RESPONSE
Objective 18. Alternatives "c" add, restrict motor vehicle access; "f" add, change to mature bull 6-point or better only; "g" add, reduce predator populations to reduce elk calf mortality (i.e. cougar, bear, coyote).	Objective 18 is now Objective 19. These strategies have been modified. Road Management receives constant management attention. When warranted, the Department attempts to engage land managers in new Road Management programs, see Chapter 3. The elk resource could not support a wide-open 6-point or better season. The branch antlered by permit season is a more viable option. The Department does not try to reduce predator populations to enhance elk populations.
The State of Oregon has set their minimum bull to cow ratio for most of the state at 10 bulls per hundred cows, while we are looking at 12/100. Oregon's elk herds are substantially healthier than Washington's and I am concerned about why we feel its necessary to maintain a higher ratio than Oregon does.	Thank you for your comment. Pre-hunt bull ratios, post-hunt bull ratios, and total bull mortality are all measurements that we use to assess the bull population (See Table 2 in elk section). The recommended range of 12 to 20 bulls per 100 cows in the post-hunt population should meet the breeding requirements that you are concerned about which would include a small percentage of mature bulls to do the breeding.
Objective 18. Breeding bulls available at breeding time pre-season. This plan does not address the need for a number of bulls for breeding. This plan continues to allow the destructive practice of harassing and the hunting bulls just when they are the most vulnerable which is at the time of the rut. Post season bull counts mean little if the bulls are harvested before they are allowed to service the cows.	Pre-hunt bull ratios, post-hunt bull ratios, and total bull mortality are all measurements that we use to assess the bull population (See Table 2). The recommended range of 12 to 20 bulls per 100 cows in the post-hunt population should meet the breeding requirements that you are concerned about which would include a small percentage of mature bulls to do the breeding.
Objective 18 (f). Mature (6pt or greater bulls) is nothing but trophy management and it can be used to further justify restrictions on opportunity. Surveys do not support trophy management.	Pre-hunt bull ratios, post-hunt bull ratios, and total bull mortality are all measurements that we use to assess the bull population (See Table 2). The recommended range of 12 to 20 bulls per 100 cows in the post-hunt population is an attempt to meet the breeding requirements which would include a small percentage of mature bulls to do the breeding.
Objective 18 (f) Mature bull definition; drop entirely or change to 5 pt. Do not require that there be 1/8-18 bulls, it can be a goal, but not required. It can not be accurately measured on the Westside nor can bull/cow ratios.	Mature bulls are defined as having antlers with at least six tines on one side. Antler points are used as an index of age because it is a characteristic that is readily visible when conducting aerial surveys. WDFW will explore the possibility of using a different number of antler points to define mature bulls if age correlations or other circumstances warrant. See background information in Population Management Section.

PUBLIC COMMENT	WDFW RESPONSE
WDFW is trying to change their own definition of "mature bull." In 1997 pulled the spike-only management stunt, your agency defined a mature bull as a 2.5 year old. Now, it's a bull with a minimum of 6pts. to a side (pg 37)! WDFW presents no reasoning for this drastic change, no scientific studies, no comparisons of what age structure of bulls current elk management has produced in Washington….simply nothing. Hence your proposal to change the definition of a mature bull elk isn't only arbitrary , it's also capricious.	The current EIS for elk (Wash. Dept. of Fish and Wildlife 1996:13) defines mature bulls as being 6 to 8 years old. In the Final Draft of this proposed GMP, mature bulls are defined as having antlers with at least six tines on one side. Antler points are used as an index of age because it is a characteristic that is readily visible when conducting aerial surveys. WDFW will explore the possibility of using a different number of antler points to define mature bulls if age correlations or other circumstances warrant. See background information in Population Management Section.
Your statement (pg. 37) "Un-hunted populations have shown bull to cow ratios ranging from 30 to 45+ bulls per 100 cows" is biased.	Thank you for your comment.
Objective 18 (j). "Minimal disturbance" from Sept. 15-30 needs to be defined. Does this refer to timber harvest, woodcutting, construction, jeeps, ATV's snowmobiles, wildlife watchers, hikers, hunters, etc....? If the intent is to prohibit archery hunting during this period the Department should produce valid scientific evidence that shows archery hunting during this period is more detrimental to elk mortality then the general firearm season is.	This means minimize disturbance from hunting. It does not mean prohibit hunting.
Objective 19. It may be more efficient to review existing data instead of starting a new study as alternatives "b" and "c" suggest.	Strategy "a" would include a review of existing data. This has been modified. Please see Objective 20.
Objective 19. The scale of management is very important and there are a lot of data available to help designate management areas. Studies of habitat type and use do not answer whether PMU designations are reasonable – studies need to be of movements and migrations.	Strategy "c" was intended to cover your point. This has been re-worded. Please see Objective 20.
Objective 19. Strategies – This seems to be a re-invention of the wheel. I doubt that another radio-telemetry study will produce any new information with the exception of localized conditions. I would recommend deleting a, b, and c. You may want to redefine the PMU's but radio telemetry is not the appropriate technique.	Radio-marking animals is one of the better techniques to confirm without any doubt, complete, annual use of areas by highly mobile large mammals. If possible we will use other more cost-efficient techniques if they present themselves.
Objective 19. Should be accomplished prior to conducting objective 17.	The two objectives can be addressed during overlapping time periods and the strategies will complement each other. See Objectives 18 and 20.
Objective 19. Issue statement and strategies – I question the wisdom of managing at the PMU level for political/administrative ease. The strategies listed to address this problem are unclear and knowing current funding levels for WDFW, are unlikely to occur. An improved or more clearly stated strategy is needed.	The Department does not see this assessment as a substantial outlay of money unless some PMUs need to be better defined. This objective has been re-worded. Please see Objective 20.
Objective 20. This is an important objective but it would be helpful to prioritize the elk and other species management objectives so the public would know how you would focus efforts as funds or staffing become limiting.	It's impossible to predict to what level of funds will become limiting during the time period of this plan. The intensity of fund limitation will affect how efforts will be prioritized. This strategic plan needs to be flexible enough to address any funding limitations.
Objective 20. Issue statement. – Use of Bender and Spencer 1999 is a poor reference for elk sexual segregation. Other literature is more appropriate.	This reference was intended to cite a technique, not the phenomenon of sexual segregation in ungulates. The reference has been moved to the appropriate location.

PUBLIC COMMENT	WDFW RESPONSE
Objective 20. Elk sightability models. – The Muckleshoot Tribe has been involved in a study to develop these models yet WDFW has not participated in working with the Tribe on these models.	It is our understanding, based on a presentation made in October by the head biologist for the Muckleshoots, that they had little to no success using sightability models to estimate elk on the west side. WDFW is typically using sightability models on the east side where the terrain is more open. The Department would be willing to participate in future studies.
Objective 20. Issue statement and strategies – I agree that we need to look closely at utilizing sightability models to provide additional tools for managers to address population size.	Thank you for your comment.
Objective 20 (c) I have never seen evidence of inbreeding problems in elk that warrant your EIS Proposal (can you show me retarded elk, three legged elk, elk with two heads, or elk breeding problems based on cow/calf ratios in Western Washington?).	Objective 20 (c) does not suggest inbreeding in elk, but rather intends to protect genetic diversity in elk populations over the long term. There are no data available at this time suggesting that Washington elk are suffering from inbreeding.
Objective 21. Strategy "e". – If the Peek et al. report determines that the goal is to promote a well-developed bull age structure and the means to this is a target bull:cow ratio of 18:100, then the 3-point restriction would be targeting just those animals desired in the population. This hunting restriction is in direct opposition to promoting old bull breeding.	Department personnel managing west-side elk in 3-point antler restriction areas feel there is enough escape cover to retain this regulation and meet population objectives. Also, see modifications made to Objective 18 regarding bull;cow ratio objectives.
Objective 21. Strategies – I think about 40 – 50 more alternative choices for this would make the decision making even easier on this one.	The number of strategies has been reduced.
Objective 21/22. Apply tables 1 and 2 criteria to eastern Washington only.	These objectives have been modified. They are now objectives 23 and 24. Objective 17 is now Objective 18 in the Final Draft. Review Objective 18 and Tables 1 and 2 for new population objectives and new composition objectives. The new bull ratio target is a range from 12 to 20 bulls:100 cows.
Objective 21. Again, are the values in Tables 1 and 2 justifiable, based on known declines in habitat as a result in the emphasis on late-successional forest management to benefit spotted owls?	The Department believes that these criteria can be met based on field data and information in the scientific literature. These Objectives have been modified and the Strategies have been reduced and re-written. They are now Objectives 23 and 24. Objective 17 is now Objective 18 in the Final Draft. Review Objective 18 and Tables 1 and 2 for new population objectives and new composition objectives. The new bull ratio target is a range from 12 to 20 bulls:100 cows.

PUBLIC COMMENT	WDFW RESPONSE
Objective 21. Strategy "d". – Based on substantial simulation modeling for an elk population assessment for British Columbia provincial government and evaluation of field data, I question the spike-only management, and would recommend a complete review of this approach. Unregulated spike-only seasons, designed to maintain hunter numbers, can greatly reduce recruitment of spikes, and hence branch bulls in later years. What studies justify this management? I would endorse strategy "g" and support more sound biological management of elk harvests. Strategy I needs to be rewritten, add>>minimize hunting opportunity, and focus (not focused)… This would be a reasonable alternative if the situation were extreme. Less extreme measures would seem to be indicated at this time. For strategy "q", How do you do this if the population is habitat limited? Do you know the trend in these populations? What does this strategy actually envision? More liberal seasons or more restricted seasons, or what?	Objective 21 is now Objective 23. This Objective has been modified. The strategies have been reduced in number and re-written. Strategies "a" through "f' were retained. Strategy "f" has been changed. Spike only general season hunting with branch-antlered bull hunting by permit has been working very well on the east side, based on our field data. WDFW data do not show that spike escapement is inadequate to recruit new branch-antlered bulls into the population. Strategy "d" refers to road management, not spike only hunting. Developing road management options are currently and always will be a part of elk management. See strategy "d".
Objective 21. Strategy "f" will result in permit only hunting.	Objective 21 is now Objective 23. This Objective has been modified. The strategies have been reduced in number and re-written. Strategies "a" through "f' were retained. Strategy "f" has been changed. Permit only hunting may be a possibility in the future in some GMUs but the Department will avoid if at all possible as long as the elk resource allows.
Objective 21. Strategies "e" and "f". – I agree permit only hunting will increase bull ratios, however, WDFW has been reluctant to implement this strategy in the past due to the desire to provide maximum opportunity to State hunters. It will be a difficult sell to the public; just on the basis of increasing bull escapement, when there is no evidence that there will be any effect on population size. Strategies "h" and "j' are repeats of the strategies under objective 17. Strategy "i" states to minimize hunting pressure on older age class bulls during the peak of the breeding, September 15-30. To realistically improve escapement of older age class bulls, pressure should be minimized into October (probably to the 10^{th} or 15^{th}). Strategies "q' and "r" – The Olympic Herd is considerably below the population objective and should be managed for an increasing population not just maintenance level.	Objective 21 is now Objective 23. This Objective has been modified. The strategies have been reduced in number and re-written. Strategies "a" through "f' were retained. Strategy "f" has been changed.
Objective 21. Delete strategies "c, o, p, q, r, s" improve the habitat and allow growth. Add a strategy to shorten seasons: bow too long, muzzleloader too close to rut and rifle too long, no December hunting except damage control.	These have been modified. Objective 21 is now Objective 23. This Objective has been modified. The strategies have been reduced in number and re-written. Strategies "a" through "f' were retained. Strategy "f" has been changed. See objective 23. .
Objective 21. Strategy "i" Again, this sacred cow keeps real elk hunters away.	Thank you for your comment.
Objective 21. Strategy J. Should open Sept. 15-30 time period to archery permit holders – if harvest of mature bulls goes up drop the number of permits to compensate.	The Department tries to avoid setting hunts during the rut for all weapon types, while maintaining general season opportunity outside the peak of rut.
Objective 21. Strategy "l" – The intent sounds reasonable but exactly how will this occur? Simply implementing spike-only during the archery season Sept. 15-30 will not result in reduced disturbance, especially with archery deer hunting also occurring. A discussion among co-managers and agreement on regulations is needed if this strategy is to be accomplished.	Objective 21 is now Objective 23. This Objective has been modified. The strategies have been reduced in number and re-written. Strategies "a" through "f' were retained. Strategy "f" has been changed. The Department will try to minimize disturbance during the rut for all weapon types while maintaining general season opportunity.
Objective 21. There is no proposal to evaluate calf recruitment and improve recruitment in areas where it is low. Without adequate recruitment there can be no harvest.	See objectives under Population Management and Habitat Management. These will impact calf recruitment.

PUBLIC COMMENT	WDFW RESPONSE
Objective 21. Several of the alternatives are redundant. Alternative "d" should mention the exception for the Selkirk herd, unless spike-only will be applied.	The strategy field has been narrowed and this strategy has been re-worded. Objective 21 is now Objective 23. This Objective has been modified. The strategies have been reduced in number and re-written. Strategies "a" through "f' were retained. Strategy "f" has been changed.
Objective 21. Alternative "d" we agree, except 3-point or better and restrict motor vehicle traffic; "j" we agree, except change 5% to ???; "t" add, reduce poaching by limiting access to wintering grounds in the Colockum; "u" add, eliminate all tribal hunting of the Colockum herd; "v" add, control logging in vicinity of Author Coffin Game Reserve to enhance cover and to provide escapement.	Objective 21 is now Objective 23. This Objective has been modified. The strategies have been reduced in number and re-written. Strategies "a" through "f' were retained. Strategy "f" has been changed. The Department does not have the authority to control Tribal hunting. Logging activity is controlled by USFS, state DNR, and private timber industry. However, the Habitat Management section identifies many strategies to improve elk habitat.
*Pg. 42 objective 23 strategy (b). Eliminate the spike-only GMUs and return to any bull or 3pt minimum.	Those GMUs that currently have spike only hunting seasons and branch-antlered bull permits are able to achieve bull ratio objectives. Those objectives would not be met with an any bull or 3-point minimum regulation.
Objective 22. Stability of hunting seasons. - How can hunting season regulations remain stable if they have not produced the desired objective in many areas? Dramatic changes may be necessary to reach goals in some areas.	If objectives are not being met then changes can be recommended and/or implemented under this plan.
Objective 22. Keep general hunting seasons as is. Consistent regulations should be maintained with only very minor change in response to management objectives.	Thank you for your comment.
Objective 22. How can you maintain stability of elk hunting season regulation in 1997-2002 and still achieve your objectives?	If objectives are not being met then changes can be recommended and/or implemented under this plan.
Objective 22. Strategies – These are all good, but I doubt that you have the resources to implement any of these, based on good solid field data, in any but a few localized areas. You certainly do not have the resources to implement statewide.	The Department thinks that most of these strategies can be achieved under current data collection protocols.
Objective 22 will be extremely difficult to accomplish. The current regulations on the Olympic Peninsular have been fairly successful. I fail to see how WDFW will meet the objectives in Table 1 and 2 without implementing large-scale permit only hunting.	Tables 1 and 2 have been modified. Most of the strategies listed in objective 22 can be achieved under current management.
* Pg. 43 objective 24 (a). The statement "When feasible and under budget and manpower restriction…" is WDFW's way out of not having to substantially accomplish anything proposed in the GMP. True, budgets and manpower dictate what will be accomplished but there should be realistic and accomplishable goals set or increased effort to ensure that funds and personnel are available to carry out the plan.	The plan was written with your comments in mind. We feel that the objectives are realistic and can be accomplished. There are always unforeseen contingencies that have to be reconciled.
With regard to Objective 24 keep the western Washington elk hunting opportunities as is.	Thank you for your comment. We encourage you to participate in the public input process for the next three year hunting season package. Options will be available for comment in on our web site and at public meetings.
Objective 23. Lose this one. Only pursue this if your willing to charge the public to use these facilities as hunters are charged for their opportunities.	The Department's Vehicle Use permit already charges this type of fee.
Objective 22,23. Alternative "d" add, restrict motor vehicle access to hunting areas and enhance habitat for winter survival.	See Road Management Section in Chapter 3. See the Elk Habitat Management Section.

PUBLIC COMMENT	WDFW RESPONSE
Objective 23. To avoid creating additional maintenance needs and expenses the improvement of existing sites should be a higher priority than development of new sites. Partnership opportunities and the teaching of wildlife viewing ethics should be emphasized. The objective needs a target date or other measure of achievement.	Current sites are limited and new sites don't necessarily have to be high maintenance. Dates have been added.
Objective 23. The primary goal of the Commission should be setting population objectives, rather than providing hunting opportunity (identified as a secondary goal of the commission) is false and should be reversed to reflect the true nature of how our wildlife population structures are achieved. That is, the hunting opportunity that the Commission approves every year establishes our actual wildlife (elk) populations, and not the populations goals that are set by the Commission but are barely validated.	The primary goal of the Fish and Wildlife Commission is to preserve, protect, perpetuate, and manage the wildlife of Washington (See Appendix A).
Objective 24. Not a bad idea. Alternate strategy "c", I like it. Low success (we are not all the same) = primitive equipment (compounds are not primitive) = hunting during the rut.	The Department will try to minimize disturbance during the rut.
Objective 24. This objective should be meshed with objective 2 and a measure of achievement added.	Both of these objectives have been modified.
Objective 24. This objective and the alternatives are very unclear. Hunters already can hunt all of eastern and western Washington.	The intent is to create a variety of opportunities that are well distributed over the landscape and thus closer to the hunter's residence.
Objective 25. WDFW should explore the use of biologist from other agencies to assist in the collection of data.	The Department does work collaboratively with other agencies, using their data, when appropriate.
Objective 25. What does improve the utility of harvest data mean?	This is now Objective 27. It has been re-worded. Data are never perfect. By improving the quality of data (sample size, reduced variability, etc.) collected, we improve the statistical inferences that can be made from those data. We always strive to improve the accuracy and precision of our sampling protocols. Mandatory harvest reporting is an example of that type of improvement.
Objective 25. Age data are needed to evaluate the effectiveness of regulations aimed at improving the bull age structure.	Collecting age data is included in Objective 27, Strategy "b".
Objective 25. Strategy "c". – This was tried with some substantial costs, and the data I analyzed found to be greatly wanting when compared to more intensive field study data (e.g., the 15-year Kapowsin Tree Farm deer study).	There are ways to collect this information for elk, if hunters are notified in advance and certain organs are collected correctly.
Objective 25. Where the Heck is the WILD data? Alternate strategy (addition) "d" Collect specific weapon data (i.e., type of bow); this will show you the effects the different weapons have on the population.	It would be cot-prohibitive to modify the WILD system to collect that type of information and the benefits would be minimal. We can explore other options for collecting those types of data.
Objective 26 needs a target date.	This information has been moved to Objective 22 has been given a target date.
Objective 27. Issue statement. – It is not necessarily so that "historically hunters and managers have been conservative…" Market hunting in the late 1800's is responsible for the re-introduction of elk from Yellowstone to many parts of the country. In contrast Native Americans lived harmoniously with the wildlife for thousands of years.	This was intended to describe the conservative mind-set of some managers and hunters regarding the harvest of antlerless elk in general.
Objective 27. The key assumption is density-dependence. Monitoring may not be responsive enough to prevent a steep decline caused by mortality factors that are inversely-density dependent, or depensatory.	Population monitoring should note declines due to all sources of mortality. The steeper the decline, the more likely the decline is to be detected. Harvest is the portion of that total mortality that the Department has the most direct control and can take corrective action.
Objective 27 is already covered by objectives 17 and 18.	Yes. The points apply in both population and recreation sections.

PUBLIC COMMENT	WDFW RESPONSE
Objective 27. Elk populations should be managed within a given GMU. If part of a GMU is having conflicts – try to harvest in that area only.	The Department manages hunters at the GMU level and animal populations at the PMU level since populations move across several GMUs.
I strongly support Objectives 21 and 22, pages 40 and 41. Surveys and population estimates need to branch out to areas not traditionally surveyed. Habitat fragmentation has resulted in sub-populations of elk being established that are not part of current survey regimes. These smaller sub populations are in need of direct management.	Thank you for your comment. We will take it under advisement.
Pg. 45 Objective 28. There may be antlerless numbers within sub-populations that are not being considered within the larger traditional population surveys. Survey methods need to be reviewed and evaluated for effectiveness.	Thank you for your comment. We should accomplish what you are proposing with Objectives 20, 21, and 22.
Pg. 45 Objective 29. I agree with all of the alternative strategies. I also strongly suggest incorporating an alternative that requires a budget item for all elk enhancement projects (specifically elk augmentation plans) to manage possible or expected elk damage complaints to private property.	Thank you for your comment. We will take it under advisement. This level of budget detail is more appropriate for elk herd plans and has been developed in several of them.
Pg. 45-46, Objective 30. These are excellent long-term solutions, but no short-term strategies are offered as to how management is to occur until these longer-term strategies are attained. Include short-term solutions in response to this habitat management issue.	Unfortunately, short term fixes are rarely available when it comes to habitat. Strategies "a" and "b" are the short term management actions for this Objective.
Objective 27. Issue statement states that historically hunters and managers have been conservative in harvesting antlerless elk. This is not historically valid. The Olympic Herd had been reported to decline significantly by the mid-1990s to around 6000 elk outside of Olympic National Park. The decline has been primarily attributed to over harvest of cow elk from the mid 1980s and into the 1990s.	Our field data do not indicate an overharvest of antlerless elk in the Olympic Herd during the 1980s and 1990s. Habitat change and change in forest practices have had a major impact on the number of elk in the Olympic herd.
Objective 28 needs to address methods to prevent damage incidents and provide a measurable parameter.	Prevention has been added to the strategies.
Objective 28. Alternative "f" add, relocate surplus elk to the North Cascade Herd to add new blood.	Although the Department does relocate elk from time to time it is not always an affordable or viable option for managing damage complaints.
Objective 28. Strategy "c". – Focus harvest to damage areas only. Exclude elk that may not be causing problems.	The Department already attempts to do this as a matter of course.
Objective 28. Damage management – Damage harvest needs to be reported as harvest in the state report.	The Department plans to do this in the future. Your suggestion has been added to the strategies.
* pg 45 objective 29. Add strategy to allow landowners to contact graduates of Advanced Hunter Education for damage hunts.	This is an option that is already available to landowners and doesn't require inclusion in this plan.
Pg 45 Management of crop damage. Segregate elk and deer damage and create a separate section within the GMP specifically addressing damage, damage issues, strategies, etc. Elk and deer damage needs a more thorough and focused review, much in the same way that predator management has been broken out of cougar and black bear management. The issues are significant enough to justify such a change.	Both the deer and elk sections have damage sections. The management of agricultural damage issues is under the jurisdiction of the Enforcement Program.
Objective 29. Strategy "b" add, reduce motor vehicle access to wintering grounds. Strategy "e" Departmental relationships with many of the large landowners are needlessly confrontational on the habitat side of WDFW operations. Negative feelings engendered in private landowners by such interactions with WDFW personnel are hard to overcome when you want them to cooperate with you in meaningful habitat enhancement activities.	Your first comment has been added. Your second comment is duly noted and the Department will try to improve these relations.
Objective 29. Strategy "d". – Muckleshoot Tribe agrees that this is a crucial step in the decision to implement habitat management programs. Many habitat improvement projects have been undertaken without documenting if the habitat is limiting, and without document responses to improvements.	Thank you for your comment.
Objective 29. Strategy "e". It is very important that WDFW give incentives to private landowners to improve habitat for wildlife.	See Private Land Programs and Hunter Access in Chapter 3.

PUBLIC COMMENT	WDFW RESPONSE
Objective 29. Strategy "f" - A general comment regarding the U.S. Forest Service is the need to engage in a more active role in providing habitat for other species than those dependent on late successional forests. Habitat suitability is declining rapidly on the Olympic National Forest for elk through forest successional processes. I am not advocating major increases in clearcutting, however, large scale commercial thinning could enhance forest stands for elk. Tribes should be mentioned as an entity for cooperative cost share projects.	These have been added.
Objective 29. Strategy "g" states to manage elk herd distribution within the tolerance limits of landowners. Landowners who develop elk habitat should not determine elk herd distribution. They should be made aware of the risks and be expected to bear the burden of damage or prevention of damage by fencing. This or another strategy should focus on minimizing human encroachment on important elk habitat.	The Department addresses human encroachment on elk habitat through Growth Management Planning with county governments but county governments have the final say on how lands can be developed.
Objective 29 needs to provide target dates, number of acres to be acquired or improved and other measurable parameters. It would also help to prioritize areas for enhancement or acquisition.	Changes to the objective have been made to include prioritization of at risk lands. Unfortunately, conservation easements and land acquisitions are so variable, it is virtually impossible to spell out acres and dates.
Objective 29. Under strategy "f", Tribes need to be inserted as cooperators.	This has been included.
Objective 29. Add strategy; WDFW needs to take a more active role in growth management planning. Human encroachment is responsible for many of the problems facing elk.	This has been included. As an agency we are only able to provide technical review and comment on county growth plans. Counties may or may not incorporate the recommendations WDFW provides.
Objective 29. In the White River we have documented malnutrition mortality. We recommend that there should be an added strategy for the White River elk herd in GMU 653 for habitat enhancements.	GMU 653 has not been identified as a priority for habitat enhancement at this time, however, it may at some point in the future.
* Pg. 46 habitat management. Whenever the Muckleshoot Tribe meets with WDFW to discuss study results in the Green and White River , WDFW biologist claim that habitat is responsible for the decline in elk herds and poor calf survival despite what the data show. If the WDFW feels that habitat has caused a 50% reduction in the White River and a 75% reduction in the Green River elk herd population size, then it is essential that the WDFW take action to ensure adequate habitat to meet population objectives for those areas. Nothing in this section specifically proposes to enhance habitat conditions.	The specifics requested appear in the North Rainier Elk Herd Plan, which the Muckleshoot Tribe helped develop.
* Pg. 47 objective 30. Add strategy (t) "Initiate a statewide, biologically sound, noxious weed control program on WDFW controlled lands with the goal of reducing noxious weed acreage by 2004 and 10% reduction thru 2009.	This would come under the jurisdiction of the Lands Division, not the Game Division.
Objective 30. The Olympic Herd should have a specific section as provided for the other herds. There is a real need to secure open/grass habitats that have been utilized for livestock or other agricultural uses through acquisitions or easements. Open grass habitats are critical to elk during the late winter-early summer.	Your comments are covered by Objective 30 Strategy "s" and by Objective 39.
Objective 30. Add to objective statement; (1) minimize habitat encroachment and (2) play a more active role with USFS on management for timber stand age classes. This section needs to address all elk herds.	These have been added to objective 30.
*Objective 30 (h). If Washington State has any problem with the conservation of elk and other wildlife, it is urban growth (We loose over 70,000 acres of habitat annually due to growth). When will WDFW hold local governments accountable for the pressures on our wildlife?	WDFW works with county governments on Growth Management Plans but county governments have the final decision on outcomes.
*Objective 30 add another strategy as follows: Secure important elk habitat through purchase, lease, acquisition of easements, or other incentives in the Olympic unit GMU 621. Also, adopt habitat management strategies that will help minimize negative interactions between the public and the Sequim elk population.	Thank you for your comment. We will investigate those possibilities.
* Objective 30. Address the possibility of adding archery only hunts on WDFW public lands located within incorporated areas, or opening discussions with county governments on this possibility.	This isn't necessarily a habitat issue. Please provide your comment during the hunting season setting process.
* Objective 30 (t). Relocate, in conjunction with volunteer contributions from public entities listed in (f).	Thank you for your comment.
Objective 31 needs target dates associated with the alternatives.	This has been added.

PUBLIC COMMENT	WDFW RESPONSE
Objective 32. Strategy "e" add, "acquire wintering agricultural lands and manage the crops in the field for wintering elk."	These have been added as alternatives to be addressed.
Objective 32 needs target dates associated with the alternatives.	This has been added.
Objective 32. The State needs to consider eliminating feed stations for elk to reduce the risk of contagious disease such as CWD (Smith, J. Wildl. Manage. 65(2):2001).	This has been added.
*Pg. 50 objective 33. Waiting until 2005 to complete evaluation of the elk feeding program is longer than necessary to start a phase out of this program. We would like to see all elk supplemental feeding sites eliminated in as timely a manner as feasible. Feeding stations could be a serious hindrance to the control of such diseases as chronic wasting disease.	WDFW thinks this is a realistic timeline. It is unlikely that all feeding sites will be eliminated. The goal is to reduce the dependency on supplemental feeding.
Objective 33 needs to explain if this is done annually or periodically.	Objective 33 is now Objective 35. This work has been done annually up to this point. Budget constraints may prevent this from being an annual exercise in the future.
Objective 34 seems contrary to the discussion on page 29 and the objectives that discuss reducing the size of the Yakima herd. Target dates are missing.	Objective 34 is now Objective 36. The reduction of the Yakima elk herd is minor and a short-term response to damage conflicts. Objective 36 is an attempt to identify the best long-term population objectives taking into account: damage, winter feeding, impacts to the ecosystem, year-round use by different segments of the elk population, hunting, viewing and other non-consumptive recreation involving elk. Results from Objective 34 will start to become available and reported on in the later years of this proposed GMP (approximately years 4 and 5). During year 6, management strategies resulting from that work will be incorporated into the next GMP as the Department prepares for another 6-year plan.
Objective 35. After having recently completed a large-scale and costly study of the elk of the blue Mountains, the public is not likely to be supportive of another effort. How would this effort be different from the past research effort?	This effort will look at all sources of mortality for more age groups than the previous work. This effort will build on what was learned from the previous work, not replace it.
Objective 36. Strategy "d" add, "reduce predators, poaching, tribal hunting, motorized access, spike bull hunting and harvest mature bulls 6-point or better only."	Thank you for your comment.
Objective 37. The Muckleshoot Tribe has been involved with such studies since 1998 in the Green River and is assessing the response to large-scale habitat improvements in this area through 2004.	Thank you for your comment. Objective 37 is now Objective 39. This proposed work would be similar in nature to work being done in several locations in the state including the Green River. This would be an expansion of those investigations to a new location.
Objective 38, and supporting Issue Statement – a multi-year radio-telemetry study of the elk in this area has been conducted, published in the Mountain Star DEIS, and provided to WDFW personnel. The need for another such study is questionable. The agreement between the Yakama's, WDFW, and the landowner on a Land Stewardship plan is a model for how to deal with these issues on a cooperative basis. WDFW personnel need to actively work with the resort owners to implement the plan.	Objective 38 is now Objective 40. Any reports pertaining to the EIS mentioned in your comment and the EIS itself would certainly be reviewed as part of the literature search conducted before the work in Objective 40 was initiated.
* Disease – objective 35 (b) Include West Nile Virus."	To date, west Nile virus has not been identified as an elk priority.
* Pg. 35 line 6, II Recreation Opportunity: change weapon to equipment in all cases throughout this draft.	We considered your comment but chose not to incorporate it.

PUBLIC COMMENT	WDFW RESPONSE
* Pg. 39 (j) : Strike of September 15-30 as this is an untrue and preditrable falsehood. Strategies: add: Inventory available habitat and food supplies versus known herd requirements.	We considered your comment but chose not to incorporate it.
* Pg. 40 Issue statement line (e), add: sub-populations, available habitat, food sources and cow elk…. Objective 20, strategies: (b) Strike: necessary Radio collar elk programs shall be implemented without….	We considered your comment but chose not to incorporate it.
Pg. 41 Issue statement: Suggest the use of check stations, using trained volunteers, or even paid public will enhance the gathering of unbiased information not using anti-hunting public. Contract hunting clubs and gun clubs, Eye in the Wood to help implement these programs. Use persons from the east and west sides of WA equally distributing the needed surveys. • Strategies: Comments: set up check stations where law enforcement, trained animal checking volunteers can live while monitoring the harvest or later studies during the full year. Employ enough personnel or remove employees from the Olympia office, placing into the fall to utilize these facilities on a regular basis.	What you've described in your Issue Statement is already being accomplished, quite successfully. The biases mentioned in Objective 22 are statistical biases. Please review Objective 22 again as it has been modified. The strategy suggested is impractical from a budget and staffing standpoint. WDFW conducts quite a number of check stations using trained biologists and volunteers without living on site.
Pg. 42 Recreation Management: • Objective 23 (d) strike: "if necessary" and add: The WDFW shall develop.. • Objective 25 comment: Find new funding sources to accomplish objective work as permit user fees to enter areas. These fees shall be used to maintain recreational areas, habitat enhancements. Etc….	We considered your comment but chose not to incorporate it.
Pg. 47 Habitat Management; • (e) improve habitat conditions shall be by…. strike "where possible" • (f) line 3, strike: "other entities, and add (1) public user fees or permits and other entities. • (j) strike "GMU 368 Yakima herd and add: all areas of Washington.	We considered your comment but chose not to incorporate it.
Pg. 49 Information & Education: • Objective 32 (a) change 2008 to 2004.	We considered your comment but chose not to incorporate it.
*Pg. 51 Disease: • (c) add: action shall be taken when a disease……	We considered your comment but chose not to incorporate it.
Pg. 53 Research: • (e) new strategy: Document changes in habitat affecting elk populations numbers including cougar and bear predation • (f) To increase law enforcement employment in the Blue Mt. Area to effectively enforce the hunting laws, and monitor Native American activities in all areas.	We considered your comment but chose not to incorporate it.
Pg. 54 Research: • Objective 40 (a and b) change landscape to habitat. • (d) change to : Explore possible elk management options by assisting small and large private land owners to reestablish habitat for wildlife.	We considered your first comment but chose not to incorporate it. We incorporated your second comment.
Yakama Nation is pleased to see the Department developing plans to deal with chronic wasting disease and other diseases.	Thank you for your comment.
Page 38, Strategy 18. Survey herds at feeding stations. Counts would be done after hunting seasons have closed. Accurate escapement numbers could be attainable.	The Department currently surveys elk on the feeding stations every year, however, we know from past experience and field data that not all of the elk in the population use the feeding stations. We do not assume that the elk surveyed on the feed grounds represent the entire population. See the Research Section.

PUBLIC COMMENT	WDFW RESPONSE
Page 42, Objective 23. Is it possible to alternate spike only one year or two years and 3 point or better for one year for archery elk seasons in eastern WA.	Changing back and forth between seasons would make it difficult to establish stabilizing trends in hunted populations. The vulnerability of 3 point or better bulls on the east side would be too high to sustain such a hunt. We would receive an intense amount of criticism from those hunters that say our regulations are too complicated. We would receive an intense amount of criticism from the other user groups that were excluded from such an opportunity. We feel that branch-antlered bulls by permit is a much better solution and our data indicate that the system is working well in most cases.
DEER	
*Close hunting season or restrict seasons in black-tailed and mule deer GMUs where populations are on a declining trend in order to increase herd numbers.	This is always an option available to the Commission if the conditions warrant such action.
* Data Collection: Pg. 57 Comment. The WDFW needs a new source of budgeting to increase the manpower. License fees and small general budget incentives are not adequate to maintain the program need to maintain, enforce, habitat and studies need by the WDFW.	Thank you for your comment.
*Black-tailed Deer: • Objective 42 Issue statement line 2: add – aging timber stands and encroachment by contractor building homes taking habitat, caused by the tremendous influx of people in western Washington. the destruction of habitat by unlawful harvest of native plants by the public being sold on the open market. Strategies add (f) make reliable estimates of human encroachment affecting black-tailed deer populations.	We considered your comment but chose not to incorporate it.
*Mule Deer: • Pg. 60 objective 44 (d) add: WDFW shall, as funding permits make improvement to mule deer habitat. • Objective 46 add (e) inventory • (d) Strike: "when necessary" and change to WDFW shall develop…. • (e) Inventory quality & quantity of mule deer habitat • Objective 47, Pg. 62 (d) Add Document and publicize changes in quality and quantity of habitat • Issue Statement: line 7 add: high or less than desirable habitat conditions • Objective 49: strategies (a) strike: If necessary WDFW shall conduct , Add: WDFW shall conduct • Objective 53 strategies: add: (c). Contact hunting, shooting clubs and fishing clubs for assistance in all animal, habitat studies to keep cost lower.	These issues are addressed in the Habitat Management section.
* Pg. 65 Objective 54 Strike: explore the possibility of conducting and change to WDFW shall conduct white-tail……	We considered your comment but chose not to incorporate it.
Pg. 65 Black-tailed Deer Issue Statement, add: to aged habitat, encroachment by the general public for construction of homes and commercial uses, and destroying habitat. • Objective 55. Strike: "try to" and add WDFW shall maintain and enhance…. • Objective 56, strike: "try to" and add WDFW shall maintain and enhance… • Pg. 66 strategy Add: (e) Contact hunting clubs, shooting clubs, fishing clubs for assistance in habitat, animal and fish studies….	We considered your comment but chose not to incorporate it.
Pg. 66 White-tailed Deer: • Objective 57 strike "try to" and replace with WDFW shall …. • Objective 58 add deer biology management and deer…. • Strategies (a) add: management topics, asking for their assistance…. • Strategies (b) line 2 add: history and management needs.	We considered your comment but chose not to incorporate it.
*Pg. 67 All Deer • Same as Pg. 66 Whitetail deer.	We considered your comment but chose not to incorporate it.

PUBLIC COMMENT	WDFW RESPONSE
In northeastern Washington the buck/doe ratios are not healthy. Make harvesting a doe mandatory before harvesting a buck for two years and then evaluate.	Thank you for your comment.
Page 42. Black-tailed deer represent 38% of the state harvest yet receive little research attention. Consider cooperative research studies with tribes to assess black-tailed deer population dynamics.	The Department is very interested in learning more about black-tailed deer population dynamics. The current GMP would allow for future work on black-tailed deer should funding become available.
Hunters and the WDFW must be functioning on the same wavelength. The agency would do well by better communicating with their user constituents and not worry so much about appeasing animal rights extremist and the general public.	The Department serves the general public, which includes hunters. The Department recognizes that it can always improve communication with the public.
Deer in this state are having some real problems especially with habitat loss, habitat change, predation, and disease and there are no long range plans to counter these issues.	The sections on Habitat Management, Research, and Disease in the GMP prioritize activities that address many of these issues.
More depredation tags should be given to landowners and the names made public so the hunters can call and inquire about hunting.	Currently Enforcement handles game damage and they are trying alternative strategies to better coordinate landowners with damage permits and hunters.
Deer management needs some real attention. The 3-pt. restriction hasn't done much good to improve herd sizes and buck to doe ratios. What has occurred is a steady depletion of the breeding stock of our older bucks.	Thank you for your comment. In most locations where it is being used, our field data indicate the 3-point antler restriction is allowing post-hunt deer populations to meet buck:doe ratio objectives.
It is well known that the 3-point or better hunting plan used in eastern Washington is not a scientific plan, just a reaction to hunters requests to harvest mature bucks.	Thank you for your comment. In most locations where it is being used, the 3-point antler restriction is allowing post-hunt deer populations to meet buck:doe ratio objectives.
I believe that some GMUs need to be closed for rehabilitation while others that maintain a 25 buck/100 doe ratio remain selectively harvested.	Our field staff feel they can continue to meet population objectives without changing the current hunt structures in most cases.
White-tailed deer are over-populated and need to be reduced by increased hunter harvest.	There are some areas where the Department is trying to encourage more harvest of white-tailed deer.
White-tailed deer are increasing in number to the detriment of mule deer numbers in eastern Washington. Their numbers need to be reduced dramatically to allow mule deer greater access to the historic winter ranges currently dominated by whitetail. A more liberal whitetail season with an either sex hunt would be appropriate to reduce their numbers in areas identified as important mule deer winter range. On important mule deer winter range, reducing the post-season buck ratio for white-tails to <10:100 does will help keep white-tails from breeding with mule deer and may increase mule deer numbers. We need a plan to deal with this problem.	Our field data do not show that mule deer are declining because of an increase in white-tailed deer. Where white-tailed deer numbers are increasing, it is because the habitat has become more favorable to white-tailed deer and less favorable to mule deer. There are some areas where the Department is trying to encourage more harvest of white-tailed deer to keep the population in check and to alleviate damage complaints.
Close mule deer hunting for three years.	None of the Department's data support this action.
Random surveys for the various diseases affecting deer and other ungulates are important for our state's wildlife. An action plan for each major disease should be in place before the onset of the disease. These plans should be available to the public for review and comments in order to have public approval in the event of an "emergency."	The Department is drafting prevention and contingency plans for chronic wasting disease (CWD). Other diseases that affect deer don't lend themselves to prevention or contingency plans. See Objective 61.
Mule deer season openers in eastern WA need to be later. Suggest 3rd Saturday, or GMUs block units by area and weather conditions.	Thank you for your comment. We encourage you to participate in the public input process for the next three-year hunting season package. Options will be available for comment on our web site and at public meetings.
Stop DNR employees hunting behind locked DNR gates in private and state vehicles.	WDFW has no jurisdiction over DNR employees.

PUBLIC COMMENT	WDFW RESPONSE
Restrict early season hunting before the rut to does only. This will allow the "Alpha buck" to do the majority of the breeding.	Thank you for your comment. We will consider your idea during the season setting process. At this time, the Department feels that there are a number of other strategies available to insure some breeding by mature, dominant bucks without restricting seasons to does only before the rut.
Initiate a study to determine if killing of alpha bucks leads to younger bucks doing the breeding and resulting in predominately female progeny.	This is not a priority for the Department and funding is not available for this type of study.
Begin a herd sexual management program that restricts the taking of the mature bucks by GMU.	The Department already does this when necessary, by establishing permit only buck tags for a GMU.
I noted that black-tailed deer comprise the majority of harvest and are undoubtedly the most heavily hunted of the three species of deer in Washington. However, in the remainder of the section on deer management the emphasis is primarily on white-tailed deer management and research.	The deer section has been reorganized.
Page 42. Deer– This whole section is concentrated on mule deer than black-tailed deer, when black-tailed deer provides the majority of the harvest to state hunters.	The Department recognizes that black-tailed deer need more attention and we need to better understand the population dynamics and habitat requirements of black-tailed deer. The deer section has been reorganized to address all three deer native to Washington.
A number of objectives are provided for management of the three species. As a general comment I note that the emphasis is placed on white-tailed deer. It would seem that resources would be better directed towards black-tailed deer management since this species has seen a decline in numbers over recent years and this species contributes the majority of opportunity for hunters. Mule deer also receives relatively little emphasis even though they are a popular species.	The Department recognizes that black-tailed deer need more attention and we need to better understand the population dynamics and habitat requirements of black-tailed deer.
Deer Population Management goals are discussed, however, there is no discussion on the scale of management. Are deer managed by PMU or GMU scale or statewide based on the range of each species? It would be difficult to adequately measure success or address local needs unless they are managed at the GMU level.	Deer are managed at the PMU level. Hunters and hunting opportunity are managed at the GMU level.
Klickitat county has far too many deer, and of those, far too many are antlerless. Deer damage is occurring on both residential and agricultural property. There needs to be a way for hunters to take a second antlerless only deer	Thank you for your comment. This will be considered during the season setting process. Please provide comment during the season setting process.
Antlerless Permit holder should be required to harvest an antlerless only and not be able to hunt for a buck.	Thank you for your comment. This will be considered during the season setting process. Please provide comment during the season setting process.
Deer management goals – Goal number 2 needs subsistence uses by Native Americans added.	"Subsistence" has been incorporated into the list of activities in goal #2.
Objective 39. The three-point antler restriction has been in effect for more than 5 years and needs to change. Because of this, mature "superior genetics" breeding bucks are being depleted to low numbers that may never rebound.	The Department has no evidence to suggest that is the case. In fact more areas are meeting buck escapement goals now, since the 3-point regulation was established.
Objective 39. Quality deer hunting GMUs referenced in alternative "b" should be identified.	It will take some time and effort to identify which GMUs will be most appropriate to provide mature buck hunting. That hasn't been done yet.
Objective 39 "i" we disagree with this objective. Add strategy "d" restrict motorized vehicle traffic after post hunting to allow non-harassment.	This section has been re-organized. Fifteen bucks per 100 does is a buck:doe ratio ~~is an~~ objective that the Department has been using and successfully meeting for a number of years.

PUBLIC COMMENT	WDFW RESPONSE
Objective 39. Where did the number 15 for a buck to doe ratio come from? Why is it lower than the elk objective?	The objective states greater than or equal to 15. This is a metric that the WDFW has used for a number of years. It was not lower than the old elk objective of 12. The new elk objective of 12 to 20 would have a great deal of overlap. There is a wide variety of opinions among deer managers and very little agreement on an appropriate post-hunt buck:doe ratio for deer. There is also some question whether this measurement should be used at all. The Department thinks that the stated objective will help meet population objectives.
Objective 39. Strategy "i" – What is the justification for the objective of 15 bucks/100 does. Deer have a tending-bond breeding system where males stay with and tend a single female until she is bred, thereby exhibiting serial polygyny. Thus, a larger number of male deer per 100 does would be required for reproduction. With deer comprising the majority of big game harvest in Washington, why isn't there greater emphasis placed on quality management? What justification is there for maintaining the stated buck/doe ratio? There needs to be a reference or documentation for the stated goals as was indicated for elk.	The objective now states greater than 15. This is a metric that the Department has used for a number of years. There is a wide variety of opinions among deer managers and very little agreement on an appropriate post-hunt buck:doe ratio for deer. There is also some question whether this measurement should be used at all. The Department thinks that the stated objective will help meet population objectives.
Objective "ii" discusses a scale for management of older age structure for buck sub-population. This is the only issue for which a scale for management is addressed. A scale needs to be determined for managing each species of deer across their range.	This has been re-worded. See Objective 42 for scale of deer management.
Objective "iii" states maintaining 20-25 bucks/100 does in GMUs managed for older age class bucks. I question whether providing 5-10 extra bucks/100 does will provide significantly more, older bucks than those present in the GMUs managed for 15 bucks/100 does. What documentation exists to support this premise?	This section has been re-written. The buck:doe ratio now states greater than 15 bucks:100 does.
Objective "iv" states the need to maintain an adequate number of mature bucks in the post hunt population. What is the definition of "adequate" and "mature"? For elk the target was 5%, what percent is biologically significant for deer? How would the number of mature bucks in the population be effectively monitored?	This section has been re-written. WDFW will investigate what is adequate for mature bucks in white-tailed deer, see Objective 48. Mule deer and black-tailed deer will be investigated when funds and staffing become available. There is a wide variety of opinions among deer managers and very little agreement on an appropriate post-hunt buck:doe ratio for deer.
Carrying capacities are still not known for many deer areas.	Thank you for your comment. Although we may not know the exact carrying capacity of a particular area for deer, we can look at various population measurements like body condition, fat indices, fawn ratios, and recruitment to get an index of carrying capacity.
Objective 39. What about improving winter range conditions to limit winter mortality?	This has been added, see Habitat Management Section Objectives 56 to 58.
*Pg. 60 objective 44. Add v., "Certain PMUs or GMUs will be managed for mule deer only and aggressive hunting techniques will be used to eliminate all white-tailed deer from these units.	WDFW has not identified any PMUs or GMUs where white-tailed deer need to be completely eliminated. We considered your comment but chose not to incorporate it.
* Pg. 60 objective 46. Should be by 2005 not 2008.	We feel this is a realistic time line. We considered your comment but chose not to incorporate it.

PUBLIC COMMENT	WDFW RESPONSE
Objective 40. The WDFW needs to define their management scale for deer, PMU or GMU?	Deer are managed at the PMU level. Hunters and hunting opportunity are managed at the GMU level.
Objective 40. This objective and alternatives do not address the issue statement. How will additional resources be invested to adequately survey mule deer (improved protocols are only part of the solution)?	Additional resources are not available at this time. Improving protocols under the current funding structure would improve deer surveys. See Objective 47.
Objective 40, alternative "a". – A thorough survey of deer census techniques was conducted in the early 1990s, and should be used as a basis for an update.	Thank you for your comment.
Objective 40 we agree, except step up to 2004. Strategy "a" we agree and use other states materials to save $$. Strategy "c" If it wasn't working why validate?	An assessment by 2004 does not give enough time considering all of the other work that needs to be accomplished. Most of our techniques are working, but there is some room for improvement and the techniques need to be formalized as protocols.
Objective 41. The Muckleshoot Tribe maintains a base of 25 radio-collared adult deer in the Green River watershed to provide an index of sightability and rough Lincoln-Peterson population estimate during surveys. Survival data has also contributed to refining population estimates and guide harvest permit numbers.	Thank you for your comment.
Objective 41. This objective and the rest of the section on deer utilize an outline that is different than the rest of the plan. If there is only one element to the objective, it should not be designated by "a".	The deer section has been revised.
Objective 41. Please add most of the black-tail populations are lean on the mountain areas because of predator rise and populations are up in the lowlands and causing problems due to limited hunting access, lots of food, less predators. Strategy "c" add, differentiate lowland populations versus highland populations. Lowlands could actually stand bonus or damage hunts with weapon restrictions.	Thank you for your comment. Objective 41 is now Objective 43. This objective pertains enumerating populations. The strategies in Objective 44 better address your concerns about b-t deer management.
Objective 42 needs a target date.	No date was given as these are objectives the Department attempts to meet every year.
Objective 42. Extend eastern Washington white-tailed deer season by 2 days to encourage hunters to switch to WT deer and away from mule deer.	Thank you for your comment. This will be considered during the season setting process. Please provide comment during the season setting process.
*Pg 61, objective 47 (ii). Replace "if possible" to "when appropriate."	We considered your comment but chose not to incorporate it.
* Pg. 61 objective 47. Add iv, "Certain PMUs or GMUs will be managed for mule deer only and aggressive hunting techniques will be used to eliminate all white-tailed deer from these units.	We considered your comment but chose not to incorporate it.
Objective 43 needs target dates associated with alternatives.	We are unable to predict how long this effort will take. This section has been revised.
Objective 43. Why hasn't this been done already as this is basic science management?	The Department is already doing some of these things, but they need to be put into a formal protocol.
Objective 44 needs a target date.	The time period would be for the length of the GMP or until deemed an inappropriate technique.
Objective 45 needs a target date. Completion of the mule deer study will not meet the stated objectives for black-tailed and white-tailed deer.	This objective only pertains to mule deer. This is a very expensive and time-consuming exercise. The funding and staffing will not be available to complete this for white-tailed deer or black-tailed deer during this plan.
Objective 46. We agree but add iv. Provide bonus antlerless hunting opportunities in lowlands utilizing weapons restrictions. Strategy "b" add, Provide bonus antlerless hunting opportunities in lowlands utilizing weapons restriction hunts. Try an antler restriction program. Most antlerless harvest should be by kids.	Thank you for your comment. This will be considered during the season setting process. Please provide comment during the season setting process.

PUBLIC COMMENT	WDFW RESPONSE
Objective 46. Add strategy for mule deer by increasing season length by one week, while maintaining 3-point antler restriction indefinitely or add a 2nd week to start 2 weeks after the 1st, requiring hunters to choose either the tradition starting date (for one week) or the late (end of October) week.	Thank you for your comment. This will be considered during the season setting process. Please provide comment during the season setting process.
*pg 63 background. The recreation goals for deer management are to maintain ***or increase*** hunting opportunity….	We considered your comment but chose not to incorporate it.
*pg 63, objective 50, strategy (b). Replace "special permits" with "hunting opportunities."	You comment would change the intended meaning. We considered your comment but chose not to incorporate it.
Objective 47. The outline format used here is incorrect.	The deer section has been revised.
Page 47, Research: this section seems to have not been completed. The alternatives are incomplete.	This section has been revised.
Objective 48. Are there targets that can be associated with this objective?	This section has been revised.
Page 47, Habitat Management section seems to have not been completed. The alternatives are incomplete.	This section has been revised.
Habitat management is also key to deer population sustainability. Fire suppression should not be encouraged where young stands are needed for deer and elk forage. Controlled burns should be conducted on department and cooperators' lands where feasible. Acquiring critical lands for deer and elk should also be a priority for the department, whether for hunting opportunity, refugia, or public viewing.	Thank you for your comment. These items have been incorporated in the Habitat Management sections for both deer and elk.
Objective 49. There is a typo in the objective statement. Alternative "a" and "b" are not complete; I assume you mean to use these programs as a vehicle for distributing information about deer, but neither alternative addresses the general public. Alternative "c' needs a target date.	This section has been revised.
Objective 49. We agree but do not downplay they are wild animals – enough of the "Walt Disney" syndrome.	Thank you for your comment.
* Pg 65 objective 53. WDFW has a poor track record of informing cooperators and co-managers of study results. The black-tailed deer mortality study has been conducted for 3 years yet not preliminary study results have been released. Why should we accept new studies when there is not reporting on the existing study? Shouldn't the most up-to-date data be used to guide management? The Muckleshoot Tribe has kept all cooperators and co-managers up-to-date on elk, deer, and cougar study results and the WDFW must do the same for all studies it conducts.	Thank you for your comment.
* Pg. 66 objective 57 (c). Proposed strategy to open/initiate discussions with county governments to allow archery only hunting access within incorporated limits to reduce animal human conflict.	This is not a habitat issue. Please provide your comment during the hunting season setting process. We considered your comment but chose not to incorporate it.
* Pg. 67 objective 58 (d). Add West Nile Virus.	To date, west Nile virus has not been identified as a deer priority.
* Pg. 67 objective 59. Add strategy (g) Youth hunter opportunity.	This group is covered as a subset of the three primary groups listed in "c".
* Pg. 67 objective 59. Add strategy (h) Sell additional/special fee access permits to participate in hunt.	We considered your comment but chose not to incorporate it.
Objective 50 needs a measurable parameter to evaluate achievement. Are their one or more areas in the state that need identified as priorities for treatment? Where does damage prevention fall into this strategy.	Objective 50 is now Objective 60. This section has been re-written and strategies expanded. You are right that a measurable parameter to determine success is necessary, however, such a parameter for deer damage is problematic. Both the number of complaints or the dollars paid in damage claims are a function of weather, success of prevention programs, and landowner tolerance. Identifying priority areas has been added to the strategies. Damage prevention has been added to the strategies.

PUBLIC COMMENT	WDFW RESPONSE
Objective 50. Strategy "d" add, Offer bonus and or damage hunt opportunity in lowlands by utilizing weapons restriction hunts.	Thank you for your comment. This will be considered during the season setting process. Please provide comment during the season setting process. See Objective 60.
Objective 50. Provide landowners 3 deer takes per 40 acres of agricultural land (irrigated) that are transferable to hunters of their choice for late season hunt.	The Department already provides a similar program with Landowner Preference permits. See Objective 60.
Objective 50. Add additional strategy "d." Increase qualified disabled hunter access to private lands.	This has been added. See Objective 60.
Objective 51. Alternative "b" and "c" need target dates.	Date has been added for "b". Stratgey "c' is expected to be constant and ongoing. See Objective 61.
Objective 52 needs a target date.	This has been added. See Objective 53.
Objective 52. We strongly support the research objectives for black-tailed deer.	Thank you for your comment. See Objective 53.
*Objective 55 (b). We urge additional language to clarify that thinning should be done in a manner consistent or in balance with other objectives for the area. For example, some types of thinning operation may enhance deer habitat, but be detrimental to salmon habitat.	This strategy is offered with the understanding that forest practices rules ands regulations will be adhered to by the other entities. We considered your comment but chose not to incorporate it.
Mandatory hunter reporting is an excellent program. Will there be possibilities of increased antlerless white-tailed deer hunting as a result?	Antlerless white-tailed deer opportunities will continue to increase if the white tailed deer population continues to increase.
Page 43. Table 1: The addition of a column showing success, as a function of license would be informative. Particularly, with a view to dropping number of license holders as a percentage of population falling.	Not appropriate for this planning document but perhaps your suggestion can be added to the Department's annual Game Status and Trend Report.
Mule deer are declining partly due to whitetail encroachment. Areas/units should be designated as "whitetail deer" or "mule deer" or "both." Whitetail deer should be reduced in certain "mule deer" areas/units.	White-tailed deer are increasing because the habitat is becoming more suitable to white-tailed deer. Our field data do not show that mule deer are declining because of an increase in white-tailed deer. Where white-tailed deer numbers are increasing, it is because the habitat has become more favorable to white-tailed deer and less favorable to mule deer. There are some areas where the Department is trying to encourage more harvest of white-tailed deer to keep the population in check and to alleviate damage complaints.
COMMENT	**AGENCY RESPONSE**
BIGHORN SHEEP	
Habitat management section is very weak, and with the exception of burns, provides no strategies for plant community enhancement with the exception of the artificial fertilizing. The latter is like starting a feeding program for sheep, and should be used only if sustaining vegetation management methods cannot be employed.	Strategies were added to the Habitat Section that enhance local plant communities.
Feeding of bighorn sheep may lead to increased risk for disease and should be avoided.	Bighorn sheep are especially prone to disease when their population approaches or exceeds local carry capacity. Recognizing this phenomenon, Washington State bighorn sheep herds are purposefully managed for a conservative population size. As such, the risk of disease outbreaks during winter-feeding activities is probably lower. Nonetheless, bighorn sheep populations that are fed during the winter are continually monitored for disease and health related issues.

PUBLIC COMMENT	WDFW RESPONSE
* Bighorn sheep should be fed only under the direst circumstances. These animals are very prone to disease and these feeding sites can contribute to the spread of disease.	Bighorn sheep are especially prone to disease when their population approaches or exceeds local carry capacity. Recognizing this phenomenon, Washington State bighorn sheep herds are purposefully managed for a conservative population size. As such, the risk of disease outbreaks during winter-feeding activities is probably lower. Nonetheless, bighorn sheep populations that are fed during the winter are continually monitored for disease and health related issues.
Table 1 – As noted above with elk, what is the basis for the numbers in the table, especially the "desired" column? Has habitat capacity been taken into consideration? Are populations above the desired level exhibiting any negative characteristics?	The desired populations levels are based on subjective estimates of habitat capacity, including forage, escape cover, and water sources. In addition, past experiences with disease outbreaks that coincided with high sheep densities were considered. This clarification was added to the table with population objectives.
Objective 54 needs a target date for completion.	A target date was be added.
Objective 55. Alternative "b" must have a type – it doesn't read correctly.	The typo was corrected.
Objective 57. Alternative "b" needs a target date.	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 58 needs a target date for completion.	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 59. Table 2 is confusing. Does it include tribal harvest? Will al sheep herds be subject to this strategy? The Hall Mountain herd is currently un-hunted – will the status change under this plan?	The table includes all harvest, including tribal harvest. However, at this time WDFW is not aware of any tribal harvest of bighorn sheep. The table applies to all herds, unless inconsistent with other strategies. Clarification was added in the table.
*pg 74, objective 67, strategy (g). Use youth, senior and disabled for ewe hunts.	From an operational policy standpoint, the plan indicates when ewe hunts might occur. The consideration of which user groups is part of the Fish and Wildlife Commission season setting process and would include public comment on the specific issue.
*pg 74, objective 68. Add strategy (e) Consider permit allocation by user groups to increase recreation days.	Bighorn sheep populations are not high enough to have permits for each user group. Permit levels are too low to divide up equitably.
* The department should not allow bighorn hunting for cape and horns only. Full utilization of the animals should be required.	Game animals may not be harvested for parts only. Under RCW 77.15.170 animals may not be wasted.
* Pg. 73 Objective 65 (d) Strike "use" and add <u>determine if populations</u>….	Population size will either be determined by actual counts (strategy a) or through modeling (strategy d).
Objective 60 needs a target date for completion. Also need to consider alternatives for the Noisy Cr. Viewing area if cougars continue to be a problem.	If no target date is identified, the assumed completion date is the ending date of the plan. Strategies to ensure public safety as it relates to cougars are addressed in the Cougar Section.
Objective 61 needs a target date for completion. Alternative "b" should be dropped or moved to objective 60.	If no target date is identified, the assumed completion date is the ending date of the plan. A statement was added to link the two objectives.

PUBLIC COMMENT	WDFW RESPONSE
Objective 62. How is tribal harvest factored into this?	In the past, tribal harvest, and therefore marking, has not been an issue. The desire is to mark all known mortalities, regardless of who harvested or collected the animal, to minimize illegal trading and/or harvest of rams. This comment is also addressed in tribal management Section of Chapter 3.
Objective 63. Research dollars are limited and can take funds away from other management needs.	The research strategies are essential components if management is to be based on science. This is articulated in the issue statement.
Rather than reintroduce sheep to new areas, it is obvious that augmentation to herds with low numbers should be the first priority. Rather than allow more permits for herd reduction, conduct trap and augmentation instead. An assessment of habitat carrying capacity should determine potential herd numbers, a reasonable goal for conducting sustainable harvesting of mature and desired individuals, or trapping for augmentation or reintroductions.	These comments are consistent with strategies outlined in the plan under recreation in the Bighorn Section.
Have past reintroductions been cost effective? Many of the current herds have depressed populations, are unable to coexist with domestic sheep, suffer poor forage conditions due to fire suppression and grazing by cows, or have suffered direct mortality due to wild fires. Has the department analyzed if this money could be better spent through doing better habitat and risk analysis?	Bighorn sheep reintroductions have been cost effective in terms of success. All bighorn sheep populations that have been reintroduced within the last 10 years currently are healthy and population levels are stable to increasing.
To reduce the threats to bighorns, would it be cost effective for the Department to pay for vaccinations of domestic sheep in close proximity to bighorns or pay for the grazing leases affecting bighorns.	Currently, there are no vaccines for domestic sheep or bighorn sheep to eliminate *pasteurella*. Purchasing grazing leases is identified in the plan.
Bighorn viewing is a popular activity around the town of Loomis and in the Sinlahekin Valley. Publicizing these and other places where bighorn can be observed and the season to do so would continue to boost the public's appreciation of wildlife.	WDFW agrees and is looking to add viewing opportunities for bighorn sheep, as identified in the plan.
MOUNTAIN GOAT	
Pg. 80 objective 76 I. As it is written because it is a mis-statement change (d) to I . strike "consider" and add <u>WDFW shall study</u>…. • Research: objective 80 (e) add, <u>WDFW shall study changes in habitat and food sources</u>	(a) WDFW does not study alternatives to reduce crowding. Rather, WDFW provides alternative recommendations for the Fish and Wildlife Commission "to consider". (b) This concept is included in strategy a, in terms of habitat and food as they related to mountain goat declines.
*Pg 77. The number of applicants/permit does not calculate correctly given the other numbers stated.	The average is from the number of the last 10 years. The high and low application levels are not 1991 and 2001, respectively. The application levels represent the high and low throughout that period.
Goats need attention.	A research project investigating the decline of goats in WA has been initiated.
Objective 64 needs target dates with alternatives.	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 64. Do nothing more than maintain the very limited number of permits, which essentially allows for self-management. Hands-off management is best use of available funding.	Given the thresholds outlined in the plan, goat hunting is only considered for goat populations with sustainable populations, as stated in the recreation section of the plan.
Objective 65. Alternative "b" is only valid for hunted population; therefore, needed data on non-hunted population would not be collected.	Strategy b is considered supplemental data. Survey data is required for establishing hunting seasons. This point is clarified in the plan.
*Pg 79, objective 74. Add a strategy to determine the population of un-hunted groups.	Determining the population status of un-hunted goat populations is included in strategy a (i.e., …all goat populations…)

PUBLIC COMMENT	WDFW RESPONSE
*Objective 74. Where herds are doing well, the department should forgo some of the harvest permits and opt for trap and capture for augment ting herds elsewhere in the state.	Until a better understanding about why goat populations are struggling, WDFW prefers not to transplant goats. A transplant may hinder goat productivity depending on what's causing the decline (e.g., competition for food or space).
* The department should not allow goat hunting for cape and horns only. Full utilization of the animals should be required.	Game animals may not be harvested for parts only. Under RCW 77.15.170, animals may not be wasted.
Objective 66. This objective needs to accommodate tribal harvest.	In the past, WDFW wasn't aware that tribal harvest of mountain goats was an issue. The harvest thresholds outlines in the plan correspond to total recommended take. Take by Tribes has not been factor in, but needs to be, if tribal co-managers anticipate tribal goat harvest.
Objective 66. Is tribal hunting factored into the calculations?	In the past, WDFW wasn't aware that tribal harvest of mountain goats was an issue. The harvest thresholds outlines in the plan correspond to total recommended take. Take by Tribes has not been factor in, but needs to be if tribal co-managers anticipate tribal goat harvest.
Objective 66. High priority should be given to turning around the declining mountain goat population.	Given the thresholds outlined in the plan, goat hunting is only considered for goat populations with sustainable populations, as indicated in the recreation section of the plan.
Objective 66. Strategy "b". – During what time of the year is the production survey conducted to trigger hunting? Pre and post season could be very different.	Following survey protocols, goat surveys are typically conducted in mid to late summer. Robust survey protocols are currently being developed as a part of the goat research project outlined in the research section of the plan.
Objective 67. Both alternatives should continue to be employed.	Thank you for the comment.
Objective 67. These strategies are the current policy, so maybe this needs to be rewritten to acknowledge that fact.	Thank you for the comment. Clarification was added.
Objective 68. A mountain goat viewing area already exists on the Colville N.F. and is featured on the WDFW web site in at least 2 location and in the Washington Wildlife Viewing Guide.	Clarification was added.
Objective 69 needs target dates for the alternatives.	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 70. Does this include tribal harvest? Need a target date.	In the past, tribal harvest, and therefore marking, has not been an issue. The desire is to mark all known mortalities, regardless of who harvested or collected the animal, to minimize illegal trading and/or harvest of goats. This comment is also addressed in tribal management Section of Chapter 3. If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 71. Research dollars are limited and can take funds away from other management needs.	The research strategies are needed components if management is to be based on science.
Objective 71. Do nothing more than maintain the very limited number of permits, which essentially allows for self-management. Hands-off management is best use of available funding.	Given the thresholds outlined in the plan, goat hunting is only considered for goat populations with sustainable populations, as indicated in the recreation section of the plan

PUBLIC COMMENT	WDFW RESPONSE
Pg 80, objective 80. Add a strategy (e). Consider permit allocation by user groups to increase recreation days.	Goat populations are still relatively low to consider allocation by user group. Some goat hunts only have 2 permits.
No hunting should occur on goat herds that have not been surveyed for a minimum of 3 years in order that short term population trend and herd health would have been assessed.	Thank you for your comment. The draft GMP states this in the harvest section.
With the drastically declining numbers on may herds, developing a model for suitable habitats would be warranted. Also studying why the declines have occurred in select areas may give an index for possible reintroduction sites. Where herds are doing well, the department should forgo some the harvest permits and opt for trap and capture for augmenting herds elsewhere in the state.	WDFW has initiated a study to investigate the cause of the mountain goat decline. Augmentations, and sources of animals, will be considered if the data indicate augmentation is necessary.
* Harvest of declining mountain goat herds may accelerate the decline of these herds. A better justification for harvest needs to be addressed. The publics desire for goat and sheep trophies should not threaten extirpation of the resource.	Harvest levels for mountain goats are specifically set at levels that do not impact a population growth rates. This is because harvest is conservative. If a population is declining and harvest exacerbates that decline, harvest will be terminated.
MOOSE	
* Pg. 82 Recreational opportunity: change all wording as weapon or weapons to equipment.	The change was made.
*Pg. 83 Objective 82: Rewrite "<u>The WDFW shall conduct annual surveys for three years to monitor population demographics of moose so a level of populations increase or decline can be established.</u>"	The objective is to evaluate the moose populations so a 20% decline could be detected within 3-years. This is because moose populations typically do not fluctuate widely from year to year.
*Pgs 82-84. The numbers are wrong on the number of applicants and number of applicants/permit. In 2001 there were 18,360 applications in just 4 units that had 47 permits. This is approximately 4,000 applicants/permit.	The figure 18,360 (from the hunting pamphlet) is not the number of applicants per se. It includes the number of hunter choices and each hunter gets four hunt choices. The figures in the plan are actual numbers of people submitting an application to hunt moose.
* Moose are important food sources for predators, namely grizzly and wolves. Keeping with the trend of increasing moose numbers, the department should allow numbers to increase and their range to expand.	WDFW does not manage moose to limit abundance or range. In fact, moose numbers and range are increasing.
* The department should consider maintaining mature bull numbers by requiring a certain percentage of bull harvest being from immature or younger bulls.	This already occurs in the harvest without needing a specific regulation. A portion of the bull harvest is younger bulls and is consistent with the numbers required to maintain mature bulls in the population.
Objective 72 needs a target date for completion.	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 73 needs target dates for alternative "b" and "c".	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 74. Is tribal harvest a factor?	In the past, WDFW wasn't aware that tribal harvest of moose was an issue. The harvest thresholds outlines in the plan correspond to total recommended take. Take by Tribes has not been factor in, but needs to be, if tribal co-managers anticipate tribal moose harvest.
Objective 75. I support the use of the existing permit system and "once-in-a-lifetime" strategy.	A once-in-a-lifetime opportunity is included in the plan as a strategy.
Objective 75. Strategy "c" add, distribute harvest equally between user groups.	Given the relatively low level of permits available, and the once in a lifetime status, equability among user groups is problematic.

PUBLIC COMMENT	WDFW RESPONSE
Objective 75. Strategy "b" – What if all hunters decided to hunt moose the first year this was enacted?	The point system tries to increase ones odds of drawing as their points increase through time. The odds of drawing would be similar for individuals with equal numbers of points, assuming hunt choices are also the same.
*Pg 84, objective 84. Add a strategy (e). Consider permit allocation by user groups to increase recreation days.	Moose populations are still relatively low to consider allocation by user group. In addition, hunters drawn for moose can hunt with any legal equipment.
Objective 76. This issue statement is not correct. There is already a moose page on the WDFW website, as recognized in alternative "b". This objective needs a target date for completion.	The issue statement was revised to reflect the existing web site. If no target date is identified, the assumed completion date is the ending date of the plan.
Keeping with the trend of increasing moose numbers, the department should allow numbers to increase and their range to expand.	WDFW has not identified strategies to limit moose abundance or range.
To control landowner damage a more liberal season could be allowed in Spokane county. Controlling the poaching in Pend Orielle, Stevens, and Ferry counties should be a priority.	Your comment is addressed in the harvest section by increasing female harvest in damage situations.
We note that the desired bull to cow ratio is >50 bulls: 100 cows, yet the buck:doe ratio for deer and elk is much less. Will the department consider maintaining mature bull numbers by requiring a certain percentage of bull harvest being from immature or younger bulls? We like the idea of select hunts having a once-in-a-life-time opportunity as is done for moose, bighorns, and mountain goats.	The median age threshold in the harvest section is designed to maintain a healthy balance of older-to-younger bulls in the population.
*Moose/human encounters continue to be problematic in the urban Spokane area. The plan should reflect continued close monitoring and increase harvest opportunities, particularly in Spokane County because of potential nuisance and damage problems.	The harvest strategies for moose do allow for a more liberal moose harvest near suburban areas, in an attempt to manage for human-moose conflict.
* Pg. 84 objective 83. Information and education – Issue Statement. Add the following "and feedback mechanisms from landowners, hunters and recreational observers on moose sighting. Consider adding this to mandatory hunter feedback.	A strategy was added to the population management section to address this comment
BLACK BEAR	
*Pg. 3. Black bear management, 1st sentence, add "excessive wildlife predation" to the concerns. At the end of the Pgh, add "Conduct research to determine a method of obtaining accurate population data."	Public support for managing black bears to increase game species abundance is low. As such, bear management objectives to not emphasize managing bears to increase game species abundance. Objectives are included in the plan to collect accurate population information on bears.
* a. Pg. 86 Population status and trends line 10, add: local bear populations shall be managed so that bear habitat and population numbers are in balance according to dynamics and conditions…. b. Goal # 4. add: yield, while maintaining quality of bear habitat.. Issue statement, objectives and strategies c. Objective 86 strategies: add (f) WDFW shall establish recreation hunting for black bears. (Why was this omitted in the 3 draft?) d. Habitat Mgmt. Issue Statement: ad interaction, and bear habitat damage.. e. Alternative strategies: (a) Delineate care habitat areas for black bears using regional staff expertise f. Objective 90 (a) add: property damage habitat damage, domestic pet and livestock….	(a) Bear numbers are managed within bounds set by carry capacity, nuisance activity, and property damage. (b) WDFW is limited in terms of ability to effectively maintain habitats at the scale and resolution appropriate for bears. (c) Providing recreational hunting opportunities is included as a goal. (d) Managing for reduced habitat damage (i.e., commercial timber damage) is not consistent with managing for enhances habitat. (e) The change was made. (f) Habitat (private commercial timberlands) are considered property.
* Pg iii Exec. Sum. Recreational hunting has been omitted for both black bear and cougar and needs to be included here as one of the management strategies.	Providing recreation opportunities is included in the plan in the goal statements. Those opportunities are reflected in the recreational management section of each species (bear and cougar).

PUBLIC COMMENT	WDFW RESPONSE
We find the proposal to increase sport hunting of black bear and expend limited resources on a PR campaign to increase public acceptance biologically reckless, ethically reprehensible, and fiscally irresponsible.	The black bear chapter of the GMP does not recommend increased harvest from past years. Lethal take strategies reflect status quo. Harvest strategies in the timber damage section are designed to focus harvest near timber damage areas.
Allow bear baiting by including a strategy that would allow bear baiting every other hunting season.	To allow bear baiting, RCW 77.15.245 would have to be amended by the State Legislature.
There are no scientific (accurate) data on population numbers of our predator mammals of black bear and cougar, the emphasis in this GMP is still to emphasize and even promote their being hunted. I can find no reference to numbers of illegal takings even though these unreported takings may represent a high percentage of the overall totals.	A recent bear study in Washington did not find that illegal take was a major mortality factor for bears. The number of black bears in Washington, and the resulting thresholds to regulate harvest are based on scientific analyses of age data, sex ratio information, population reconstruction, and population growth models. The interpretation of these parameters are supported in scientific peer-reviewed literature. As such, bear harvest seasons are allowed following the stipulations of RCW 77.04.012.
* Pg 88, objective 86. Delete strategy (a) or at least change "Establish to "Identify."	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
* Pg. 88 objective 86 (a). Cougar reserves will be identified yet black bear reserves will be established implying that areas currently open to hunting will be closed. While this does not affect tribal hunting it may affect timber resources and prey populations.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
* The issue statement for objective 88 conflicts with strategy "c". Using age and sex ratio's of harvested bears as indicators of population change can lead to precipitous population declines.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
*Pg 88 objective 86. Consider implementing at least two management strategies related to black bear hunting by 2008 to address public (delete "**opinions")** concerns without negatively impacting hunting opportunity.	The word "opinions" was chosen because it's consistent with the public "opinion" survey conducted by Responsive Management Inc. From a word semantic standpoint, both words likely reflect the same meaning in this case.
*pg 88 strategy (d). Add the words "recreational hunting after "livestock".	The intent is to focus recreational hunting in areas with livestock damage caused by bears.
* Pg 89 objective 88 I. Your document states that we have "abundant and healthy black bear populations," and that "Washington State has one of the highest black bear populations in the lower 48." If and when the game department can establish a good inventory of black bears, and can conclusively show that populations are declining—only then should you consider reducing harvest levels. Preserves are not needed.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
* Pg. 90 objective 90 strategy (a). This strategy should be changed to focus on managing black bears like other big game species in Washington. If managed as in the past human safety, livestock, protection of pets and recovery of listed species would be minor problems.	In terms of harvest guidelines, black bears have been managed the same for over a decade. Harvest methods (the use of dogs and bait) have changed, but those are results of changes in RCW 77.15.245, not WDFW bear management.
* Pg. 92 objective 94. I support strategies (a-c). I support implementing a spring bear season where feasible Eliminate contracting killing black bears.	It's unknown if the use of private contractors to remove bears would be needed if a spring bear season was established. As such, the implementation of a spring season would likely be experimental, and contractors would continue in some fashion until the efficacy of spring seasons could be determined.

PUBLIC COMMENT	WDFW RESPONSE
Objective 77 needs a target date for accomplishment.	If no target date is identified, the assumed completion date is the plan's ending date.
Objective 78. Tribes are concerned about black bear reserves.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 78 need target dates. Just because an area is closed to hunting does not mean that it is good black bear habitat, suitable for use as a population source. The proposed strategy does not include any consideration for habitat quality, only protection from hunting.	If no target date is identified, the assumed completion date is the ending date of the plan. Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 78. What is the justification for needing to establish black bear reserves that are closed to hunting? A concept of reserves would need to be carefully planned at the landscape level and incorporated islands of core habitat with connectivity established through linked corridors. This level of planning is not indicated in the plan. The concept of black bear reserves doesn't appear to be a biological necessity considering the current population size and relative habitat security. Is 10% of a BBMU biologically, ecologically, or genetically significant to the perpetuity of black bear populations?	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 78, strategy "b". Identifying such lands as reserves does not allow their managers/owners to reopen them to bear hunting for the six-year period of the EIS, denying private owners their property rights.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
While black bears are doing quite well in most areas, some places may develop extremely low and unsustainable population if legal hunting combines with poaching. Studies done in Arizona in the '80s (Mollohan and LeCount) stated that bear populations in a fragmented habitat (roaded) are not sustainable and these areas rely on dispersers from un-fragmented areas for their population viability. It is very important to map the refugia for bears, as it exists today and determine where bears are that would be susceptible to over harvest.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 79. Why propose alternative "c" if the technique produces misleading interpretations?	Sex and age structure data are value pieces of information when there is auxiliary data such as survival, intrinsic rate of growth, or density estimates. The necessary auxiliary data are included in the population status strategies.
Population estimates are very inaccurate and much more effort needs to be put into obtaining accurate numbers; sound science is drastically needed.	Thank you for your comment. WDFW has identified the biological information needed to make sound management decisions. These parameters, namely adult female bear survival and cub survival are both identified in the plan.

PUBLIC COMMENT	WDFW RESPONSE
Objective 80. The BMU criteria for harvest, as proposed by percent of females in the harvest, are too liberal. There is only a 5% difference between a liberal harvest and restrictive harvest (liberal <35%, acceptable 35-39%, restrict >39%). How well can the agency determine that small a difference?	The black bear harvest thresholds were adopted from a long-term bear research project in Idaho (Beecham and Rohlman 1994). The results of the research indicated that an over-exploited bear population tends to have >35% females in the harvest and median ages that are relatively low. Similarly, the research indicated that bear populations with <35% females in the harvest and older median ages tended to be reflective of an low-exploited bear population. These relationships are also supported in population models with Washington bear data. To accurately determine and evaluate these parameters, harvest data (i.e., % females and median ages) are pooled across 3-years and over several game management unit (collectively called a Bear Management Unit).
For the WDFW to establish harvest quotas is ludicrous due to inaccurate information about bear numbers, age, sex and maturity along with their respective hunted numbers.	WDFW collects and evaluates several biological parameters when assessing harvest levels. These include total harvest, estimated total population size, age structure, sex ratios, cub production, and trends in population growth.
Open bear hunting for hounds and bait.	To allow hounds, RCW 77.15.245 would have to be amended by the State Legislature.
Proposed median age for harvested males promotes younger bears. While this might be good for the bear-consuming hunter, it may not be good for the propagation of the species. We would recommend that management be for maintaining older bears by only having a liberal harvest when bears are brought in that average over 6-7 years old. As with most species, having older males doing the breeding promotes more resilient populations.	The median ages in the plan were obtained from a research project that identified the appropriate levels to protect from over harvest (Beecham and Rohlman 1994). Maintaining median ages as outlines, along with other key indicators, favors a healthy age structure in the population.
To avoid timber damage by bears, experiment with supplemental spring feeding. Pursuing a spring hunt that is not ever going to be popular with the public is not a good alternative.	Experiments with supplemental feeding are currently conducted by the timber industry, but the feeding does not totally alleviate the damage and feeding is expensive. Spring seasons are also currently being conducted to mitigate the situation. The plan identifies a type of spring hunt that is more acceptable to the general public than the current methods (see predator management in chapter 3).
Objective 81. Trees per stand is not a good measure, as stand size can be variable. Trees per acre or some other measure (percent of stocking) would be more meaningful.	"Trees/stand" is not the best measure, because as you said, a stand can vary in size. Language was added to look for a better measure.
Objective 81. What is considered a stand and how was the number 30 derived? Under strategy "b" where do relocated bears go and if they are relocated it should be mandatory that they are radio collared.	A stand varies in size, but is generally considered the group of even-aged trees that are managed as a single unit. The 30 trees/stand threshold was considered by the Fish and Wildlife Commission and was adopted. Captured bears will be relocated to designated areas as identified by each region. If no areas are identified, bears will be euthanized instead (consistent with problem wildlife policy).
Poaching bears to sell body parts to the Asian market must be curtailed. We strongly encourage under cover operations to arrest anyone trafficking in wildlife parts.	In the Enforcement Section of the bear chapter, the objective seeks to establish a long-term monitoring program to assess illegal activity of this nature.

PUBLIC COMMENT	WDFW RESPONSE
Objective 81. Capture and relocation is largely unsuccessful and should be abandoned.	An investigation of capture-relocation to mitigate problem bears is currently being developed and will likely be initiated by 2003.
Objective 81. Strategy "b" encourages the use of non-lethal methods to address timber damage from bears. With high populations of black bears, capture-relocation will not address the problem of damage that occurs on industrial forestlands. A reduction in bear density seems to be the logical and cost efficient alternative. Moving bears from one location to another does not change the behavior, just moves the problem. Is WDFW willing to issue depredation permits for commercial/economic reasons for bear but not for protection of elk herds?	The public identified non-lethal alternatives, such as capture and relocation, over lethal removal of problem bears. In light of that, an investigation of capture-relocation to mitigate problem bears is currently being developed and will likely be initiated by 2003. WDFW does issue bear depredation permits to commercial timber damage as mandated. However, the department has no mandate to, and does not, issue bear depredation permits to mitigate elk losses.
Objective 81, strategy "c". Delete this strategy.	Spring seasons are currently being considered to mitigate commercial timber. The plan identifies a type of spring hunt that may be more acceptable to the general public than the current methods (see predator management in chapter 3).
Objective 81, strategy "d". We disagree; damage causing bears almost always come back or start up the same pattern. Save the expenses and put cost into other bear programs.	For a depredation permit to be issued, there needs to be evidence that the problem is occurring and at a level that impacts the commercial timber industry.
Objective 81. Use PLWMA program concept with landowners to manage damage issues for this species.	Your comment was added to the timber damage section.
Objective 81. Use boot hunter's not professional hunters with hounds in road closures.	The plan provides an experimental process to determine if "boot" hunters can be used as an effective tool for addressing timber damage by bears. Until the efficacy of a spring season is determined, contractor hunters will likely continue as identified in RCW 77.15.245.
* Pg. 91 objective 93. Add strategy (f) "Reduce commercial timber company bear baiting by 10% annually.	Private industrial timber companies are allowed by RCW 77.15.245 to feed bears to mitigate tree damage caused by bears.
* Pg. 92 objective 94 (d). Reduce use of "contractors" by 10% annually and increase use of licensed hunters.	The plan provides an experimental process to determine if "boot" hunters can be used as an effective tool for addressing timber damage by bears. Until the efficacy of a spring season is determined, contractor hunters will likely continue as identified in RCW 77.15.245.
Objective 82. This objective needs target dates or some other parameter to measure success. Is there a strategy beyond undercover operations to reduce illegal trading of bear parts?	If no target date is identified, the assumed completion date is the ending date of the plan. Your comment for additional operations to reduce illegal take is reflected in the revised plan under the Enforcement Section of the bear chapter.
Objective 82. Why so much emphasis on enforcement if black bear populations are healthy? It is understandable to deter illegal harvest for gall bladders, but the state population appears robust.	WDFW is mandated to deter illegal taking of wildlife, regardless of population status. Given the known market for certain bear parts, a pro-active strategy is recommended.
Bear and cougar tags are part of a package, thus their accurate hunter numbers, success and days of effort are skewed and we don't know how many animals are actually being targeted other than damage control hunts.	The number of bear and cougar harvested are estimated by mandatory report for all bear hunters, whether they were successful or not, and a mandatory carcass check for all harvested cougar.

PUBLIC COMMENT	WDFW RESPONSE
* Pg. 89 line 2, population management. The wording "Bear reserves" concerns me about forest damage management. This may cause friction on private lands with forestland managers. Could you please clarify what options foresters would have to protect their forests from animal damage, specifically bear damage, in "bear reserves."	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
* Pg. 89 line 2 under Timber Damage. Bears are interested in the sugary phloem (or sapwood) and not in the cambium layer. The cambium is a "layer" of 1 (one) film of cells between the xylem (woody part) and the phloem, promoting growth but do not transport any free floating carbohydrates.	The changes were made in the plan.
*Pg. 92 Objective 94 strategies. Probably a waste of time and monies because public opinion/decision making on this issue is driven by subjective not objective input and responses.	The plan provides an experimental process to determine if "boot" hunters can be used as an effective tool for addressing timber damage by bears.
*pg 92. Add an objective and strategies for black bear control in areas where predation threatens sustainability of prey species.	Public support for using bear hunting as a tool to increase prey species is relatively low (except threatened and endangered species). As such, bear management does not emphasize managing bears to enhance prey abundance.
COUGAR	
* a. Pg. 94 Recreation opportunity: pgh 2, line 2 add: cost, <u>license structure,</u> and…. b. Cougar management goals: add: # 1 populations <u>in balance with prey species…</u> c. Goal # 4 add: <u>yield in balance with habitat</u>… d. Issue Statement, strategy (d) change to read: Focus cougar hunting efforts to those areas and situations that address human safety, protection of <u>domestic</u>…..recovery of <u>prey</u> species…. e. (e) new strategy <u>WDFW shall establish recreational hunting to control cougar damages to domestic pets, livestock, and prey species…</u> f. Pg. 96 Objective 97 (b) add: <u>important prey species</u> g. Population Mgmt. Issue Statement line l0: Add sentence <u>"first priority shall be to determine desirable levels of cougars in relation to prey species"</u> h. Objective 98 Omit in each CMU (except CMUs 2,7,9) i. Pg. 98 pgh 2 , line 1 change to read: In general, cougars are managed to protect human safety, <u>domestic pets,</u> property , <u>prey species populations ….</u> j. Objective 100 Pg. 98 change to read: sustainable cougar <u>and prey species in</u> each cougar….. k. Pg 98 (d) New strategy: <u>There is a definite monetary correlation between cougars and prey species. A correlation of historical trends on prey species and cougar populations shall be established in order properly cougar and prey species will be established.</u>	a. The change was made. b. A section was added to evaluate cougar-prey relationships. A second step would be to then use that information to help shape population objectives. c. A cougar-habitat oriented goal is included in goal #1. d. Public support for using cougar hunting as a tool to increase prey species is relatively low (except threatened and endangered species). As such, cougar management does not emphasize managing cougars to enhance prey abundance. e. This emphasis is included in the population objectives section, harvest section, and public safety section. f. The change was made. g. A section was added to evaluate cougar-prey relationships. A second step would be to then use that information to help shape population objectives. h. Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data. . i. Domestic pets are considered property. Public support for using cougar hunting as a tool to increase prey species is relatively low (except threatened and endangered species). As such, cougar management does not emphasize managing cougars to enhance prey abundance. j. A section was added to evaluate cougar-prey relationships and possible impacts. k. Strategies were added in a new section to evaluate correlations between cougar and prey.

PUBLIC COMMENT	WDFW RESPONSE
* There is a lack of understanding of controlling our predator populations. WDFW personnel have acknowledged that cougars are not being controlled biologically, have not realized the great impact cougars have on other species or that one exists, which obviously does, but is being ignored.	A section was added to evaluate cougar-prey relationships and possible impacts.
* WDFW needs to educate the general public in the need for true biological answers to predator issues, this standoffish, non committal approach has done more damage to the health of all of Washington's wildlife than any consumptive user group ever could.	A section was added to evaluate cougar-prey relationships and possible impacts.
*Pg. 3 cougar Management, 1st sentence, add "excessive wildlife predation" to the concerns. At the end of the Pgh., add "conduct research to determine a method of obtaining accurate population data."	Public support for managing cougars to increase game species abundance is low. As such, cougar management objectives to not emphasize managing cougars to increase game species abundance. Strategies are included in the cougar section to collect accurate population data for cougars.
*I suggest using the term cougar instead of mountain lion or lion throughout the GMP as this is the tem used to title this section and is consistent with WAC 232-12-007.	The change was made
* Pg 96 Population Management-Issue Statement. First sentence. The word "likely" guides all cougar management actions yet there is no real evidence one way or another. If cougar numbers are not declining, then the conservative management proposed will allow cougar numbers to expand at a faster rate. It has already been said that age and sex ratios say nothing about population trend (Caughley 1974) so using this data to argue a declining population may be misleading. Prey population trends in some areas have declined rapidly with far more certainty than the data available for cougar trends.	The section was revised. From a statewide perspective, the data we do have indicates that cougar abundance is declining.
* Pg. 96 Population Management-Issue Statement second paragraph. The issue is far more complex than implied in this paragraph. If predation rate increases, then the result is additive if there is a detectible decline in juvenile survival or some other baseline variable. If there is no detectable change in the prey variable, yet cougar numbers have increased and predation rate increased, then predation may be compensatory. Small isolated populations are typically the ones most intensively studied so obviously the results on impacts to prey will be generally seen on small isolated prey populations. The fact is that cougars eat between 30 and 50 ungulates per year and the prey base must be able to support this while also providing opportunities for human harvest of the same prey.	The section was revised to address your points.
* Pg. 97 Recreation Management. This section needs to include the following statement; "Cougar seasons have changed significantly over the past 6 years. Washington voters passed Initiative 655 (which banned the use of hounds for hunting cougar) in the November 1996 general election. Therefore the use of hounds for hunting cougar became illegal for the 1997 season." The current text is erroneous and implies that hunters voluntarily changed hunting tactics for cougar.	The initiate became law 8 days into the 1996-97 cougar season. The text was revised to indicate that hunting methods changed as a result of voter Initiative 655
* Pg. 95 objective 96. Delete strategy (a) (as well as objective 98) and change strategy (d). Focus on managing cougars like other big game species in Washington.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
* Pg. 100 Cougar Research. There needs to be more cooperation with Tribes on designing and conducting research on all species. WDFW wants to be a cooperator on tribal studies, and WDFW wants to guide tribal studies, but WFDFW rarely, if ever, consults with tribes on studies WDFW proposes, even if those studies occur close to tribal reservation. WDFW should float study proposal through tribes for comment and potential cooperative opportunities.	Designing specific research projects doesn't necessarily fit into this plan. This plan is an umbrella plan for managing all game animals from an operational policy standpoint. Designing projects is a "finer scale" activity. That said, thank you for the comment. WDFW would like tribes to be involved in relevant wildlife research projects as well.
We find the proposal to increase sport hunting of cougar and expend limited resources on a PR campaign to increase public acceptance, biologically reckless, ethically reprehensible, and fiscally irresponsible.	The cougar harvest guidelines in Table 2 of the cougar chapter will likely result in a decrease in sport hunting of cougar, not an increase.

PUBLIC COMMENT	WDFW RESPONSE
The Muckleshoot Tribe feels that cougar reserves will not work over the long term because prey and subsequently cougars will be driven so low the reserve will no longer function as such.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Population status and trend – Be more specific on the methods used to arrive at this number. How are these animals distributed (include a column of population size range in Table 1). Is this an acceptable population size? Can the prey base support these numbers within CMU's?	The revised draft includes more detailed information on the kind of model used and a better figure of cougar distribution. Population size at the CMU level is more problematic, as estimates have a wide variance. A new section was added to evaluate cougar-prey relationships.
Cougar management goal # 1. The harvest strategies seem aimed at keeping the population status quo, however, it has not been determined if the present cougar population is too high or too low. Tribes worked on setting elk population goals and there should be cooperation with Tribes to set cougar population goals as well. A sustained yield of cougars can be accomplished at any population size, so status quo population size may not be acceptable.	A new section with cougar population objectives for each CMU was added. The overall objective is to strive for sustainability, or when sufficient data is lacking, make conservative harvest recommendations. In the case of public safety and property damage, the objective is to reduce cougar levels. WDFW understanding is that tribal preferences are to manage cougar populations to increase prey species. However, the public does not support lowering cougar abundance (even at sustainable levels) for the purpose of increasing game species levels.
Cougar population and quota goals are being forced upon Tribes by WDFW without they're being a discussion as to whether the cougar goals are reasonable. Elk population goals were jointly determined, however, cougar population goals have not undergone such a process.	Tribes were invited to discuss and provide comment on all aspects of the GMP. In some cases, follow-up meetings have occurred to discuss specific aspects of the plan.
Muckleshoot Tribes believes WDFW is not able to achieve maximum recreation days when predators are responsible for the inability of populations to maintain themselves in the absence of female hunting as we have seen in the Green and White River watersheds.	Public support for managing cougars to increase game species abundance is low. As such, cougar management objectives to not emphasize managing cougars to increase game species abundance.
The state needs to push much harder to use available studies (i.e. Vancouver B.C,) and accurately determine the number of mountain lions statewide.	Total population size is extremely difficult to obtain. In terms of prioritizing which biological parameters are most useful for managing a cougar population, total population size is not the most desirable parameter. Other parameters, such as adult female survival and cub survival are more useful for assessing the status of a lion population. These parameters are easier to obtain and can be monitored over several years.
There are no scientific (accurate) data on population numbers of our predator mammals of black bear and cougar, the emphasis in this GMP is still to emphasize and even promote their being hunted. I can find no reference to numbers of illegal takings even though these unreported takings may represent a high percentage of the overall totals.	The number of cougars in Washington, and the resulting thresholds to regulate harvest, are based on scientific analyses of age data, sex ratio information, population reconstruction, and population growth models. The interpretations of these parameters are supported in scientific peer-reviewed literature. As such, cougar harvest seasons are allowed following the stipulations of RCW 77.04.012.
Cougar management goal number 4. We disagree; the Department needs to minimize threats to game populations, not just public safety. Remember, Charlie the lonesome cougar eats a deer a week.	Public support for managing cougars to increase game species abundance is low. As such, cougar management objectives to not emphasize managing cougars to increase game species abundance.
Cougar management goal number 4 belongs in the Black Bear Section.	The correction was made in the plan.

PUBLIC COMMENT	WDFW RESPONSE
The issue statement needs to address game species predation as well as public safety.	Public support for managing cougars to increase game species abundance is low. As such, cougar management objectives to not emphasize managing cougars to increase game species abundance.
Why shouldn't NE Washington and the Puget Sound area (CMUs 2 and 7) map and document 10% of the land area as cougar reserves? Will not doing this jeopardize the ability of the areas to contain sustainable cougar populations over time?	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 83 needs target dates for accomplishment.	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 83. Cougar reserves; as many problems as we are having now and we want to make reserves for them? It lists 2,500-4,000 as population, which is quite a range and higher than the 2,000-2,500 previously estimated. We need a healthy population but not an over abundance.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 83. Cougar reserves cannot occur where elk and deer are managed for sustained harvest by humans. Perpetual cougar reserves will depend on social tolerance of cats relative to prey base availability.	Public support for managing cougars to increase game species abundance is low. As such, cougar management objectives to not emphasize managing cougars to increase game species abundance.
*We recommend further expanding of areas as cougar reserves and corridors.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
*Eliminate cougar/bear reserves and "implied reserves', the de facto reserves of National Parks can be acknowledged.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
*Under cougar recreation management, strike the added verbage to support the concerns for grizzly and lynx.	Because cougar harvest has the potential to impact grizzly bear and lynx, as discussion of that potential and mitigating efforts was warranted.
*Eliminate the Table 1 cougar harvest guidelines. The current unrestricted harvest data is the best you currently collect for population guesstimates. Your own biologist just told the Commission that if ½ the current population of cougars (unknown) were harvested there would still be a sustainable population. Regulate harvest by current methods; by length of season and cost of tag.	The female harvest guidelines correspond to harvest levels to achieve individual population objectives in each CMU. These guidelines will be met through adjustments to season length.

PUBLIC COMMENT	WDFW RESPONSE
*Our primary concerns are threefold in the emphasis on lethal management. (1) the continuing kill of Mt. Lions, including females, given the lack of a scientifically defensible population estimate for the state, (2) the indiscriminate hunting of cougars for public safety, (3) the failure to consider this continuing kill in light of expected cumulative impacts of habitat loss, degradation, and fragmentation on mountain lion population in Washington.	l. An accurate and precise estimate of cougar abundance is not necessarily critical to managing for a stable and sustainable cougar population. Female harvest, hence survival, is more influential parameter in terms of population growth. Recognizing that, WDFW has established female harvest guidelines that correspond to achieve each population objective. These guidelines were determined by modeling the impacts to cougar populations at various harvest levels. 2. The objective of public safety cougar removals is to reduce cougar densities in areas with a demonstrated history of high human-cougar conflicts. 3. Cougar harvest guidelines do account for the amount of available cougar habitat in Washington.
*Two factors threatening the long-term maintenance of self-sustaining mountain lion population – overkill and habitat loss. The low fecundity of mountain lions and their need for expansive ranges makes them particularly vulnerable to local and regional extinctions. Clarifying these factors and mitigating their impact is particularly relevant to the draft plan.	A strategy was added to a new section to evaluate the role habitat in cougar-prey dynamics. For CMUs where the objective is for a stable population, the cougar harvest guidelines facilitate a long-term, self-sustaining cougar population.
*Without a scientifically valid estimate of the numbers and distribution of lions, thee is no biological justification for the continued kill of lions for reasons other than direct and immediate threats to public safety. End the profligate killing of mountain lions. WDFW should set a moratorium on all hunting of mountain lions in Washington other than removal of individual verified to be direct and immediate threat to public safety.	An accurate and precise estimate of cougar abundance is not necessarily critical to managing for a stable and sustainable cougar population. Female harvest, hence survival, is more influential parameter in terms of population growth. Recognizing that, WDFW has established female harvest guidelines that correspond to achieve each population objective. These guidelines were determined by modeling the impacts to cougar populations at various harvest levels.
*The harvest of female lions should be limited or prohibited to facilitate population recovery from hunting impacts and to prevent future declines.	For CMUs where the objective is for a stable cougar population, the female guidelines limit female harvest to facilitate achieving that objective.
*WDFW must consider the cumulative effects of habitat loss, degradation, and fragmentation on mountain lion populations. Using mountain lion sightings and conflicts as population indicators upon which to determine tag quotas or public safety removals may result in the rapid reduction of mountain lions in some areas.	Strategies are included in the plan to assess the role of habitat quality in cougar-prey dynamics and corridors. The use of human-cougar incidents and sightings to consider public safety cougar removals is consistent with RCW 77.15.245. In these areas, reducing cougar densities is the objective.
*While the draft plan contains minimal language acknowledging the ecological importance of mountain lions, its goal of "managing statewide cougars populations for a sustained yield" in essence treats mountain lions as little more than a commodity. This philosophy is at odds with the growing knowledge of the importance of lions as a keystone predator, and with public sentiment.	A new section was added to evaluate cougar-prey dynamics.
*Redefine mountain lion management in a conservation biology context that recognizes their ecological role.	A new section was added to evaluate cougar-prey dynamics.
*Manage for long-term viability of population systems that include predator/prey relationships rather than single species.	A new section was added to evaluate cougar-prey dynamics.
*Establish population monitoring and habitat models to define and maintain essential habitat	A new section was added to evaluate cougar-prey dynamics.

PUBLIC COMMENT	WDFW RESPONSE
*End "public safety removals" as currently implemented and as discussed in Objective 101.	Public safety cougar removals are consistent with RCW 77.15.245. In addition, when asked, Washington citizens supported managing cougar to enhance public safety and protection of property.
*Implement and expand objectives 97 and 98 to identify and map core and peripheral habitat, and to acquire and protect present and potential reserves and linkages.	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
*Implement objective 99 to support scientific research to establish site-specific population data.	Collection of site specific cougar data is included in the plan.
*Implement an aggressive public education program on how to co-exist with mountain lion.	This topic is included in the public safety section.
*Facilitate a scientifically based survey (that is more focused on cougars then Duda et al. 2002) to ascertain the opinions of Washington's citizens on cougar hunting.	A strategy was added to survey the public by 2007.
*In absence of a moratorium we suggest the following: 1) Set strict and conservative limits on the number, location, and types of licenses sold. 2) Terminate the hunting of all mountain lions in an area once either the female or the male quota for that area has been reached. 3) Revoke the rule allowing incidental kills by hunters for other species. 4) Prohibit the sport hunting of female lions.	a. The plan includes female harvest guidelines to facilitate a stable cougar population for areas where that's the objective. b. Seasons will be set to best achieve the female harvest guidelines. c. Only hunters with a valid cougar transport tag may harvest a cougar. d. Because female survival is a key parameter to population growth, WDFW purposely select it as management criteria to ensure female harvest does not facilitate a decline in areas where the objective is a stable cougar population.
*Establish strong penalties to discourage and prohibit the killing of lions outside Department policies, and for killing a female lion or kitten for lack of ability to accurately sex in the wild.	Setting penalty levels of fish and wildlife violations are beyond the scope of this plan.
*Manage for ecological systems at the regional, or meta-population, level.	A new section was added to evaluate cougar-prey dynamics.
*Pg. 94 – 100. This is a mishmash of bureaucratic mumbo-jumbo couched in "how can you not understand this?" verbage and presentation. Very poorly done for the average person to understand.	The plan was restructure and hopefully reads better.
*Pg. 95 objective 96. Delete the word "opinions" and add "concerns without negatively impacting hunting opportunity."	The word "opinions" was chosen because it's consistent with the "public opinion" survey conducted by Responsive Management Inc.
*pg 100 objective 103, strategy I. What is meant by "corridor design?" This needs to be explained before including in the plan. Will it impact hunting activities specifically to cougar or all species?	The strategy is to evaluate how cougars move through difference sizes and shapes of habitat corridors. It's not intended to be related to cougar hunting. Rather is aimed at gaining a better understanding of how cougars move and exist in fragmented habitats most commonly associated with suburban or residential areas.
Objective 84 needs target dates. Just because an area is closed to hunting does not mean that it is good cougar habitat, suitable for use as a population source. The proposed strategy does not include any consideration for habitat quality, only protection from hunting.	If no target date is identified, the assumed completion date is the ending date of the plan. Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.

PUBLIC COMMENT	WDFW RESPONSE
Objective 84. Why do we need to establish reserves with relatively secure habitats for cougars on Federal and industrial timberlands? What is the logic for 10% of a CMU being in reserve status? How will reserves be designed and will they be meaningful?	Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 85 needs target dates.	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 85 calls for monitoring to detect a 20% decline in population size in 3 years or less, yet no science exists for doing so. We recommend that a scientific study look at the problem of trying to assess population's demographics from age and sex of harvest data. Modeling is a great exercise, but when it is not compared to an actual harvested and un-harvested population, it may get cougars in deep trouble. We also recommend that all cougar harvested be required for a mandatory check by agents and be tagged. The department can collect the biological information, even if the data wouldn't be analyzed until a later date.	Under the population management section of the chapter, the strategies include developing an inventory and monitoring technique to assess cougar population status. Also, under the Enforcement Section, mandatory check of all carcasses, as well as marking all carcasses is identified. This activity already occurs and is status quo.
We recommend that the department implement male and female harvest quotas for areas open to hunting. This should also be conducted for CMUs 2 and 7, despite the department alternative not to do so.	Harvest guidelines are not recommended for the Puget Sound CMU because of conflicting values with minimizing public safety (public safety is a higher priority). Harvest guidelines are not recommended in the Columbia Basin CMU because cougar populations do not occur there (outside of suitable habitat).
* Pg. 97 objective 99. Your document states "that no reliable estimate of lion abundance is available," and also "current populations are believed to be between 2500-4000 animals." Yet a statement is made that "the cougar population is declining by at least 5% annually given the harvest levels." Based on the above information it is impossible to determine if the populations are declining and your modeling is suspect.	The premise of the modeling was to evaluate Washington's cougar harvest during the past three years and determine how it might impact cougars in Washington if cougar populations were at the high end. The model indicated that even if cougar populations are high in Washington, the level of female harvest is likely causing a decline in the statewide population.
* Pg. 97 objective 99. You need to establish inventory guidelines/system to factually determine populations, male and female percentages, and kitten survival rates before you guess at the numbers.	Strategies are includes in the population status section to obtain this information.
* Pg. 97 objective 99. If you are trying to establish a harvest of 250 animals as stated, that 11% of a 2500 population or 7% of a 4000 animal population. The previous harvest of 282 animals fits easily into that scenario, unless you have a better idea of the total population—which you do not.	During the last 3-years, the number of females harvested was relatively high. High enough that the statewide cougar population is likely declining. Limiting female harvest at a lower level will facilitate a more stable population.
* Pg. 97 objective 99. If credible evidence shows a cat decline, which I am sure it will not, then modify the seasons, license requirements or eliminate the $5 combination cat tag with other species.	Adjustments to seasons will be used to achieve the female harvest guideline in the plan.
* Pg. 97 objective 99. I do not believe that you have a declining cat population, but a vastly increased one. You need to prove me wrong with some accurate statistics on population inventories-not modeling with suspect numbers. Cougar preserves are not needed.	The plan includes strategies to obtain better biological data for making management decision. Still, modeling can be a useful tool when interpreted with caution. Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 86, issue statement. The statement, "…while at the same time ensuring long-term sustainability." This depends on sustainability of prey base relative to other competing objectives for prey management. WDFW is attempting to manage for the present number of cougars without determining if that number is reasonable within the constraints of other objectives.	A new section was added to evaluate cougar-prey dynamics.

PUBLIC COMMENT	WDFW RESPONSE
Objective 86, cougar harvest quota. Is there presently a cougar harvest quota? If not, why go to one? The quota is aimed to maintain the existing number of cougars without determining if that number is reasonable. The Muckleshoot Tribe intends to manage cougars using a prey-based approach. Our goal is to ensure long-term sustainability of deer and elk that allow for modest human harvest while still recognizing that cougar and bear have a place in the ecosystem. Management will not focus on protecting stable cougar numbers in areas where prey are documented to be limited by predation in the absence of hunting.	Currently, there are no cougar harvest guidelines. The female harvest guidelines are recommended to limit harvest of female cougars. Recent analyses of harvest data indicate that the statewide cougar population is likely declining. This is due to two factors; high levels of harvest during the last 5 years and greater proportion of females in the harvest (~60%).
*Pg98, objective 100. We feel that the % of females in the harvest should not exceed 30% for any CMU. The department must develop a way to ensure the females or total harvest for a given CMU is not exceeded. We also think that cougar refugia should be mapped as was in the original draft.	Cougar harvest seasons will be structured to best achieve the female harvest guideline. Public support for the establishment of reserves was low, so it was removed from the plan. As a result, more emphasis was placed on identifying source and sink areas, and collection of biological data.
Objective 86. The CMU numbers in the chart do not correspond to the CMU map shown on page 71. Current rules require reporting cougar kills within 72 hours. Is this sufficient to monitor cougar harvest as closely as you need? What measures are in place to notify hunters when CMU quotas have been reached? What happens when the quota for one sex is reached well before the quota for the other sex? Also need a strategy to address criticism that will be received if recreational hunting is shut off in any CMU due to quotas being reached, but additional cougars later need to be removed due to depredation or public safety.	Thank you for pointing out the error, the table CMU numbers was corrected in the Plan. The implementation of harvest guidelines can be achieved through a variety of approaches, including notifying hunters, adjusting season length, retroactive adjustments, etc.
Objective 86 establishes 236 as a maximum for harvest statewide. How was a harvest of 236 cougars determined? The minimum population size stated was 2,500 and harvest appears to be focused at 11% of the population. This would indicate a minimum harvest of 275 cougars. Why is harvest managed so conservatively?	The harvest guideline was revised to include female cougars only, as they're pivotal to population growth. The guidelines were determined by analyzing three avenues of reasoning; estimated cougar abundance in each CMU, past harvest trends by CMU, and population modeling. The guidelines correspond to a harvest level that facilitates meeting population objectives for each CMU.
Objective 86. Based on previous numbers there is quite a range of possible under harvesting and doesn't the current practice of open season boot hunting give a more accurate indication of population levels?	During the last 3 years, the average harvest by boot hunters has been higher than 3-year averages prior to I-655. Because boot harvest tends to be non-selective, it does better represent the actual age and sex structure of the population, but that also means boot hunters take a higher proportion of females because boot harvest is less selective. Given the high harvest levels and greater proportion of females in the harvest, the statewide cougar population is likely declining.
Objective 86. One very important thing to remember is that since I-655 the harvest was initially low, and then went back up because of illegal hound harvest. Therefore, the boot hunter harvest is not accurate.	WDFW has no substantiated evidence to support high levels of illegal take. From a population status standpoint, total take and the composition of the take is most meaningful, not necessary how the animal was harvested.
Objective 86, strategies "a" and "b". To set quotas for cougars that will be used for the next six years cannot be considered professional scientific management. The management of any species must be fluid and needs to be determined based on hunting pressure and age, sex, and number of harvested animals in any particular year. Mature males should be targeted.	Having a female harvest guideline and developing seasons to target that level is the preferred strategy for achieving the population objectives. Given current legal harvest methods, targeting adult males is problematic.

PUBLIC COMMENT	WDFW RESPONSE
In regards to cougars, the GMP implies there will not be a quota for the Puget Sound Area, yet other areas in the state will have quotas. Does this mean there will be permits for cats?	Cougar harvest will not be restricted to a specific level and will generally be more liberal due to public safety concerns. Cougar will be harvested also via public safety cougar removals when warranted. Clarification was added to the plan.
Objective 86. How can quotas be used when populations are unknown? Public safety dictates a better plan.	Harvest guidelines were established by analyzing three avenues of reasoning; estimated cougar abundance in each CMU, past harvest trends by CMU, and population modeling.
Objective 86. Tribes are concerned about state imposed harvest quotas on cougar.	Harvest guidelines are designed to limit female take in order to achieve population objectives.
Open cougar season year around, 24 hours a day and use hounds and spot lights.	This harvest strategy would result in over-exploiting cougar populations and the use of dogs to hunt cougars by licensed hunters is illegal under RCW 77.15.245.
Objective 86. Make harvest objective 500 per year. Do not allow any non-hunter to interfere with the season setting process.	This harvest strategy would result in over-exploiting cougar populations.
For the WDFW to establish harvest quotas is ludicrous due to inaccurate information about cougar numbers, age, sex and maturity along with their respective hunted numbers.	The best available information on total take, age structure, sex ratios, and several other biological parameters were used to develop the recommended harvest guidelines.
Recreation management issue statement should include a statement to include livestock protection.	Your comment is included in the plan.
Objective 87. The use of 11 complaints per GMU to gauge the success of this objective is meaningless. In GMUs that have little urban development and are primarily rural, 11 complaints may signal real problems, while in the more urban dominated GMUs 11 complaints may be acceptable.	The value of 11 complaints was established using a scientific model that evaluated the history of complaints, human density, road density, and several other factors. The model indicated that when complaints reached 11, regardless of the area, the level was amongst the highest in the state. Below 11 complaints, other tools for addressing complaints appear to be effective.
Objective 87. We agree but add problems of game species depredation problems also.	Public support for managing cougars to increase game species abundance is low. As such, cougar management objectives to not emphasize managing cougars to increase game species abundance.
Objective 87, strategy "b". Add, conduct predator reaction to game population, set harvest goals to keep game population available to hunters who fund your program.	Public support for managing cougars to increase game species abundance is low. As such, cougar management objectives to not emphasize managing cougars to increase game species abundance.
Objective 87. Delete strategy "a". Develop a pursuit season for hounds. This will allow cougars to be programmed to avoid humans.	Strategy a was revised for clarity. The use of pursuit seasons was already considered by the Fish and Wildlife Commission and was not enacted and may be unlawful given RCW 77.15.245.
Objective 88. The objective should be better stated. Accounting for ALL cougar mortalities is impossible and cannot be met with the alternative strategies presented. In addition, the alternative strategies are already in place. This should be mentioned in the plan to avoid confusing the public.	Clarification was added to the plan.
Objective 89. Research dollars are limited and can take away from other needs. All research needs should be prioritized for funding.	The research strategies are needed components if management is to be based on science

PUBLIC COMMENT	WDFW RESPONSE
Cougar and bear tags are part of a package, thus their accurate hunter numbers are skewed and we don't know how many animals are actually being targeted other than damage control hunts.	The number of bear and cougar harvested are estimated by mandatory report for all bear hunters, whether they were successful or not, and a mandatory carcass check for all harvested cougar.
COMMENT	**AGENCY RESPONSE**
WATERFOWL	
Open the waterfowl season on the 2nd or 3rd weekend of October and run until the 3rd week of January.	Duck season length is dependent on breeding populations and wetland conditions. A mid-late October opener would be recommended if the moderate or liberal package is selected (see Obj. 115).
Reduce the bag limit on lean years.	Duck bag limits are dependent on breeding populations and wetland conditions. Reduced bag limits would be recommended if the moderate, restrictive, or very restrictive package is selected (see Obj. 115).
Objective 90 needs target dates for the alternatives.	These are ongoing activities throughout the term of the plan.
Objective 91. Alternative "b" additional effort needs to be placed on solicitation for external organizations and agencies. Perhaps something could be developed to utilize the WDFW web site to this end.	Availability of project funding is limited, and has been advertised through competitive bids and Joint Venture organizations.
Objective 92. Although it seems that his objective will be fairly easy to meet, I would like to see more marketing of the availability of funds and types of projects sought under this program. I think there are many potential partners out there that do not have an awareness of these funds and opportunities.	Availability of project funding is limited, and has been advertised through competitive bids and Joint Venture organizations
Objective 93 needs target dates for alternative "b", "c" and "d".	Target dates will be added for b. and d. Strategy c. is an ongoing activity as new observers are added (see new Obj. 110).
Objective 94 needs target date for alternative "b"	Target dates will be added (see Obj. 111).
Objective 95. It will be difficult to evaluate success of alternative "c" without a more solid period. Conducting an activity "as time allows" is too vague. What priority does this activity have in relation to others?	Target dates will be added to reflect priorities (see Obj. 112).
Objective 96. These alternatives need time frames or some other parameters to measure achievement.	These are ongoing activities throughout the term of the plan
Objective 97. How does this compare to current management? Is this more intensive, less or the same as what is being done now?	The draft will be revised to provide context (see Obj. 114).
Objective 98. How does this compare to current management? Is this more intensive, less or the same as what is being done now?	The draft will be revised to provide context (see Obj. 115).
Objective 99. How does this compare to current management? Is this more intensive, less or the same as what is being done now?	The draft will be revised to provide context (see Obj. 116).
Objectives 98 and 99 needs to address Department ban on electronic decoys, which was not consistent with the majority of waterfowl hunters or based on waterfowl population biology. Robo-duck and goose ban has reduced quality hunting according to the 60% majority who express their opinions to the Fish and Wildlife Commission. This issue should be clearly stated in the EIS for historical background and reference.	This issue is addressed under Objective 5, where some additional background is provided. It has also been incorporated FEIS under impacts.
Objective 100. Alternative "c" needs a target date	Target dates will be added (see Obj. 117).
Objective 101. Maintaining hunter numbers should not come at the expense of the resource.	Clarification will be added (see Obj. 118).
* Pg. 109 objective 115 (DEIS #101). Hunter numbers and use days goals should be increased to levels of the 1970's.	Given the factors influencing hunter numbers, it is unlikely that 1970's goals are attainable.
Objective 102. Research dollars are limited and can take away from other needs. All research needs should be prioritized for funding.	Research strategies are presented in priority order for this objective. Priorities among objectives will be addressed in other WDFW planning activities.
Objective 103. The alternatives need target dates.	Some of these are ongoing activities throughout the term of the plan; others will have target dates added (see Obj. 120).

PUBLIC COMMENT	WDFW RESPONSE
Objective 104. The public has told you that hunter compliance should be 100%. Is it wise to establish an objective accepting anything less? Perhaps this should be an "interim" objective to achieve by 2005 or 2006. The way alternative "b" is phrased makes one wonder what the current situation is.	Unfortunately, 100% compliance is difficult to achieve and in most cases not feasible. Current compliance levels have not been estimated.
*Pg. 110 Public Safety: Enforcement goal issue statement: add "at adequate levels due to the required or adequate number of law enforcement personnel."	Clarification has been to Obj. 121 to address this comment.
*Objective 118, add: (d) WDFW shall increase law enforcement staff to adequately enforce game laws in all areas of Washington.	This suggestion is beyond the scope of this chapter, and relates to agency budget levels and priorities.
Educating waterfowl hunters to shoot primarily single birds, as opposed to paired birds, would help soften the population lows of some species. Some sportsmen already do this. If the department promoted it in the hunter education classes, it could make a difference in population swings.	The value of this type of harvest management has not been documented in the literature.
Require all steel shot use for all shotguns and the associated hunts, even for upland game birds.	Nontoxic shot is required for all waterfowl, coot, and snipe hunting, and for all species on many public lands. Uptake of lead shot by wildlife has been identified as a problem in specific areas (e.g. swans in Whatcom County), but biological evidence is currently lacking to require steel shot for all upland game bird hunting (see WDFW web site for a report on this issue).
MOURNING DOVE, PIGEON, COOT & SNIPE MANAGEMENT	
Eliminate dove and crow hunting.	It is unlikely that current harvest levels for these species are impacting population trends and closure is not warranted. Crow populations have increased and a closure is not warranted.
Objective 105 needs target dates.	These are ongoing activities throughout the term of the plan.
Objective 105. Add an alternative C. Work with private landowners to set aside important habitats by providing protection from development, hunting, and other detrimental effects until populations are shown to increase over a ten-year period.	Habitat enhancements are addressed under Objective 123. Hunting issues are addressed under Objectives 124 and 127. It is not believed that closure of private lands to hunting will significantly affect population trends.
Objective 106. This seems like a meager amount of treatment. Is habitat being lost? How much is being accomplished now?	Habitat losses for band-tails and doves are unknown, but assumed by biologists to be continuing. Funding for habitat enhancements for these species is limited by legislation establishing the migratory bird stamp (currently 2% of revenue), but the plan acreage has been increased to 50 / year in Obj. 123.
Objective 107. It would be nice to show current trends – only band-tailed pigeons and doves are reported in the plan.	Graphics have been limited to surveys coordinated by WDFW. Graphic trend information for other species is available from USFWS and USGS.
Objective 108. Alternative "a" needs target dates.	These are ongoing activities throughout the term of the plan
Objective 109. How does this compare to current management? Is this more intensive, less or the same as what is being done now?	The draft will be revised to provide context (see Obj. 126).
Objective 110. Good link between recreation opportunity and the resource. For alternative "c", what is significant?	Strategy c. refers to a statistically significant trend (i.e. significant at the 90% CL).
Objective 111. Does this objective potentially clash with objective 110?	Clarification will be added (see Obj. 128).
Objective 112. Alternatives need target dates.	These are ongoing activities throughout the term of the plan.

PUBLIC COMMENT	WDFW RESPONSE
Objective 113. Research dollars are limited and can take away from other needs. All research needs should be prioritized for funding.	Research strategies are presented in priority order for this objective. Priorities among objectives will be addressed in other WDFW planning activities.
There is a paucity of data available for the common snipe, and all of it suggests that it should no longer be classified as a game species within Washington State. 1) Breeding bird survey data (1980-00) indicates a negative population growth rate for Washington. No population trend data was provided in the EIS. 2) Available evidence (Paulson, 1993) suggests steep declines of winter population. 3) WDFW wing survey data revealed that 1 out of every 5 common snipe shot is actually a different shorebird species mistakenly identified by hunters as common snipe. The true percentage may actually be quite a bit higher… Anecdotal evidence suggests that hunting common snipe is decreasing other wildlife related recreation opportunities. There are no resources available to collect more accurate data on either population status/trends or incidental take of other shorebird species. The agency does not appear able to devote sufficient resources to monitor populations or incidental take issues.	Breeding Bird Survey data for the past 10 years show a strongly positive trend. Winter survey information must be compared throughout the range of the species to infer declines, which may really be population shifts. WDFW wing survey did not yield a statistically-reliable sample. It is unlikely that snipe hunting, which has declined drastically over the past 20 years, is impacting population trends for snipe or other shorebirds. USFWS has recently upgraded harvest and wing-survey protocols to obtain better information regarding this species. Additional emphasis on this species will be added to the plan under Objective 130.
We feel the bag limit on coot (25 per day) is unjustifiable. We have seen rafts of coots decline in numbers as much as half or more in the last 20 years.	Hunters rarely target coots, and harvest has declined drastically over the past 20 years. Based on data from current harvest surveys compared to population survey data, this species does not appear to be impacted by current seasons.
* Pg. 112 Strike out coot and snipe in all areas concerning mourning dove and band tailed pigeons. Coot and snipe are waterfowl birds, dove and pigeons are not.	The plan is organized to group waterfowl (i.e. ducks, geese, and swans) and other migratory birds (e.g. coot, snipe) under separate sections.
• Pg. 113 Statewide goals and issue statement: Add WDFW shall determine the unknown trends of mourning doves and band-tailed pigeons. • Objective 121 strategy (e) <u>WDFW shall select alternative sites that will not be too adversely affected by future human activities.</u> • Pg. 114 Recreational Management, Strike (a) as written and change to read <u>adjust state harvest regulations within federal framework (30 day hunting season) to provide maximum hunting opportunities while maintaining species populations within viable parameters.</u> • (b) Adjust the mourning dove and band-tailed pigeon hunting to coincide with Washington climate condition by establishing opening hunting seasons the last 2 weeks of August. • Strike (c.), use new (a.) • Objective 125 strategies (c.) Add <u>Liberalize length of mourning dove and band-tailed pigeons to hunting dates as mid August to mid September as climate trends indicate for our cool climates.</u> • Objective 127: strike "and/or conduct in all categories" rewrite as <u>"WDFW shall support and conduct"</u> • (d) Strike out present sentence. Add: <u>"WDFW shall support and conduct research to determine resident mourning dove populations for sustainable harvest levels.</u>	• Trends for mourning doves and band-tailed pigeons are adequately tracked through existing surveys. • Sites are selected based on literature and regional expertise (see Strategy a.). • The strategy has been revised to clarify intent. • Not warranted based on population status; earliest federal frame work date in Sept. 1. • Not warranted based on population status; earliest federal framework date in Sept. 1. • Not warranted based on population status; earliest federal framework date in Sept. 1. • The strategy has been revised to clarify intent (see Obj. 130). • A new strategy (e) has been added under Obj. 130 regarding sustainable harvest.
*Pg 114, objective 124. The department should recommend that mourning doves season be further curtailed until the call-count numbers come up significantly.	Although a significant decrease in the long-term (1966-2001) call-count index for Washington has been observed, the 10-year index shows no significant trend. Current season restrictions are adequate to conserve this population.

PUBLIC COMMENT	WDFW RESPONSE
*pg 115, objective 125. We disagree with strategy (a) Funding programs to provide 5 new hunter access areas on those species with population declines lacks scientific approval.	Harvest is influenced more by season regulations than hunter access, and the addition of 5 new sites would have an insignificant effect on harvest.
* The department and commission should have a heads-up regarding animal rights folks bringing mourning doves to the public's attention in other states. Conservative and scientific management of this depressed population could help in the public perception of hunting doves.	Washington dove harvest management is based on population objective thresholds. Season length is more conservative than allowed by federal frameworks, and the 10-year call-count index shows no significant trend.
Mourning doves are being brought to the public's attention by the animal rights in other states. What is the department doing to stem this tide of potential opposition to dove hunting? Couple this with the department's data showing a precipitous decline in the dove population, we would like the department to consider recommending that the commission close the season, at least until the numbers come back up.	Long-term declines in the dove population are most likely related to long-term habitat changes. Existing seasons in Washington are more conservative than Federal frameworks, and based on harvest questionnaire data, current harvest levels do not appear to be affecting this population.
There is no biological reason to allow hunting of band-tailed pigeons or snipe. Both these species have very depressed numbers. Any surplus birds should be used to augment other populations rather than allow hunting of these birds.	Hunting seasons for these species are established to provide recreation within biological parameters, and current harvest levels do not appear to be affecting these species. Habitat enhancement, rather than population augmentation, is the focus of current management efforts, because augmentation is likely to not be effective for these species.
The non-hunting public could be a great source for census taking of migratory birds. Bird watching is the largest group partaking of outdoor activities. The Department should develop a survey protocol for local bird watchers or organizations to conduct in specified areas of concern.	WDFW has developed an urban band-tail survey in the Seattle area. Birders are active in other surveys considered in management, including the Breeding Bird Survey and Christmas Bird Count.
Need to initiate work on snipe habitat use, survival, and effects of harvest.	These suggestions have been added as a strategy in Objective 130.
COMMENT	**AGENCY RESPONSE**
UPLAND GAME BIRDS	
Research and develop a long-term plan to increase pheasant populations so that releasing pheasants to support hunting will not be required.	The long-term plan to increase pheasant populations is held within the Habitat, Research, and eastern Washington Enhancement objectives of the Upland Game Section. The plan is to focus on specific areas rather than trying to spread limited funds over too large of an area.
Allow the use of electric scooters for the disabled hunter on the Vancouver Lake pheasant release site.	The WDFW is sensitive to the needs of hunters with disabilities and strives to provide access to recreational opportunities. Please contact WDFW in Olympia at (360) 902-2349 to address this issue.
Objective 134. Is any increase acceptable, or should you specify a percentage or number of acres?	The level of increase will be largely dependent on available funding and landowner cooperation. These factors are unknown at this time. This is now objective 153.
Objective 134. While surface water is a part of habitat management, I do not see it given much attention. Consider the impact of the USDA 1970's water draining programs, tilling, had on the availability of surface water and its impact on wildlife on agricultural lands.	The plan addresses habitat in a general sense. In addition, the plan calls for development of a definition of quality habitat, which will include open water and the associated plant communities. This is now objective 153.

PUBLIC COMMENT	WDFW RESPONSE
Objective 134 strategy "d" we disagree; we need these lands for additional west side release sites to help reduce crowding. Strategy "f" we agree but also expand program for land acquisitions.	Properties identified as pheasant habitat in western Washington are typically less than 10 acres in size and would not be appropriate for pheasant release. Currently, the law does not allow for purchase of property using Eastern Washington Pheasant Enhancement funds. This is now objective 153.
Objective 135. Good measurable objective	Thank you for your comment. This is now objective 154
Objective 136. Need a timeframe for accomplishment of the alternatives	The strategies should be complete and reports being made by 2006. This is now objective 155.
Objective 136, strategy "c" add, "implement the introduction of wild stock to said key habitat areas plus Conservation Reserve Program (CRP) holdings or the release of young pen raised birds as was done successfully in the late 60's and early 70's (weeks before the season)."	Current opinion is that habitat conditions are the driving force behind pheasant population density. If additional birds were released into areas that could not support them, then the release of wild birds would not be successful. The release of pen-raised birds has been proven not to be a successful method of population enhancement. This is now objective 155.
Objective 137. Be sure to mesh this with objective 134.	Both objectives refer to activities within priority or key areas. This is now objective 156.
Objective 137, strategy "b" - Do you mean general public funding or our hunting license fees?	A wording change has been made to clarify. In the example given, funding comes from various hunting license fees. This is now objective 156.
Objective 137. More emphasis on developing private property access agreements for upland bird hunting. Increase in area should be much greater than 10% by 2008, say to about 50% increase.	Currently, there are over 4 million acres of private property signed up in our upland restoration program. A 10% increase would add over 400,000 acres. We think this is a reasonable goal. This is now objective 156.
Objective 138. Good measurable objective. Need a timeframe for alternative "c".	Thank you for your comment. A time frame has been added to strategy "c". This is now objective 157.
Objective 137. Information about where to hunt on private land would also be helpful.	Objective 156 Strategy "d" addresses this.
Objective 140. With data already available, it should not take you 6 years to figure this out. Strategies "a" through "c" we disagree. Data research, factors, and studies have already been done. Use it; do not waste any more time and our limited funds.	This is now objective 160. The goal is to have it completed by 2008, however it may be completed earlier. Strategy "a" is necessary to utilize existing research, strategy "b" is designed to address anything that cannot be answered by existing research and strategy "c" is needed to help understand issues specific to Washington. Unnecessary research will not be done.
Objective 140. Research dollars are limited and can take away from other needs. All research needs should be prioritized for funding.	Objective 160, strategy "a" should help prioritize research needs.
Objective 140. Add alternative strategy "d". Identify lead contamination both in the birds and in the environment that may contribute to mortality of these or other species. Should lead be found as a contributor or potential contributor to mortality, institute a statewide ban on lead shot ammunition for the hunting of birds.	An objective has been added to the western Washington pheasant section of this chapter. Lead shot density will be higher in these areas than in areas of lower hunter density, thus maximizing funding available for risk analysis.

PUBLIC COMMENT	WDFW RESPONSE
Objective 141. Just evaluate? Why not reduce weed population? See research comment above. Use Washington State's Noxious Weed Control Boards or other agencies studies.	Control of noxious weeds is already required by state law. Objective 161 is designed to help acquire funding and prioritize control efforts. Changes have been made to the objective and strategies to help clarify direction.
Objective 142. This is long overdue. Glad to see the 2003 target date.	Thank you for your comment. This is now objective 162.
Objective 142. We agree but add, then extend habitat enhancement to habitat areas such as Conservation Reserve Program (CRP) lands.	CRP lands may exist within the priority areas identified for enhancement. This is now objective 162.
Objective 143 issue statement needs to address the quality of birds being released and season length.	Season length has been the same for over 15 years and efforts are being made to ensure high-quality, mature birds are released. This is now objective 163.
Objective 143. Good measurable objective. Strategy "c" we agree but when you're looking to save money don't drop quality.	Thank you for your comment. This is now objective 163.
Objective 144. What level of reduction is targeted? Strategies "a" we agree and this should be a priority; "b" we agree and other crowding solutions should be addressed; "c" we agree and other sites as well to provide more acres and less crowding.	There is not a targeted level of reduction. We plan to pursue all avenues to reduce crowding and create safer hunting conditions. This is now objective 164.
Objective 145. Good measurable objective.	Thank you for your comment. This is now objective 165.
Objective 145. Issue statement is mute; all birds are being harvested for sure. Strategy "a" we disagree, this could result in even greater hunter over crowding; "c" we disagree, save the money and visit the site.	Changes have been made to the strategies section from previous draft. This is now objective 165.
Objective 146, strategy "a" we agree but maintain presence through out entire day, not just make an appearance.	Pheasant release site enforcement will be placed on the list of priority activities during the hunting season. This is now objective 167.
Objective 146. Is there a target level of reduction?	There is no target level for reduction. The objective has been re-worded. This is now objective 167
Please continue with the pheasant release program in western WA.	Plans are to continue the program. See objectives 163-166.
Procure more sites to hunt on and spread out the hunters.	This is addressed in the Western Washington Pheasant Program Section with the hunter crowding objective (Objective 164).
Upland game birds need a helping hand. A program to raise and transplant new stock would increase bird population and hunter numbers.	Current biological opinion is that habitat conditions are the driving force behind pheasant population density. If additional wild birds were released into areas that could not support them, then the release would likely not be successful. The release of pen-raised birds has been proven not to be a successful method of population enhancement.
More emphasis should be placed on wild upland bird establishment by planting birds and habitat enhancement/protection. Public surveys showed little support for planting birds for hunters and this is not good biology.	Habitat enhancement and the release of birds for hunters are addressed by the Eastern Washington Pheasant Enhancement program objective in the plan (Objective 162). Research has shown that release of pen-raised birds has not been a successful population enhancement tool.
More emphasis on chukar and Hungarian partridge recovery programs, such as population monitoring, establishment/planting of wild birds.	The proposed projects for these species have been prioritized among activities for all upland game birds (Objective 154). More emphasis may be placed on these species in future plans.

PUBLIC COMMENT	WDFW RESPONSE
The numbers of upland game birds are far below what they were 25 years ago and demand immediate attention.	This plan has objectives within the Population Management and Habitat Management Sections aimed at improving upland game populations (Obj. 153-155).
Open the quail season at the same time as the chukar and Hungarian partridge season.	Opening dates for hunting seasons are evaluated every 3 years and this will be considered in the spring of 2003.
Stop wasting money on pheasant release programs and spend the money on habitat improvement and game land purchase or long-term leases.	The plan calls for review of the eastern Washington pheasant program and this comment will be used to help complete the EWPE program objective (Objective 162).
Hunters participating in the pheasant release program from Cowlitz County must drive to over-hunted and over-populated release sites in the Woodland Bottoms or Scatter Creek. Please fix the problem.	This concern is addressed in the hunter crowding objective (Objective 164). The public is welcome to contact WDFW with proposed release sites.
Page 106, Figure 3:Add a line showing human population estimate trend.	This graph is designed to illustrate pheasant hunting opportunity. Including this information would not be consistent with that purpose.
Page 110 Eastern Washington Pheasant Enhancement. Consider using other sportsman organizations such as the Snake River Sportsman and Gun Dog Association.	The plan references Pheasants Forever as an example. Other organizations can be utilized as well. This is now objective 162.
We strongly recommend that the funding emphasis of the Eastern Washington Pheasant Enhancement Program be shifted from 80% for the release of pheasants to 80% for habitat development.	This comment will be used for the EWPEP objective (Objective 162).
Pheasant, California quail, chukar, and Hungarian partridge are not native birds. What assessments or research has been conducted for these species and their impacts to native species of wildlife, especially sharp-tailed grouse and sage grouse as many of these birds like similar habitat conditions? The release, relocation, or augmentation of these birds should be studied before any additional birds are moved around.	Pheasant have existed in Washington since 1883 and quail since 1857. Other non-native upland game birds have been in Washington since the early 1900s. These species have not been considered a threat to native upland bird populations. Objective 158 has been added to mitigate misidentification by hunters.
Pg 109 – Consider using the non-hunting public sources such as Audubon bird counts as a resource. They are probably no weaker than the WDFW own counts and would bring another segment of the public into the decision making process.	It may be necessary to utilize non-hunting organizations as well as hunting organizations to help collect data on upland game birds.
Pg 131. III Data Collection. What is a "crow count" and how is it known to be reliable?	A crow count is a scientifically proven (ie through peer reviewed studies) method of creating a population index for male pheasant density.
Pg 137 Objective 163. Hasn't this been done already? Also, let us not forget that lead, Pb, with an atomic # of 82, is a natural element.	There has been a determination to exclude leas shot use on western Washington pheasant release sites, however, this objective addresses expanding the scope of the previous decision. The fact that lead is a naturally occurring element is noted. This is now objective 166.
*There are no research objectives for these species and their impacts to native species. The release, relocation, or augmentation of non-native upland game should be studied before any additional birds are moved around.	Pheasant have existed in Washington since 1883 and quail since 1857. Other non-native upland game birds have been in Washington since the early 1900s. These species have not been considered a threat to native upland bird populations.
*Pg. 135 Objective 158. New strategy (f) "Solicit resources and involvement from public entities to participate in weed eradication efforts.	This is addressed in a more broad sense in Objective 161, strategy "c".

PUBLIC COMMENT	WDFW RESPONSE
* Pg. 135 objective 159. New strategy (d) "Encourage/solicit use of public entities in chick rearing/release programs.	Current biological opinion is that habitat conditions are the driving force behind pheasant population density. If additional wild birds were released into areas that could not support them, then the release would likely not be successful. The release of pen-raised birds has been proven not to be a successful method of population enhancement. This is now objective 162.
* Pg. 135 objective 157 (b). Eliminate "if needed."	There is much existing literature on pheasants across many portions of North America. The inclusion of "if needed" will allow the Department to spend money on other aspects of pheasant management if existing research provides the answers needed. This is now objective 160.

PUBLIC COMMENT	WDFW RESPONSE
• Pg 130 , pgh 1, line 2 Strike: "apparently". • Line 8, strike "although and including and add "principle for including" • Line 9, add: habitat, increased predation by predators, public encroachment, and clean farming practices. • Pgh 3, line 2 add: "conditions, and lack of agricultural shelter areas." • Data Collection Pg. 131 add: species priorities and diversion of staff personnel from field activities to the Olympia office…. • Goal # 1 add "by planting proper habitat plants, grasses and shrubs conducive to pheasants." • Habitat Management Issue Statement, line 2 add: 50 years, due to clean farming practices, no proper habitat propagation, which leaves no cover, increased taxes on farmers, which forces farmers to gain as much as possible from their land to survive. • Pg. 132 strategies (b) Comment: Use proper habitat propagation to enhance pheasant habitat. • Add (e) WDFW shall determine the level of predator control to maintain adequate upland bird populations. • Objective 152, line 2 add: including predator control • Issue Statement, line 3 add: Selling high cost hunting licenses to offset high taxes, operation cost, and crop damage. • Public education: Pg. 134 (d) Strike (d) altogether. The anti-hunters are a large problem with the WDFW management hoping to shut down Washington as the first non-hunting, fishing state in the U.S. Don't increase the anti-hunters with information that can be misconstrued as truth.	1. A changed has been made. 2. A change was not made because the sentence would not have read correctly. 3. Much of this has been included in "loss and degradation of habitat" which was used as an example of a larger set of factors. 4. Added "available cover" to pgh 3, line 2. 5. This comment is outside the scope of this FEIS. 6. These goals are broad, overriding statements that do not contain specific actions. Specific actions are described in the objectives that follow. 7. Many factors resulted in loss, alteration, or deterioration of pheasant habitat, so they have been grouped by using these words. 8. Objective 153, Strategy "b" calls for defining "quality habitat", however, WDFW recognizes that it is important to pursue proper propagation techniques. 9. Many predators are federally protected and cannot be harmed. WDFW intends to work to develop quality habitat, which can reduce predation. 10. This is now Objective 155 which is a population monitoring objective. Predator management is not an appropriate topic for the objective. 11. Addition of "selling high cost…." is not appropriate for any issue statement in this section. 12. WDFW has been requested to provide the public with information on the level of risk associated with hunting with lead shot. This is now objective 159.
WILD TURKEY	
Page 93, title should read *Meleagris gallopavo*	Thank you for your comment. It has been changed.
Wild turkey management goals: There is no issue statement, objectives, or alternate strategies in this section that addresses habitat management. We recommend a habitat section be developed.	A habitat management Section has been added to the chapter (Objective 138).

PUBLIC COMMENT	WDFW RESPONSE
Want to see introductions in Whatcom and Skagit counties.	The Population Management Section of the plan contains an objective dedicated to population management, which includes an assessment of potential introductions and an evaluation of where turkeys should and should not be introduced (Objective 131).
Non-native wild turkey represents one of the greatest threats to native ecosystems and the Department's wild turkey management goals are contrary to modern conservation ethics and practice.	At this point, we have not found scientific information that documents substantive negative competition with native wildlife species. However, the plan does call for developing and/or participating in inter-specific competition research projects (Objective 140). If scientific study determines that competition is an issue, then management practices will adapt.
I would like to see more detail in the DEIS as it relates to the management of introduced wild turkey populations and their potential impact on other native species of wildlife. While documentation of direct competition between western gray squirrel and turkey are lacking, two the three major foods used by squirrels are also staple foods for wild turkeys. If wild turkeys do compete with western gray squirrels for food, conflict management may be in order.	There are strategies identified in the population and research sections that address turkey introductions and competition related issues (Objectives 131, 140). If scientific study determines that competition is an issue, then management practices will adapt.
Introducing potentially destructive non-native species to provide convenient hunting opportunities to placate the desires of a small fraction of the taxpaying public is just a few steps away from the Department operating an exotic game ranch on public land.	The wild turkey, which has been in Washington since 1960, provides both consumptive and non-consumptive recreational opportunities, which is in line with the WDFW legislative mandate to provide a diversity of wildlife oriented recreational opportunities.
Make the fall turkey hunt "tom's only."	Hunting toms only in the fall is not practical and, in some situations, we are attempting to control turkey population growth by removing hens.
Run the turkey season from April 15 to May 15.	Current turkey season is April 15 – May 15.
Objective 114. Judging by the objectives that follow this one, is population enhancement the objective, or population management and maintenance?	Changes have been made to reflect a management objective. This is now objective 131.
The importation of 3 types of turkeys was never analyzed for their impacts to native wildlife. There is no alternative listed under Objective 114 to do the long over due assessment, starting with an Environmental Assessment. No more augmentations, introductions, or movement of turkeys in our state by agencies, hunting clubs, or the members of the public should be allowed until the proper assessments are completed.	The strategies have been changed to add emphasis to environmental issues (Objective 131).
Objective 115. Good measurable objective.	Thank you for your comment. This is now objective 132.
Objective 115. In some areas with the increase in wild turkey populations, there is a perception that wild turkeys are causing significant damage. However, that perception is generally not borne out by facts. Turkeys are large, diurnal birds and often get blamed for damage caused by other wildlife.	Damage complaints are evaluated on a case-by-case basis. Appropriate actions are recommended based on the type of animal involved. This is now objective 132.
Objective 115. In developing a plan or response strategy for damage/nuisance, it is imperative that a wide range of methods or a combination be made available to alleviate or reduce damage including education and habitat management. Depredation permits should be considered an extreme measure.	The objective lists several alternatives, but does not limit actions to those listed. Habitat enhancement was added to the list of examples. This is now objective 132.
Turkeys are already becoming a nuisance in some areas. Liberalize the harvest of this non-native species to reflect landowner complaints.	Hunting seasons in some areas of the state are being manipulated to manage the populations (see Objective 132).
Objective 116. Good measurable objective.	Thank you for your comment. This is now objective 133.
Objective 117. Good measurable objective.	Thank you for your comment. This is now objective 134.

PUBLIC COMMENT	WDFW RESPONSE
Objective 118. Good measurable objective. Hasn't alternative "a" already been done?	Thank you for your comment. A portion of strategy "a" has been done, but additional input can be gained. This is now objective 135.
We recommend that the turkey tag continue to be included with the purchase of a small game license.	Thank you for your comment. There is an objective in the Recreation Management Section that addresses resolution of this issue (Objective 135).
Charge a nominal fee for the turkey tag and earmark the funds received from these fees for wild turkey and wild turkey habitat management.	Thank you for your comment. There is an objective in the Recreation Management Section that addresses resolution of this issue (Objective 135).
Objective 118. NWTF members and others have expressed concern over the issuance of a free turkey tag with the purchase of a small game license.	Thank you for your comment. There is an objective in the Recreation Management Section that addresses resolution of this issue (Objective 135).
Turkey tags should be separated from the small game license. While I agree this is good for exposing more people to the sport and species, it isn't the way to recruit safe, informed, ethical hunters.	Thank you for your comment. There is an objective in the Recreation Management Section that addresses resolution of this issue (Objective 135).
Objective 119. Good measurable objective.	Thank you for your comment. This is now objective 136.
Objective 119. WDFW should address access issues and increase public hunting opportunities on private lands. A 10% increase should be considered a bare minimum. Also this strategy is inconsistent with 15% increase identified under private land program.	This objective has been clarified. The 10% is specifically related to a primary turkey zone and is considered as part of the 15% mentioned under the private lands Section. This is now objective 136.
Objective 120. Good measurable objective.	Thank you for your comment. This is now objective 137.
Objective 120. We concur with an adaptive management strategy that will allow for management changes or decisions based upon analyses of index trends, harvest data, and other monitoring information.	Thank you for your comment. This is now objective 137.
Objective 121. I encourage alternatives "d" and "e".	Thank you for your comment. This is now objective 139.
Objective 121. We concur with the strategies for developing educational and outreach products as part of the turkey management program.	Thank you for your comment. This is now objective 139.
Objective 122. Research dollars are limited and can take away from other needs. All research needs should be prioritized for funding.	Research funds are limited and projects will be prioritized. This is now objective 140.
Objective 122. NWTF strongly concurs with this objective and will continue to assist and support research for the conservation and wise management of wild turkey and other natural resources.	Thank you for your comment. This is now objective 140.
Objective 123. What level of reduction is targeted?	The objective has been reworded to show emphasis rather than a specific level of reduction. This is now objective 141.
Fall turkey seasons should coincide with deer and elk seasons along with weapons type during these seasons. After all the fall seasons are based on damage and or over populations.	The fall season is purposely designed to reduce hunter crowding and maximize hunter safety. Making these seasons coincide may increase harvest, but it would also negatively affect hunter safety.
*Pg. 122 objective 137 (c). Consider adding the following statement, "in conjunction with both public and private entities."	This has been incorporated. This is now objective 140.
* Pg. 122 objective 137 (d). Please consider adding the following, "and other public entities."	This has been incorporated. This is now objective 140.

PUBLIC COMMENT	WDFW RESPONSE
* Pg. 122 issue statement: Comment: Illegal activities will continue in Washington until law enforcement personnel is increased to properly enforce all violations through out all of Washington. Proper funding must be found to increase incentives such as salary, reduced work load, proper usage of enforcement personnel, to create a willing attitudes for new hires as wildlife enforcement office is established. The shifting of expenditures (pg. 16) to better usage of present personnel and budget, not assigning enforcement to Olympia for business, or other than enforcement duties..	Thank you for your comment. This comment is outside the scope of this FEIS.
MOUNTAIN QUAIL MANAGEMENT	
Objective 124. Good measurable objective.	Thank you for your comment. This is now objective 142.
Objective 124, alternative "a" – We agree with the alternative strategy for developing a map of potential mountain quail habitat for eastern Washington. We would like to expand that recommendation to include western Washington as well.	Changes to the objective and strategies have been made. This is now objective 142.
* Pg. 124 objective 139. Mountain quail should not be reintroduced in eastern Washington until a thorough public review of all impacts has been accomplished.	Mountain quail have historically occupied southeastern Washington and a SEPA process is not required for a reintroduction of a native species. This is now objective 142.
1. pg. 123 Goals Add # 4: <u>Improve habitat for mountain quail in eastern Washington.</u> 2. Habitat management – Issue Statement. The unknown factors on all species of animals and birds will never be known unless WDFW removes personnel from behind computers and places them in the field. Also, to establish equal funding for research, and studies equally between the east and west sides of Washington. 3. Population Mgmt. Objective 140 add strategy (f) WDFW shall determine habitat modifications needed to promote mountain quail populations in eastern Washington.	1. These goals are broad, overriding statements that do not contain specific actions. This is generally addressed in goal 1. 2. This comment is outside the scope of this FEIS 3. This concept has been added to strategy "c" of Objective 142.
Objective 125. Need a target date for accomplishment.	A date has been added
* Pg. 124 objective 140. Mountain quail should not be reintroduced in eastern Washington until a thorough public review of all impacts has been accomplished.	Mountain quail have historically occupied southeastern Washington and a SEPA process is not required for a reintroduction of a native species.
Objective 126. Need a target date for accomplishment.	A date has been added
No harvest should be allowed at this time in western Washington. Any "surplus" birds should be either used to augment existing population or should be used in reintroduction to former habitats. The alternative to allow harvest until there is a 50% decline over 3 years on a minimal population is putting mountain quail persistence in jeopardy in our state!	The harvest of mountain quail in western Washington is limited and is not likely affecting population densities. Using western Washington populations for translocation would not be as efficient as using stock from Oregon where they are more abundant. The percent decline listed in the Recreation Management Section has been changed to 30%
Objective 127. Good measurable objective. Change decline percentages from 50% to 30%.	Changes were made to the objective and the strategy.
* There is no literature cited for this species either indicating research is needed to assess population numbers and where they are before proposing a potential harvest. There is no research section for this species.	Mountain quail in western Washington are considered introduced and harvest is limited. In addition, harvest of upland game birds has not been identified as a factor limiting population numbers.
FOREST GROUSE	
Objective 128. Good measurable objective.	Thank you for your comment. This is now objective 146.
Objective 129. Good measurable objective.	Thank you for your comment. This is now objective 147.
Objective 129. We disagree, detection should be 30% not 50% decline.	Limitations of statistical analysis prohibit detection of less than 50% at the regional level. This is now objective 147.

PUBLIC COMMENT	WDFW RESPONSE
Objective 129. The department recommends improving harvest estimation to detect a 50% decline over a 3-year period at the region level. A region level detection would represent too great a chance of local extirpations. We recommend requiring hunter result report. It is also important for the region or local biologists to track local weather tends.	Mandatory reporting for a species that is hunted for many months with multiple bag limits allowed would be very expensive compared to the increase in precision and accuracy. Weather is listed to be included in a statistical model in strategy "b" of objective 147.
Add; "brood surveys will be conducted during critical spring periods to determine production and survival."	A new objective has been added to the Population Management Section to address this comment (Objective 149).
We are concerned about the drop in populations of forest grouse. Average number harvested in the last 20 years is half the average of the 20 years before that. Nowhere is it mentioned that this also corresponds to the large growth of wild turkey numbers across the state, many of which now reside in forest grouse habitat.	There are likely several reasons for this apparent decline, including habitat changes, a decline in hunter numbers, and changes in harvest estimation techniques. A strategy to evaluate turkey competition is listed in the turkey chapter of the plan in the Research Section of the plan (Objective 140).
* Pg. 128 objective 144. Should be when there is a 20% decline, not 50%.	Limitations of statistical analysis prohibit detection of less than 50% at the regional level. This is now objective 147.
Objective 130. Good measurable objective.	Thank you for your comment
* Pg. 128 objective 145. Should be when there is a 20% decline, not 50%.	Limitations of statistical analysis prohibit detection of less than 50% at the regional level. This is now objective 148.
Objective 131. Where did this objective go?	Objectives were re-numbered.
Objective 132. Need a timeframe for accomplishment.	A date has been added. This is now objective 151.
Objective 132. In the objective and strategy statements interject the wording "and ammunition" following the word "weapons" or "firearms".	Changes were made. This is now objective 151.
Objective 133. Need a timeframe for accomplishment.	A date has been added. This is now objective 152
We support the existing regulations for use of a center-fire cartridge firearm to hunt forest grouse. We do not believe that the concerns of ethical fair chase, wastage or respect for the game bird are issues warranting attention.	Thank you for your comment. There is an objective in the Recreation Management Section that addresses resolution of this issue (Objective 150).
Issue statement – We totally disagree. Grouse harvest is one of the most enjoyable hunts because we can use all types of weapons, especially center-fire guns.	Thank you for your comment. There is an objective in the Recreation Management Section that addresses resolution of this issue (Objective 150).
Objective 133. We agree but strategy "b" we disagree. If objective 133 "a" is successful, this is not necessary.	This is now objective 152, which has been modified to address this comment.
Objective 133 strategy "b" we disagree, save the money.	The strategy has been removed to focus on strategy "a".
We need more public access.	Chapter 3 has a section that addresses increasing access to private lands.
The department needs to increase grouse through accurate assessments, closures and captive relocation.	As with many game birds, population density is often a function of habitat quality and weather conditions. Current populations are likely occupying available habitat, therefore relocation will not likely be successful. In general, hunting seasons do not regulate population density, so closures would not be an effective population management tool. Population assessments are being proposed in the Population Management Section of the plan (Objectives 147-149).

PUBLIC COMMENT	WDFW RESPONSE
* Pg. 128 objective 144 (d) Make reporting 100% required and specify all GMUs where grouse were observed.	Mandatory reporting for a species that is hunted for many months with multiple bag limits allowed would be very expensive compared to the increase in precision and accuracy. In addition, previous analyses show that hunters are not very accurate when reporting harvest for this type of season structure. This is now objective 147.
SMALL GAME, FURBEARERS & UNCLASSIFIED WILDLIFE	
Population Status and Trend – We take exception to the statement "the risk of over-exploitation is low." As fur prices improve for these species, a repeat of the past precipitous declines can happened due to over harvest, especially if the body gripping trap ban is overturned and the state returns to an unregulated trapper area policy.	In a regulated harvest framework (body-gripping traps or not), the level of take for many furbearer species is far below the net recruitment into the population.
a. Pg. 142, objective 169 issue statement: add <u>"programs to educate the public in regards to need for population control to reduce monetary damage by furbearers are needed."</u> b. Objective 170 strategy (d) Explain in detail how restricting hunting or trapping impact other native species. c. Pg 142 & 143. Delete the word "trapped" on pg 143 as this is no longer true as of 2000. d. Pg 143 Issue Statement: Further explanation is needed to explain what problems, in what locations, by what mammals or animals. e. Pg. 143, Objective 172, Strategy (f) <u>"at general fund expenses only</u> f. Pg. 144, objective 173 strategy (e): Add <u>" Develop a program to control non-game species such as sea gulls, cormorants, terns, and seals.</u>	a. This is included in the problem wildlife section. b. If trapping is determined to negatively impact other native species, trapping season modifications would be considered to minimize that impact. c. Coyotes can be trapped with non-body gripping traps, such as cage traps. However, WDFW recognizes cage traps are not very effective of coyotes. d. The issue statement is meant to be general, include all areas and native wildlife. e. The funding mechanism is beyond the scope of this plan. f. These species are not game species and therefore are not included in this Game Management Plan.
* We take exception to the statement that "the risk of over-exploitation is low." Fur prices can influence exploitation.	The statement reflects the low harvest levels (over the last decade) of furbearer species relative to the population growth potential for these species. The reproductive potential of furbearers exceeds the current harvest levels by a wide margin.
I would encourage WDFW in its efforts to promote recreational hunting of deleterious non-native species. Although not currently classified as such, two examples are the eastern gray squirrel and the bullfrog. Both of these species create management problems, but have the potential to be desirable game species. Current harvest levels are inadequate for population control.	Thank you for your comment. The comment is addressed in the problem wildlife management section.
Data Collection should be IV.	The correction has been made in the Final EIS.
Population management issue statement says, "There is little documentation on the known distribution and relative densities of individual small game and furbearer species in Washington. In the case of furbearers, prior to 1982 detailed data was collected and compiled and should be available in the archives.	Thank you for your comment. The text has been corrected in the Final EIS.
The Department seeks to "maximize recreational opportunities," i.e., trapping, of furbearing mammals in the DEIS once again demonstrates how out of sync the agency is with its constituents.	WDFW is mandated through RCW 77.04.012 to maximize public recreational hunting and trapping opportunities. WDFW carries out this mandate within WAC regulations.

PUBLIC COMMENT	WDFW RESPONSE
API strongly opposes the trapping and killing of wildlife for profit, recreation, or "management" and request that the Department accurately reflect public opposition to trapping in a revised DEIS.	The plan attempts to fulfill the agency's mandate to maximize public recreational hunting and trapping opportunities, while at the same to provide opportunities that correspond to public opinions. Trapping methodologies were recently amended (voter initiative 713). In addition, future furbearer take opportunities will be shaped through time to emphasis control of furbearers causing property damage.
API recommends that WDFW develop a reporting system for non-target wildlife trapping.	Your recommendation has been added in the revised plan.
API recommends that WDFW establish a 24-hour trap check requirement for all traps and snares. API recommends reducing liberal bag limits and seasons.	Your comment has been addressed in the revised plan.
Replace the wording "recreational trapper." The concept by which the modern fur harvester is portrayed, as a fun seeking recreational pursuit is a perpetuated inaccuracy and should be viewed as a "commercial activity."	Recreational trapper is consistent with RCW language and the seasons are managed for recreational opportunities.
We agree with most objectives and strategies, but feel the Department has dropped a big ball on the whole subject of control of these animals. Trapping education for the general public is not favorable we know, but realistically it is the only viable solution to population control. A kill harvest is needed. The Department needs to do their job and re-instigate legislation for trapping.	This is beyond the scope of this plan. The plan identifies goals, objectives, and strategies within the current legal framework established in RCW. Only the Legislature develops legislation.
The ability to accurately census fur bearing animal population in our state as outlined in the EIS, is probably an impossible goal in terms of both funding and the physical ability to gather the necessary data as a result of I-713.	The plan identifies the need to assess furbearer populations regardless of trapping methodologies.
Objective 147. Good measurable objective.	Thank you for your comment.
Objective 148. Good measurable objective but it seems out of order with objective 147.	The date for objective 148 will be revised to concur with objective 147. This is now objective 169.
Objective 149. Good measurable objective.	Thank you for your comment.
Objective 150. I'm confused. Objective 3 relates to electronic hunting gear regulations.	The typo has been corrected in the revised plan. This is now objective 171.
*pg 142 objective 169 strategy (a). This would be more convenient for those participants who have internet access. However, a large number of persons do not have this capability, therefore web-reporting must be an option- not the only method of reporting catch.	Given the relatively low number of trappers statewide, efforts will be made to accommodate trappers by providing internet access at Regional offices for reporting purposes.
*pg 142 issue statement. Change the statement by changing last sentence as follows; "Therefore, efforts should be made to provide truthful information to the public in regards to incidental catch of non-target animals with the goal of changing the public's wrong perception and gaining their support so that the agency can fulfill its mandate to maximize recreational hunting and trapping opportunities."	The desire to provide the public with information of catch of non-target animals is included in the plan. Changing the publics values is not an objective of the plan.
*pg 142 objective 170, strategy (a). WDFW should participate in the "Best Management Practices" studies of devices used in trapping. The work is done by licensed trappers and it would be a huge mistake to discontinue participation.	Washington's involvement in the Best Management Practices for furbearer trapping was terminated because may of the trap types being evaluated are not legal traps in Washington State.
*pg 142 objective 170, strategy (c). Washington was the first state in the nation to require Trapper Training (1970's). This strategy needs to be changed to reflect that this is current practice.	The change was made. This is now objective 173.
*pg 143 objective 171. This section needs to be deleted in its entirety. Wolves have not been reintroduced and established in WA. In fact, the Federals are considering de-listing them from the Endangered Species List. To include this section in the 6 year plan is inappropriate at this time.	The consideration of the objective 174 is considered if wolves become established in Washington
Objective 151. Bravo on expanding use of the web site. No timeframe provided for accomplishment.	If no target date is identified, the assumed completion date is the ending date of the plan.

PUBLIC COMMENT	WDFW RESPONSE
Objective 152. With expanding human populations, is this really the proper measure of achievement?	This measure would indicate if conflict is increasing slower or faster than human populations. This is now objective 175.
Objective 153. Need timeframe for accomplishment.	If no target date is identified, the assumed completion date is the ending date of the plan.
Objective 154. Just reaching 100,000 people does not mean they understood your message. Need another parameter to evaluate success.	This is the first step in an effort to educate the public. The measure to see if the educational effort is working is needed, but likely beyond the workload and timeline of this plan. This is now objective 178.
Snowshoe hares are very important to the Canada lynx. In lynx recovery areas, the hare should not be a game animal as this could compete with lynx recovery in the low of the hare cycle. The 2,398 hares taken in 2000 represented the needs of approximately 7 lynx for one year.	The Okanogan Lynx Recovery Zone is approximately 5,354 Km^2 and hares typically have a density of 35/Km^2 resulting in approximately 187,383 hares within the Zone. Hare harvest in all of Okanogan county was estimated at 990 in 2000, a harvest of 0.5%. This level of harvest is not likely affecting lynx recovery.
Badgers are still very limited in number in many places. The very limited harvest would be better served by capture and relocation than as dead animals.	Current levels of badger harvest are low and likely do not impact even regional populations.
You state that because "accurate information on the status of furbearer populations is absent; as a result harvest levels are conservative." Later, "…managers typically set conservative harvest levels…" Other than maybe otter, what limits exist for harvest of any of these species? It is not unusual for trapped species to suffer a precipitous decline before the seasons are curtailed or stopped altogether.	Harvest levels are adjusted primarily through season dates and area closures, and are set at levels that are consistent with long-term sustainability. If trapping seasons are believed to be impacting the viability of a population, the season would be closely examined for possible restrictions.
We would like to see the department work with the Washington Trappers Association to develop a web based reporting system for trappers (harvest). The mail in catch forms should also be allowed as not everyone has access to the web.	Your recommendation was incorporated in the plan.
Educational materials should be developed to help the public learn to live with the wildlife around them. Wetland boardwalks and any other possible public viewing of furbearers that could be developed would also be a big help to raise the public's consciousness of furbearers.	Your recommendation is consistent with the objectives outlined in the Public education Section.
Page 142 objective 170 (d). Eliminate. To consider restricting hunting or trapping opportunities that greatly impact other native species—is one of the semi-truck loopholes that are throughout this GMP.	Consideration and mitigating strategies are required by law for actions that have negative impacts to other native species.
We support the continued ban on body gripping traps for recreational harvest. Professional, licensed companies who are regulated by WDFW should be allowed the use of conibear traps for underwater sets to catch nuisance wildlife.	Thank you for your comment. The determination of legal trap methods is beyond the scope of this plan and has been established in RCW through voter initiative 713.
Trapping – Past harvest figures for furbearers was heavily influenced by fluctuation of prices and demand for different furs. When the price was up for a specific species so was harvest.	WDFW recognizes this relationship. Thank you for your comment.
* I support the furbearer management plan but when I-713 is overturned there must be a return to the use of traditional traps i.e. foothold, body gripping and snares.	Thank you for your support.

Game Management Plan Comment Letters Received

(D)=Draft EIS (S)=Supplemental EIS

To receive a copy of the comments received, please call the Wildlife Program at (360) 902-2515

1. Ahn, Tammy **(D)**
2. Anderson, Dennis **(S)**
3. Anderson, Mary **(S)**
4. Antonsen, Ray **(S)**
5. Arnswaldt, David **(D)**
6. Backus, Eric **(D)**
7. Baldwin, Everett E. **(D) (S)**
8. Barquist, Jim **(S)**
9. Barney, Roger/Washington Trappers Association **(D)**
10. Baysinger, Scott **(S)**
11. Bergman, Scott **(S)**
12. Bihary, Dan **(D) (S)**
13. Boeholt, Dan & Georgia **(D) (S)**
14. Boeholt, Tracy **(S)**
15. Bonnell, Robert W. **(D)**
16. Braack, Douglas & Patricia **(D)**
17. Brady, George **(D)**
18. Brown, Ken **(S)**
19. Calvert, Melissa **(D)**
20. Carroll, Paul **(D)**
21. Christensen, Jeff **(D) (S)**
22. Christensen, Walt **(S)**
23. Christenson, Randall **(D)**
24. Crain, Patrick/Clallam Co CDC **(S)**
25. Cranston, Clare **(S)**
26. Douglass, Larry **(D)**
27. Dunbar, Keith **(D)**
28. Engebretson, Monica/Animal Protection Institute **(D)**
29. Engle, Ralph **(D)**
30. Erland, Harold **(S)**
31. Estes, Ken **(S)**
32. Fair, Melissa/Animal Protection Institute **(D)**
33. Ficke, Len **(S)**
34. Fox, Camilla/Animal Protection Institute **(D)**
35. Foytack, Brian **(D)**
36. Fries, Mary **(D)**
37. Gadberry, Sylvia **(S)**
38. Garrison, Dave **(D) (S)**
39. Geiger, Joe **(S)**
40. Gibbons, Tom **(D) (S)**
41. Gohlke, Tom **(S)**
42. Golladay, Gary E. **(D) (S)**
43. Grubbs, Dave **(S)**
44. Hamann, David **(S)**
45. Hamlyn, Jay **(S)**
46. Hamm, Marty **(D)**
47. Harriman, Bob **(D)**
48. Hastings, Terry **(D)**
49. Hebner, Bill WDFW Region 4 Enforcement Captain **(S)**
50. Hersom, Marshall **(S)**
51. Hill, Anthony **(S)**
52. Houston, Lee **(S)**
53. Irvine, Franklin **(D)**
54. Jarmon, Bill WDFW Enforcement Detective **(S)**
55. Jennings, David G. **(D)**
56. Johnson, Brad **(S)**
57. Jones, Greg **(D)**
58. Joyce, Gerald **(D)**
59. Kavanaugh, Rob **(D)**
60. Keilwitz, Martin **(S)**
61. Kenagy, Stephen K. **(D) (S)**
62. Kerwood, Craig **(D)**
63. Kosterman, John **(S)**
64. Kramer, John W. **(D)**
65. Krause, Debra **(S)**
66. Krause, Kevin **(S)**
67. Layman, James A. **(D) (S)**
68. Lee, Richard **(D)**
69. Liebel, Rick/Washington State Bowhunters **(D) (S)**
70. Lilly, Joe **(S)**
71. Linders, Mary **(D)**
72. Mackey, Michael **(S)**
73. Martin, Rowland **(D)**
74. Maybee, Bob **(D)**
75. McAfee, Jim/Pierce County Sportsmen's Council **(D)**
76. McKay, Ken **(S)**
77. McCoy, Rob/Makah Tribal Council **(D)**
78. McGowan, James **(D)**
79. McLean, Michael D. **(D)**
80. Muckleshoot Wildlife Program **(S)**
81. **Munn, Ryan (D)**
82. Northup, Thomas **(D)**
83. Papouchis, Christopher **(S)**
84. Peabody, George **(D) (S)**
85. Pickell, Bill **(S)**
86. Pickinpaugh, Don & Mildred **(S)**
87. Purvine, Bruce **(D)**
88. Pyle, Gaylord/Richland Rod and Gun Club **(D)**
89. Raedeke, Kenneth **(D)**
90. Rightmire, Todd **(D)**
91. Roberts, Dennis **(S)**

92. Rua, Dan **(D)**
93. Ruh, James **(D)**
94. Schiller, James R. **(D)**
95. Schlegel, Wm A. **(D)**
96. Schlueter, Mike **(D)**
97. Sedy, Ken **(S)**
98. Sharp, Dale **(D)**
99. Shearer Jim/Richland Rod & Gun Club **(S)**
100. Siegel, Gary **(S)**
101. Simpson, Howard/WDFW Enforcement Retired **(D)**
102. Skatrud, Mark **(D) (S)**
103. Smith, Bruce R. **(S)**
104. Smith, Helen & Sandra **(D)**
105. Smith, Rod **(D)**
106. Solheim, Ron E. **(D) (S)**
107. Speece, Leonard **(D)**
108. Stengle, Jim/ National WildTurkey Federations **(D)**
109. Stephenson, Jim/Yakima Nation **(D) (S)**
110. Stinchfield, Thomas & Katie **(D)**
111. Stinchfield, Frank **(D)**
112. **Stoddard, Jerry (D)**
113. Tasto, Thomas & Mary **(D)**
114. Thiesfeld, David **(S)**
115. Thorniley, B.J. & Michael **(D) (S)**
116. Vandervort, Bruce **(S)**
117. Washines, E. Arlen/Yakima Nation **(D) (S)**
118. Wathne, Lisa **(D)**
119. Wert, Michael **(D)**
120. Ziegltrum, George **(S)**
121. Zimmerman, Tom **(D)**