

Washington State Elk Herd Plan

BLUE MOUNTAINS ELK HERD

Washington Department of Fish and Wildlife
Wildlife Program
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BLUE MOUNTAINS ELK HERD PLAN

Executive Summary

The Blue Mountain Elk Herd is one of ten herds identified in the state. It is an important resource that provides significant recreational, aesthetic, cultural, and economic benefit to the people. The Blue Mountain elk population peaked in the late 1970's at an estimated 6,500 elk and started declining in the late 1980's with an estimated population of 4,500 in 1999.

Herd surveys have tracked sex and age composition to determine productivity and survival of calves and population trends. Cow:calf ratios declined from 38-45 calves:100 cows historically to 16-25 calves:100 cows in recent years. Cow:bull ratios dropped significantly in the 1980s. In 1989, a harvest management strategy was implemented with a spike bull general season, and branch-antlered bulls by permit only. This harvest strategy was established to improve low bull ratios. In two years the spike only rule improved bull ratios significantly. Though pregnancy rates, peak conception date, and early summer calf ratios have improved to 50+ calves:100 cows, calf survival remains below desired levels and the population has remained below objective level of 5,600.

The purpose of this plan is to provide direction for the management of the Blue Mountains elk resource into the future. This is a five-year plan subject to amendment. Before the fifth year this plan should be updated, reevaluated, amended and extended out for another 5-year period. It will be a valuable reference document and guideline for the Washington Department of Fish and Wildlife (WDFW), Tribes, agency cooperators, landowners and the public. Priority management activities can be carried out as funding and resources become available.

There are three primary goals stated in the Blue Mountains Elk Herd Plan: (1) to manage the elk herd for a sustained yield; (2) to manage elk for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, cultural and ceremonial uses by Native Americans, wildlife viewing and photography; and (3) to preserve, protect, perpetuate, manage and enhance elk and their habitats to ensure healthy, productive populations.

Specific elk herd and habitat management goals, objectives, problems and strategies have been stated in the plan. These are priority objectives identified to address specific problems in elk management. To accomplish each objective a variety of strategies have been developed. The following objectives have been identified:

- ! Increase elk population levels in GMUs 166 (Tucannon), 169 (Wenaha), 172 (Mountain View) and, 175 (Lick Creek); maintain population levels in GMUs 154 (Blue Creek), 157 (Mill Creek Watershed), 162 (Dayton), and 186 (Grande Ronde); and suppress population levels in GMUs 163 (Marengo), 178 (Peola), and 181 (Couse).
- ! Manage the Blue Mountains elk herd using the best available science.
- ! Provide recreational hunting opportunity consistent with overall elk herd management objectives and specific bull elk survival targets.
- ! Coordinate management of sub-herds within GMUs 157, 169, 172, and 186 with the State

of Oregon.

- ! Increase public awareness of the elk resource and promote viewing and photographic opportunities.
- ! Reduce damage complaints caused by elk on private lands.
- ! Correlate recreational harvest of black bear and cougar with elk management objectives.
- ! Control poaching of elk.
- ! Cooperate with the Nez Perce and Umatilla Tribes to carry out the Blue Mountains Elk Herd Plan.
- ! Improve habitat conditions for elk on National Forest, WDFW, and other public lands.
- ! Encourage private landowners to enhance elk habitats.

Spending priorities have been identified for the first year and next five years. Achieving spending levels will be contingent upon availability of funds and creation of partnerships. The recommended annual prioritized expenditures for the Blue Mountains elk herd are as follows:

Priority	1st year cost	5 year cost
! Elk herd composition surveys	\$17,000.00	\$85,000.00
! Improve collection of hunter harvest and effort data	\$12,500.00	\$62,500.00
! Landowner/elk conflicts	\$70,000.00	\$350,000.00
! Peola elk fence extension and maintenance.	\$190,000.00	\$190,000.00
! Habitat Preservation Program: habitat easements, etc.	\$25,000.00	\$125,000.00
! Elk habitat improvement	\$20,000.00	\$100,000.00
! Elk augmentation	\$25,000.00	\$25,000.00
TOTAL	\$359,500.00	\$937,500.00

BLUE MOUNTAINS ELK HERD PLAN

I. Introduction

The Blue Mountains Elk Herd Plan is a step-down planning document under the umbrella of the Washington State Management Plan for Elk (McCall, 1997) and the Environmental Impact Statement for Elk Management (McCall, 1996). For management and administrative purposes the state has been divided into many Game Management Units (GMUs). A group of GMUs is described as a Population Management Unit (PMU). The Blue Mountains herd is one of ten herds designated in Washington. In this context a herd means a population within a recognized boundary as described by a combination of GMUs. The Blue Mountains elk herd is in PMU 13 and has the following GMUs: 145 (Mayview), 149 (Prescott), 154 (Blue Creek), 157 (Mill Creek Watershed), 162 (Dayton), 163 (Marengo), 166 (Tucannon), 169 (Wenaha), 172 (Mountain View), 175 (Lick Creek), 178 (Peola), 181 (Couse) and 186 (Grande Ronde). (See map Appendix A-1) The distribution of the Blue Mountains elk herd in Washington is primarily within GMUs 154, 157, 162, 166, 169, 172, 175, 178, 181 and 186. Occasionally, elk are observed in GMUs 145, 149 and 163.

The Blue Mountains Elk Herd Plan is a five-year planning document subject to annual review and amendment. The Washington Department of Fish and Wildlife (WDFW) recognizes the sovereign status of federally recognized treaty tribes. This document recognizes a responsibility of the WDFW, Nez Perce Tribe and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) to work cooperatively in achieving elk management goals and objectives. It also recognizes the role of private landowners and public land management agencies in providing habitat for elk, notably the U.S. Forest Service (USFS), Bureau of Land Management (BLM), and Washington Department of Natural Resources (DNR).

II. Area Description

- A. Location:** The Blue Mountains are in the southeast corner of Washington State. (See map Appendix A-2) The Blue Mountains elk herd is distributed over an area of approximately 900 square miles. The primary elk range in the Blue Mountains is divided into ten GMUs: 154 (Blue Creek), 157 (Mill Creek Watershed), 162 (Dayton), 166 (Tucannon), 169 (Wenaha), 172 (Mountain View), 175 (Lick Creek), 178 (Peola), 181 (Couse), and 186 (Grande Ronde).
- B. Ownership:** Ownership between public and private lands varies by GMU, but approximately 63% (565 mi²) of the elk range is public land, whereas 37% (335 mi²) of the area is private land. GMUs 154, 162, 178, and 181 are largely privately owned, and are primarily agricultural and range lands. Most of the area in GMUs 157, 166, 169, 175, and 186 is public land, managed by the USFS, DNR, WDFW,

and BLM. The CTUIR own the 8,100 acre Rainwater Wildlife Area in GMU 162. GMU 172 is evenly split between public and private land. The WDFW's Grouse Flats Wildlife Management Area is in GMU 172, the Asotin Wildlife Area is in GMU 175, Chief Joseph Wildlife Area is in GMU 186, and Wooten Wildlife Area is in GMU 166.

- C. Topography:** The Blue Mountains are part of the Columbia Plateau formed by fissure lava flows from the Miocene and early Pliocene periods. Uplifts occurring during the late Pliocene caused the Blue Mountains to rise above the Columbia Plateau. Erosion over millions of years created the major drainages of the Blue Mountains: Asotin Creek, Grande Ronde, Mill Creek, Touchet River, Tucannon River, Wenaha River, and Wenatchee Creek. The Blue Mountains are part of the Blue Mountains physiographic province (Franklin and Dyrness 1973). The elk herd ranges in elevation from 1,400 to 6,100 ft.

The climate in the Blue Mountains is primarily influenced by marine air from the Pacific Ocean. Summers are normally dry and hot, whereas winters are relatively mild. Temperatures average 57° F between April and November, while winter temperatures average 36° F from December through March; annual average temperature is 50° F. Precipitation averages 16 inches per year, with 44% (7 inches) falling during December-March.

- D. Vegetation:** The vegetative communities of the Blue Mountains are a mixture of forests and bunch-grasses on the ridges. The lowlands comprise mostly agricultural crops and range land. This combination of habitats is very attractive to elk. The Blue Mountains in Washington consist of the following forest types as described by Kuchler (1964) for the United States: Western Spruce (*Picea* spp.)-Fir (*Abies* spp.) Forest, Western Ponderosa (*Pinus ponderosa*) Forest, and Grand Fir (*A. grandis*)-Douglas fir (*Pseudotsuga menziesii*) Forest.

Two major soil types, vitrandepts and argixerolls, cover the area. Vitrandepts are of volcanic origin and are found at moderate to high elevations; these soils are formed under forested vegetation. Argixerolls are developed from loess and igneous rock and are found at lower elevations. Argixerolls support grassland, mainly bunch grasses (*Agropyron* spp.), and shrub/grass vegetation. Vegetative associations have been previously described by Daubenmire and Daubenmire (1968), Daubenmire (1970), and Franklyn and Dyrness (1973).

Higher elevations are characterized by heavy conifer forests on the north slopes and in the canyons, whereas south slopes are open with scattered conifers and patches of brush. As elevation decreases, the steppe habitat type becomes more prominent and south slopes are more open, with bunch grass and low shrubs comprising the dominant vegetation. Riparian zones are dominated by deciduous trees and shrubs.

III. Distribution

- A. Historic Distribution:** Much discussion has occurred about the origin of the Blue Mountains elk herd. Elk have been present in the Columbia Basin and adjacent areas for at least 10,000 years, and were an important source of food for Native Americans (McCorquodale 1985). Unregulated subsistence and market hunting by Euro-American immigrants, along with habitat changes resulting from livestock grazing and land cultivation, nearly extirpated elk from the Blue Mountains by the late 1880's (McCorquodale, 1985, ODFW, 1992).

To help recover elk populations in the Blue Mountains, sports groups in southeast Washington initiated transplants of elk from Yellowstone National Park. Twenty-eight elk were released near Pomeroy in 1911, 50 elk near Walla Walla in 1919, and 26 elk near Dayton 1931 (Urness, 1960). The first season for branch-antlered bull elk was held in 1927, and the first either sex season in 1934 to reduce elk numbers and control damage on private lands in the Charley and Cummings Creek drainages.

- B. Current Distribution:** The density of the elk population in the Blue Mountains varies among the ten GMUs. Major wintering populations occur in GMUs 154, 157, 162, 166, 169, 172, and 175. Smaller populations occur in GMUs 178, 181, and 186 (Appendix B).
- C. Proposed Distribution:** No expansion is proposed for the overall distribution of the Blue Mountains elk herd. Elk distribution in southeast Washington is limited biologically by the carrying capacity of seasonal ranges, and socially by human-elk conflicts on agricultural lands. Habitat preservation programs on private lands, such as easements and elk habitat improvement incentives, will most likely be necessary to alleviate agricultural damage concerns and maintain current population levels into the future.

IV. Herd Management

- A. Herd History, Current Status, and Management Activities:**

Herd History: The elk population in the Blue Mountains peaked in the late 1970s and early 1980's at an estimated 6,500 elk. The elk population started declining in the late 1980's. The 1999 population was estimated at 4,500 (\pm 500) animals, based upon estimated sightability from March surveys. Herd productivity declined in the mid-1980s. Post-hunting season calf-cow ratios, used as a measure of calf survival, has historically ranged from 38-45 calves:100 cows, while in recent years calf survival has declined with ratios ranging between 16-25 calves:100 cows.

Low pregnancy rates (65-68%) were recorded in the late-1980s and may have been the result of low bull ratios (2-5 bulls:100 cows) and poor physical condition in cow

elk related to drought conditions (Fowler, 1988). In 1989, a new harvest management strategy was implemented allowing a hunter to harvest only spike bull elk with branch antlered bulls by permit-only. The goal of this strategy was to increase post-season bull ratios and to improve breeding effectiveness by increasing the number of adult bulls in the population. For simplicity, adult bull elk are defined in this plan as bulls that are 2.5 years old or older. However, elk managers and researchers recognize the need for adequate numbers of bull elk in the population that are 4+ years of age in order to maintain breeding effectiveness and herd health (Noyes et al. 1996). By 1991, post-season bull ratios increased to 16 bulls:100 cows, and pregnancy rates measured in 1992-1993 increased to an average of 90% (Fowler, 1993).

Breeding effectiveness improved dramatically as adult bull numbers increased in the elk population. Increased rutting activity and smaller harem sizes were also noted by field personnel. Before the increase in adult bulls produced by the "spike-only" management program, average mean conception dates were September 30 in 1987 and October 9 in 1988. By 1992 and 1993, the average conception dates for cow elk had moved back two weeks to September 24 and September 18, respectively (Figure 1). The date of conception is important because calves born early have a greater chance of surviving (Thorne et al. 1976).

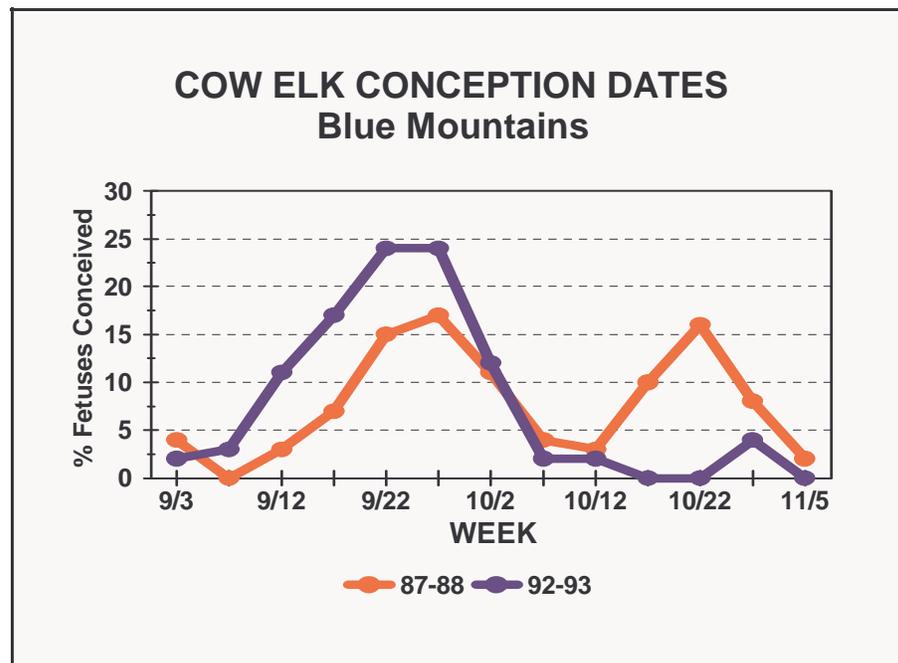


Figure 1 Trends in cow elk conception dates prior to and following implementation of spike only management in the Blue Mountains.

Although pregnancy rates, conception dates, and early summer calf ratios have improved to 50+ calves\100 cows, calf survival over time remains below management objective, due mostly to predation by mountain lion and black bear. Survival of adult cows is also crucial for maintenance of the Blue Mountains elk herd. Cow elk survival has improved in the West Blue Mountains due to elimination of general season antlerless permits.

Estimated Population Size: Between 1993-1999, the Blue Mountains elk population estimate averaged 4,500 elk (range: 4,300-4,700). This estimate is based on the number of elk observed ($\bar{x} = 3652$) (Table 1), adjusted for sightability. Based upon estimated habitat carrying capacity and historic population levels, the elk population management objective for the Blue Mountains is 5,600.

Population Status by GMU: In GMU 154 (Blue Creek) elk migrate into Washington from Oregon during periods of severe weather, which causes the wintering elk population in Washington to fluctuate dramatically. Elk from GMU 157 (Watershed) also winter in GMU 154.

The elk population in GMU 162 (Dayton) has increased slightly in recent years, though calf survival is low. The increase is due to the elimination of antlerless elk

Table 1. Elk Survey History, 1993-2000 and Elk Population Objectives.

Game Management Unit	Mean # Elk Counted 1993-00	Population Objective	Average Bull Ratio 1993 - 00	Bull Ratio Objective
154-157 Blue Creek-Watershed*	813	800	15	15
162 -Dayton	757	800	14	15
166 -Tucannon	423	700	11	15
169 -Wenaha	476	1,400	24	20
172 -Mountain View	404	700	20	15
175 -Lick Creek	623	1,000	6	15
178 -Peola	N\A	30	—	—
181 -Couse	35	≤ 50	—	—
186 -Grande Ronde	62	≤ 150	—	15
Total	3,593	5,600	—	—

* Survey data and objectives combined because elk from GMUs 157 and 154 merge on winter range.

permits from 1994-1999. Elk counted during March surveys has increased from a low of 375 in 1989, to 818 in 2000. The antlerless harvest has been reduced significantly since 1994, but may need to be reimplemented to hold this population

within management objectives.

The number of elk counted during surveys in GMU 166 (Tucannon) has declined from 791 in 1988 to 420 in 2000. Within this GMU, the number of elk counted east of the Tucannon River has declined significantly, while elk numbers west of the Tucannon have increased. Low calf survival and the loss of antlerless elk from the population have been identified as factors which negatively impact this elk herd. Adult bull survival east of the Tucannon River has also declined over the last six years.

The elk population north of the Wenaha River in GMU 169 (Wenaha) has declined during the last 15 years. Surveys conducted in the mid-1980's documented 2,500 elk wintering north of the Wenaha River. The elk population in the spring of 2000 was estimated at 650 elk (447 elk counted-ODFW). Several factors are thought to have contributed to the observed decline in elk numbers, including: documented low calf survival for many years; and harvest of cow elk during antlerless hunts in adjacent units of Oregon and Washington (GMU 172); changes in the vegetative communities resulting from fire suppression within the Wenaha Wilderness may have reduced the carrying capacity for elk, causing elk to move further south into Oregon to find adequate winter range. This exposed them to late-season antlerless hunts in Oregon. Between 1995 and 1999 Oregon responded by reducing or eliminating antlerless permits in units that are below management objectives.

The number of elk counted during surveys in GMU 172 (Mountain View) has fluctuated from 626 in 1990, to 345 in 1996, to 533 in 2000. The decline in the elk population is a direct result of low calf survival and cow elk lost to antlerless permits issued for damage control prior to 1995. Since 1995, management action was taken to reduce the loss of cow elk to damage control, which has resulted in an increase in the elk population.

The number of elk counted during March surveys in GMU 175 (Lick Creek) has declined from a high of 1098 in 1989 to 529 in 1997. The number of elk counted since 1998 has ranged from 620-649. Low calf survival and the loss of antlerless elk from the population have been identified as factors which negatively impact this elk herd. Adult bull survival in GMU 175 is the lowest of any unit in the Blue Mountains at 2 adult bulls/100 cows, compared to an average of 11 adult bulls/100 cows for all other units. On March 7 and 8, 2000, seventy-two elk from the Hanford Site (DOE) were released in GMU 175 in an effort to improve productivity and increase the population to management objective. Based on telemetry data, most elk have left the unit. Of the nine radio collared cow elk released, three have died, two are missing, three have left the unit, and one remains in the unit.

While GMU 178 (Peola) is not managed to encourage elk, poor maintenance of the elk fence and a continuous loss of elk to damage control prior to 1997 contributed significantly to declining elk numbers in adjacent elk units (GMUs 166 & 175). The

installation of one-way gates in the elk fence has greatly reduced the loss of elk to damage control in this unit.

Neither GMU 181 (Couse) nor GMU 186 (Grande Ronde) contains major elk populations. Elk numbers in GMU 181 have ranged from 10-150 during surveys. The resident elk population in GMU 186 varies between 50 and 150 elk. Elk from Oregon move into GMU 186 during the winter months increasing the elk population by 250 to 300 elk, depending on the severity of winter conditions.

Herd Composition: Pre- and post-hunting season surveys are conducted annually to determine herd composition and population trends by GMU (Appendix C and D). Pre hunting season surveys are usually conducted from the ground to collect herd composition data, but this effort has declined during the last two years due to lack of time and people. Post hunting season surveys are conducted in March using a Hiller 12-E helicopter to collect herd composition and population trend data. Aerial surveys are designed to follow protocol for the Idaho Sightability Model. The Idaho protocol is very similar to the procedures that have been in place since 1988. From 1993 to 1999, post hunting season bull:cow ratios averaged 13 bulls:100 cows, GMU 154 and 157 (15 bulls:100 cows), GMU 162 (14 bulls:100 cows), GMU 166 (11 bulls:100 cows), GMU 169 (24 bulls:100 cows), GMU 172 (20 bulls:100 cows), GMU 175 (6 bulls:100 cows), (Appendix C). From 1993-1999, post hunting seasons calf:cow ratios averaged 20 calves:100 cows.

Post season bull ratios in GMU 172 (Mountain View) are influenced by bull elk migrating into this unit from GMU 169 (Wenaha) during the late winter. Years that produce high bull ratios in GMU 172 usually produce lower bull ratios in GMU 169. This factor is addressed when calculating the number of controlled hunt permits for bull elk in GMU 172.

Recreational Harvest: Recent studies (Myers 1999) have shown that hunting mortality, including wounding loss' account for 50% of all deaths of adult elk in the Blue Mountains. Recreational harvest of elk in the Blue Mountains has declined dramatically since 1981 because of harvest restrictions required by declining elk populations and low bull survival. Reported harvest has shown a significant decreasing trend ($r = -0.96$, $P < 0.001$) from 1981 to 1996 (Appendix E). Harvest declined 85% (2,161 to 315) during this period. For this period, harvest of antlered elk declined 86% (1,451 to 208) and antlerless harvest declined 85% (710 to 107). WDFW currently restricts antlerless harvest to private land damage control situations.

Tribal Harvest: The Nez Perce tribe has traditionally exercised their treaty hunting rights within GMUs 166 (east of Tucannon River) and 175. While the Tribe's Law and Order Code contains several safety provisions for handling of firearms in the field, as well as prohibitions on spotlighting of game, there are no restrictions on bag limits and the tribe does not require harvest reporting (K. Lawrence personal

communication, 2000). Annual mortality rates for elk by mortality source, including tribal harvest, have been estimated from observations of radio-collared elk in the eastern Blue Mountains from 1990-95 (Myers 1999). Annual mortality rates attributed to tribal harvest were estimated to be 0.03 (90% CI = 0.00 - 0.05) for antlerless elk and 0.23 (90% CI = 0.16 - 0.30) for bull elk. Using these mortality rates and an estimated mean population of 1047 antlerless and 196 bull elk within GMUs 166 east of the Tucannon River and 175, the mean annual tribal harvest is estimated to be 31 antlerless (90% CI = 0 - 52) and 45 bull (90% CI = 31- 59) elk annually. The combined total has a mean harvest of 76 elk (90% CI = 31-111). (Myers, personal communication 12/18/00).

The CTUIR has acquired 8,100 acres on Robinette Mountain known as the Rainwater Wildlife Area (old Rainwater Ranch) in GMU 162 (Dayton). WDFW and CTUIR have entered into a Memorandum of Understanding (MOU) for the purpose of memorializing a mutual understanding that addresses specific wildlife, fish, habitat and land management projects that are currently in effect and to identify future efforts (Appendix F). Tribal hunting does occur on the Rainwater Wildlife Area. Tribal hunters are asked to refrain from targeting large breeding bulls for harvest in an effort to protect this segment of the population. The Tribe does not require harvest reporting, but tribal members reported taking two bulls on the Wildlife Area during early fall of 2000. Tribal hunters may hunt during seasons established by the CTUIR, and seasons vary as to sex and age of elk that can be harvested (Appendix G)(Carl Scheeler, Wildlife Prg. Mgr. CTUIR personal communications 10/20/00 unreferenced).

Damage Removal: Agricultural damage complaints involving elk are a historical problem in the Blue Mountains. The WDFW is required by law (Appendix H) to respond to damage complaints. When elk damage cannot be reduced by herding (aerial or ground), hot spot hunts, landowner preference permit hunts, or kill permits are used in an attempt to modify elk behavior and move them away from the damage area. Since 1991, 144 elk have been harvested under hot spot hunts (16/yr.), 14 harvested under landowner preference permits (1.6/yr.), and 7 with kill permits (0.8/yr.) (Appendix I) In addition antlerless, either sex, or any elk hunts and special permit hunts have been established by Fish and Wildlife Commission action to reduce elk numbers to relieve damage.

Calf Survival: Calf survival is below levels observed in the early 1980s. Calf mortality studies (Myers et. al. 1997) have shown that a minimum of 58% of the annual calf crop is lost during the first year of life, and a minimum of 78% of the calf mortality is due to predation. Predation rates may be influenced by predator densities, prey susceptibility, and other factors. In addition, an adequate survival rate of the adult cow component of the population is crucial for maintenance of the Blue Mountains elk herd.

Poaching: Poaching of adult bull elk has become an issue. Increasing public

awareness to help with information on poaching and rewards to turn in a poacher may help reduce this problem. It is hoped that newly increased penalties for poaching trophy-class animals will be a significant deterrent for poachers. The new civil penalty for poaching a trophy-class bull elk (six points or more on either side) is \$6,000.

Natural Predators: Although WDFW does not conduct population surveys of cougar and black bear, it does monitor damage complaints and harvest rates. Over the last 10 years both bear and cougar populations appear to have increased substantially. Damage complaints and total harvest have increased, as has incidental observations of these species during other surveys and field activities. Hounds were allowed for cougar and bear hunting until 1996. From 1974-1986 the number of cougars harvested by hunting and removed in damage complaints averaged two cougars per year in the Blue Mountains. The number of cougars removed through harvest and damage averaged 17 cougars per year between 1987 and 1997. The use of hounds for hunting cougar and bear was eliminated due to voter initiative in 1996. The number of cougars removed through harvest and damage complaints averaged 22 cougars per year for 1998 and 1999. The 1999-2000 hunting season resulted in 36 cougars taken in the Blue Mountains. The trend in the cougar harvest and damage complaints indicates a substantial increase in the cougar population.

B. Social and Economic Values:

Number of Elk Hunters and Elk Hunter Days: The number of hunters based on elk tag sales declined in the Blue Mountains area (includes all 100 series GMUs prior to 1998) from a peak of 18,400 in 1978 to a low of 4,630 in 1998 (Figure 2).

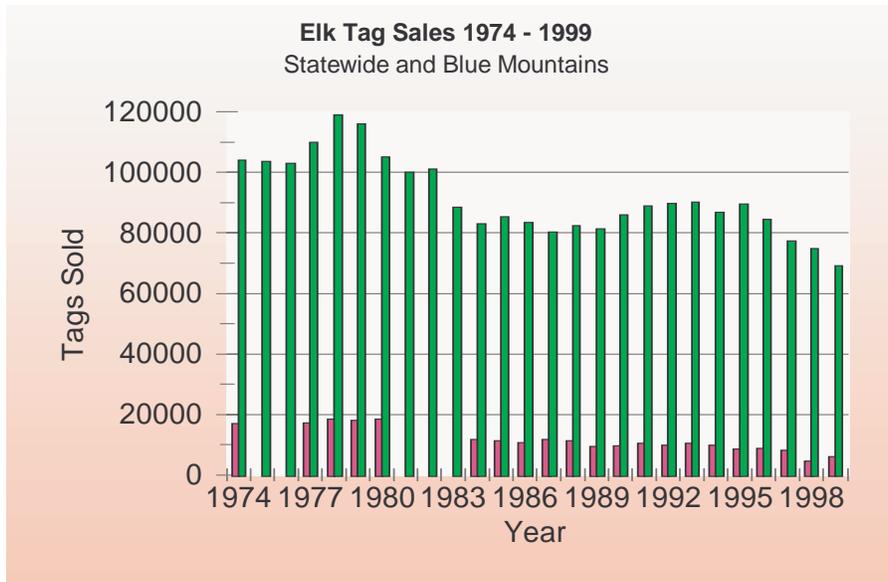


Figure 2 Elk tag sales trends statewide and in the Blue Mountains herd area.

These declines may be attributed to the application of early and late elk seasons in 1983, the requirement to choose one hunting method (archery, modern firearm, or muzzleloader) in 1984, and declining hunter success. Following application of the spike only strategy with branch antlered bull by permit-only in 1989 and continued low hunter success, both the number of hunters ($r=-0.86$, $P=0.007$) and hunter days ($r=-0.90$, $P=0.003$) have shown significant decreasing trends from 1988 to 1996 (Appendix E). From 1988 to 1999, the number of elk tags sold in the Blue Mountains zone declined 46% (11,179 to 6,039) and hunter days declined 43% (51,586 to 29,269).

The value of elk to the state and local economy was estimated to be as high as \$1,945 per harvested elk in the Blue Mountains (Myers 1999). The 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation reported that trip and equipment expenditures for big game hunting in 1996 averaged \$860 per hunter (U.S. Dept. of Interior, et al. 1996). There were 3,886 elk hunters reported hunting the Blue Mountains of Washington in 1998. Using the \$860 average expenditure per hunter from the National Survey, Blue Mountain elk hunters added \$3,341,960 to the local and state economy in 1998. The decline of elk hunting opportunity in the Blue Mountains since the mid-1980s has resulted in a significant economic loss. Elk hunter numbers reached a high of 18,000 in the early 1980s. The current number of elk hunters represents a 79% decline. Although hunter numbers may have been too high in the 1980's and caused problems with bull survival, elk hunting provided a significant economic boost to local communities. At today's costs (\$860/hunter) this decline in hunter numbers would represent a loss of \$12,138,040 in revenue to the local and state economy.

Harvest Strategies: Specific recommendations for harvest strategies will be made every three years as a part of the current WDFW Commission policy of adopting hunting seasons for a three-year period with annual establishment of special permit seasons and necessary amendments. The three-year hunting package will serve as the state's harvest plan. Tribal participation in the formulation of specific recommendations and harvest strategies begin at the regional level. WDFW regional staff and field personnel meet with tribal representatives periodically to coordinate harvest strategies and other elk management activities.

Prior to 1989, hunters were allowed to harvest any bull during the general archery, rifle, and muzzleloader seasons, which resulted in high bull mortality and poor recruitment of adult bulls. Less than five percent of the harvest consisted of bulls that were over three years of age, and few survived to be four years of age or older. Hunter numbers increased to such high levels during the 1970's and early 1980's that bull survival declined dramatically to post hunting season ratios of 2-5 bulls/ 100 cows, with only 1 adult bull/100 cows, and most of the adult bulls observed were two year-old raghorns. Bull ratios at that level, and the low number of adult bulls in the population resulted in problems with breeding efficiency within the elk herd, and WDFW was forced to change harvest management to increase bull survival. In

1989, the spike only strategy with branch antlered bulls by permit only was adopted for the Blue Mountains. This system has produced a high-quality adult bull population and a marked increase in breeding effectiveness.

The harvest of spike bulls by general tag holders has decreased significantly between 1985-1999 (623 - 169). This reduction in harvest is a result of population declines in several sub-herds, and reduced calf survival.

GMU 157 (Mill Creek Watershed) is restricted to human entry by cooperative agreement with the City of Walla Walla because it provides the water supply for the City. Public entry into this GMU by hunters is by special permit only in Washington and Oregon. Each state issues a limited number of permits each year for its portion of the watershed. This GMU is managed under a permit only strategy for three-point minimum bull or antlerless elk. This strategy meets objectives of the GMU and increases the survival of yearling bulls for GMU 157 and adjacent units. The management objective for GMU 157 will be to maintain control of the elk population through permit only hunting.

Damage: The Blue Mountains Elk Control Committee (BMECC) was established by the WDFW in 1989 to develop better ways of dealing with elk/landowner conflicts. The BMECC members in Walla Walla, Columbia, Garfield, and Asotin counties helped in development of the Blue Mountains Elk Control Plan in 1990 (Appendix J). The plan outlines policies and procedures for dealing with elk damage problems. The BMECC has also aided in securing funding for several major habitat improvement projects and research on elk. Elk/landowner conflicts continue to be a major issue in the Blue Mountains. Formation of the BMECC has produced a better working relationship between landowners and WDFW when dealing with elk damage.

Elk damage to crops and fences is a continuing problem on the lowlands of the Blue Mountains elk herd area. The Enforcement Program has maintained recent records of damage complaints and claims for damage, (Appendix K-1, 2 & 3). The number of elk damage complaints reported to WDFW in 1995, 1998 and 1999 ranged between 36 and 47. Elk damage appears to occur more frequently during the period April through September. During winters with heavy snowfall, damage to hay stacks may also be a problem.

Agricultural damage and landowner intolerance continue to be a significant elk management problem in GMU 154 (Blue Creek). However, implementation of the Blue Mountains Elk Control Plan has improved landowner/WDFW relations.

In GMU 162 (Dayton), agricultural damage is historical on northern Robinette Mountain and in the upper Hatley Gulch-Patit areas of Eckler Mountain. The use of hot-spot hunts and landowner preference permits have improved landowner/WDFW relations, but complaints of elk damage continue.

The late archery season in GMU 166 (Tucannon) was eliminated because this season forced elk off the Wooten Wildlife Area and onto private lands in the Eckler Mountain-Patit areas. To reverse this trend, the late archery season was adjusted in 1997.

Within GMU 172 (Mountain View), landowner/elk conflicts occur on both agricultural crop lands and private range land because elk compete with domestic livestock on native range. To address these conflicts, elk numbers are held below their potential. In GMU 172, a program involving land purchases, forage enhancement programs, and landowner compensation is needed to increase landowner tolerance of elk.

A 27-mile long elk fence forms the entire southern border of GMU 178 (Peola). The fence extends from the Wooten Wildlife Area on the Tucannon Road, east to USFS land on the Mountain Road, then east to the edge of the Asotin Wildlife Area on Tam Tam Ridge in GMU 175 (Lick Creek). This fence was designed to prevent most elk from moving north onto agricultural lands in GMU 178. However, elk damage complaints have persisted because:

- A Failure to adequately maintain the elk fence and the inadequate length of the fence has resulted in many elk accessing private land and causing damage.
- B Elk that get around or through the fence and are often trapped on the wrong side. Prior to 1997 elk not herded back were killed.
- C Excessive kills in this GMU are a major drain on elk numbers in GMUs 166 and 175 and one reason the population is below population management objectives. Approximately 1,206 cow elk have been harvested in this GMU using either-sex seasons between 1975-1994.
- D The solution to damage problems in GMU 178 lies in the application of several programs.
 - In fall 1997, 12 one-way gates were placed at strategic points along the fence to allow elk that are outside the fence to cross back through, thus eliminating the loss of many elk trapped outside the fence.
 - Elk fence extension must receive high priority in the capital budget and a schedule of maintenance must be carried out. The elk fence should be extended for approximately two miles along its eastern boundary to stop elk from going around the fence during the winter.
 - Lastly, \$5,000 per year should be allocated for helicopter flight time to herd elk back inside the fence when necessary.

Focusing on extending and maintaining the elk fence in GMU 178 will reduce the potential for adult bulls from GMUs 166 and 175 to become trapped in the wrong area as well. The adult bull harvest in GMU 178 should be controlled by a conservative level of permits to reduce the drain on the adult bull population in GMU 166 east of the Tucannon River and in GMU 175 because both units are

below management objectives for bull elk.

When elk numbers exceed 25-50 in the Schumaker Grade-Ten Mile area in GMU 181 (Couse) landowner damage complaints increase. The number of elk wintering in this unit has increased dramatically over the last five years, from as low as 12 elk in 1992 to more than 150 elk in 1996. This shift in elk distribution is due to two factors. First, a late cow hunt in GMU 172 was held in 1989 to address landowner complaints but was ended in 1995 due to declining elk numbers. Hunter pressure from this season forced elk to move westward into GMU 181 to avoid hunting pressure, causing a redistribution of elk over time. Second, range conditions on private lands in GMU 172 are poor due to grazing by domestic livestock, which contributes to elk moving to the west, across the Rattlesnake Grade, during periods of severe weather. Early and late muzzleloader seasons were started in 1997 to encourage these elk to stay east of the Rattlesnake Grade. Only 26 cow elk have been harvested during this muzzleloader season, and the number of elk counted in GMU 181 (Couse) during post season surveys has dropped from 150 in 1996, to 26 in 1997, to zero in 1998 and 1999. The number of elk counted in GMU 172 (Mountain View) during this period has increased by 119.

Tribal Hunting: Two Tribes, the Nez Perce and Umatilla, retain treaty hunting rights within the Blue Mountains. Coordination of management objectives between the state and tribes, for population levels, habitat and harvest, will be in the best interest of future elk recovery and management.

Non-Consumptive Uses: The number of individuals participating in bird watching, day hiking, and shed antler hunting has increased phenomenally over the last five years. This type of activity starts as early as January. Disturbance generated by this constant activity may be causing considerable harassment of elk on the winter ranges, and redistributing elk into agricultural areas. Human activity in critical areas on WDFW lands may need to be monitored and controlled if use trends continue to increase.

Viewing of elk in the Blue Mountains has increased significantly since application of the spike only strategy. The increase in adult bulls has resulted in a significant increase in public viewing and probably harassment as well, especially during the breeding season and winter months.

V. Habitat Management

Recent studies (Myers 1999) have documented how road densities, forage:cover ratios, stand composition, amount of edge, and opening size influence seasonal elk use, especially in the eastern Blue Mountains. In some units of National Forest land elk face problems from high road densities, and habitat deterioration from long term fire suppression and past logging practices. Many habitat improvement projects have been developed and completed by WDFW, USFS, RMEF, and Blue Mountain Elk Initiative to improve habitat

for elk on National Forest lands, and reduce elk damage on private lands (Appendix L).

Forage enhancement projects, controlled burns, water developments, and area closures have been initiated in the Blue Mountains. WDFW will continue to develop habitat improvement projects through partnerships with the RMEF and the Blue Mountains Elk Initiative. The Blue Mountains Elk Initiative is a group made up of WDFW, Oregon Department of Fish and Wildlife, USFS, tribes, and private landowners whose main objective is to initiate projects to improve elk habitat in Washington and Oregon.

WDFW and USFS have initiated motorized access closures on winter range to reduce harassment to wintering elk. Area closures have also been implemented around major elk calving areas. Violations of these closures continues to be an ongoing problem.

WDFW has worked closely with the USFS to improve habitat effectiveness for elk by reducing road densities in important elk habitat. In GMU 162, road closures have been initiated on the Walla Walla and Pomeroy Ranger Districts. However, some of these closures allow ATV (4-wheeler-motorcycle) use, which is incompatible with the objective of increasing elk use of these areas. In GMU 166, increased road building is a problem, and a road closure program has been implemented on the Pomeroy Ranger District; however, better enforcement and control of firewood cutting is needed to improve elk utilization in many areas. Increased vehicle traffic due to firewood cutting from summer-fall reduces elk use of areas near roads (Perry and Overly, 1977).

In GMU 175 (Lick Creek), high road densities on USFS land combined with uncontrolled firewood cutting reduce summer range habitat effectiveness for elk. A winter range closure and calving area closures have been initiated in this unit. However, based on field observations, violations of these closures appear to be increasing.

Fire suppression has reduced long-term habitat effectiveness on National Forest land by reducing the quality of the elk habitat in many areas of the Blue Mountains, and especially in GMUs 157, 162, 166, 169, 172, and 175. The USFS's new Fire Management Policy will improve habitat conditions for elk through the use of prescribed and controlled natural fires. This policy will affect the Wenaha-Tucannon Wilderness in the Pomeroy Ranger District, and will hopefully allow fire to play its natural role in maintaining habitat conditions in this area. WDFW will work with USFS to improve habitat conditions through the use of fire.

The spread of noxious weeds continues to be a major problem in many areas; noxious weeds can out-compete and replace plant communities used by elk, resulting in a reduction in available elk forage. WDFW has implemented weed control programs on its lands, and continues to work with USFS to identify and control noxious weeds on USFS lands. In GMU 166, noxious weeds are a problem on elk winter range. A weed control program was initiated on the Wooten Wildlife Area in GMU 166; however, noxious weeds on adjacent private lands threaten to compromise weed control efforts on the Wildlife Area. Habitat conditions in GMUs 154, 157, and 162 continue to deteriorate due to

noxious weeds, such as the yellow-star thistle.

In GMU 162 (Dayton) forage enhancement and water development projects involving the RMEF have been completed on Robinette and Eckler mountains. These projects have been successful in attracting elk onto these areas.

Silvicultural treatment, especially clear cutting adjacent to open roads, has impacted elk habitat in many areas in the Blue Mountains. Numerous clear cuts reduce the amount of security and thermal cover available for elk, and associated road development increases vulnerability. Elk have shown preference for areas with large tracts providing security cover, smaller sized openings, and edge areas (Myers, 1999). In GMUs 166 and 175 increased logging, open roads, and uncontrolled firewood cutting have contributed to declining elk use in areas of important summer habitat.

In GMU 172 (Mountain View), range conditions on USFS lands appear to be good, but many private land parcels appear to be over-grazed, a condition which dramatically increases the risk of a noxious weed problem. Habitat conditions on public land in GMU 186 (Grande Ronde) are excellent. Trespass cattle on the Chief Joseph Wildlife Area continue to be an annual nuisance.

Sale and sub-division of large tracts of land also contributes to the loss of elk habitat in some areas. Habitat conditions in GMU 154 continue to deteriorate due to subdividing of land into smaller parcels.

The use of off-road vehicles on developed trail systems on USFS land in GMUs 162 and 166 could result in increased harassment of elk and decreased use by elk in prime habitat areas. This problem is especially acute when trails are constructed through known elk calving areas and high-use summer habitat. WDFW will continue to work closely with the USFS on Travel and Access Management Plans in order to minimize this impact.

VI. Research Informational Needs

Two research projects have been completed and final reports are being prepared. In 1990, a research project was initiated to assess elk populations and distribution, habitat use, damage problems, and control measures. This research project is titled "Elk Populations and Habitat Assessment in the Blue Mountains of Washington" (Myers, 1999). A second research project was initiated in 1992 to determine the factors responsible for low survival of elk calves. This project is titled, "Investigations of Elk Calf Mortalities in the Blue Mountains, Washington" (Myers, 1999).

New research efforts for the Blue Mountains elk herd should center around elk damage problems and elk/landowner conflicts. Research is needed to determine the effectiveness of current control techniques, and to develop better control techniques.

VII. Management Goals

A. Herd Management Goals:

The Blue Mountains Elk Herd Plan provides the historical background, current condition and trend of this important resource. It is essentially an assessment document that, identifies management problems, develops solutions to overcome these problems, and sets direction. The plan outlines goals, objectives, problems, strategies, and helps establish priorities for managing the elk herd. It provides a readily accessible resource for biological information collected from the herd and identifies inadequacies in scientific information. Fundamental goals for the management of the Blue Mountain elk herd are to:

1. To manage the Blue Mountains elk herd for a sustained yield.
2. To manage elk 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, manage and enhance elk and their habitats to ensure healthy, productive populations.

VIII. Herd Management Objectives, Problems and Strategies

A. Herd Management Objectives, Problems, and Strategies:

1. *Objective:* Population goal levels by GMU are as follows:

Increase Population Levels	
<u>GMU</u>	<u>GOAL</u>
GMU 166 (Tucannon)	700
GMU 169 (Wenaha)	1,400
GMU 172 (Mountain View)	700
GMU 175 (Lick Creek)	1,000

Maintain Population Levels	
<u>GMU</u>	<u>GOAL</u>
GMUs 154 (Blue Creek) and 157 (Watershed)	800
GMU 162 (Dayton)	800
GMU 186 (Grande Ronde)	150

Suppress Population Levels	
<u>GMU</u>	<u>GOAL</u>

GMU 178 (Peola)	< 30
GMU 181 (Couse)	< 50

Problem: The current 2000 Blue Mountains elk population estimate is 4,500, or 20% below the population goal of 5,600 elk.

Strategies:

- a. In units consisting of primarily public land, increase elk numbers in units that are below the management objective. In units with historical agricultural damage problems maintain elk numbers at levels that are compatible with overall management objectives. In “elk suppression zones” strive to keep elk numbers below target objectives to minimize damage complaints.
- b. Work cooperatively with USFS to implement habitat improvement projects on Umatilla National Forest to increase elk carrying capacity through forage enhancement projects, road closures, weed control, and prescribed burning.
- c. Implement harvest management actions that would allow the population to grow in GMUs 166, 169, 172, and 175.
- d. Implement harvest management actions in GMUs 154, 157, and 162 to maintain static elk population levels.
- e. Utilize one-way gates and herding as the priority strategies to minimize elk use of agricultural lands in GMU 178 (Peola).
- f. Implement low impact harvest management actions (primitive weapon seasons, hot spot hunts, landowner permits) to redistribute or suppress elk populations in GMUs 181 and 186.
- g. If feasible, augment the elk population in GMU 175 when it is below management objective.

2. *Objective:* Improve the scientific database for managing the elk population.

Problems: Harvest information (kill and hunter effort) collected from report cards and the hunter questionnaire is not providing accurate information for use at the GMU level and Tribal harvest is not available. Herd surveys and harvest data are critical elements in monitoring herd status and making management recommendations.

Strategies:

- a. Increase pre-season survey sampling to 1500 elk. Ground counts would require approximately 50 person-days, while helicopter surveys would require fewer days of surveying and approximately 10 hours (\$4,250) of flight time.
- b. Maintain accuracy of post-season aerial herd composition counts by surveying 70% of the survey zones. This will require approximately 30 hours of helicopter time at a cost of about \$12,750 annually.
- c. Continue to coordinate and cooperate with the Tribes to develop and exchange accurate harvest information.

- d. Maintain the statistical precision (90%) of population estimates by using the elk sightability model, and/or use of appropriate population models.
3. *Objective:* Provide recreational hunting opportunity in keeping with overall elk herd management objectives and specific bull elk survival targets as follows:

Manage hunted elk units for post hunting season bull ratio consistent with the Statewide Plan (currently a *minimum* of 12 bulls/100 cows). In GMUs 154, 157, 162, 166, 172, 175, and 186 maintain slightly higher than minimum post hunting season bull ratio of ≥ 15 bulls\100 cows in combination with overall bull mortality of $\leq 50\%$, in order to maintain adequate recruitment into the bull population, and optimum age class structure within the adult bull population.

In GMU 169, maintain a post hunting season bull ratio of ≥ 20 bulls\100 cows in combination with a bull elk mortality rate of $\leq 40\%$, in order to maintain adequate recruitment into the bull population, and adequate age class structure of the adult bull population. Calf survival is much lower in GMU 169 than other units in the Blue Mountains, which means bull recruitment is lower with much less room for error .

Problem: Bull escapement goals cannot be achieved through general seasons alone without specific strategies to protect bulls. Under the spike only regulations increasing hunting opportunity will decrease spike bull survival rates, which will compromise adult bull survival targets.

Strategies:

- a. Maintain spike-only general hunting seasons with branched antlered bulls by permit only.
 - b. Alternatively, it may be necessary to restrict yearling bull harvest (spikes) if recruitment into the adult bull population declines.
 - c. Provide antlerless elk permit-only hunting opportunities to meet herd management objectives.
4. *Objective:* Coordinate management of sub-herds within GMUs 157, 169, 172, and 186 with the State of Oregon.

Problem: Portions of elk sub-herds within GMUs 157, 169, 172, and 186 summer in Washington and winter in Oregon, or vice versa, and are subject to dual hunting seasons.

Strategy:

- a. Work cooperatively with Oregon biologists to establish population and harvest objectives for inter-state elk herds in GMUs 157, 169, 172, and 186.
5. *Objective:* Increase public awareness of the elk resource and promote appropriate levels of viewing and photographic opportunities.

Problem: Promotion of “non-consumptive” use values requires careful planning and assurance that they will not adversely impact the resource.

Strategies:

- a. Develop a brochure for the public with general information on where elk are likely to be found and their natural history and management.
 - b. Maintain a close intra-departmental coordination effort to ensure that educational materials and facilities developed will not adversely impact the elk resource.
 - c. Monitor late winter and spring recreational activities to determine if they have an adverse impact on elk distribution.
6. *Objective:* Reduce damage complaints caused by elk on private lands.

Problem: Elk cause damage to high value agricultural crops, compete for forage with domestic livestock, and cause property damage (fences).

Strategies:

- a. Maintain the Blue Mountains Elk Control Committee and plan to improve relations with landowners and increase tolerance for elk among landowners.
 - b. Repair, maintain, and extend the elk proof fence that forms the southern boundary of GMU 178 (Peola). The elk fence should be extended for approximately 2 miles to the east. Helicopter time should be included in the annual budget to herd elk off private land, where feasible.
 - c. Continue to use low impact, hunting seasons to redistribute elk and reduce damage.
 - d. Reduce damage to private lands through land easements and acquisitions; GMUs 162, 166, 172, and 175.
 - e. Keep resident elk populations in GMUs 178 and 181 at ≤ 30 and ≤ 50 elk, respectively.
 - f. Determine the effectiveness of current control techniques, and develop better control strategies.
7. *Objectives:* Encourage recreational harvest of black bear and cougar consistent with population management objectives for elk, black bear, and cougar.

Problem: High predator populations and low calf survival make it difficult to achieve elk population goals on the eastside of the Blue Mountains and in the Wenaha-Tucannon Wilderness (GMU 169).

Strategies:

- a. Recommend increased harvest of black bear and cougar in the Blue Mountains as long as the combination of high predator populations are related to poor recruitment, and declining and/or depressed elk populations exist.
- b. Encourage cougar hunting in the Blue Mountains area by providing information

on effective hunting techniques.

III. Encourage hunter harvest of cougar and black bear where elk populations are below management objectives and show poor recruitment or excessive losses to these predators.

8. Objective: Reduce poaching of elk.

Problem: Poaching is a growing public concern in the Blue Mountains with the increased numbers of adult bull elk that carry large antlers.

Strategies:

- a. Increase public awareness of the problems of illegal harvest of adult bull elk and solicit their help in apprehending violators.
- b. Inform the public on how to report violations: State Patrol, County Sheriff's Offices, and WDFW offices.
- c. Encourage District Court Judges to implement mandatory penalties (\$6,000) for poaching trophy class bull elk under RCW 77.21.070.

9. *Objective:* Cooperate with the Nez Perce and Umatilla Tribes to implement the Blue Mountains Elk Herd Plan.

Problem: In the past, consistent coordination with tribes has been limited.

Strategies:

- a. Work cooperatively with the tribes in developing specific strategies for elk management in the Blue Mountains with emphasis in GMUs 162, 166, and 175.
- b. Develop a coordinated plan with the Nez Perce and Umatilla Tribes to monitor and share tribal harvest data in the Blue Mountains.

B. Habitat Management Objectives, Problems and Strategies:

1. Objective: Improve habitat conditions for elk on National Forest lands.

Problem: Elk habitat condition and functionality has been compromised by increased road densities, noxious weed invasion, firewood cutting, fire suppression policies, silvicultural practices, and off-road use.

Strategies:

- a. Work with the USFS on their new Fire Management Plan to improve habitat conditions for elk using prescribed fires and controlled natural fires.
- b. Work with the USFS and identify ways to improve habitat conditions in GMUs 157, 162, 166, 169, 172, and 175.
- c. Continue efforts to reduce open road densities to \leq one mile per square mile on National Forest land outside of roadless and wilderness areas, via road

- closures, road obliteration, and limited future road construction.
- d. Enforce closures of elk winter range and calving areas.
- e. Encourage the USFS to control noxious weeds, such as yellow-star thistle and knapweed on elk winter range in GMUs 157, 162, 166, 169, 172, and 175.
- f. WDFW will review and comment on Draft Environmental Impact Statements (DEIS) and timber sale EAs to assess impacts to elk and their habitat.
- g. WDFW will advise USFS regarding silvicultural treatments that benefit elk.
- h. Encourage the USFS to control the timing and distribution of woodcutting areas in order to minimize elk disturbance, especially in high use summer elk areas.
- i. Work with the USFS in their development of Off Highway Vehicle (OHV) trails so they will not be placed in sensitive elk habitat, and to minimize OHV impacts on elk.
- j. Develop partnerships with affected tribes to address elk habitat issues on public and tribal lands.
- k. Implement the M.O.U. between the Confederated Tribes of the Umatilla Reservation and the Washington Department of Fish and Wildlife - June 1999.
- l. Work with the Umatilla Tribe to improve habitat on the Rainwater Wildlife Area.

2. *Objective:* Encourage private landowners to enhance elk habitat.

Problem: Private lands are often important areas traditionally used by elk, but are being impacted severely by conflicting uses such as land subdivisions, change in agricultural practices, and invasion of noxious weeds.

Strategies:

- a. Educate private landowners on the problem and encourage control of noxious weeds, such as the yellow-star thistle in GMUs 154, 162, 166, 172, 175, and 186.
- b. Coordinate with cooperative extension offices to encourage landowners to manage domestic livestock grazing in order to minimize the spread of noxious weeds.
- c. Work with individual or groups of landowners and develop incentive programs that reward them for maintaining or enhancing elk population and elk use opportunities on their lands.
- d. Develop cooperative weed control projects with landowners adjacent to WDFW lands.
- e. Work with the counties on growth management to minimize the loss of elk winter range to development.

3. *Objective:* Improve habitat conditions for elk on WDFW and other public lands.

Problem: Elk habitat enhancement needs are important on WDFW lands and other public lands where significant improvements can be made with increased funding.

Strategies:

- a. Continue to develop and encourage partnership projects in the Blue Mountains to improve elk habitat with the RMEF and Blue Mountains Elk Initiative.
- b. Participate in District Team efforts to coordinate and prioritize projects to improve elk habitat.
- c. In GMU 157, continue to work with the City of Walla Walla to improve habitat conditions and control elk populations.

IX. Spending Priorities

The following priority investments are needed to implement the Blue Mountains Elk Herd Plan.

- A. Herd composition surveys:** WDFW and cooperators should seek adequate funding to conduct annual population surveys, with the objective of obtaining precise and accurate data on pre and post-season composition, and data required for population modeling. An analysis of post season herd composition data from the Blue Mountains indicate that the level of sampling to derive bull:cow: calf ratios were within $\pm 5\%$ at 90% Confidence Interval; well within the target level of $\pm 10\%$, (C. Rice, personal communication, November 2000).

Priority: High - Basic biological data collection is essential for responsible management of the Blue Mountains elk herd.

Time line: Maintain and conduct annual herd composition and population surveys.

Pre-season Surveys. Pre-season surveys will require 50 person-days if ground surveying is used, or 10 hours of helicopter time if aerial surveys are used (\$4,250).

Post-season Surveys. Post-season aerial surveys will require 30 hours of helicopter time in order to cover 70% of the survey zones (\$12,750). Post-season elk and bighorn sheep surveys are normally conducted at the same time in order to make efficient use of available funding, which results in a ratio of approximately 60% elk to 40% bighorn sheep in survey costs.

Total Survey Costs: \$17,000 annually.

- B. Improve Collection of Hunter Harvest and Effort Information:** There is a need to improve accuracy of all harvest and hunter effort information for use in management decision making. Increase the accuracy of state recreational elk harvest data through implementation of mandatory reporting.

Priority: High

Time line: 2001

Cost: \$12,500 estimated annually.

- C. Landowner/elk conflicts:** Elk/landowner conflicts and agricultural damage are a major problem in the Blue Mountains and a continuous threat to this elk population. Additional one-way gates may also be needed in the elk fence. Elk herders and the landowner incentive program should be maintained in the annual budget to assist with elk/landowner conflicts in the spring, summer, and winter. Funding should be

budgeted for helicopter time (minimum of \$5,000/year) necessary to deal with specific elk herding operations.

Priority: High

Time line: 2001 - 2003

Cost: \$60,000 annually. Fence maintenance-\$20,000/landowner incentive-\$25,000/personnel time (herders)-\$20,000/ helicopter time-\$5000.

- D. Peola elk fence extension:** The elk fence should be a high priority in the capital budget, with annual maintenance scheduled and completed. The elk fence should be extended for approximately two miles on the east end to prevent elk from going around the fence onto agricultural land.

Priority: High

Time line: 2001 - 2003

Cost: \$190,000 Cost of two mile fence extension.

- E. Habitat preservation program (easements and incentives):** Key areas of elk winter range should be identified and given a high priority in future land acquisitions, leases, easements or incentives for creation or preservation of elk habitat. Funds would also need to be secured for operation and management of these properties.

1. GMU 175 (Lick Creek): Secure (7100 acres) private lands adjacent to the Asotin Wildlife Area.

Priority: High

Time line: 2003 as land becomes available.

Cost: \$175-\$500/acre. (\$1,242,500 - \$3,550,000) Purchase/Easement Program \$25,000/yr.

2. GMU 166 (Tucannon): Secure 3,000 acres adjacent to the Wooten WA in the Tualum drainage.

Priority: Medium

Time line: 2004 as lands become available.

Cost: \$175 - \$500/acre. (\$525,000 - \$1.5 mil.)

3. GMU 172 (Mountain View): Secure 9,000 acres of winter range lands within the unit.

Priority: Medium

Time line: 2005 as lands become available.

Cost: \$175 - \$500/acre. (\$1,575,000 - \$4.5 mil.)

- F. Habitat improvement:** WDFW should continue to identify areas where habitat improvement projects can be initiated to improve elk populations and control damage in GMUs 154, 162, 166, 169, 172, and 175. Funding and manpower should be prioritized to meet partnership needs for projects with the RMEF and the Elk Initiative. Project development will center around forage enhancement, weed control, and prescribed fire projects on private, WDFW, and USFS lands.

Priority: High

Time line: Maintain annually through RMEF and Blue Mountain Elk Initiative.

Costs: \$20,000 annually.

- G. Elk Augmentation:** Augmentation of elk to be used when populations are below management objectives, and other management actions have not improved population levels.

Priority: Medium

Time line: 2001-2003

Cost: \$25,000. The estimated cost of trapping and transplanting elk is \$500/elk. An augmentation of 50 elk would cost \$25,000.

X. Plan Review and Maintenance

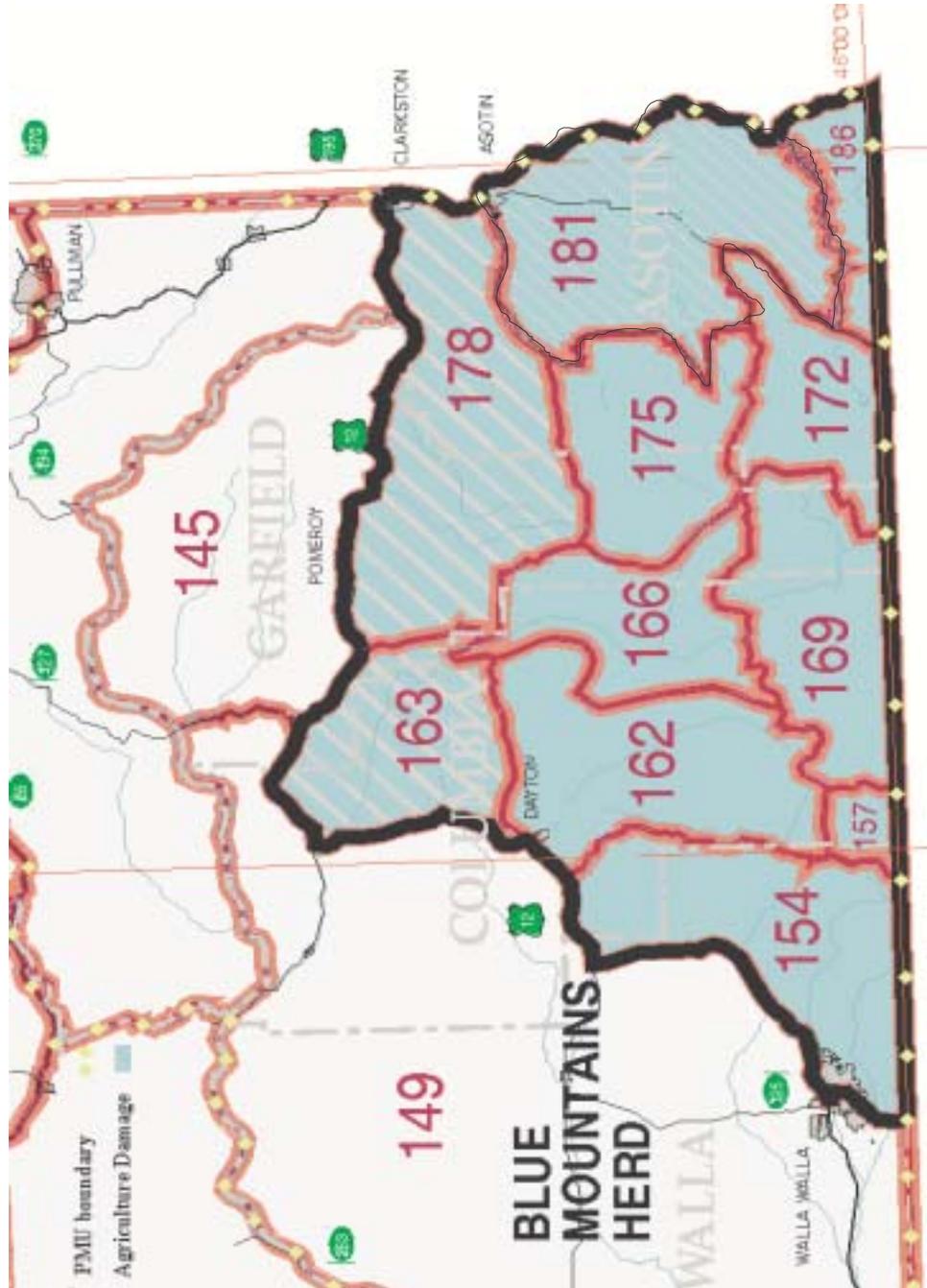
- A. The Blue Mountains Elk Herd Plan should be reviewed annually to track strategies and their impact on meeting goals and objectives.
- B. Strategies that are not providing progress in meeting management goals and objectives should be re-evaluated and modified, as necessary.

XI. Literature Cited

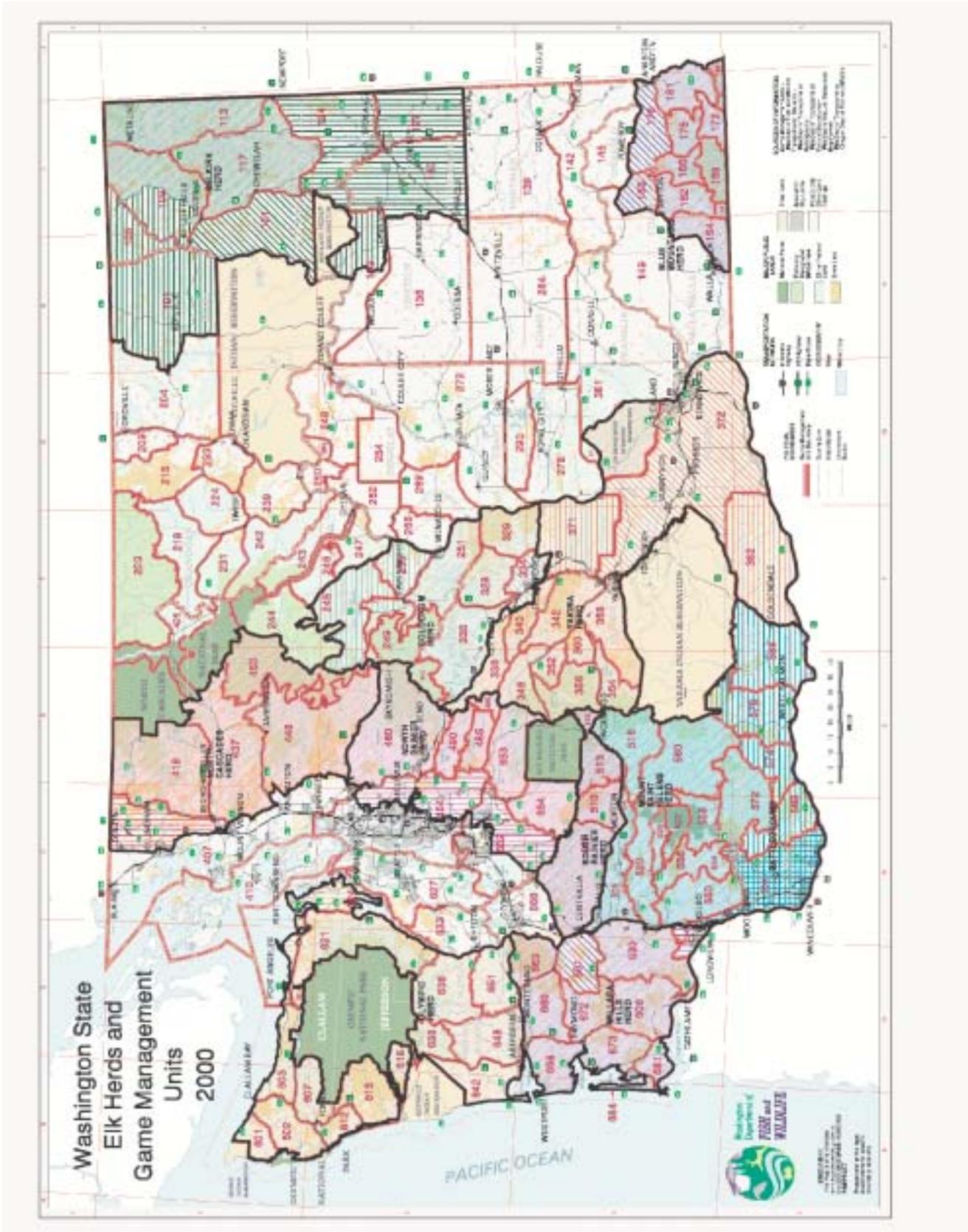
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APPENDIX A-1

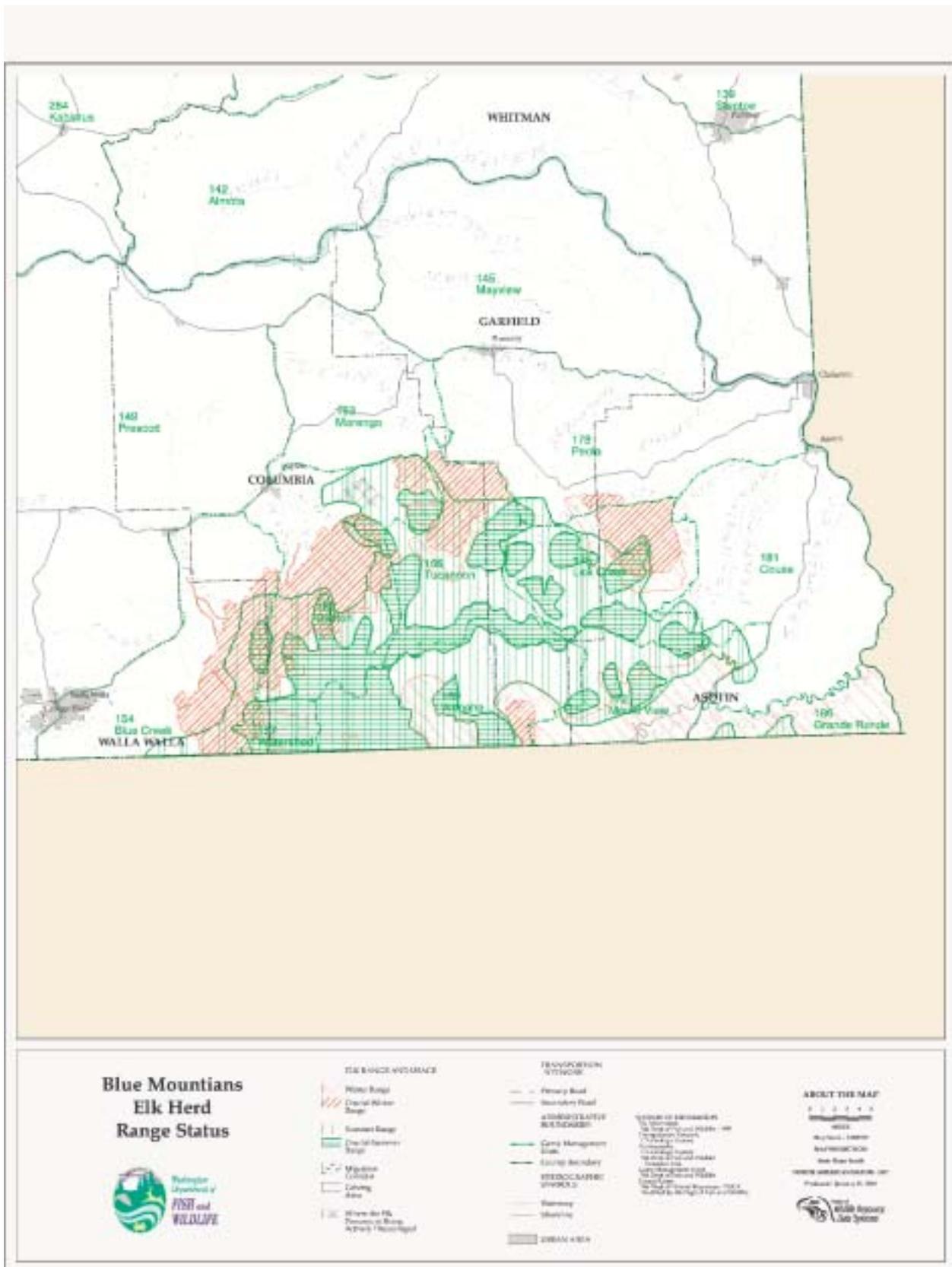
The Blue Mountains Elk Herd Area Map



APPENDIX A-2 Blue Mountains Elk Herd Location in Southeastern Washington



APPENDIX B Blue Mountains Elk Herd Seasonal Distribution Map



APPENDIX C Pre-hunting season population composition data for the Blue Mountains elk herd, (July-Sept.) 1988-2000

Year	Bulls: 100 cows	Adult bulls: 100 cows	Calves: 100 cows	Sample size
1988	18	4	40	711
1989	11	3	41	998
1990	15	6	50	768
1991	20	7	45	1667
1992	21	12	47	1304
1993	18	10	51	1475
1994	18	5	50	905
1995	11	4	40	1036
1996	13	6	48	1656
1997	11	9	53	1189
1998	14	5	55	976
1999	15	7	58	388
2000	15	4	54	775

APPENDIX D Elk composition-population trend surveys for the Blue Mountains, March 1987-2000.

Year	Bulls: 100 cows	Adult bulls: 100 cows	Calves: 100 cows	Sample size
1987	7	2	35	2060
1988	6	1	32	2962
1989	5	1	22	4196
1990	8	3	25	3706
1991	11	7	28	4072
1992	16	10	18	3560
1993	13	8	19	4092
1994	14	10	18	3161
1995	17	13	20	3689
1996	14	11	15	3656
1997	13	9	24	3405
1998	11	8	23	3118
1999	13	9	23	3615
2000	12	9	17	3628

APPENDIX E Elk harvest and hunter trends for the Blue Mountains herd.

YEAR	ANTLERED	ANTLERLESS	TOTAL	HUNTERS	DAYS
1960	760	802	1562		
1961	731	699	1430		
1962	760	690	1450		
1963	626	530	1156		
1964	1062	641	1703		
1965	1009	673	1682		
1966	935	1297	2232		
1967	817	970	1787		
1968	1052	730	1782		
1969	925	760	1685		
1970	981	331	1312		
1971	1068	333	1401		
1972	1226	434	1660		
1973	1320	1040	2360		
1974	1278	1230	2508		
1975	1065	710	1775		
1976	1230	890	2120		
1977	1200	770	1970		
1978	1280	770	2050		
1979	1240	660	1900		
1980	1610	535	2145		
1981	1451	710	2161		
1982	1176	606	1782		
1983	1032	562	1594		
1984	813	548	1361	11506	48217
1985	831	391	1222	13452	51857
1986	701	436	1137	11763	51439
1987	799	688	1487	12581	53717
1988	614	481	1095	12131	51586
1989	358	583	941	10174	41291
1990	307	436	743	9602	ND
1991	242	281	523	9395	41386
1992	356	243	599	10023	39664
1993	269	212	481	9583	40996
1994	305	167	472	9788	36290
1995	235	15	250	6265	24586
1996	208	107	315	6463	23226
1997	380	57	437	6151	26053
1998	148	61	209	5501	21769
1999	208	28	236	6039	29,269

APPENDIX F
Memorandum of Understanding
Confederated Tribes of the Umatilla Indian Reservation
and
Washington Department of Fish and Wildlife
June 1999

This Memorandum of Understanding is between the State of Washington Department of Fish and Wildlife acting through and by the Director, hereinafter referred to as the Department, and the Confederated Tribes of the Umatilla Indian Reservation acting through and by the Chairman of the Tribal Board of Trustees, hereinafter referred to as the Tribes. Both the Department and the Tribes recognize a mutual concern and responsibility for the wildlife and fisheries resources found within the state and desire to cooperate for the protection and enhancement of such valuable natural resources.

The parties enter into the Memorandum for the purpose of memorializing a mutual understanding that addresses specific wildlife, fish, habitat and land management projects that are currently in effect and to identify the areas that can be addressed in the future.

It is the intention of the parties to set forth a framework of projects and efforts to be undertaken in pursuit of the terms of this Memorandum. This Memorandum shall not be construed by either party as modifying the terms of previous agreements so as to create obligations which are in conflict with technical documents or previous agreements.

The Tribes and the Department agree to the shared partnership, and the responsibilities in protecting and enhancing the wildlife, fish and land resources in the Rainwater Project, Columbia County, Washington. The Tribes and the Department agree that the implementation of wildlife, fish and lands enhancement activities and programs have strong potential to benefit the wildlife, fish and lands management resources of the Rainwater Project. The Tribes and the Department agree that continued coordination of these enhancement activities and programs will be through the Technical Coordination Team (Coordination Team). The Coordination Team is comprised of members from the Department's District 3 and the Tribes. The purpose of this Coordination Team is to assist its members in making technical and operational recommendations for future wildlife, fish and land management enhancement activities as may occur in the Rainwater Project.

The Department and the Tribes Mutually Agree:

1. The Tribes and the Department agree to the shared partnership and desire to work together in protecting and enhancing the wildlife, fish and land resources in the Rainwater Project. After consideration of time, workload, and budgetary limitations, the Tribes and Department agree to dedicate available staff and monetary resources to the development and implementation of the Rainwater Project Management Plan including conducting Habitat Evaluation Procedures and other necessary surveys on the subject lands.
2. The Tribes and the Department agree to promulgate and enforce Rainwater Project Regulations designed to protect and/or enhance wildlife, fish and land resources.
3. The Tribes and the Coordination Team agree to meet at least quarterly, or more often as necessary, to discuss and consider problems and issues of mutual interest.
4. The Tribes and the Department agree to the joint publication of press releases and the interchanges between parties of all pertinent policies and objectives, plans, statutes, rules, and regulations and additional information as required by the wise use and perpetuation of the natural resources of the Rainwater Project.

5. The Tribes and the Department agree to actively seek alternative sources of funding to achieve the Rainwater Project Management Plan objectives.
6. The Tribes and the Department agree to share information and pertinent technical data associated with resources on and adjacent to the property. By example, data transfers may include GIS data themes, habitat assessments, species and population distribution information, etc.
7. The Tribes and the Department agree that the protection of native species is of paramount importance.
8. The Tribes and the Department agree to mutual notification and assistance in regard to environmental and habitat concerns.
9. The Department agrees to support the inclusion of adjacent State Department of Natural Resources lands in the Rainwater Project and to commit these land for wildlife in perpetuity consistent with the Northwest Power Planning Council's Wildlife Rule.
10. The Tribes and the Department agree to enter into supplemental agreements to this Memorandum as necessary to carry out joint programs.

Terms of the Agreement:

The Department and the Tribes each respect the sovereignty of each other's party, and this Memorandum shall in no way be construed as a waiver of any rights, including treaty rights, immunities, including sovereign immunities, or jurisdictions. Through this Memorandum, the Department and the Tribes strengthen their collective ability to successfully resolve issues of mutual concern.

Nothing in this Memorandum shall be construed as obligating either party here to the expenditure of funds for future payment of money in excess of appropriations authorized by law.

This Memorandum of Understanding shall remain in full force and effect, unless canceled by either party upon a written 60-day notice to the other party.

In Witness where of, the parties here to have entered into and executed the memorandum.

Antone Minthorn, Chairman
Confederated Tribes of the Umatilla Indian Reservation
Pendleton, Oregon

Date

Jeff Koenings, Director
Washington Department of Fish and Wildlife
Olympia, Washington

Date

APPENDIX G Elk Hunting Seasons for Members of the Confederated Tribes of the Umatilla Indian Reservation

Year	Season Dates	Legal Animal	Bag Limit	Rules
1990				
1991				
1992				
1993				
1994				
1995	Aug. 1 - Aug. 31	Bulls only	no restrictions	
	Sept. 1 - Nov. 31	Either-sex	no restrictions	
	Dec. 1 - Dec. 31	Antlerless only	no restrictions	
	Oct. 1 - Nov. 30*	Any elk	*permit only drawing	Mill Cr. Watershed hunt
1996				
1997	Aug. 1 - Aug. 24	Bulls only	no restrictions	
	Aug. 25 - Sept. 30	Spike or antlerless	no restrictions	archery hunting - any elk
	Oct. 1 - Nov. 30	Any elk	no restrictions	
	Dec. 1 - Dec. 31	Spike or antlerless	no restrictions	
1998				
1999				

APPENDIX H
Management Authority For Controlling Elk Damage

Authority:

RCW 77.36.005

Findings.

The legislature finds that:

(1) As the number of people in the state grows and wildlife habitat is altered, people will encounter wildlife more frequently. As a result, conflicts between humans and wildlife will also increase. Wildlife is a public resource of significant value to the people of the state and the responsibility to minimize and resolve these conflicts is shared by all citizens of the state.

(2) In particular, the state recognizes the importance of commercial agricultural and horticultural crop production and the value of healthy deer and elk populations, which can damage such crops. The legislature further finds that damage prevention is key to maintaining healthy deer and elk populations, wildlife-related recreational opportunities, and commercially productive agricultural and horticultural crops, and that the state, participants in wildlife recreation, and private landowners and tenants share the responsibility for damage prevention. Toward this end, the legislature encourages landowners and tenants to contribute through their land management practices to healthy wildlife populations and to provide access for related recreation. It is in the best interests of the state for the department of fish and wildlife to respond quickly to wildlife damage complaints and to work with these landowners and tenants to minimize and/or prevent damages and conflicts while maintaining deer and elk populations for enjoyment by all citizens of the state.

(3) A timely and simplified process for resolving claims for damages caused by deer and elk for commercial agricultural or horticultural products is beneficial to the claimant and the state.

[1996 c 54 § 1.]

RCW 77.36.010

Definitions.

Unless otherwise specified, the following definitions apply throughout this chapter:

(1) "Crop" means a commercially raised horticultural and/or agricultural product and includes growing or harvested product but does not include livestock. For the purposes of this chapter all parts of horticultural trees shall be considered a crop and shall be eligible for claims.

(2) "Emergency" means an unforeseen circumstance beyond the control of the landowner or tenant that presents a real and immediate threat to crops, domestic animals, or fowl.

(3) "Immediate family member" means spouse, brother, sister, grandparent, parent, child, or grandchild.

[1996 c 54 § 2.]

RCW 77.36.020

Game damage control -- Special hunt.

The department shall work closely with landowners and tenants suffering game damage problems to control damage without killing the animals when practical, to increase the harvest of damage-causing animals in hunting seasons, and to kill the animals when no other practical means of damage control is feasible.

If the department receives recurring complaints regarding property being damaged as described in this section or RCW 77.36.030 from the owner or tenant of real property, or receives such complaints from several such owners or tenants in a locale, the commission shall consider conducting a special hunt or special hunts to reduce the potential for such damage.

[1996 c 54 § 3.]

RCW 77.36.030

Trapping or killing wildlife causing damage -- Emergency situations.

(1) Subject to the following limitations and conditions, the owner, the owner's immediate family member, the owner's documented employee, or a tenant of real property may trap or kill on that property, without the licenses required under RCW 77.32.010 or authorization from the director under RCW 77.12.240, wild animals or wild birds that are damaging crops, domestic animals, or fowl:

(a) Threatened or endangered species shall not be hunted, trapped, or killed;

(b) Except in an emergency situation, deer, elk, and protected wildlife shall not be killed without a permit issued and conditioned by the director or the director's designee. In an emergency, the department may give verbal permission followed by written permission to trap or kill any deer, elk, or protected wildlife that is damaging crops, domestic animals, or fowl; and

(c) On privately owned cattle ranching lands, the land owner or lessee may declare an emergency only when the department has not responded within forty-eight hours after having been contacted by the land owner or lessee regarding damage caused by wild animals or wild birds. In such an emergency, the owner or lessee may trap or kill any deer, elk, or other protected wildlife that is causing the damage but deer and elk may only be killed if such lands were open to public hunting during the previous hunting season, or the closure to public hunting was coordinated with the department to protect property and livestock.

(2) Except for coyotes and Columbian ground squirrels, wildlife trapped or killed under this section remain the property of the state, and the person trapping or killing the wildlife shall notify the department immediately. The department shall dispose of wildlife so taken within three days of receiving such a notification and in a manner determined by the director to be in the best interest of the state.

[1996 c 54 § 4.]

RCW 77.36.040

Payment of claims for damages -- Procedure -- Limitations.

(1) Pursuant to this section, the director or the director's designee may distribute money appropriated to pay claims for damages to crops caused by wild deer or elk in an amount of up to ten thousand dollars per claim. Damages payable under this section are limited to the value of such commercially raised horticultural or agricultural crops, whether growing or harvested, and shall be paid only to the owner of the crop at the time of damage, without assignment. Damages shall not include damage to other real or personal property including other vegetation or animals, damages caused by animals other than wild deer or elk, lost profits, consequential damages, or any other damages whatsoever. These damages shall comprise the exclusive remedy for claims against the state for damages caused by wildlife.

(2) The director may adopt rules for the form of affidavits or proof to be provided in claims under this section. The director may adopt rules to specify the time and method of assessing damage. The burden of proving damages shall be on the claimant. Payment of claims shall remain subject to the other conditions and limits of this chapter.

(3) If funds are limited, payments of claims shall be prioritized in the order that the claims are received. No claim may be processed if:

(a) The claimant did not notify the department within ten days of discovery of the damage. If the claimant intends to take steps that prevent determination of damages, such as harvest of damaged crops, then the claimant shall notify the department as soon as reasonably possible after discovery so that the department has an opportunity to document the damage and take steps to prevent additional damage; or

(b) The claimant did not present a complete, written claim within sixty days after the damage, or the last day of damaging if the damage was of a continuing nature.

(4) The director or the director's designee may examine and assess the damage upon notice. The department and claimant may agree to an assessment of damages by a neutral person or persons knowledgeable in horticultural or agricultural practices. The department and claimant shall share equally in the costs of such third party examination and assessment of damage.

(5) There shall be no payment for damages if:

(a) The crops are on lands leased from any public agency;

(b) The landowner or claimant failed to use or maintain applicable damage prevention materials or methods furnished by the department, or failed to comply with a wildlife damage prevention agreement under RCW 77.12.260;

(c) The director has expended all funds appropriated for payment of such claims for the current fiscal year; or

(d) The damages are covered by insurance. The claimant shall notify the department at the time of claim of insurance coverage in the manner required by the director. Insurance coverage shall cover all damages prior to any payment under this chapter.

(6) When there is a determination of claim by the director or the director's designee pursuant to this section, the claimant has sixty days to accept the claim or it is deemed rejected.

[1996 c 54 § 5.]

RCW 77.36.050

Claimant refusal -- Excessive claims.

If the claimant does not accept the director's decision under RCW 77.36.040, or if the claim exceeds ten thousand dollars, then the claim may be filed with the office of risk management under RCW 4.92.040(5). The office of risk management shall recommend to the legislature whether the claim should be paid. If the legislature approves the claim, the director shall pay it from moneys appropriated for that purpose. No funds shall be expended for damages under this chapter except as appropriated by the legislature.

[1996 c 54 § 6.]

RCW 77.36.060

Claim refused -- Posted property.

The director may refuse to consider and pay claims of persons who have posted the property against hunting or who have not allowed public hunting during the season prior to the occurrence of the damages.

[1996 c 54 § 7.]

RCW 77.36.070

Limit on total claims from wildlife fund per fiscal year.

The department may pay no more than one hundred twenty thousand dollars per fiscal year from the wildlife fund for claims under RCW 77.36.040 and for assessment costs and compromise of claims. Such money shall be used to pay animal damage claims only if the claim meets the conditions of RCW 77.36.040 and the damage occurred in a place where the opportunity to hunt was not restricted or prohibited by a county, municipality, or other public entity during the season prior to the occurrence of the damage.

[1996 c 54 § 8.]

RCW 77.36.080

Limit on total claims from general fund per fiscal year -- Emergency exceptions.

(1) The department may pay no more than thirty thousand dollars per fiscal year from the general fund for claims under RCW 77.36.040 and for assessment costs and compromise of claims unless the legislature declares an emergency. Such money shall be used to pay animal damage claims only if the claim meets the conditions of RCW 77.36.040 and the damage occurred in a place where the opportunity to hunt was restricted or prohibited by a county, municipality, or other public entity during the season prior to the occurrence of the damage.

(2) The legislature may declare an emergency, defined for the purposes of this section as any happening arising from weather, other natural conditions, or fire that causes unusually great damage to commercially raised agricultural or horticultural crops by deer or elk. In an emergency, the department may pay as much as may be subsequently appropriated, in addition to the funds authorized under subsection (1) of this section, for claims under RCW 77.36.040 and for assessment and compromise of claims. Such money shall be used to pay animal damage claims only if the claim meets the conditions of RCW 77.36.040 and the department has expended all funds authorized under RCW 77.36.070 or subsection (1) of this section.

[1996 c 54 § 9.]

APPENDIX I Elk Damage Harvest History (Hot spot hunt/landowner preference/kill permit harvest)

Year	Hot Spot Elk	Landowner Preference Elk	Kill Permit Elk	Total Damage Elk
1991-92	3	1	unk.	4
1992-93	39*	4	unk.	43
1993-94	13	1	unk.	14
1995	unk.	unk.	unk.	----
1996	29	5	3	37
1997	5	0	1	6
1998	46	0	3	49
1999	9	3	0	12
TOTAL	144	14	7	165

* Damage hunts are restricted to antlerless elk only.

APPENDIX J

Washington Department of Fish and Wildlife

BLUE MOUNTAINS ELK CONTROL PLAN

Objectives

- Create a workable pilot project to establish effective elk damage control procedures
- Reduce the need for out-of-season harvest of elk
- Integrate wildlife management and wildlife damage control policies
- Test a variety of control techniques

Historical Overview

The Blue Mountains of southeast Washington are home to several herds of Rocky Mountain elk which total about 7,000 animals (1990).

After near extirpation at the turn of the century due largely to unregulated hunting, elk were reintroduced to the Blues from 1909 through 1930 with transplants from Yellowstone National park. By the 1960s, elk were thriving again. By the 1970s elk hunting peaked, and the Blue Mountains communities in Walla Walla, Columbia, Garfield, and Asotin counties were enjoying a near \$3 million annual benefit from that recreation. Over the years, numerous factors caused a shift in the balance between elk herds and agriculture. These factors include growing elk herds. Elk distribution, drought, severe winters, wildlife management practices and land management practices on public and private land.

Historically, elk have foraged on agricultural lands in the Blue Mountains. The department furnished over 21 miles of fence between 1943 and 1979 in an effort to alleviate damage caused by deer and elk. Most of this fence was placed to keep elk from invading agricultural lands. Much of the land adjoining fenced land is in the Umatilla National Forest, which comprises 14 percent of Asotin, 19 percent of Garfield and 28 percent of Columbia counties. Although fences have been constructed, it is not possible, nor desirable to “fence in” the national forest.

Washington Department of Wildlife (WDW) officials have tried to minimize this damage year after year with other methods of damage control, including: hazing elk out of areas with noise guns or helicopters, fencing haystacks, increasing hunting permits, and conducting special “hot spot” hunts - all with varying levels of short-term success.

By the 1980s, with more land in agricultural production than ever

before, and a slumping farm economy, landowners became less tolerant of elk damage. Elk damage claims have increased over the years, with an average between 1983 and 1987 of over \$11,000 a year. And when WDW's efforts to control elk continued to fail as a long-term solution, an adversarial relationship between WDW and some landowners developed.

This plan is an integrated effort to use a combination of appropriate strategies to attain a long-term reduction of conflict between wildlife and agricultural resources in the Blue Mountains region of Washington. Its working components include: conflict prevention; landowner relations; habitat improvement; corrective measures and compensation.

Preventive Measures

Establish population base and harvest goals by Game Management Unit.

Population and harvest objectives will be developed by local wildlife management and enforcement personnel under the direction of the Regional Manager. These will be forwarded to the wildlife management division for approval and consultation with the wildlife enforcement division.

Population goals may be revised depending upon the results of the "Blue Mountain Elk Study" and subsequent findings.

A harvest objective will be developed each year. Herd distribution, last year's damage, and current damage potential will be considered when establishing harvest levels. In a GMU that has a history of significant elk damage, adjustments in hunting season harvest levels of antlerless animals will be recommended.

The area wildlife biologist, sergeant, and district wildlife agent will present and discuss population/harvest goals with affected landowners.

Landowner Cooperation

Landowners will allow/encourage hunting on their lands. Whenever practical, landowners will assist in preventing damage by allowing public hunting during scheduled hunting seasons.

Habitat Stimulation and Enhancement

Burning

Washington Department of Wildlife will pursue the use of controlled burning on public lands. This will require coordination with the USFS and other agencies. The purpose of a controlled burn is to stimulate the growth of preferred browse plants on public lands which would attract animals away from private lands. It is estimated an effective program will require 2,000 - 3,000 acres.

Food Plots/Green Forage

Washington Department of Wildlife will initiate a program on establishing food plots on public lands, and private lands where feasible. Providing preferred alternatives to agricultural crops will lessen the amount of damage. Specific areas have not been identified. An effective program will require 3,000-5,000 acres.

A program patterned after Oregon's Green Forage Program will be implemented. This program will provide seed and/or fertilizer to landowners. The purpose is to provide excess growth of forage crops that are browsed by elk.

Mineral Enhancement

Washington Department of Wildlife will initiate a program to place mineral blocks on public and private lands, where permitted. The selection of locations will be dependent on the area's ability to keep elk from agricultural lands.

Ponds

Washington Department of Wildlife will work with the USFS and private landowners to provide ponds. Areas selected for the construction of ponds will be chosen based on need and the ability to hold or attract elk.

To identify habitat manipulation needs, prioritize them, provide technical assistance, and generally assure the effectiveness of the program, it is proposed that a steering committee be used. The committee should consist of the following: A local landowner, a member of the Columbia County Agriculture Improvement Association, a sportsperson from the local area, a representative from the U. S. Fish and Wildlife Service, the WDW area wildlife biologist, and the local sergeant.

Corrective Measures

Response to Damage complaints

Following the report of damage, Washington Department of Wildlife will contact the landowner and/or respond to the complaint within 48 hours.

Disbursing/Herding

During the months of March through August, two elk herders will be available to assist landowners.

The department will use a helicopter to attempt to move elk away from agricultural lands prior to calving.

Washington Department of Wildlife will continue to use and make available to landowners materials and devices e.g., propane guns, firecrackers, cracker shells, and shotgun shells for disbursing and redistributing.

Haystack Protection

Washington Department of Wildlife will furnish panels for the protection of haystacks that are being damaged by elk.

Elimination and dispersement

When no other practical means of damage control is feasible, selected elk may be killed out of season. An assessment will be made by field personnel to determine the effectiveness of remedial methods. Consideration will be given to such factors as time of year, extent of damage, potential for future damage and whether season adjustments are possible.

The numbers of elk eliminated will be the minimum necessary to help landowners disperse them from a crop that is being damaged. Most damage situations can be resolved with the harvest of five or less antlerless elk.

The preferred method of out of season elimination is to permit licensed hunters the opportunity to harvest the animals. The presence of hunters associated with the killing of a minimum number of animals has proven to be an effective means of dispersement. Hot spot damage control may be considered when the value of the potential claim exceeds \$1,000. The local wildlife agent, sergeant, and district wildlife biologist will determine the need for a hotspot hunt, recommend the season structure and the number of permits necessary. Authority for hot spot damage control will rest with the Regional Manager. The Regional Captain will administer the program.

This method of hot spot damage control will utilize hunters who are selected by the Director. If hot spot damage control is not effective or cannot be used, the Director may issue landowner kill permits.

Compensation Crop Substitution/Replacement

Landowners suffering crop damage may choose to receive hay as replacement for lost crops.

The advantages to the landowner are: almost immediate settlement, no requirement to file a formal damage claim, and quality (alfalfa) hay available at their convenience.

This method of compensation would apply in the following situation and manner:

- Landowner and local Washington Department of Wildlife representative agree on dollar value of damage.
- Cost of replacement (hay) will not exceed \$2,000, based on average local price at time of agreement.
- Both parties agree that the exchange, hay for damages, is full and final payment.

Formal Damage Claim

- **Claims of \$500 or less**
Where damage does not exceed \$500 and the landowner and WDW representative agree on the amount of loss, settlement will be at the local level. Payment can be expected within 15 days following agreement.
- **Claims in excess of \$500 and less than \$2,000.**
These claims will be processed and the claimant notified of the disposition within 60 days of receipt of the claim in Olympia. However, if a crop value cannot be established within 60 days, the claimant will be advised and the claim will be processed as soon as possible. Nothing will prohibit the claimant and the department from agreeing on a reasonable extension.
- **Claims denied by the Director, or payment amount refused by Claimant.**
These claims must go to the legislature for consideration.

Landowner Preference Permit

Purpose: To provide an alternative form of compensation to landowners incurring elk or deer damage.

Eligibility:

- Landowner or tenant must own or lease a minimum of 500 acres of cultivated land.
- The department has determined that deer or elk damage on affected crop exceeds or is expected to exceed \$500 per year. A permit will be considered for damage levels of less than \$500, but not less than \$250, if there has been a prior history of damage claims exceeding \$250 in at least two prior years.

Conditions:

- One antlerless permit will be issued free of charge per eligible person per year. Permit will be transferable among the immediate family. Immediate family includes wife, sons or daughters.
- Permit to be used only on property where claim originated.
- Permit will be considered compensation for a claim.

APPENDIX K-1 1996 - 99 Elk Agricultural Damage Claims

County	Date	Species	Crop	Claim	Paid	Status
Asotin	10-01-96	Elk	Unk.	Unk.	N/A	Rejected
Garfield	11-24-96	Elk	wheat	\$620.50	\$610.50	Paid
Asotin	1-24-97	Elk	hay stack	\$200.00	\$150.00	Paid
Asotin	1-27-97	Elk-Deer	hay stack	\$216.00	\$216.00	Paid
Asotin	1-25-97	Elk	barley	\$3,750.40	\$2,800.00	Paid
Asotin	8-28-97	Elk	barley	\$454.50	\$454.50	Paid
Asotin	10-20-97	Elk	wheat	\$364.12	\$331.12	Paid
Asotin	10-14-97	Elk	hay	\$103.68	\$103.68	Paid
Columbia	9-12-97	Elk-Deer	wheat	\$29,600.00	\$1,872.00	Paid
Columbia	9-12-97	Elk-Deer	wheat	\$10,800.00	\$8,075.68	Paid
Columbia	7-25-97	Elk-Deer	peas	\$6,360.24	\$6,360.24	Paid
Columbia	7-25-97	Elk-Deer	peas	\$990.18	\$990.18	Paid
Garfield	9-29-97	Elk	wheat	\$1,185.00	\$1,185.00	Paid
Walla Walla	11-3-97	Elk	wheat	\$6,868.00		Rejected
Walla Walla	11-3-97	Elk	peas	\$8,300.00		Rejected
Asotin	3-18-98	Elk-Deer	alfalfa	\$1,000.00	\$427.50	Paid
Columbia	8-17-98	Elk-Deer	wheat	\$200.00	\$200.00	Paid
Columbia	8-26-98	Elk	wheat	\$500.00	\$500.00	Paid
Columbia	8-31-98	Elk	wheat-oat	\$2,500.00	\$2,037.80	Paid
Columbia	8-31-98	Elk	barley	\$1,000.00	\$407.74	Paid
Columbia	10-08-98	Elk	Unk.	Unk.		Rejected
Garfield	8-31-98	Elk	barley	\$207.60	\$207.60	Paid
Walla Walla	9-13-98	Elk	barley	\$266.66	\$206.66	Paid
Walla Walla	8-28-98	Elk				Rejected
Total				\$75,486.88	\$26,728.46	35% paid

APPENDIX K-2 1999 Agricultural Elk Damage Claims

County	Date	Species	Crop	Claim	Paid	Status
Asotin	9-10-99	Elk	hay	\$543.00		
Columbia	8-02-99	Elk	peas	Unk.		Rejected
Columbia	8-02-99	Elk	wheat	Unk.		Rejected
Columbia	8-02-99	Elk	barley	Unk.		Rejected
Columbia	8-16-99	Elk	peas	\$4,985.79		
Columbia	9-20-99	Elk-Deer	wheat	\$5,000.00		
Columbia	9-20-99	Elk-Deer	barley	\$3,000.00		
Garfield	9-27-99	Elk	wheat	\$1,304.60		
Garfield	9-06-99	Elk	wheat	\$1,914.00	\$1,914.00	
Walla Walla	9-03-99	Elk-Deer	wheat	\$3,000.00		
Walla Walla	8-23-99	Elk	peas	\$4,125.00		

APPENDIX K-3 Elk Damage Claims-Annual Summary

YEAR	NO. CLAIMS	AMOUNT CLAIMS	NO. PAID	AMOUNT PAID	CLAIMS REJECTED
1996	2	\$620.50	1	\$610.50	1
1997	13	\$69,192.12	11	\$22,538.40	2
1998	9	\$5,674.26	7	\$3,987.30	2
1999	11	\$23,872.39	incomplete	incomplete	3
TOTAL	35	\$99,359.27			

APPENDIX L Rocky Mountain Elk Foundation Funded Projects in the Blue Mountains.

Year	Project	RMEF Funds	Yearly Totals
1987	Staumbaugh Ridge Burn	\$3,465.00	\$3,465.00
1988	Cook Ridge Fertilization Project	\$1,000.00	\$1,000.00
1989	Pomeroy Burn	\$6,000.00	\$6,000.00
1990	Tucannon #3 and Eckler burn Reseed	\$3,000.00	\$12,170.00
	Blue Mountain Elk Study (elk depredation)	\$5,000.00	
	Blue Mountain Elk Reproduction Study	\$4,170.00	
1991	Jim Creek Weed Control	\$1,250.00	\$1,250.00
1992	Hatchery Ridge Prescribed Burns	\$5,500.00	\$5,500.00
1993	Pomeroy Ranger district Salting (year 1)	\$2,000.00	\$17,555.00
	Blue Mountains Elk Mortality Study	\$8,000.00	
	Cottonwood Prescribed Burn	\$5,555.00	
	Pomeroy Ranger District Salting (year 2)	\$2,000.00	
1994	Blue Mountain Elk Calf Mortality Study (year 2)	\$8,000.00	\$27,900.00
	Miller Shingle Forage Enhancement	\$19,900.00	
1995	Blue Mountains Salting Project (year 3)	\$2,000.00	\$31,500.00
	Blue Mountains Elk Calf Mortality Study (year 3)	\$9,500.00	
	Miller Shingle Forage Enhancement	\$20,000.00	
1996	Pasture Winter Range Burn	\$2,500.00	\$23,500.00
	Winter Range Noxious Weed Control	\$5,250.00	
	Abels Ridge Winter Range Burn	\$2,500.00	
	Case Horn Winter Range Burn	\$5,250.00	
	Lick Creek Winter Range Burn	\$5,000.00	
	Water Pond Development (West Tucannon)	\$3,000.00	
1997	Sourdough Yellow Star Thistle Control	\$1,500.00	
	Wooten forage Enhancement	\$5,000.00	
	Asotin Creek Range Fertilization	\$6,000.00	\$18,750.00
	Wooten Weed Control	\$6,250.00	
1998	Asotin Creek Wildlife Area Fertilization	\$3,500.00	\$37,750.00
	Wooten Weed Control	\$6,250.00	
	Wooten Wildlife Area Field Restoration	\$5,000.00	
	Brachen Yellow Star Thistle Treatment	\$8,000.00	
	Lewis Creek Elk Burn	\$15,000.00	
1999	Meadow Prescribed Fire Vegetation Response Study	\$1,750.00	\$52,550.00
	Moonshine Winter Range Burn	\$4,000.00	
	Upper Tucannon Burn	\$15,000.00	
	Asotin Creek Fertilization	\$1,800.00	
	Asotin Creek Area Weed Control	\$5,000.00	
	Walla Walla Yellow Star Thistle	\$2,500.00	
	North Fork Asotin Creek Burn	\$5,000.00	
	Mt Horrible Burn	\$17,500.00	
2000	Middle Tucannon Yellow Star Thistle	\$3,700.00	\$20,800.00
	Cottonwood Winter Range Burn	\$4,000.00	
	Meadow Prescribed Fire Vegetation	\$1,100.00	
	Tallow Tail Burn	\$12,000.00	
Total RMEF Funding for Blue Mountains Projects 1987-2000			\$259,690.00

STATE OF WASHINGTON
GARY LOCKE, GOVERNOR

DEPARTMENT OF FISH AND WILDLIFE
JEFF KOENINGS PhD, DIRECTOR

WILDLIFE PROGRAM
DAVE BRITTELL, ASSISTANT DIRECTOR

GAME DIVISION
DAVE WARE, MANAGER

This Program Receives Federal Aid in Wildlife Restoration funds.
Project W-00-R, Category A, Project 1

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