DRAFT
03-15-2001

Washington State Elk Herd Plan

Mt. ST. HELENS ELK HERD

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March 2001

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Date

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Executive Summary

The Mt. St. Helens Elk Herd is one of ten herds identified in the state. It is one of the most important elk herds in the State as it provides significant recreational, aesthetic, and economic benefit to the citizens of Washington.

The purpose of this document is to provide direction for the management of the Mt. St. Helens elk resource into the future. This is a 5 year plan subject to amendment. Before the fifth year this plan should be updated, re-evaluated, amended, and implemented for another 5 year period. The plan will serve as a valuable reference document and guideline for WDFW, agency cooperators, landowners, tribes, and the general public. Priority management activities can be implemented as funding and other resources become available.

The three primary goals of the Mt. St. Helens Elk Herd Plan are; (1) to manage harvest of the elk herd for a sustained yield; (2) to manage elk for a variety of recreational, educational, and aesthetic purposes, including hunting, scientific study, and photography; and (3) to preserve, protect, perpetuate, manage, and enhance elk habitat to ensure healthy productive populations.

Specific elk herd and habitat objectives, problems, and strategies are identified 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 proposed. The following objectives have been identified:

- Manage the Mt. St. Helens Elk Herd using the best available science.
- Increase the estimated elk population from the current 1999 estimate of 12,500 to the mid-90's estimate of 15,000.
- Manage all open-entry elk units for post-hunting season bull ratios consistent with the statewide plan (currently $\geq$12 bulls per 100 cows) in conjunction with overall bull mortality rates $\leq$ 50%. Manage quality permit-only units for post-hunting season bull ratios greater than 24 bulls per 100 cows, in conjunction with overall bull mortality rates of $\leq$ 40%.
- Identify those factors associated with increasing elk damage and nuisance complaints.
- Reduce elk damage throughout the herd area.
- Maintain and enhance existing elk habitat on USFS lands.
- Increase habitat quality on the Mt. St. Helens Wildlife Area.
- Develop partnerships on private timberlands to maintain and enhance elk habitat.

Spending priorities have been identified for the next 5 years. The recommended annual priority expenditures for the Mt. St. Helens elk herd are as follows:

Priority Expenditure	**1st Year**	**5 Years**
● Pre-season elk surveys	$20,000.00	$100,000.00
● Post-season elk surveys	$3,000.00	$15,000.00
● Habitat improvement on St Helens WA	$25,000.00	$125,000.00
● Deer/elk study	$60,000.00	$160,000.00
● Monitor annual harvest	$12,000.00	$60,000.00
● Analysis of elk damage	$40,000.00	$120,000.00
TOTAL	$160,000.00	$580,000.00

MT. ST. HELENS ELK HERD PLAN

I Introduction

The herd plan is a step-down planning document under the umbrella of the Washington State Management Plan for Elk (WDFW 1997) and the Environmental Impact Statement for Elk Management (WDFW 1996). For management and administrative purposes the state has been divided into numerous Game Management Units (GMUs). A group of GMUs having similar characteristics is described as a Population Management Unit (PMU). The Mt. St. Helens Elk Herd is one of ten herds designated in Washington (Appendix A). In this context an elk herd is defined as a population within a recognized boundary as described by a combination of GMUs. The Mt. St. Helens Elk Herd is in PMUs 52, 53, 54, 56 and parts of PMU 51.

The Mt. St. Helens Elk Herd Plan is a five-year planning document subject to annual review and amendment. Once approved, the plan will remain in effect, as amended or until canceled. This document recognizes a responsibility of the WDFW to cooperative and collaborative management with affected Indian treaty tribes. It also recognizes the role of private landowners and public land management agencies, notably the U.S. Forest Service (USFS), Washington Department of Natural Resources (DNR) and U.S. Fish and Wildlife Service (USFWS), in elk management.

II Area Description

A. Location: The Mt. St. Helens Elk Herd encompasses habitat in 5 PMUs and 16 (GMUs) in Clark, Cowlitz, Klickitat, Lewis, and Skamania counties (Appendix B). The external boundaries of the geographic distribution of the Mt. St. Helens Elk Herd are as follows: That area east of Interstate Highway 5 from Centralia south to the Oregon state line; on the south by the Oregon-Washington State line; on the east by Highway 97, the Yakama Indian Reservation boundary, the Cascade Crest Trail to Lake Creek, on the north by Highway 12 from Lake Creek to Morton and SR 508, by SR 508 from Morton to the Alpha Road, Salzer Valley Road and point of beginning. A high degree of mixing occurs with the South Rainier Elk Herd along the Cowlitz River area, bordering GMUs 513 and 516. Physiographically, most of the area belongs within the Southern Washington Cascade Province except the westernmost portion, which belongs to the Puget Trough Province (Franklin and Dyrness 1973).

B. Ownership: Landownership is varied throughout the Mt. St. Helens herd area. Public and private landownership are approximately equal in the herd area. Much of the eastern portion of the area is under federal ownership through the U.S. Department of Agriculture's (USDA) Gifford Pinchot National Forest (GPNF). The majority of the western half of the herd area is in private industrial forest land, owned primarily by the Weyerhaeuser Company. The majority of the northwest and southwest corners are privately owned by individual landowners. Similarly, much

of the land along the major drainages in the herd area (Cowlitz, Toutle, Lewis, and Columbia rivers) is in small private holdings.

C. Topography: Elevations in the Mt. St. Helens herd area range from approximately 6.4m (21 ft) at Longview to 3,729m (12,307 ft) at Mt. Adams. Much of the herd area is located in the western Cascades and consists of steep mountainous terrain. The westernmost and northern portions of the herd area consist of rolling foothills and level to mostly level terrain along the major drainages and the I-5 corridor.

D. Vegetation: Originally the entire area was covered with dense coniferous forests. Considerable agricultural and later residential conversion has occurred in the Puget Trough area, although much of the area still remains in commercial forest land. The majority of the herd area is dominated by coniferous forests. Based on a combination of elevational and moisture gradients, Franklin and Dyrness (1973) described three major forest zones in the area. Named after the climax conifer species, these are the lower elevation Western Hemlock (*Tsuga heterophylla*), the mid-elevation Pacific Silver Fir (*Abies amabilis*), and the high elevation Mountain Hemlock (*T. mertensiana*) zones. Franklin and Dyrness (1973) list a variety of plant communities and associations for each of the major zones, reflecting differences in soil type, elevation, aspect, and slope.

The May 18, 1980 eruption of Mt. St. Helens drastically impacted habitat in roughly 575 km² blast zone (230 mi²) of the herd area. The lateral blast and lahar of the eruption destroyed approximately 4 billion board feet of standing timber. The associated ashfall from the eruption deposited a layer ranging from 25cm (10 in) deep 16.7 km (10 mi) from the crater to 2.5 cm (1 in) deep 100 km (60 mi) from the crater. Habitat in the blast zone was instantly transformed from a mixture of old-growth forest and younger secondary growth to pioneer, early successional stages.

E. Human Influences: Human activities have greatly influenced the landscape of the Mt. St. Helens herd area. Much of the herd area is intensively managed industrial or public forest. Outside of protected areas, timber harvesting operations have greatly changed the composition and structure of forest lands. This is most evident in the highly productive Western Hemlock Zone which includes virtually all of the elk winter range. Timber harvest has generally been by clear-cutting and following site preparation, these cuts are replanted to silviculturally desirable species. In the Western Hemlock Zone, Douglas fir (*Pseudotsuga menziesii*) tends to be a co-dominant species even in virgin timber stands. A change from the use of fire as the predominant site preparation method to intensive herbicide application may result in poorer forage quality on private timberlands. Initial research conducted by Weyerhaeuser and Oregon State University indicates that intensive herbicide application as a pre planting treatment results in a species shift from native to more exotic species (B. Anderson pers. comm 2000). Herbaceous plant communities and grass communities are impacted by these applications. From a landscape perspective, however, the current proposed scale of the program within the Mt. St.

Helens herd area is slight.

Agricultural conversion is common along the major drainages and in the lowland level terrain, particularly in the western and northern portions of the herd area. Agricultural production is varied and includes row and hay crops, orchards, and beef and dairy ranches. Small acreage farms supporting horses or alternative livestock species, such as llamas and emus, are increasingly common near urban areas.

Urban and suburban development is extensive along the I-5, U.S. 12, and State Route 14 corridors. Development has reduced elk habitat along State Routes 503 and 504, and within the Coweeman and Kalama drainages. As economic conditions continue to improve, urban growth and development will continue to expand in the western portions of the herd area.

Continued residential development along the Lewis River from approximately Merwin Reservoir upstream, is resulting in further loss of elk winter habitat due to both habitat conversion and increased human disturbance. Inundation along the Lewis River, through the creation of Merwin, Yale, and Swift Reservoirs, has already resulted in the loss of much quality winter range. Habitat management by Pacificorp as part of the Merwin Wildlife Habitat Project increased the quality of elk winter range associated with Merwin and Yale Reservoirs, but not the quantity. Residential development threatens to isolate these areas from migratory elk. Loss of winter range along the Lewis River, altered USFS management policies limiting timber harvest, favoring the development of late successional habitats, and some changes in herbicide application regimes by private timber companies are the most important habitat issues facing the Mt. St. Helens herd in the future.

F. Other Ungulates: The Mt. St. Helens herd shares the majority of its range with an estimated 55,000 black-tailed deer *(Odocoileus hemionus columbianus*). In the southeast portion of the herd area (GMU's 574, 578 (southern portion), and 588), management has emphasized deer by suppressing elk numbers through liberal "any elk" harvest regimes. The purpose of this strategy has been to, (1) minimize potential competition between elk and deer on the open grassland winter ranges used by migratory deer and, (2) reduce agricultural depredation complaints.

Populations of mountain goats (*Oreamnos americanus*) occur in and around the Goat Rocks Wilderness in the northeast portion of the herd range, the Mt. Adams area in the southeast, and possibly the Mt. St. Helens area as well. The reintroduction of bighorn sheep (*Ovis canadensis*) into the Dead Canyon area along the Klickitat River, in the southeast portion of the herd area, occurred in 1999.

Domestic ungulates occur throughout the herd area, with highest populations in the western agricultural areas. Cattle grazing on USFS and private timber lands occurs in limited areas in the southeast portion of the herd area. Two grazing allotments

occur on the GPNF in areas frequented by wintering elk (Cave Creek and Mt. Adams allotments). The impacts on wintering elk of cattle grazing in this area are unknown.

III Distribution

A. Historic Distribution: The portion of the herd area that lies west of the Cascade Crest is within the original range of the Roosevelt subspecies of North American elk (*Cervus elaphus roosevelti*). Within this area, however, elk were not evenly distributed. Given the nature of the original habitat (largely unbroken stands of dense forests), it is likely that elk were sparse or absent over large areas, tending to concentrate along riparian zones and near disturbed sites, such as fire seres and other natural openings. With the arrival of settlers in the early 1800's, elk populations were largely extirpated from much of the range of the Mt. St. Helens herd.

Releases of Rocky Mountain elk (*C. e. nelsoni*) relocated from Yellowstone National Park occurred at various times and locations throughout western Washington in the early 1900's. Records from 1939 document the releases of 50 elk in 1913 along the Naches River in Yakima County and 45 elk in1915 of elk near Vantage in Kittitas County. An additional release of 30 elk from Montana near Eatonville in 1932 may have also contributed to the Mt. St. Helens herd. However, small herds of elk reported in the early 1930's near Spirit Lake in Skamania County are thought to represent remnant populations of indigenous Roosevelt elk that survived there due to the inaccessibility of the area (Pautzke et al. 1939). An analysis of blood proteins from elk in the Mt. St. Helens area (Dratch and Gyllenstein 1983) showed that they had a closer affinity to samples from Idaho than to samples from the Olympics. These results clearly show the genetic contribution the introduced Rocky Mountain elk made to the Mt. St. Helens herd. WDFW is currently collecting DNA from elk throughout the Mt. St. Helens herd area to better assess the history of these elk.

B. Current Distribution: The Mt. St. Helens elk herd currently has a wider geographic distribution than at any historical time (Appendix C). Elk are currently in significant numbers throughout all GMUs comprising the herd area. Highest populations occur in the core GMUs of the Mt. St. Helens herd. Elk numbers in the remaining GMUs (Appendix B) have been suppressed to reduce damage problems (GMUs 564, 568, and 588).

C. Proposed Distribution: Chronic elk damage occurs in several areas within the herd boundary. Special permit hunts and issuance of landowner preference permits will continue to be the primary tools in addressing this damage. Outside of the primary damage areas (Elk Areas 029-Toledo, 052-Mossyrock, 053-Randle, and GMU 554-Yale), other pockets of landowner intolerance to elk exist, but large-scale elk

suppression in these areas is not proposed. A cursory evaluation of the efficacy of current methods of addressing elk damage is underway. Questions that need to be addressed are; (1) do late damage hunts reduce elk damage, or, (2) do they merely contribute to overall decline of elk numbers without an appreciable reduction in long-term elk damage, and, (3) would resolution be better served solely through the use of landowner preference permits that would target specific elk, possibly create a behavioral negative feedback, and be utilized sporadically as elk damage occurs.

Management strategies aimed at increasing elk numbers in GMUs 568 and 574 and the northern part of GMU 578 are proposed. These areas are predominantly forested. Thus, competition with wintering deer may not be as critical a factor as previously thought. Elk will continue to be discouraged in those areas of GMU 578 that are primarily open grasslands. A shift in management emphasis will necessitate a concurrent evaluation of deer population response to increasing elk numbers.

IV Herd Management

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

Estimated Population Size: The mean annual estimated population for the Mt. St. Helens herd from 1996-1999 was 13,350. The mean annual estimated population from 1991-1995 was 15,000. The WDFW objective (Washington Department of Fish and Wildlife 1997) is to increase and then maintain the Mt. St. Helens herd at a population level of approximately 15,000.

The eruption of Mt. St. Helens in 1980 probably helped enhance habitat for elk by returning approximately 575 km² (230 mi²) of forest to early successional habitat, which produced greater quantity and quality of forage. More recently, development of denser timber stands in the 'blast zone' has led to a decline in quantity and quality of forage. Without habitat enhancement, these maturing forests will result in localized declines in elk numbers in GMUs 522, 524, 556, and 558. Similarly, new management practices on USFS lands favoring the development of late successional habitat will reduce the habitat capability of USFS lands for elk, gradually resulting in declining elk populations, primarily in GMUs 560 and 572. Therefore, without extensive habitat enhancement, the Mt. St. Helens herd will likely decline in numbers in the future in response to lowered habitat capability.

Until a better method of mitigating elk damage is found, current strategies of suppression of local populations in damage areas (e.g. Elk Areas 029, 052, and 053) will continue. Additionally, the Mt. St. Helens herd will continue to be suppressed in units with high human populations, where the potential for elk-human conflicts are high (GMUs 564 and 568).

Elk populations are considerably below habitat capability in portions of GMUs 574, 578, and 588. Elk in these GMUs have been liberally hunted to limit population size and range. The primary purpose of this strategy has been to reduce potential conflicts with the migratory black-tailed deer in these units, which use open grasslands and open exposed slopes along the Columbia River for wintering. Historically, these units have been the most popular deer units in southwest Washington; therefore, management for deer has taken priority over enhancement of the elk resource. However, some of these areas, especially GMUs 568 and 574, are comprised primarily of habitat features more closely associated with elk ranges than with deer. The potential to increase elk numbers and recreational opportunities without deleterious impact to deer populations may be present in GMUs 568 and 574 and the northern parts of GMU 578.

Herd Composition: In western Washington, herd composition of elk is determined in the fall (pre-hunting season) because this is when the most unbiased information can be obtained. Statewide objectives for bull:cow ratios are reported using post-hunting season ratios to provide a comparable objective for western and eastern Washington.

Pre-hunting season herd composition surveys for the Mt. St. Helens herd are typically conducted from 15 September to 14 October. Special care is taken to avoid surveying units just prior to or during regulated hunts. Survey data since 1995 are given in Appendix D. Lack of consistent funding for survey work has resulted in sporadic coverage of many of the units within the herd range.

Using estimates of harvest and other sources of mortality, the pre-hunting season composition information for western Washington is converted to post-hunting season data to compare to statewide objectives, which are based on post-season surveys. The WDFW minimum bull elk survivorship objective of 12 bulls per 100 cows (Washington Dept. Fish and Wildlife 1997) is currently being met only in the permit-only harvesting units (GMUs 524, 554, and 556). The historic 3-pt units in the herd area (GMUs 558 and 572) meet post-season escapement objectives in some years. In the 2 years since the 1997 regulation changes that were specifically set to increase bull survivorship, the other open-entry 3-pt units (GMUs 505, 520, 550, and 560) continue to fail to meet escapement goals.

Calf production has historically been good in the Mt. St. Helens herd. Pre-hunting season calf:cow ratios are key in that they provide an index of the amount of mortality the elk population can withstand before declining. Calf:cow ratios greater than 30:100 indicate a minimum cow mortality threshold of about 15% assuming no overwinter calf mortality, and about 7.5% assuming 50% overwinter calf mortality. A regulated cow elk harvest rate of 2.5-5.0% has been the management objective for the Mt. St. Helens Herd.

Mortality: From 1995-1999, bull elk mortality rates throughout the Mt. St. Helens

herd area varied by harvesting strategy. In those units (GMUs 505, 516, 520, 550, and 560) where regulations have progressed from any bull, to spike-only with branched bull by permit, to 3-pt minimum; bull mortality rates have averaged about 71%. In the two years of 3-pt minimum regulations the bull mortality rates have declined from about 73% to about 65%. The traditional 3-pt units (GMUs 558 and 572) have averaged bull mortality rates of about 61%. The permit-only units (Margaret and Toutle) have averaged about 40% and about 45% respectively. A 2-year increase in bull mortality rates in these two units occurred from 1997-1999 due to higher harvesting rates and above average winter kill. Observed mortality rates include all forms of bull elk mortality (harvesting, predation, disease, accidents, etc). Typically, about 80% of the overall bull elk mortality can be attributed to hunting. Thus, hunting annually removes approximately 52% of the bull population in open entry 3-pt minimum units. In the permit units, legal harvest accounts for about 32% and 36% of annual bull mortality in the Margaret and Toutle units respectively.

The role predation plays on elk mortality in the Mt. St. Helens herd area is unknown. However, the total mortality rates for bull elk given above include all mortality factors, including harvest, predation, poaching and malnutrition. Poaching is an increasing problem in some areas of the herd area. With the onset of antler point restrictions (3-pt minimum), the occurrence of poaching and wastage of spikes has increased. Disease or other forms of natural mortality have not been a serious problem in the Mt. St. Helens herd. A possible exception to this occurs in the elk wintering along the Toutle River on the Mt. St. Helens Wildlife Area and adjacent lands. A notable winter die-off occurred in 1998, when over 79 elk succumbed to malnutrition on the Wildlife Area. This isolated event was precipitated by a number of factors; (1) early and sustained mid-elevation snowfall, (2) loss of low and mid-elevation habitat to erosion, (3) continuing maturation of the blast zone vegetation, and (4) low quality of existing forage.

The 1995-99 State elk harvest has averaged 1,617 (range: 1,352-1,883) for the Mt. St. Helens herd (Appendix E). For this period, State hunters harvested a mean of 1,009 (range: 831-1,297) bulls and 608 cows (range: 521-737). Until recently, reported tribal harvest in the herd area has been nominal. A 2-year period from 1997-1999 saw high levels of tribal harvest, primarily in the permit-only areas. Reported tribal harvest is shown in parentheses in Appendix E.

Current levels of bull elk mortality in open-entry, 3-point units are too high to allow elk managed under these harvesting strategies to meet WDFW escapement objectives. Management strategies that reduce overall bull elk mortality to $\leq$50% would allow these units to meet WDFW objectives. A bull elk mortality rate of $\leq$50% in combination with pre-hunting season bull:cow ratios of $\geq$25 bulls per 100 cows is necessary to meet WDFW escapement objectives for open-entry elk units.

In an effort to meet WDFW bull elk survivorship objectives, several any-bull units

(GMUs 505, 516, 520, 550, and 560) were managed under a spike-only, branched bull by permit harvesting strategy beginning in 1997. The 3-point GMUs (558 and 572) remained 3-pt minimum. Also in 1997, the general firearm season was shortened from 12 to 9 days. The move to spike-only and the reduction in season length were designed to determine if bull escapement could be increased. Public sentiment resulted in the abolishment of spike-only regulations after 1 year. The spike-only units were changed to 3-pt minimum units thereafter.

Recent survey data indicate that in most of the open-entry units, a 3-pt minimum rule in conjunction with a reduction in season length has not resulted in appreciably lowered bull mortality rates and achievement of escapement objectives. Habitat condition, amount of cover, and human access vary considerably across the range of the GMU's that comprise the Mt. St. Helens herd. It is likely that the 3-pt minimum may achieve escapement objectives in one unit (e.g GMU 572) but may not have the same result in another (e.g. GMU 520). Those GMUs currently managed to limit elk numbers (564, south part of 578, and 588) will continue under an any-elk harvest strategy because of damage problems. Management in GMUs 568, 574, and the northern part of 578, may change, in an effort to increase overall elk numbers.

Bull elk survivorship in quality units (GMUs 524 and 556) currently meets or exceeds levels necessary to achieve WDFW bull elk escapement objectives. The percentage of mature bulls in these two units, however, has been declining in recent years. Two years of increased tribal harvest and one severe winter resulted in a decline from about 30% mature bulls to about 12% in the Margaret unit. Mature bulls now only comprise 8% of the Toutle bull population. In the absence of high levels of un-regulated harvest, continued conservative permit allocation should result in a recovery of mature bull numbers.

B. Social and Economic Values

Hunter Days: In 1999, an estimated 27,247 hunters spent an estimated 135,776 days afield hunting for Mt. St. Helens elk. Hunter participation has averaged 23,933 hunters since 1995. The overall trend in hunter effort is stable, but the recent 3-year trend is increasing. Increasing hunter pressure, in conjunction with a stable to declining elk herd and general decline in habitat will likely lead to increased hunter competition and an overall decline in hunt quality in the Mt. St. Helens herd area. The revenue generated by hunters contributes significantly to the local economies within the boundaries of the herd area. Based upon figures compiled in a 1996 national survey, approximately 30.4 million dollars is generated annually either directly or indirectly by hunters in the area encompassed by the Mt. St. Helens herd.

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

Historically, harvest regimes in the units comprising the Mt. St. Helens herd have been variable (Appendix F) These harvesting strategies have ranged from; (1) any bull, (2) 'spike-only' and branched bull by permit-only, (3) 3-pt minimum, (4) any elk, (5) limited entry by permit-only. Legal animal descriptions and permit seasons are only a part of the harvest strategies. Equally important is season lengths, early and late seasons, timing of seasons, resource allocation, and equipment restrictions.

Currently, units in the Mt. St. Helens herd are managed under one of three harvest regimes; (1) 3-pt minimum, (2) any elk, and (3) limited entry by permit-only. Most units (n=7) are under a 3-pt minimum harvest regulation, which puts the harvest pressure on the older animals in the population. Five units in which any elk is legal, have been managed to reduce competition with both migratory black-tailed deer and land development. The two limited entry, permit-only units are managed to provide a quality hunting experience with excellent opportunity for permit holders to both see many elk and harvest an older age-class bull.

There are questions about the propriety of late-season hunting of elk in the Mt. St. Helens herd. At issue are the December hunts in areas frequently covered by significant snowfall at that time, primarily GMU's 574 (Wind River) and 578 (West Klickitat). Elk are nutritionally stressed during this period, and increased movements during periods of deep snowfall (>18 in) can result in extreme energy losses, which may affect survival and productivity. Merrill et al. (1987) determined that elk in the Mt. St. Helens herd were in a negative energy balance by November. Thus, elk are losing energy and weight from November through March or April, regardless of whether they are hunted. Other research (e.g. Thomas and Toweill 1982 and Cole et al. 1997) has documented the effects of human disturbance on elk behavior and movement patterns. Also well documented are the energetic costs of metabolism for ungulates during winter (e.g., Moen 1973, Parker et al. 1984, Jiang and Hudson 1994). Late season hunting likely causes elk to lose energy reserves. If not pursued, they would retain those reserves further into the winter and spring. Whether current late hunts adversely affect productivity or subsequent winter survival needs to be evaluated.

Nonconsumptive Uses: Viewing is popular throughout all GMUs in the herd area, particularly those around the Mt. St. Helens National Volcanic Monument (MSHNVM). Groups of several hundred elk are often visible along the mud flow of the Toutle River immediately west of Mt. St. Helens, in GMU 522. This area is comprised of portions of the MSHNVM, the Mt. St. Helens Wildlife Area, and industrial forest land owned by the Weyerhaeuser Corporation. Several established

viewing and interpretive sites occur along State Highway 504 overlooking the Toutle mudflow, and receive many visitors throughout the year. GMU 522 (Loowit) is closed to all hunting.

Damage: Elk damage to commercial agricultural and horticultural crops or silvicultural areas in the Mt. St. Helens herd area is becoming more widespread . Depredation occurs on farms and ranches occupying the Cowlitz River lowlands, the Toutle River area, and the Glenwood Valley in Klickitat County. Horticultural damage periodically occurs in developed areas adjacent to the Cowlitz and Lewis Rivers, and sporadically in most developed areas of the elk range.

Elk/human conflicts are also increasing in the Mt. St. Helens herd area. Encroaching residential development, particularly in the Coweeman and Kalama River drainages and loss of wintering habitat are resulting in elevated levels of human dissatisfaction with the presence of elk. This has led to an increasing use of lethal removal, through special late damage hunts and issuance of landowner preference permits, as the mode for conflict resolution.

WDFW and private landowners and tenants share the responsibility for damage prevention. RCW 77.36.005-080 outlines management authority for controlling elk damage and payment of claims (Appendix G). Elk damage complaints and claims received for damages in the Mt. St. Helens Herd area from 1991 through 2000 are summarized in Appendix H. A total of 7 claims were received requesting $14,046.08 in compensation. WDFW paid out $3,970.50 or approximately 28% of the claimed amount. Cowlitz and Lewis County received the majority of elk damage complaints and monetary claims.

In areas of widespread historic damage, specifically the Toledo and Mossyrock areas, special late-season hunts have been used to suppress the local population of elk. The effectiveness of these special hunts in decreasing elk damage and/or suppressing the local elk population have not been objectively quantified. An initial analysis of current methodologies is underway.

Landowner preference permits have been used sparingly in the Mt. St. Helens herd area. These permits allow landowners to kill an elk to compensate for damage. In addition, landowners agree to not pursue claims. Since 1997, a total of 13 preference permits have been issued to twelve different landowners, mostly (n = 10) in the Mossyrock area. All of these landowners reside within the boundaries of established elk areas. Landowner damage hunts allocate a specific number of permits to the landowner that they distribute to hunters. The advantage of this technique is that the landowner can select the hunters.

Comments gathered from public meetings and other contacts, indicate that damage control hunts are becoming increasingly unpopular among the general public. Hunters do not favor continued general reductions in elk populations in areas where

damage problems do not seem to be declining. Late damage hunts may be contributing to overall declines in elk numbers in the surrounding areas, without achieving the goal of reducing damage in the targeted area. Little is currently known of what factors, other than elk numbers, predispose areas to damage. Cultural practices (cultivating techniques, crops grown), landscape characteristics, and elk behavior may all contribute to chronic damage. Greater understanding of these factors may contribute to better mitigation of chronic damage situations.

Tribal Hunting: After the Buchanan court decision of 1996, elk herds in several areas within Region 5 experienced increased tribal hunting pressure and harvest. Tribal harvest in the Mt. St. Helens herd area was primarily concentrated in GMUs 520, 524, and 556. Enforcement officer mortality forms, field checks, and locker checks corroborated the reported tribal removals of elk in the Region 5 permit-only units during the 1997 and 1998 hunting seasons. In 1997-98, bull mortality rates in GMU 556 increased from 39% to 52%. Locations of documented tribal kills taken from mortality forms, field checks, and locker forms, in conjunction with tribal reporting; indicated that this increase can be largely explained by the number of bull elk taken by tribal hunters, as permit removals were at the same levels as in previous years. Winter loss during that time period was normal.

Increased mortality rates were also observed in GMU 524 during the same time period. Surveys and modeling indicate that the quality hunting provided by prime bulls in these permit only units, will not be available if bull mortality continued at the 1997-99 rate. The 1998-99 winter loss in the Toutle River valley undoubtedly also contributed to the reduction in branched bulls, although the total contribution of these losses to the populations in the Toutle and Margaret units is unknown, due to the lack of data concerning migration patterns of these animals. Surveys indicated a decline of prime bulls in both these units of >50%.

V Habitat Management

Presently, direct mortality, rather than habitat quantity or quality, has the greatest influence on overall elk numbers in the Mt. St. Helens herd. Continued habitat loss, however, is a major problem. Hydroelectric dam construction has already resulted in the loss of prime historic wintering habitat along the Lewis River. The Mt. St. Helens herd faces further significant loss of elk habitat through the following activities: (1) creation of Late Successional Reserve areas on USFS lands which will result in loss of both summering and wintering habitat; (2) changing forestry practices by private timber companies; (3) continued residential development in the major drainages, including the Lewis River corridor, which has already been impacted by hydroelectric dam construction.

On the GPNF, Late Successional Reserves where timber harvest is limited, are expected to decrease the carrying capacity for elk by up to 40% in certain areas (R. Scharpf, GPNF,

unpubl. data). Efforts to minimize this impact are currently being evaluated by the GPNF and the WDFW in conjunction with the WDFW's Integrated Land Management program for the Lewis River watershed (Washington Depart. of Fish and Wildlife 1995). Alternative strategies such as manipulating Managed Late Successional Areas to provide elk forage are also being evaluated.

The move from prescribed burning of clearcut units prior to re-forestation to a more intensive herbicide treatment may substantially impact both quality and quantity of forage for elk on private timber lands. Intensive chemical site preparation will result in less species diversity in clearcuts and a likely reduction in nutritive quality (B. Anderson pers. comm. 2000).

Mitigation for the loss of winter range along the Lewis River corridor has been addressed in the Merwin Wildlife Management Plan, a cooperative agreement between Pacificorp (Portland, OR) and the WDFW for the Merwin Reservoir. Pacificorp is the utility company which manages Merwin, Swift, and Yale reservoirs. Similar negotiations are currently ongoing with Pacificorp over Yale Reservoir. WDFW's Integrated Landscape Management program for the Lewis River watershed, proposed a plan to modify residential development to minimize impacts to winter range (Washington Department of Fish and Wildlife 1995). Unfortunately, implementation of the plan has been slow to materialize. Additional winter range must be protected in the Lewis River watershed to ensure maintenance of the elk population.

Habitat improvement projects have been conducted sporadically throughout the range of the Mt. St. Helens herd (Appendix I). Consistent funding and cooperation with the USFS will be paramount to future habitat improvement efforts within the Gifford Pinchot National Forest. Large-scale habitat improvements on industrial timberlands within the herd area may prove more difficult, as increasing elk numbers may be detrimental to tree production.

The 2,800 acre Mt. St. Helens Wildlife Area (includes portions of GMUs 522, 524 and 556) has been managed for both summer and winter elk habitat on the mud flow of the Toutle River, immediately downstream from Mt. St. Helens. Poor range conditions exist on the area, which supports approximately 200 resident and over 600 migratory elk. In the winter of 1998-99 a relatively large winter kill of at least 79 animals was documented (Appendix J). The actual number of mortalities along the entire Toutle River Valley was certainly higher than the 79 found on the Wildlife Area itself. Although high calf mortality is to be expected during a winter kill, the poor quality of the wintering habitat was evident in the large proportion of prime age animals that succumbed during this particular event.

Enhancement of forage quantity and quality on the Toutle mud flow through plantings and fertilization continues to be the management emphasis. With the cooperation of the Rocky Mountain Elk Foundation, The Mt. St. Helens Preservation Society, and other volunteers, seeding of three hundred and sixty acres occurred in 1999. A cooperative

project with Weyerhaueser in the spring of 1999 fertilized an additional 200 acres. Additional seeding and fertilization in 2000 brought the total seeded acreage to approximately 700 acres, with an additional 500 acres fertilized. Results of these projects have been variable. Stabilization of the mud flow itself through tree planting is also occurring.

The Mt. St. Helens Wildlife Area is receiving by transfer from the Washington Department of Transportation, an additional 4,000 acres of property along the Toutle mudflow downstream of the existing property. Habitat enhancements in the form of timber harvest, fertilization, and plantings are planned for the bulk of the acquisition. This should greatly improve the wintering habitat along the mudflow from Hoffstadt Creek to the sediment dam.

The Mt. St. Helens Wildlife Area is also extremely popular for elk viewing, with several thousands of viewers each year observing elk from lookouts located along the Mt. St. Helens Highway (SR 504) or from foot or horseback on the mudflow itself. Habitat condition on the Wildlife Area must continue to be significantly improved to support the numbers of elk currently wintering there.

WDFW have concerns regarding cattle grazing on wintering areas, specifically the Cave Creek and Mt. Adams grazing allotments in the GPNF. Warm season grazing may limit the amount of forage available to wintering elk in these areas.

VI. Research Needs

1. Elk depredation to commercial agricultural crops is an ongoing and increasing problem in the Mt. St. Helens herd area, and a variety of special hunts are held to address this problem. The effectiveness of these damage control hunts is unknown. Comments obtained during public meetings and through other hunter contacts indicate that public sentiment is decidedly against these hunts. Similarly, the landscape characteristics which contribute to damage areas are also unknown. Another question to be answered is how big a role elk behavior plays in areas of chronic damage. Is depredation a learned behavior or merely an opportunistic one? As human development continues to encroach on elk habitat, elk/human conflicts will likely continue to increase. Research is needed to address the damage issue in westside habitats, both from a preventative and corrective aspect. What landscape and cultural factors predispose areas to elk damage? Are current strategies effective, or do alternative methods need to be developed?

2. Investigate the effects on deer populations of shifting management emphasis from deer to elk in GMUs 568, 574, and the northern part of 578. These units have been primarily managed for deer and are popular deer hunting units. Any shift in management strategy with the potential to impact deer populations in these areas must be evaluated.

Evidence throughout the range of mule deer (*Odocoileus hemionus hemionus*) indicates that in those areas where elk and mule deer overlap, mule deer populations have declined (e.g. Lindsey et al 1997). Mule deer, however, favor more open, less forested habitats than do black-tailed deer. Little has been done to study competitive interactions between elk and black-tailed deer in forested habitats. Several studies have documented significant dietary overlap between elk and blacktails (Leslie et al. 1984 and Kirchhoff and Larson 1998). Thus, the possibility for competition exists. However, competition would likely be manifest only when habitat was limited. Research should evaluate the effects of increasing elk numbers on black-tailed deer populations through an analysis of deer productivity and condition as elk numbers increase.

3. The impacts of late-season (through December) hunting on elk nutritional condition have not been quantified. Controversy exists over the influence of season length on elk nutritional status, and consequently winter survival and productivity. Excessive stress during winter has been shown to decrease winter survival and productivity the following spring in elk populations. However, late hunting has not been established as a cause-and-effect mechanism for this stress.

VII. Management Goals

A. Herd Management Goals:

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

1.) Manage harvest of the Mt. St. Helens elk herd for a sustained yield.
2.) Manage elk for a variety of recreational, educational, and aesthetic purposes including, hunting, scientific study, 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:* Manage the Mt. St. Helens herd utilizing the best science.

   Problem:
   Inadequate survey intensity limits the ability to collect adequate samples of elk herd age and sex composition data.

   Strategies:
   a. Monitor annual production and recruitment levels using pre-hunting season composition surveys. Increase present level of pre-hunting season composition surveys by 100% to more precisely (90% C.I. of ≤10% of the mean) document herd demographics and population size.
   b. If bull mortality rates or herd recruitment levels are below objectives, develop strategies to determine the cause and adjust harvest management regimes.

   Problem: 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. Accurate harvest data are critical for making sound management recommendations.

   Strategies:
   a. Initiate mandatory reporting system to better assess State recreational harvest.

2. *Objective:* Manage open-entry elk units for post-hunting season bull ratios of ≥12 bulls per 100 cows in combination with overall bull mortality rates ≤50%. Manage quality GMUs for minimum bull:cow ratios of ≥24 bulls per 100 cows in combination with overall bull mortality rates ≤40%.

   Problem: Most open-entry 3-pt minimum units fail to meet bull survivorship and escapement objectives.

   Strategies:
   a. Maintain current management strategies for GMUs for at least the next 3 years to determine whether they achieve objectives for bull:cow ratios and bull mortality rates. Historic 3-pt units have, in some years, achieved escapement objectives. More time is needed to assess the 3-pt regulation in all open-entry units.
   b. Evaluate alternate harvesting strategies along with current regimes to determine methods which consistently achieve escapement goals.

3. *Objective:* Increase the current estimated elk population to the pre-1995 mean of 15,000 in keeping with both habitat and cultural carrying capacities.

   Problems: The Mt. St. Helens Elk Herd has declined from an estimated pre-

1995 population of 15,000 to a present estimated population of 12,500.

Strategies:
a. Increase elk in GMUs 568, 574, and northern part of 578.
b. Evaluate efficacy of current damage strategies.

4. *Objective:* Reduce damage caused by elk.

   Problems: Elk damage and human/elk conflicts are increasing throughout the herd area.

   Strategies:
   a. Identify factors which predispose areas to damage, such as increasing elk numbers, elk behavior, cultural practices (cultivating techniques, crops grown), and landscape patterns. Use knowledge gained to develop and implement new strategies for alleviating damage.
   b. Use hot-spot hunts, landowner damage hunts, and landowner preference permits that target depredating individual elk. In areas of widespread historic damage, use special late-season hunts to suppress local populations of elk.
   c. Increase forage enhancement projects on WDFW Wildlife Areas and industrial forest lands.
   d. Discourage elk from increasing in elk elimination units (GMUs 564 and 588) to reduce damages.

5. *Objective:* Increase public appreciation of the elk resource and promote nonconsumptive values of elk including viewing and photographic opportunities.

   Problems: Increasing human populations are resulting in less tolerance for elk, which is resulting in an increase in damage removals and some landowner dissatisfaction.

   Strategies:
   a. Develop a brochure for the public with general information on living with elk, their natural history and management.

6. *Objective:* Continue to monitor the health and winter survival of elk wintering in GMU 522 (Loo-wit) and Mt. St. Helens Wildlife Area.

   Problems: Large numbers of wintering elk utilize the area. Public use and scrutiny of the area is high.

   Strategies:
   a. Continue to utilize volunteer groups to conduct winter surveys on mudflow.

B. Habitat Management Objectives, Problems, and Strategies:

1. *Objective:* Maintain current habitat capability of USFS lands to support elk (no net loss).

   Problem: Creation of Late Successional Reserves (LSR's) and overall decline in timber harvest on USFS lands will result in gradual decline in elk carrying capacity.

   Strategies:
   a. Work with USFS to develop silvicultural treatments to increase elk emphasis on Managed Late Successional Areas.
   b. Identify suitable matrix (non-LSR) lands and other early successional habitat to manage preferentially for elk.
   c. Monitor elk use and forage availability on wintering areas within cattle grazing allotments.
   d. Continue efforts to reduce road densities to 1 mi/mi^2 on wintering areas.

2. *Objective:* Maintain current level of elk winter range along the Lewis River.

   Problem: Continued development along the reservoirs and upper Lewis River watershed are reducing elk winter range.

   Strategies:
   a. Continue to work with Pacificorp on the Merwin Wildlife Plan and other hydropower mitigation agreements for elk winter range.
   b. Continue efforts to reduce road densities to 1 mi/mi^2 on wintering areas.
   c. Coordinate with local government entities to develop comprehensive land use plans that maintain current winter range capacity for elk.
   d. Acquire management authority on critical elk wintering areas through conservation easements, lease agreements, land exchanges, landowner incentives, and fee purchases.
   e. Work with both public and private landowners to design development strategies which do not result in declines in winter range capacity for elk.
   f. Continue to work with the USFS and Department of Natural Resources (DNR) to manage for no net loss of winter range capacity from forest practices.

3. *Objective:* Improve the quantity and quality of elk habitat on the Mt. St. Helens Wildlife Area.

   Problem: The Mt. St. Helens Wildlife Area provides critical winter range for up to 700 elk. Poor quality of existing habitat and continual habitat loss due to changes in the Toutle River resulted in high levels of winter mortality in 1998-

99.

Strategies:

a. Increase the acreage producing preferred grasses and forbs.
b. Decrease noxious weed levels below current levels on important elk habitats.
c. Plant a minimum of 50% of erosion prone areas with palatable woody forage plantings to improve forage quantity and quality, as well as stabilize the remaining mudflow.
d. Collaborate with the Weyerhaeuser Corporation on complimentary management of their adjacent property to increase habitat capacity above current levels.
e. Reduce non-compatible public use during periods of winter stress.
f. Improve forage quality through regular fertilization applications.

4. *Objective:* Maintain quality of elk summer ranges on all land ownerships.

Problem: Changing forestry practices may result in a decline in forage quantity and quality.

Strategies:

a. Participate in District Teams and review Forest Practice Applications and other project proposals for their potential affects on elk habitat and recommend mitigative measures.
b. Increase forage enhancement efforts with public and private landowners.
c. Identify and protect key habitats.

5. *Objective:* Develop partnerships to improve habitat for elk.

Problem: Varied ownership throughout the range of the Mt. St. Helens herd make creation of partnerships paramount in affecting positive habitat change.

Strategies:

a. Seek ALIA funding for acquisitions, enhancements, and easements.
b. Develop MOU's, Conservation Easements, Cooperative Agreements with various stakeholders.
c. Seek funding and support from conservation organizations.
d. Work closely with agencies and industrial timber landowners.
e. Solicit volunteers to conduct projects.

IX Spending Priorities

B. Pre-hunting season composition surveys: Pre-hunting season composition surveys should be substantially increased in the Mt. St. Helens herd area. Fall pre-

season composition surveys allow the estimation of mortality rates of bull elk and the level of antlerless harvest that the herd can sustain. These rates must be more precisely estimated to assess the affects of harvesting strategies as well as to more precisely estimate elk population sizes. These surveys are the single most important elk management activity conducted by WDFW.
Priority: High
Timeline: Fall/Spring annually 2001-2006
Cost: $23,000/year

B. Enhance habitat quality of the Mt. St. Helens Wildlife Area: Mortality from nutritional stress has occurred on the Mt. St. Helens Wildlife Area. The Mt. St. Helens Wildlife Area is also extremely popular for elk viewing. Habitat condition on the Wildlife Area needs to be improved if current numbers of elk are to be maintained without increasing winter mortality.
Priority: High
Timeline: Spring/Summer annually 2001-2006
Cost: $25,000/year

C. Evaluate effects of elk on black-tailed deer productivity and nutritional condition in GMUs 568, 574, and northern part of 578. A shift in management emphasis from deer to elk in these areas mandates an evaluation of the effects of increasing elk numbers on deer population demographics. Monitoring of productivity, population estimates, and nutritional status of deer should be conducted as elk numbers increase.
Priority: High
Timeline: Fall/winter/spring annually 2002-2006
Cost: $60,000/year for first year, $25,000/year thereafter

D. Investigate the effectiveness of damage control hunts and develop alternative damage control strategies: Damage is increasing throughout the Mt. St. Helens herd area. Little is currently known of what factors, other than elk numbers, predispose areas to damage. Agricultural practices (e.g. cultivating techniques, crop selection), landscape characteristics, and elk behavior may all be factors contributing to chronic elk damage situations. Additionally, crop depredation may be a learned behavior. If the majority of elk damage is being done by small groups of animals, then current larger-scale damage hunts may not be effective in alleviating damage and may contribute to overall elk declines in the surrounding areas. These damage control hunts are becoming increasingly unpopular among the general public, which do not favor continued general reductions in elk populations in areas where damage problems do not seem to be declining. Greater understanding of the factors contributing to elk damage is needed to effectively alleviate chronic damage situations.
Priority: Moderate
Timeline: Spring/Summer annually 2002-2004
Cost: $40,000/year for three years

E. Evaluate the impact of late season hunting on elk energetics: Controversy exists over late-season hunting of elk in the Mt. St. Helens herd (primarily GMU 578). Late archery hunts through the middle of December also occur in several units. Elk are nutritionally stressed during this period, and increased movements during periods of deep snowfall (≥18 in) result in extreme energy losses, which may affect survival and productivity. The impacts of these hunts on elk mortality and productivity are currently unknown.
Priority: Moderate
Timeline: Summer/Fall annually 2002-2003
Cost: $40,000/year for two years

X Herd Plan Review and Amendment

The Mt. St. Helens Elk Herd Plan is identified as a five-year document subject to annual review and amendment. As new information is gathered and conditions change it well be necessary to maintain a free exchange of communication between WDFW, Tribes, and cooperators. An annual review of the plan by WDFW will be announced and new information and emergent issued shared with all cooperators.

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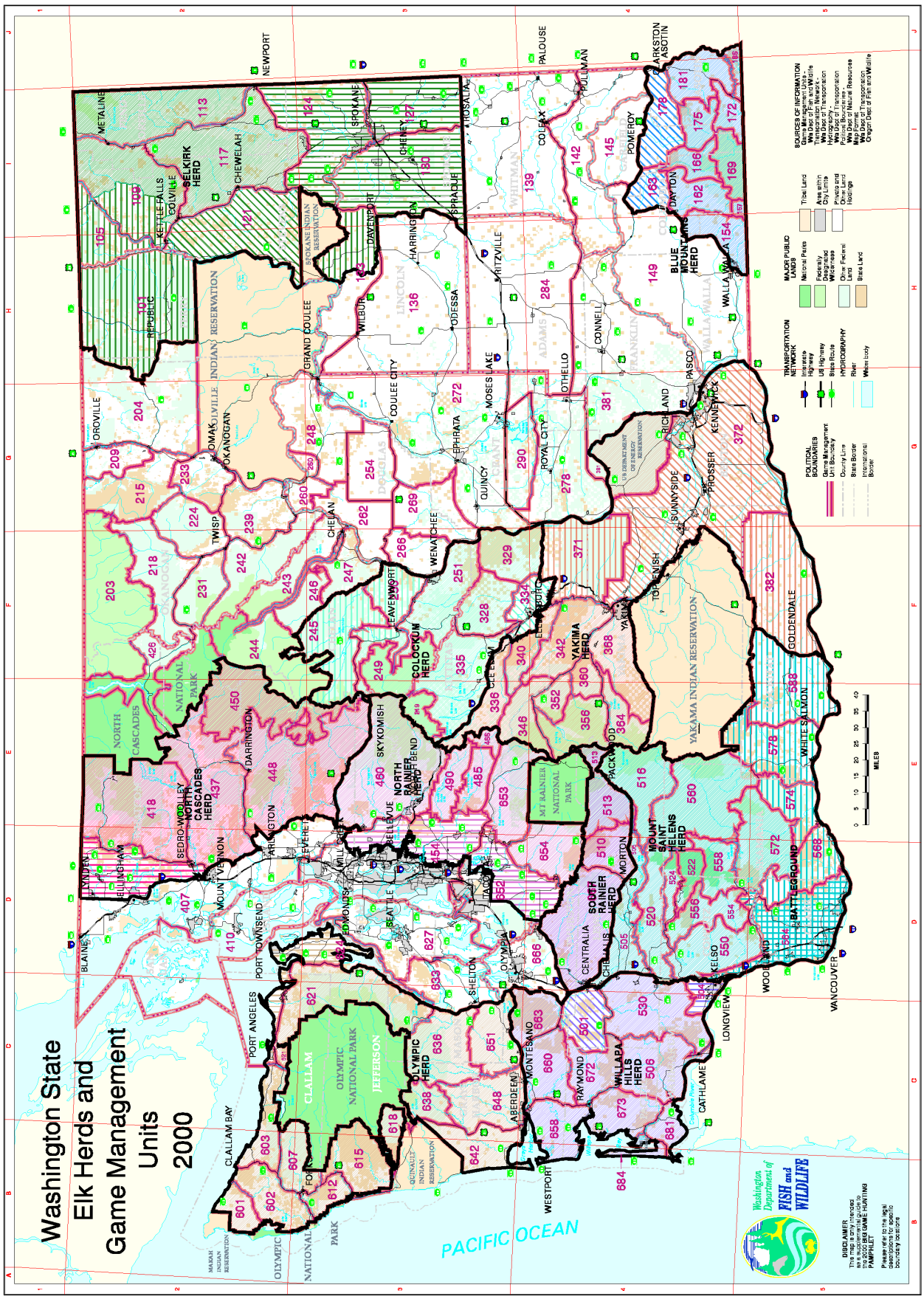
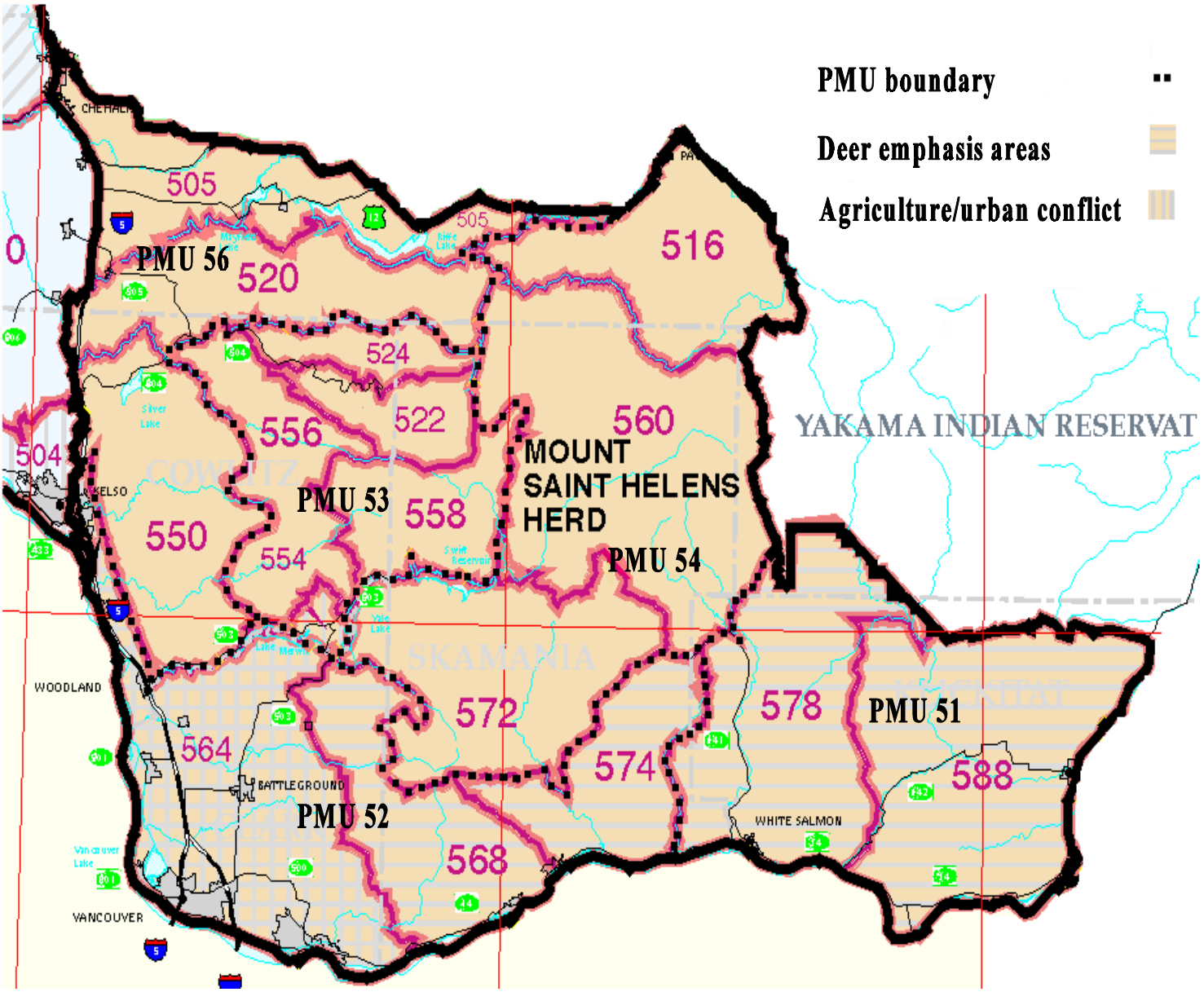
APPENDIX A Location of the Mt. St. Helens Elk Herd in Washington.



APPENDIX B Mt. St. Helens Elk Herd Area , GMUs and PMUs.



APPENDIX C Mt. St. Helens Elk Herd Seasonal Distribution

(NOT YET AVAILABLE)

APPENDIX D Aerial Survey Elk Composition Data From Mt. St. Helens Herd, 1995-1999

Year	GMUs	Spike Bulls	Raghorn Bulls	Prime Bulls	Total Bulls	Cows	Calves	Total	Ratio B/Cow/C
1999	520/550	9	12	3	24	79	40	143	30/100/51
1999	524	13	39	11	63	145	44	252	43/100/31
1999	556	5	20	3	28	84	29	141	33/100/35
1999	558	12	20	3	35	108	42	185	32/100/39
1998	520/550	40	9	10	59	156	52	267	37/100/33
1998	524	38	37	20	95	193	70	358	49/100/36
1998	556	29	20	7	56	158	52	266	35/100/33
1997	505	2	4	2	8	44	24	76	18/100/54
1997	520/550	34	9	3	46	176	74	296	26/100/42
1997	524	35	39	26	100	210	100	410	48/100/48
1997	556	18	17	11	46	131	64	237	35/100/49
1997	558	5	3	2	10	39	15	64	26/100/38
1996	520/550	16	5	2	23	90	38	151	26/100/42
1996	524	34	29	27	90	167	75	332	54/100/45
1996	556	25	27	16	68	109	53	230	62/100/49
1996	558/572	14	13	2	29	75	40	144	39/100/53
1995	520/550	32	5	2	39	165	89	293	24/100/54
1995	524	25	28	20	73	128	70	271	57/100/55
1995	556	18	13	9	40	92	47	179	43/100/51
1995	558/572	3	1	1	5	20	6	31	25/100/30

APPENDIX E Reported Harvest (Tribal Harvest) From Mt. St. Helens Herd, 1995-1999

Year	Bulls	Cows	Total
1999	1297+(0)	586+(0)	1883+(0)
1998	880+(106)	737+(76)	1617+(182)
1997	831+(56)	521+(46)	1352+(102)
1996	1142+(3)	593+(0)	1735+(3)
1995	896+(4)	605+(14)	1501+(18)

APPENDIX F General Firearm Hunting Seasons For Mt. St. Helens Herd, 1995-1999

Year	GMUs 505, 520, 550, 560	GMU 522	GMUs 524, 554, 556	GMUs 558, 572	GMUs 564, 568, 574 578, 588
1999	3-Pt Minimum	Closed	Permit-only	3-Pt	Any Elk
1998	3-Pt Minimum	Closed	Permit-only	3-Pt	Any Elk
1997	Spike-only, Branched Bull by Permit	Closed	Permit-only	3-Pt	Any Elk
1996	Any Bull	Closed	Permit-only	3-Pt	Any Bull
1995	Any Bull	Closed	Permit-only	3-Pt	Any Bull

APPENDIX G 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 H Elk Damage Claims and Payments in the Mt. St. Helens Elk Herd Area

Year	County	Date	Species	Crop	Claim $$	Paid $$
FY91	Lewis		elk	fence	$641.00	$41.00
	Lewis		elk	fence	$598.04	$100.00
	Lewis		elk	fence/trees	$1,872.00	$0.00
FY92	None		elk		$0.00	$0.00
FY93	Lewis		elk	?	$0.00	$0.00
FY94	None		elk		$0.00	$0.00
FY95	None		elk		$0.00	$0.00
FY96	Cowlitz	2/28/96	elk	hay	$600.00	$600.00
	Lewis	1/16/96	elk	alfalfa	$915.00	$855.00
	Lewis	5/21/96	elk/deer	trees	$9,070.80	$2,000.00
FY97	None		elk		$0.00	$0.00
FY98	None		elk		$0.00	$0.00
FY99	Cowlitz	9/16/98	elk	lettuce/peas	$349.24	$374.50
FY00	None		elk		$0.00	$0.00
Total					**$14,046.08**	**$3,970.50**
Average					**$2,006.58**	**$567.21**

APPENDIX I Elk Enhancement Projects Within Mt. St. Helens Herd Area, 1992-1999

Year	Project	Cooperator	RMEF	Total
1992	Lone Butte Wildlife Area Prescribed Burn	GPNF	$0	$9,000
1992	Mt. St. Helens Interpretive Site	GPNF	$3,586	$7,086
1992	Lewis River Prescribed Burn	GPNF	$0	$1,500
1992	Lewis River Home Range Study	WDFW	$2,500	$94,300
1992	North Fork Ridge Viewpoint	WDOT, Weyco	$36,741	$66,741
1992	Woods Creek Watchable Wildlife Interpretive	GPNF	$2,000	$4,000
1992	Black Creek Swamp Rehabilitation (Prescribed burn)	GPNF	$0	$2,500
1993	Mt. St. Helens Weed Control	WDFW	$450	$1,450
1993	Swift Reservoir Access Mgmt	WDFW, Plum Creek	$18,000	$36,000
1993	Swofford Pond Habitat Enhancement (seeding)	WDFW, Tacoma Public Utility	$3,466	$4,397
1993	Lone Butte Access Mgmt		$0	$1,500
1994	Woods Creek Interpretive Site	GPNF	$250	$500
1994	Mt. St. Helens/Olympic Peninsula Elk Population Study	WDFW	$5,000	$12,500
1997	Sawtooth Berry Fields Restoration	GPNF	$4,000	$17,000
1998	Mt. St. Helens Fertilization and Planting	WDFW, Weyco	$8,000	$18,011
1999	Mt. St. Helens Forage Expansion #2 (seeding)	WDFW, Mt St. Helens Pres Soc., Weyco	$37,500	$75,000

APPENDIX J Documented Winter Mortality on the Mt. St. Helens Wildlife Area, 1999.

Date 1999	Calf	Prime cow	Old cow	Spike bull	Prime bull	Unk.	Total
2/12	1	4	0	0	0	0	5
2/23	3	2	1	1	0	0	7
3/11	15	3	1	0	0	0	19
3/26	9	10	6	0	4	2	31
4/7	1	8	3	3	1	1	17
Total	29	27	11	4	5	3	79

Washington State Elk Herd Plan

MT. ST. HELENS ELK HERD

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

STATE OF WASHINGTON

GARY LOCKE, GOVERNOR

DEPARTMENT OF FISH AND WILDLIFE
JEFF KOENINGS, PH.D., 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

This report should be cited as:
Washington Department of Fish and Wildlife. 2000. Mt. St. Helens Elk Herd Plan. Wildlife Management Program, Washington Department of Fish and Wildlife, Olympia. 33 pp.