

Washington State Elk Herd Plan

OLYMPIC ELK HERD

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

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Prepared by WDFW Staff

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Director, Washington Department of Fish and Wildlife

Date

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OLYMPIC ELK HERD PLAN

Executive Summary

The Olympic Elk Herd is one of ten elk herds identified in Washington. It is located on the Olympic Peninsula, generally north of the Chehalis River and west of Hood Canal. The herd is an important resource that provides significant recreational, aesthetic, cultural, and economic benefits to the people of the state. The current distribution of the Olympic Peninsula elk population is similar to its historic distribution. Based on historical harvest information, elk numbers peaked in the late 1970s with a conservative estimate of about 12,000 elk outside of Olympic National Park. Current population estimates are based on a combination of harvest data, telemetry studies, and mark-resight surveys. These techniques yielded a fall population estimate of approximately 8,600 in the Game Management Units (GMUs) surrounding Olympic National Park in the year 2000.

The purpose of this plan is to provide direction for the management of the Olympic elk resource into the future. This is a five-year plan subject to amendment. Before the fifth year, this plan should be updated, re-evaluated, and amended or extended 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 will be carried out as funding and resources become available.

There are three primary goals stated in the Olympic Elk Herd Plan; (1) to preserve, protect, perpetuate, manage, and enhance elk and their habitats to ensure healthy, productive populations, and ecosystem integrity; (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 manage the elk herd for a sustainable yield.

Management of the Olympic Elk Herd requires close coordination and cooperation with Indian tribes, public and private land managers, and the public. A Cooperative Elk Management Group (CEMG 1999) made up of representatives from the Olympic Peninsula tribes and WDFW was established in 1996 in an effort to better manage this valued resource. In view of the declining elk populations as well as the potential for further declines, the Cooperative Elk Management Group worked together with the objective to, “reverse the decline in the Olympic Herd elk numbers and ensure elk populations throughout the Olympic Peninsula are huntable in perpetuity.”

Specific elk herd and habitat management goals, objectives, problems, and strategies have been stated in this 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 the accuracy of the scientific database for managing the Olympic Herd.

- Increase elk numbers to a combined GMU population of at least 11,350 elk outside of Olympic National Park.
- Pursue management strategies and practices that will maintain the proportion of adult bulls in the population consistent with statewide objectives.
- Work cooperatively with the Indian tribes to implement the Olympic Elk Herd plan.
- Increase public awareness of the Olympic Peninsula elk resource and promote viewing, photographic, and educational opportunities.
- Minimize damage caused by elk.
- Increase and improve habitat where it is a limiting factor on meeting the elk population objectives identified in this plan.
- Work with landowners to reduce open road densities where road densities exceed management objectives.
- Work with public and private landowners to enhance elk habitats and protect elk forage in areas heavily utilized by elk during spring green-up.

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

<u>Priority</u>	<u>First year cost</u>	<u>Five-year cost</u>
• Aerial elk composition surveys (Pre and post season)	\$21,000.00	\$105,000.00
• Population estimation using mark-resight method	\$0.00	\$60,000.00
• Elk mortality monitoring	\$0.00	\$60,000.00
• Green forage habitat enhancement program	\$20,000.00	\$500,000.00
• Road management partnerships	<u>\$20,000.00</u>	<u>\$420,000.00</u>
Total	\$61,000.00	\$1,145,000.00

OLYMPIC ELK HERD PLAN

Introduction

The Olympic Elk Herd Plan provides the historical background, current conditions, and trends for this important natural resource. This plan is primarily an assessment document that identifies management problems, develops solutions to overcome these problems, and sets direction. It outlines goals, objectives, problems, and strategies, and helps establish priorities to resolve management issues concerning this elk herd. It also provides a readily accessible resource for biological information collected from the herd and identifies the current inadequacies of this scientific information.

This plan is one of ten elk herd plans under the umbrella of the Washington State Game Management Plan (Washington Department of Fish and Wildlife 2002b). It is a five-year planning document subject to annual review and amendment. Once approved, this plan will remain in effect, as amended or until canceled.

There are a number of important groups that will affect the success of this plan. The Washington Department of Fish and Wildlife (WDFW) recognizes the treaty hunting rights of federally recognized treaty tribes, and their right to implement their own hunting regulations. This document recognizes a responsibility of the WDFW to cooperate and collaborate with the Makah, Quileute, Hoh, Quinault, Squaxin, Skokomish, Port Gamble S'Klallam, Jamestown S'Klallam, and Lower Elwha Klallam tribes. It also recognizes the pivotal role that private landowners and public land management agencies, notably the U. S. Forest Service, the National Park Service, and Washington Department of Natural Resources, play in assisting to manage and sustain this elk herd.

Herd Area Description

Location

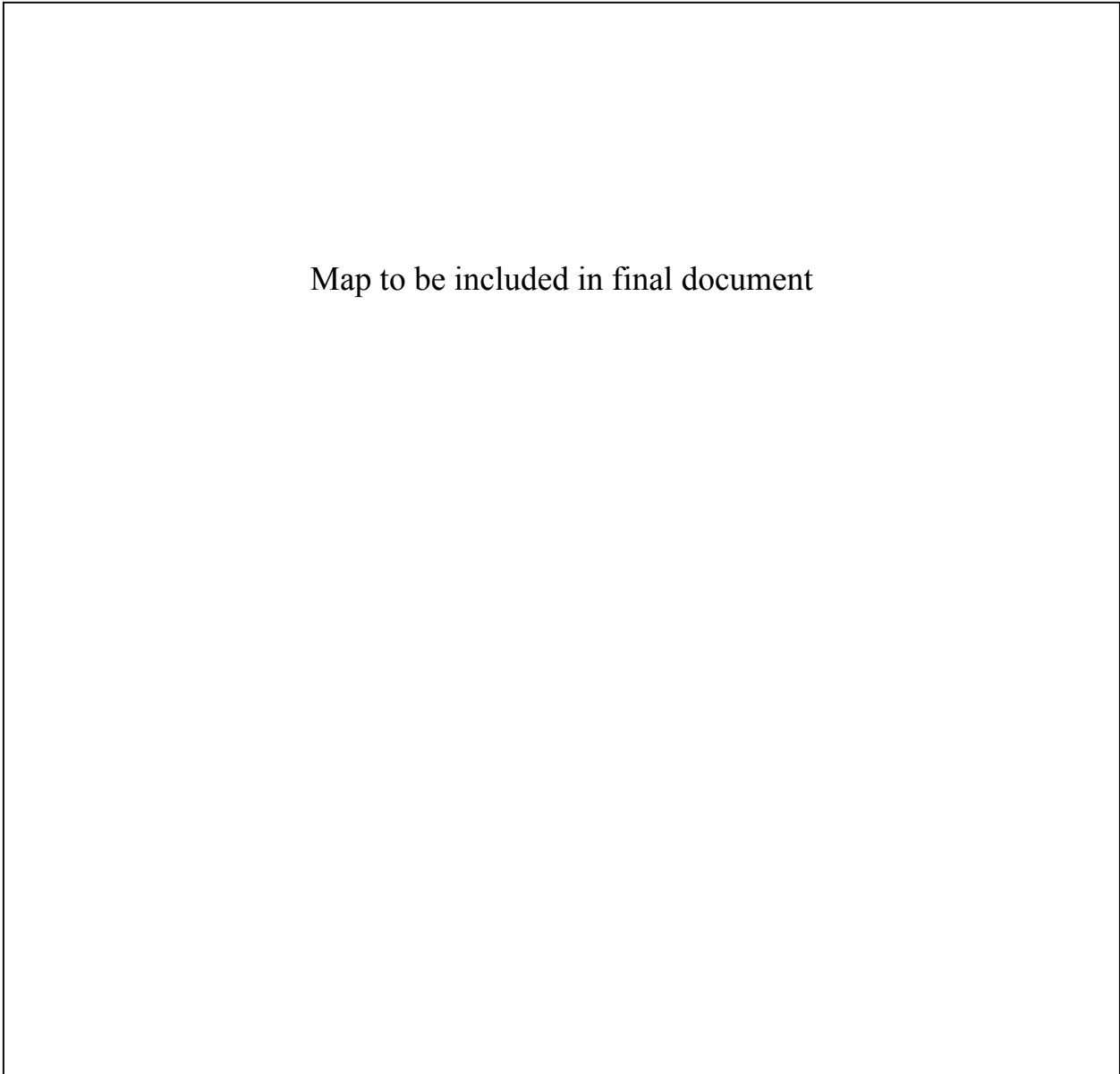
The Olympic elk herd occurs throughout much of the Olympic Peninsula proper and adjacent areas. For purposes of this herd plan the Olympic Peninsula is defined as the area enclosed by State Highways 8 and 12 to the south, Hood Canal to the east and the Straits of Juan de Fuca, and the Pacific Ocean to the north and west. This area contains approximately 4 million acres (Map 1).

For management and administrative purposes Washington State has been divided into 134 Game Management Units (GMUs). For planning, an elk herd is defined as a population within a recognized boundary as described by a combination of GMUs. The Olympic elk herd includes the following 15 GMUs: Hoko (601), Dickey (602), Pysht (603), Solduc (607), Goodman (612), Clearwater (615), Matheny (618), Olympic (621), Coyle (624), Mason Lake (633), Skokomish (636), Quinault Ridge (638), Copalis (642), Wynoochee (648), and Satsop (651) (Map 1).

Ownership

Much of the land utilized by elk in this area is in public ownership. Federal lands include over 922,000 acres in the Olympic National Park (ONP) consisting of the core of the Olympic Mountains proper, as well as portions of coastal areas along the Pacific coast. Olympic National Forest (ONF) lands adjacent to ONP include an additional 643,000 acres. The State of Washington through the Department of Natural Resources, manages 368,000 acres of forest lands in the herd area, of which the 168,000 acre Clearwater Block is the largest. Indian Reservation lands encompass over 255,000 acres, the largest being 208,000 acres in the Quinault Indian Nation Reservation. The remainder of the land is in private residential, agriculture, or industrial timber company lands.

Map 1. The Olympic Elk Herd Area



Map to be included in final document

Topography

The Olympic Peninsula is made up of the central core of the rugged Olympic Mountains surrounded by nearly level lowlands. On the east, the lowland strip is 3 to 16 kilometers (2 to 10 miles) wide. The lowland strips are narrow on the north, but 16 to 32 kilometers (10 to 20 miles) wide on the west, and 48 kilometers (30 miles) wide along the south side of the peninsula. Most ridges in the Olympic Mountains are 1,200 to 1,500 meters (3,900 to 4,900 feet) in elevation, with some higher peaks attaining elevations of 2,100 to 2,400 meters (6,900 to 7,900 feet). Glaciation has strongly influenced the landforms. All main river valleys are broad and U-shaped. The extremely high precipitation in the interior has caused rapid down cutting by streams, resulting in precipitous mountain slopes (Franklin and Dyrness 1973).

Vegetation

The Olympic Herd area is within the Olympic Peninsula Physiographic Province as described by Franklin and Dyrness (1973). Dominant plant communities are described in zones that reflect elevation and moisture gradients.

The low lying areas of the west side of the Olympics, from sea level to 150 meters (500 ft.), are in the Sitka spruce (*Picea sitchensis*) zone. Precipitation averages 200 to 300 cm (80 to 120 inches) and soils are deep, relatively rich, and fine textured. Mature forest stands are dense and tall, with lush understories of shrubs, herbs, and mosses. Sitka spruce, western hemlock (*Tsuga heterophylla*), and Douglas fir (*Pseudotsuga menziesii*) are the most common tree species (Franklin and Dyrness 1973).

The western hemlock zone is by far the most extensive within the Olympic Peninsula. It occurs between 150 and 550 meters (500 to 1,800 feet) on the west side and from sea level to 1,125 meters (3,700 feet) on the drier eastern slopes. Precipitation averages 150 to 300 cm (60-120 inches), occurring mainly in the winter. Throughout the western hemlock zone, Douglas fir is often a co-dominant species, even in old growth stands. Western red cedar (*Thuja plicata*) is common in this zone on lower elevation wet slopes and stream terraces (Franklin and Dyrness 1973).

With increasing elevation, the western hemlock zone is replaced by the Pacific silver fir (*Abies amabilis*) zone. This transition occurs at about 550 meters (1,800 feet.) on the west side and 1,125 meters (3,700 ft.) on the eastern slopes (Franklin and Dyrness 1973). Precipitation in this zone ranges from 200 to 500 cm (80 to 200 inches) and soils are coarse and poor. Dominant trees are silver fir and western hemlock, with an understory of ericaceous shrubs and herbs (Henderson et al. 1989).

The highest elevation forested areas consist of two subalpine zones distinguished by the amount of precipitation. The mountain hemlock (*Tsuga mertensiana*) zone is typical of areas above 1,000 meters (3,200 feet) in the wetter west and central part of the peninsula. It is replaced by the subalpine fir (*Abies lasiocarpa*) zone in the drier northeast part of the peninsula above 1,200 meters (3,900 feet). These areas also have open parklands and subalpine meadows with rich herb communities (Franklin and Dyrness 1973, Henderson et al. 1989).

Historically, the area below timberline was covered by dense forests, except for openings such as disturbed sites, riparian areas, and edaphic climax. These forests were among the densest in the United States and the lower elevations were part of the temperate coniferous rain forest biome.

Both the Sitka spruce and western hemlock zones have changed dramatically due to logging and forest management. After the removal of the climax western hemlock and Sitka spruce, many sites were replanted with Douglas fir. On many sites this required burning of clear-cut areas.

Agriculture in suitable lowlands and rapid timber removal followed by subsequent high intensity forest management has greatly altered plant communities. Today much of the commercial forest timberlands (public and private) are young seral stands, which were either planted or are a product of natural re-seeding of logged or burned sites.

Human Influences

Human impacts on this elk herd occur in a number of direct and indirect ways. In terms of total area affected, commercial timber harvests and subsequent silvicultural practices have had the biggest impact. The initial impact of logging activities was beneficial for elk. Large scale logging operations initially opened up the original, virgin forest. This created large open areas that produced abundant ungulate forage. As a result, numbers of elk increased. There are indications that elk numbers in the herd area were highest during the decade of the 1970's.

Management of logged sites has changed over time. More intensive management in recent years has decreased the total forage available to elk and reduced the total time period of forage availability. More recently, the practice of burning clear cuts has been drastically curtailed because of air quality concerns. Burning created good conditions for the development of elk forage. Timber companies have turned to herbicide spraying to reduce competition from “undesirable” vegetation, including important elk forage species (Johnson 2001).

Another impact has come from the construction of roads for logging activities. For example, in the Sequim area road density increased from 0.46 miles per square mile in 1960 to 1.86-miles/square mile in 1973. By 1992 the road density was 3.02-miles/square mile (Holtrop and Hart 1993). High road densities decrease the total forage available to elk, and the increased disturbance leads to poor forage utilization since elk tend to avoid roads (Hansen 1993).

The increase in motorized access also makes elk vulnerable to hunting and poaching. Harvest is the largest source of mortality on adult elk in the Olympic herd. More roads make it easier to find animals and transport them, and larger clearcuts make it easier for hunters to see animals in the field. In many areas WDFW has worked with landowners to implement road management programs to reduce access.

A lesser impact on the elk herd, but one with increasing negative potential, is the conversion of forest and range type lands to rural residential areas and other development. While the total number of acres involved in this conversion is relatively small it typically involves lower elevation, often agricultural, lands that are important to elk during the winter. In effect, such areas are converted from prime elk winter range to areas where elk are considered a nuisance.

Taxonomy

Taxonomically considered distinct, Roosevelt elk (*Cervus elaphus roosevelti*) are among the largest members of the red deer family. The Roosevelt subspecies of elk are large and tend to have somewhat darker pelage than the Rocky Mountain subspecies. It is thought that historically Roosevelt elk were widely distributed in western Washington, while Rocky Mountain elk were found primarily in eastern Washington.

Other Ungulates

Throughout the herd area, elk share the land with black-tailed deer (*Odocoileus hemionus columbianus*). There is some competition for forage between these two ruminant species, although huntable populations of both occur in most of the area. Deer are more tolerant of human disturbance and elk are more efficient digesters of marginal forage. Thus, given different circumstances either species may have an advantage over the other.

Distribution

Historic Distribution

Roosevelt elk historically occurred in the northwest coastal region from Vancouver Island south to northern California. In Washington State, Roosevelt elk occurred west of the Cascade crest, south to the Columbia River. Elk have occurred on the Olympic Peninsula for at least 3,000 years (Croes and Hackenberger, 1988). The only known transfer of elk into the Olympic herd area was a release of 24 elk from the adjacent Chehalis Valley (GMU 660) into the Skokomish Valley (GMU 636) in 1997.

Current Distribution

The current distribution (Map 2) of elk on the Olympic Peninsula is similar to their historic distribution. Elk numbers are highest on the west side of the Olympics, followed by the south Olympic drainages (especially those in the area between the Skokomish and Humptulips River systems). Small, somewhat isolated groups occur in a few of the northeast and eastside drainages including the upper Dungeness, Dosewallips, Duckabush, and Hamma Hamma river drainages. Elk populations may intermingle on summer ranges in the interior of the Olympics, but migrate to separate winter ranges along major river drainages (Schirato and Murphie 1997). Movements of bulls between these groups and drainages may occur regularly, especially during the rut (Happe, Smith, and Michaelis 2000). Historical sources indicate this distribution hasn't changed significantly, although population changes have occurred over the years.

Proposed Distribution

The proposed distribution in this plan is essentially the same as the current distribution. The current distribution is not due to random factors, but reflects habitat/environmental conditions favorable to elk populations. A major concern is the increasing redistribution of some elk groups onto agricultural lands. In the long-term, ways must be found to make forest habitat adjacent to agricultural lands more attractive to elk.

Map 2 Olympic Elk Herd Distribution



Herd Management

Herd History

Beginning in the latter part of the 19th century, elk populations within the northwest coastal region began to decline. The reasons for the decline are unclear, but it was likely due to the introduction of modern weapons, and improved transportation that gave greater access to many areas. This decline continued into the early years of the 20th century. Goldman (1926) reported

in his field diary that elk populations on the Olympic Peninsula in 1905 numbered about 9,000 for the entire Olympic Peninsula. In 1905 the State legislature made it unlawful to kill elk. In 1909 President Theodore Roosevelt created Mount Olympus National Monument for the protection of the Olympic elk.

Due to their geographic isolation, Olympic elk maintained themselves in the core area of the Olympic Peninsula, even when elk had been eliminated in many areas of the state by the turn of the century. Even at the lowest numbers early in the twentieth century, the population densities of Roosevelt elk on the Olympic Peninsula exceeded that of elk in other areas of Washington State. Following establishment of the Mount Olympus National Monument, and under full protection, populations of Roosevelt elk on the peninsula increased steadily. Initially, large herds occurred mainly along major river drainages, but as logging opened up lowlands and ridges alike, elk populations responded to what was a significant increase in overall carrying capacity.

Population increases continued even with the return of state regulated hunting seasons in 1936, because increased clear-cut logging created additional forage. It is likely that populations, on the whole, increased through the 1970s. Logging operations on the Olympic Peninsula increased after World War II creating a habitat mix that greatly increased the carrying capacity for elk. This logging created a mix of old growth and new clearcuts. The clearcuts increased the amount of forage, while the old growth provided cover. The peak of timber harvest in Washington occurred in the late 1970s, and it appears elk populations reflected that peak. By the 1980s it was clear that elk populations on the Olympic Peninsula as a whole had leveled off, and that hunting took a large proportion of the annual production. Based on harvest estimates from the early to mid-1980s it is estimated that elk numbers in all GMUs, excluding the land areas of Olympic National Park as well as reservation lands, totaled at least 10,000 animals in early fall. This would have been the minimum number of elk needed to support the average harvest recorded during that period. This estimate assumes that all of the mortality on adult elk was due to reported hunting. This tends to underestimate the population since there are other sources of mortality including unreported legal harvest, poaching, and natural mortality. A more realistic figure would have been about 12,000 elk in all GMUs in early fall. Again, this figure excludes animals within Olympic National Park.

In 1990, Olympic National Park (Houston et al. 1990) estimated that 5,000 elk resided in the park at some time of the year. Many of the elk were migratory, spending summers in the park and wintering in lowland drainages outside the park.

Houston et al. (1990) conducted elk surveys on winter ranges along river corridors in Olympic National Park from the Elwha River south through Sol Duc, Calawah, Bogachiel, Hoh, South Fork Hoh, Queets, and Quinault rivers. Houston's surveys on winter ranges yielded a population estimate of 3,000 to 4,000 on the west and north sides of Olympic National Park.

Estimated Current Population Size

The most current, year 2000, fall population estimate for the Olympic elk herd outside Olympic National Park is 8,610. Table 1 provides the elk population estimates and population objectives for the Olympic Elk Herd by GMU. The estimates are based on a combination of mark-resight

surveys, population reconstruction using harvest data, and telemetry data. The population objectives in Table 1 are discussed on page 28

Table 1. Estimate of Fall 2000 Elk Population Size by GMU			
GMU	2000 Population Estimate	Basis of Estimate*	Population Objective
601- Hoko	300	McCoy 2000, (M)	500
602 - Dickey	1,100	CEMG 2000, (M)	1,400
603 - Pysht	160	WDFW (R)	300
607 - Sol Duc	600	Nickelson and Anderson 1996, (M)	900
612 - Goodman	600	WDFW 2000, (M)	900
615 - Clearwater	1,800	WDFW 2000, (M)	2,000
618 - Matheny	800	WDFW 1993, (M)	900
621 - Olympic	300	WDFW (T)	400
624 - Coyle	100	WDFW estimate	100
636 - Skokomish	250	WDFW (M)	500
638 - Quinalt Ridge	550	Nickelson and Anderson 1998, (M) WDFW (R)	1,000
642 - Copalis	150	WDFW (R)	250
648 - Wynoochee	1,200	Point No Point Treaty Council 1966, (M)	1,400
651 - Satsop	700	Nickelson and Anderson 1999, (M)	800
TOTAL	8,610		11,350
* Estimates are based on mark-resight (M) adjusted for calf production, population reconstruction (R) based on known harvest, and telemetry (T).			

The mark-resight method involves marking a proportion of the population and then conducting subsequent surveys to count the number of marked and unmarked elk. The marking is typically done with paintballs shot from a helicopter, but other methods can be used. The population size is estimated using a Lincoln-Peterson estimator that compares the numbers of marked and unmarked animals in the population (Gove 1994). WDFW and Olympic Peninsula tribes have conducted several mark-resight estimates in the past eight years (Table 1). WDFW conducted estimates in GMU 602 (1995), GMU 612 (2000), GMU 615 (2000), and GMU 618 (1993). The Olympic Peninsula tribes conducted estimates in GMU 601 (McCoy 2000), GMU 602 (Nickelson and Anderson 2000), GMU 607 (Nickelson and Anderson 1996), GMU 636 (Nickelson and Anderson 1995), GMU 638 (Nickelson and Anderson 1998), GMU 648 (Nickelson and Anderson 1997), and GMU 651 (Nickelson and Anderson 1999).

Population reconstruction estimates are based on fall and spring herd composition data and reported harvest. Bender and Spencer (1999) reported that population reconstruction estimates compare favorably to mark-resight estimates. To utilize population reconstruction the proportion of total mortality represented by hunting must be estimated. For this, long-term mortality data from radio-tagged elk were utilized. Population reconstruction has been used for GMUs 603, 638, and 642.

The use of radio telemetry data allows for the estimation of mortality parameters used in the reconstruction calculations. Other population parameters, such as sex-age ratios were determined using aerial group composition counts. Finally, radio-collared elk representing localized herds and aerial surveys were used to develop an estimate of population size in the Olympic (GMU 621) unit.

Population Trends

The year 2000 fall elk population estimate of 8,610 for the Olympic Herd outside ONP has declined approximately 28% from the estimated population size of 12,000 elk in the early to mid-1980s. However an estimate of 6,000 was made for this herd in 1996 (Washington Department of Fish and Wildlife 1996), which would indicate a 34% increase since 1996.

Estimates of population size in the early to mid-1980s were based on the recognition that a minimum of 10,000 elk outside ONP was needed to support the known average harvest. This methodology provided a population index or statistic that was related to population size (Caughley 1977), however, the true population size was not known (Lancia et al. 1996). Thus, comparing the historical population (population index) with the current population estimate (formal population estimate methodology) may not provide an accurate estimate of the actual population decline of the Olympic Herd over a 15-20 year period.

The recovery of the Olympic Herd is primarily attributed to the restriction of antlerless harvest since 1997. Between 1985 and 1996 the annual state harvest of antlerless elk ranged from 95 to 497 (average of 260 per year) (Table 6). In 1999, the recommended maximum antlerless harvest was 250 (CEMG 1999). This was the level of harvest that would maintain the population based on the estimated number of cows in the population, estimated productivity, and estimated non-hunting mortality. Probable over-harvest of antlerless elk during many of the seasons between 1985 and 1996 led to population decline. Elk have a low reproductive rate, so populations can decline quickly, and grow slowly. The low reproductive rate coupled with over-harvest of cows can quickly decrease the population (CEMG 1999). Since 1997 reported antlerless harvest has averaged 25 per year, well below the antlerless harvest recommended in 1999, and elk numbers appear to be increasing.

GMUs 601, 602, 603, 607, 612, 615, 618, 624, 638, 642, 648, and 651

Recovery of the Olympic Herd in GMUs open for general hunts appears to be substantiated by recent mark-resight population estimates conducted in 2000 for GMUs 601, 602, and 615. McCoy (2000) estimated the population in GMU 601 at 240 elk compared to an estimated 200 elk in 1998 (20 % increase). Nickelson and Anderson (2000) estimated the population in GMU 602 at 1,100 elk compared to an estimated 830 elk in 1995 (32 % increase). WDFW (2000) estimated the population in GMU 615 at 1,800 elk compared to 1,700 elk in 1996 (7% increase). However, a mark-resight population estimate conducted by WDFW (2000) in GMU 612 resulted in an estimate of 500 elk compared to the previous estimate of 520 elk in 1998 (4% decrease or essentially unchanged). Results of the 2000 population estimates indicate the Olympic Herd is increasing overall due to a reduction in antlerless harvest, however, populations within individual GMUs may still be declining or remaining static. Furthermore, the results suggest that factors, other than antlerless harvest, such as habitat quality and/or predation may be

limiting elk numbers in particular GMUs.

GMU 621

The elk population in GMU 621 was reported to be abundant during winter (Suckely and Cooper 1860). Declines in several herds by the 1990s were apparent from actual counts conducted by WDFW or Point No Point Treaty Council staff (CEMG 1999). Work conducted by Schirato and Murphie (1997) indicated an increase in elk numbers for the Dosewallips, Duckabush, Hamma Hamma, and Dungeness sub-herds from 127 to 179 elk (41% increase) between the springs of 1993 and 1997 and an increase from 18 to 38 elk (210 % increase) for the North Fork Skokomish sub-herd between the springs of 1994 to 1997. A sixth sub-herd, the Lilliwaup, apparently declined from 52 to 12 elk between the springs of 1994 and 1997. However, Schirato and Murphie (1997) reported that this sub-herd broke up into smaller bands throughout the Lilliwaup swamp making accurate counts difficult to obtain. Due to an increasing elk population, in 1997 a limited permit hunt was resumed.

The current population trend in GMU 621 indicates an increasing population. However, the extent of future recovery may be limited due to human/elk conflict since significant portions of the lowland and river bottom areas have been or are probable for future development.

GMU 636

Population reconstruction estimates for the 1970s and 1980s ranged from 357 to 1,120 elk in GMU 636 (CEMG 1999). Nickelson and Anderson (1995) reported a mark-resight population estimate of 258 elk for GMU 636. The estimate conducted in 1995 indicated a substantial decrease in the population; however, the extent of the decline was unknown due to numerous boundary changes between 1993-1995. Subsequently, GMU 636 was closed for state and tribal hunting to allow the population to rebuild. Biologists from the PNPTC have monitored a resident herd utilizing the South Fork Skokomish River with radio telemetry from 1995-1998 (CEMG 1999). From 1995-1997 the herd remained at 17-18 elk. In 1998 the herd increased to 25 elk, which may have been attributed to a relocation effort in the spring of 1997. No further information has been collected since 1998. Lacking harvest data to reconstruct the population and an updated mark-resight estimate, the current population trend is unknown.

Herd Composition

An elk population is not only defined by its size, but also by parameters that indicate recruitment and mortality. Standardized September (pre-season) and March (post-season) helicopter or ground based composition surveys are conducted annually by WDFW and the Olympic Peninsula tribes. Preseason surveys provide data regarding the number of bulls and early estimates of calf production. This is the time when the most unbiased information can be obtained. Postseason surveys provide data about calf survival, and anticipated recruitment into the yearling age class. Tables 2 and 3 display the available herd composition data

Herd composition data can be difficult to collect and is hampered by a lack of funds, which limits the number of surveys that can be done. In some years less than three GMUs have been

surveyed for preseason data, and none have been surveyed consistently every year during the 26 year period from 1976-2001. Sample sizes are low in some years limiting the usefulness of the data. Spring aerial surveys are conducted in only three or four units annually (Table 4). Most of the GMUs in the Olympic herd area have been surveyed less than three times from 1976 through 2001, a period of 26 years. Game management units 602 (Dickey), 615 (Clearwater), 612 (Goodman), and 607 (Sol Duc) have been surveyed most frequently during the spring season.

Analysis of 20 years of pre-season composition data (Table 2-years with a minimal sample size of 200 elk) indicates that the number of bulls and calves per 100 cows (bull:cow and calf:cow ratios) have a slight downward trend. The bull:cow ratio has ranged from 13 to 39 (with the exception of 1978) with a long term average of 24 bulls per 100 cows. The calf:cow ratio has ranged from 31 to 50 with a long term average of 43 calves per 100 cows.

Analysis of 17 years of post-season composition data (Table 3-years with a minimal sample size of 200 elk) indicates that bull:cow ratios have remained stable and calf:cow ratios have a slight downward trend. The bull:cow ratio has generally ranged from 3 to 16 (with the exception of 1984) with a long term average of 12 bulls per 100 cows. The calf:cow ratio has ranged from 24 to 43 with a long term average of 36 calves per 100 cows.

Management objectives for bull escapement were established at 12 - 20 per 100 cows for postseason surveys in areas managed for general hunting (Washington Department of Fish and Wildlife 2002b). Directly determining postseason bull:cow ratios from flight data alone is difficult since many bulls segregate from cow/calf groups at this time of year. However it is possible to estimate the average post-season bull:cow ratio by using preseason ratios adjusted for total annual mortality. Current postseason estimates for PMU 63, 65, and 66 indicate an average ratio of 14 bulls per 100 cows (Table 4).

Calf production has remained stable for the Olympic herd over the past 20 years. Declines in calf numbers between pre and postseason surveys are attributed to a number of factors: predation, habitat quality, winter mortality, disease, hunting, or accidents (CEMG 1999). Calf production is an important consideration for management. The number of calves recruited into the yearling class is a useful indicator of a herd's population trend. When the number of deaths exceeds the number of young entering a herd, the herd declines (Ballard et al. 2001) indicating a need to adjust management. The ratio of calves per 100 cows provides an important index of elk conditions for management. Declining ratios may indicate that a particular population is at or near carrying capacity (MacNab 1985) or suggest that predation is limiting population growth when elk densities are low (Gassaway et al. 1992).

Table 2. Pre-hunting season (Fall) herd composition data for the Olympic elk herd

Year	GMUs	Spike Bulls	Branch Bulls	Total Bulls	Cows	Calves	Total	Bull/100Cows/Calves Ratio
1976	602, 612, 618, 636, 639, 651	33	18	51	217	104	372	24/100/48
1977	602, 607, 618, 636, 639	40	14	54	168	88	310	32/100/52
1978	602, 603, 607, 618, 639, 645	34	11	45	233	99	377	19/100/42
1979	602, 607, 615, 618, 639, 645	13	6	19	104	38	161	18/100/36
1980	602, 607, 612, 615, 618, 639, 642	50	30	80	300	117	497	27/100/39
1981	602, 607, 615, 618, 636	90	35	125	648	235	1,008	19/100/36
1982	602, 607, 612, 615, 618, 636, 648	68	42	110	460	179	749	24/100/39
1983	602, 607, 612, 615, 618, 636	170	76	246	944	394	1,584	26/100/42
1984	601, 602, 612, 615, 618, 636, 639	80	43	123	382	189	694	32/100/50
1985	602, 612, 615	12	3	15	45	12	72	33/100/27
1986	601, 602, 603, 612, 615, 618, 636, 638, 648	169	96	265	931	414	1,610	29/100/45
1987	602, 607, 612, 615, 618	174	97	271	734	315	1,320	37/100/43
1988	602, 607, 612, 615	67	48	115	395	180	690	29/100/46
1989	602, 607, 612, 615	63	55	118	437	188	743	27/100/43
1990	602, 615	40	24	64	198	91	353	32/100/46
1991	602, 607, 612, 618	77	33	110	483	191	784	23/100/40
1992	602, 612, 615	43	19	62	471	197	730	13/100/42
1993	602, 607, 612, 618	78	51	129	686	243	1,058	19/100/35
1994	602	4	6	10	23	14	47	44/100/61
1995	602, 636	21	10	31	122	47	200	25/100/39
1996	602, 612, 615	28	27	55	206	57	318	27/100/28
1997	601, 602, 607, 612, 615, 636, 648, 651	6	61	122	738	232	1,092	17/100/31
1998	601, 615	12	6	18	132	43	193	14/100/33
1999	601, 602, 607, 612, 615, 618, 648	74	62	136	599	237	972	23/100/40
2000	602, 612, 615, 618	40	31	71	369	147	587	19/100/40

Year	GMUs	Spike Bull	Branch Bull	Total Bull	Cow	Calf	Total	Bulls/100Cow/Calves Ratio
1976	602	5	0	5	111	3	19	5/100/3
1977	602, 607, 612, 618, 639, 645	12	2	14	189	82	285	7/100/43
1978	No surveys							
1979	615	2	1	3	21	7	31	14/100/33
1980	602, 607, 612, 615, 639, 648	8	1	9	289	70	368	3/100/24
1981	No surveys							
1982	No surveys							
1983	602, 615	41	5	46			46	
1984	602, 615	58	11	69	143	59	271	48/100/41
1985	602, 615	40	13	53	27	13	93	196/100/48
1986	607	1	0	1	26	10	37	4/100/39
1987	602, 612	50	25	75	662	224	961	11/100/34
1988	602, 607, 612, 615	41	16	57	444	191	692	13/100/43
1989	602, 607, 612, 615	86	16	102	678	252	1,032	15/100/37
1990	602, 612, 615	30	4	34	577	212	823	6/100/37
1991	602, 612	29	16	45	279	105	429	16/100/38
1992	602, 603, 607, 612, 618	42	8	50	466	201	717	11/100/43
1993	602, 615	22	15	37	409	112	558	9/100/27
1994	601, 602, 612, 615	22	14	36	483	138	657	8/100/29
1995	636, 638	6	5	11	183	53	247	6/100/29
1996	607	39	2	41	321	85	447	13/100/27
1997	602, 607, 615, 648, 651	37	14	1	637	236	924	8/100/37
1998	601, 602, 636, 638, 648, 651	53	45	98	998	373	1,469	10/100/37
1999	601, 651	55	11	66	488	194	748	14/100/40
2000	No surveys							
2001	615, 648	33	2	35	302	115	452	12/100/38

PMU	GMUs	Bulls:100 Cows
63	642, 648, 651	11:100
65	607, 615, 618, 638	15:100
66	601-603, 612	16:100

Mortality Assessment

The management of elk herds necessitates an assessment of mortality sources and their importance. Smith et al (1994) measured all the sources of mortality for radio equipped elk on the Olympic Peninsula. The results for 35 bulls and 26 cows are provided in Table 5.

Mortality Source	Bull	Cow	Total
Hunting	28	8	36
Poaching	2	4	6
Natural	0	11	11
Wounding	3	3	6
Other	2	0	2
Total	35	26	61

Legal harvest is by far the largest source of mortality for the Olympic herd, particularly for bulls. Natural mortality, which includes predation, disease, and malnutrition, was the second most important, followed by wounding losses, poaching, and other sources such as road kill.

Studies by Schirato and Murphie(1997) documented higher mortality rates for cows in the un-hunted populations on the east side of the Olympics. While Smith (1994) found only 4.5% annual mortality for cow elk in the west and southern Olympics, Schirato and Murphie found cow mortality rates as high as 22% in the east Olympics. The highest mortality was in 1994-95 when mortality rate estimates included several relocated elk. Higher mortality rates for transplanted elk have been documented in Oregon as well. When the relocated elk were dropped from the sample, natural mortality rates dropped to 10%, which is higher than Smith (1994) found, but perhaps closer to normal for an un-hunted cow population.

Harvest

Legal hunting (state and tribal) is by far the greatest source of elk mortality for the Olympic herd. This is particularly true in the case of bull mortality. Mortality assessment requires accurate collection of harvest information. Accurate harvest estimates for state and tribal hunters have been deficient in the past and are essential information to prevent over-harvest.

Accurate assessments of cow harvest are particularly critical to management. Bulls can be harvested at a significantly higher rate than cows and not deplete the population. The maximum allowable cow harvest is calculated annually for the Olympic Herd (see section on Population Trend). The maximum allowable cow harvest is the number of cows that can be harvested annually while maintaining a stable population. When cow harvest exceeds the maximum allowance the population will decline. In 1999 the recommended cow harvest for GMUs open for general hunting was 3.7% of the total cow population.

Recreational Harvest

Historical recreational harvest and hunter numbers in the Olympic Herd area are presented in Table 6. A variety of methods have been used to estimate harvest over the years. Prior to 1984 hunter harvest was estimated based on hunter report cards and a questionnaire sent to 5% of hunters. Data crosschecks of report card and questionnaire reports indicated only about 35-40% of successful hunters reported their harvest. Starting in 1984 the questionnaire percentage was increased to 10% and non-reporting hunters were contacted up to three times to remind them to report.

Year	Antlered	Antlerless	Total Harvest	Hunters	Hunter Days
1972	1,188	176	1,364	-	-
1973	1,838	177	2,015	-	-
1974	1,378	183	1,561	-	-
1975	1,302	343	1,645	-	-
1976	1,200	299	1,499	-	-
1977	923	352	1,275	-	-
1978	1,612	406	2,018	-	-
1979	1,124	389	1,513	-	-
1980	1,336	464	1,800	-	-
1981	1,244	380	1,624	-	-
1982	1,521	544	2,065	-	-
1983	948	529	1,477	-	-
1984	784	452	1,236	9,474	43,086
1985	851	497	1,348	13,108	52,962
1986	663	395	1,058	10,922	54,817
1987	737	287	1,024	9,653	45,598
1988	534	271	805	10,073	49,555
1989	677	346	1,023	10,144	52,183
1990	(No Data)	(No Data)	(No Data)	(No Data)	(No Data)
1991	651	262	913	9,681	47,960
1992	626	236	862	8,326	40,472
1993	334	143	477	8,312	49,879
1994	375	200	575	8,962	45,519
1995	269	151	420	6,659	34,029
1996	235	95	330	4,998	24,902
1997	145	0	106	1,761	7,123
1998	215	1	195	3,258	12,995
1999	193	1	166	3,441	20,895
2000	185	4	163	3,710	16,500
2001	234	23	257	3,467	17,185
2002	268	19	287	3,082	15,403
2003	317	40	357	3,030	15,269

This greatly improved the overall number of hunters reporting and provided the opportunity to

correct for the biases due to non-reporting hunters. Since 2001 a mandatory reporting system has been required of all hunters.

Since 1972 recreational harvest has ranged from 106 to 2,065 in the Olympic Peninsula area, with an average harvest of 1,046. Harvest numbers declined significantly in the mid 1990s in response to lower elk populations and more restrictive hunting seasons and regulations. Harvests have increased somewhat since 2000. Hunter numbers and days of hunting show a similar variability. Hunter numbers in the Olympic herd area have ranged from 1,761 – 13,108 since 1984. Total hunter days (total hunters times average days hunted) have ranged from 7,123 to 54,817 during the same period.

Specific hunting opportunities are routinely targeted on areas where elk are causing agricultural damage. In general these are included as part of the general recreational harvest, and are included in those statistics. For more details on damage issues and strategies see page 21.

Tribal Harvest

A number of tribes have participated in elk hunting on the Olympic Peninsula. From the late-1980s to mid-1990s both coastal and Puget Sound tribes hunted the Olympic Peninsula area. In 1996 the Washington State Supreme Court ruled that the treaty hunting right applied to the ceded area, or area of traditional use. Since that time treaty hunting has been primarily limited to those tribes whose treaties include ceded/traditional use areas on the Olympic Peninsula. These currently include the Makah, Quileute, Quinault, Hoh, Squaxin, Skokomish, Port Gamble S’Klallam, Jamestown S’Klallam, and Lower Elwha Klallam tribes.

Individual tribes establish their own off-reservation hunting seasons and regulations within their treaty ceded/traditional use area. Subsistence hunting season lengths vary among the tribes, however, seasons typically begin between July-September and end between December-February. Additionally, tribal hunters occasionally harvest elk for ceremonial purposes outside the established tribal hunting season.

Prior to 1997, individual tribes collected harvest information, but did not freely disseminate the data to other managers (WDFW and other tribes). Thus, the harvest was estimated for some tribes based on informal communications, resulting in lower accuracy. Since 1997, most tribal harvest reporting has been centralized through the Northwest Indian Fisheries Commission (NWIFC) Wildlife Program. The tribal reports are summarized to provide total tribal harvests by GMU. This information is presented in Table 7. Since 1988 reported tribal harvest has ranged from 47 to 165 with an average of 110.

Tribal hunting regulations and seasons have undergone significant changes in the past 11 years. Prior to 1997 elk seasons were typically either sex and cow elk comprised the greatest proportion of the annual harvest (Table 7). In 1996 technical representatives of the tribes and the WDFW (CEMG 1999) addressed the declining Olympic Herd population and the need to substantially reduce cow harvest to reverse the decline. From 1997 to date a number of Olympic Peninsula tribes have implemented regulations to minimize the harvest of cow elk by eliminating cow harvest, implementing permit only hunts, and opening cow seasons for substantially shorter time frames. From 1997-2000 the reported annual tribal harvest of cow elk averaged 33 compared to

56 from 1988-1996 (41 % decrease) (Table 7). Similar to the recreational harvest tribal cow harvest has increased the last few years.

Year	Antlered	Antlerless	Unknown	Total
1988	20	80		100
1989	16	43		59
1990	35	54		89
1991	31	57		88
1992	82	70		152
1993	46	63	6	115
1994	57	70		127
1995	39	46	39	124
1996	24	23		47
1997	65	49		87
1998	98	30		128
1999	82	22	16	120
2000	109	30		139
2001	108	56	1	165
2002	109	51		160

The number of tribal hunters has remained fairly stable over the past 12 years (R. McCoy and D. Swanson Pers. Comm.). Reported tribal harvest has accounted for 19% of the total reported harvest of elk between 1988 and 1999 (Table 7). Reported tribal bull and cow harvest has accounted for 14 and 34%, respectively, of the total reported harvest between 1988 and 1999

Poaching

Mortality studies by Smith et al. (1994) indicated poaching statewide accounted for about 15% of all mortality (compared to 59% for legal harvest). There was no significant difference in the poaching rate of cows and bulls among GMUs with either branch antler or branch antler by permit hunting strategies. Poaching was significantly greater than expected in branched antler units compared to any-bull units. Smith et al. (1994) also documented that poaching mortalities were typically associated with hunting seasons (Oct., Nov., and Dec.). The majority of poached elk (59%) were killed during a state elk season. Also, poached animals were significantly closer to useable roads than were legally hunted animals. For the Olympics, the average distance from a road for poached elk was only 172 yards. Schirato and Murphie (1997) documented 40 mortalities in the East Olympic herds. Illegal harvest was the cause for 11 (27%) of the mortalities.

Natural Mortality Including Predation

Studies by Smith et al. (1994) indicate natural mortalities accounted for 15% (n=25) of all deaths. Of the 25 natural mortalities, 19 (76%) died from malnutrition and 4 (16%) died from cougar predation. Studies by Nickelson et al. (2003) indicated predators killed 30% of 15 transplanted elk.

Studies by Schirato and Murphie (1997) documented 40 mortalities in the east Olympics. Natural mortality accounted for 6 (15%) of the known losses, predators killed 8 (20%), and there were 6 (15%) unknown mortalities some of which were likely natural mortality. In addition road kills accounted for 4 animals (10%).

Nutrition

The Quileute Tribe is investigating the nutritional status of elk in GMU 602 (Kowalski unpub. data in progress). Body condition scores and ultrasound measurements collected from 19 elk between 2000 and 2001 indicated chronically low fat reserves and suggest that nutrition may be limiting herd demographics and productivity. Body fat for the 19 elk averaged 8.4 % in November of 2000, the lowest body fat scores for elk sampled in the state of Washington. The pregnancy rate of radio-collared elk in March of 2001 was 70%, much lower than pregnancy rates reported for Rocky Mountain Elk in GMU 485 (92%) and GMU 653 (85%) (Washington Department of Fish and Wildlife 2002a). Preliminary data suggest that available energy from forage may not be adequate to support annual breeding by cow elk, resulting in breeding pauses. Cow elk that calve in the spring are unable to build sufficient reserves, due to costs of lactation, to breed during the subsequent fall. Additionally, a lower nutritional plane for cow elk may result in lower calf birth weights. Bubenik (1982) reported significantly lower survival probability for calves with low birth weights.

Poor nutrition may also result in elk mortality due to malnutrition. Smith et al. (1994) reported malnutrition as the primary cause of natural mortality for the Olympic Herd. Seven of 11 radio-collared elk mortalities (64%) classified as natural were due to low percentage of fat reserves (Table 5).

Natural Predators

Cougars and black bears are the major natural predators of Olympic Herd elk. Cougars prey on both adults and calves, while black bear almost exclusively take calves (Smith et al. 1994, A. Kowalski, unpub. data in progress, R. McCoy, unpub. data in progress, Washington Department of Fish and Wildlife 2002a).

Four of 11 radio-collared adult cow elk mortalities (36%) for the Olympic Herd classified as natural were due to cougar predation (Smith et al. 1994) (Table 5). Cougar predation has been identified as a significant mortality source for radio-collared cow elk in GMUs 602 and 601 in ongoing studies conducted by the Quileute and Makah tribes (A. Kowalski, unpub. data in progress, R. McCoy, unpub. data in progress). Schirato and Murphie (1997) documented 35 mortalities on the eastside of the Olympic Peninsula, 7 (20 %) of which were predator kills. Five of 7 were documented as cougar kills. Additionally, Nickelson et al. (2003) indicated predators killed 30% of 15 translocated elk on the Olympic Peninsula. Higher mortality rates for transplanted elk were documented in Oregon (Stussy et al. 1994) as well.

Sources of calf mortality have not been investigated for the Olympic Herd. However, studies conducted in GMU 485 indicate that cougar predation accounts for 65% (41 of 63) and bear 10% (7 of 63) of the total elk calf deaths. Unknown predators, likely including, cougar, bear, and to a lesser degree coyote, and bobcat, accounted for about 14% (9 of 63) elk calf deaths

(Muckleshoot Indian Tribe, WDFW, and other cooperators, unpub. data).

Disease

A number of research projects conducted in the past (Schirato and Murphie 1997) and currently underway (Kowalski unpub. data in progress, McCoy unpub. data in progress, Smith, Hall, and Michaelis unpub. data) have routinely taken blood and fecal samples to monitor herd health. Only two of forty elk examined by Schirato and Murphie(1977) tested positive for any diseases. A cow elk inside Olympic National Park tested positive for a spirochete, *Leptospirosa gryppotyphosa* and later died. A second cow in the Lilliwaup area tested positive for exposure to *Leptospirosa bratislava*. All of the elk tested negative for titers of bluetongue and anaplasmosis. Other animals tested for Johne's disease and brucellosis have also tested negative. Parasite analysis was done from fecal samples from a number of captured elk. A variety of parasites were identified (e.g. Strongyle, Capillaria, Coccidia, Trichuris, and Dictyocaulus) but parasite numbers were generally low.

Social and Economic Values

Number of State Elk Hunters and Hunter Days

In 2001, 3,467 non-tribal hunters spent an estimated 17,285 days afield hunting elk in the Olympic Herd area during state seasons. The 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (U.S. Department of Interior et al. 2002) reported that trip and equipment expenditures for big game hunting in 2001 averaged \$942 per hunter. Using the \$942 average expenditure for the Olympic Elk Herd, elk hunters added \$3,265,914 to the local and state economy in 2001. Thousands of dollars are spent on equipment and specialized clothing. Small communities have an economic boom during elk hunting seasons because of the influx of hunters buying fuel, groceries, and lodging. Nevertheless the importance of this economic impact fails to match the social impact elk seasons have on those hunters that take to the field. Because the Olympic Herd is some distance from most population centers of the state, elk hunters spend multiple, consecutive days in the field on hunting trips. This, plus the size of adult elk, makes it desirable to hunt with a group of other hunters. Such groups, called "camps" often form a social bond of "partners" unchanged for many years. Families and unrelated individuals often join together to coordinate their vacation schedules so that they may spend time together afield. For many elk hunters, elk season offers an opportunity to enjoy the values of fellowship and self-reliance.

Tribal Hunting

Elk hunting has been culturally and nutritionally important to Native Americans on the Olympic Peninsula for centuries (Nickelson, 1996). One band of Indians, formerly know as Twana people (present day Skokomish Tribe) have an oral history of elk hunting. Their hunters were given elevated status in their community for their ability to successfully hunt elk, and a gift of elk meat given by a Skokomish to a visitor was considered a great honor. Songs of tribal members have recognized the ability to "call the elk." Songs designate them important to the tribe's survival. Nickelson (1996.) reports that, "If the Twana people lose their language, forget their stories, lose their ceremonies, or lose their natural resources such as the river, the salmon or the elk, they are no longer being." To native people, elk are a part of their identity.

Tribal hunting seasons offer their members the opportunity to engage in subsistence and ceremonial, as well as recreational hunting. This is an affirmation of the ways of their ancestors as well as identifying themselves with particular geographic areas (hunting grounds). As with non-tribal hunters it offers the older generation an opportunity to pass on knowledge to the younger generation.

Olympic Peninsula tribes hunted throughout the interior of the peninsula, maintaining permanent travel routes, semi-permanent villages, and seasonal camps. Several tribes, including Quinault, S'Klallam and Skokomish maintained permanent villages along rivers in the interior of the peninsula. Oral histories of the Quinault and Skokomish tribes both describe shared hunting areas in late summer around high altitude camps where their river drainages meet. Inter-tribal marriages were arranged during the annual elk hunt to cement friendly relations between the tribes (Olson 1936, Elmendorf 1993).

Harvest Strategies

Past harvest strategies are listed in Appendix A, which summarizes state elk hunting seasons for three decades (1970-2001). Harvest strategies reflect an effort to achieve a desired population objective, such as population size or structure. These objectives are based on biological factors (natural rate of population increase, desired population structures, and mortality rates) as well as social ones (user group preferences with regard to opportunity and the quality of the hunting experience).

Prior to 1983 there were no antler restrictions and modern firearm hunters had a twelve-day any-bull season. There were a few archery and muzzleloader hunts that involved antlerless opportunities, but there were only a few units open and elk harvest was modest. Beginning in 1983, GMU 636 (Skokomish) was restricted to bulls with three or more antler points on one side. In 1984, a major change in hunting seasons was adopted called "resource allocation". The major changes involved liberalizing archery and muzzleloader seasons. Archers were given statewide early archery seasons in September on the west side of the state, as well as late seasons (Nov - Dec) in some GMUs. Muzzleloaders were allotted about 10% of the units in both early (early October) and late (Nov - Dec) hunts. The history of antler restrictions in the Olympic elk herd is presented in Appendix A.

The Olympic Elk Herd, as well as most other elk herds in Washington, has been below management objectives for bull escapement. In 1997, a 3-point strategy was adopted and the modern firearm season length was reduced from 12 to 9 days. This has allowed for at least an initial recruitment into the adult bull age class and improved bull survivorship. Pre-season surveys indicate an average ratio of 22 antlered elk per 100 cows in a sample of the GMUs of the Olympic Herd (1999 data). This management strategy has not, however, significantly increased the number of prime age bulls in the population. Such an increase will only come about if the annual legal bull elk mortality is significantly lowered below the current estimated rate of about 60%.

In an attempt to hasten the recovery of the Olympic Herd, all state hunting seasons have been closed to the taking of antlerless elk since 1997 and Tribes have implemented various strategies

ranging from closing all antlerless harvest to shorter seasons for antlerless harvest.

This plan does not contain specific harvest strategy recommendations. Specific recommendations for harvest strategies will be made every three years as a part of the current Washington Fish and Wildlife Commission policy of adopting hunting seasons for a three-year period, with annual establishment of permit seasons and necessary amendments. The three-year hunting package will serve as the harvest management implementation of this plan.

WDFW regional staff and field personnel meet with tribal representatives to coordinate harvest management strategies and other elk management activities. These periodic meetings occur at the technical as well as policy level. At the technical level, biologists meet to exchange elk data, discuss data needs, and outline management options as well as strategies. Such options and strategies are then presented to the policy team, made up of WDFW administrators and program managers and tribal policy representatives, who attempt to draft common strategies for achieving management goals.

Watchable Wildlife Values

Many people enjoy viewing wildlife in their natural environment. Over 1.065 million people participate in wildlife watching activities away from their homes each year in Washington State. Wildlife watchers spend about the same amount per person as hunters, and make a significant contribution to the local economy in the Olympic Herd area (U. S. Fish and Wildlife Service 2002).

The Olympic Peninsula has long been identified in the public mind with the Roosevelt elk. The size of these elk, the fact that they occur mostly in groups, and that mature bulls can have impressive antlers all contribute to their value to the viewing public. Elk can be observed on summer range, on sub-alpine meadows by hiking into higher elevations in Olympic National Park, and along major drainages such as the Wynoochee, Quinault, Queets, Clearwater, and Hoh rivers and along Matheny Creek.

Damage

State law under RCW 77.12.270 and 77.12.280 requires that WDFW respond to and compensate landowners for elk damage to certain classes of agricultural lands (see Appendix B). Formal damage claims must be made following specific procedures as set forth by statute. Elk damage payments have been limited to a relatively small number each year in the Olympic Herd area (Table 9). Elk damage complaints have averaged approximately eight per year during the 1995-1999 period (Table 10). The greatest numbers of elk complaints come from Jefferson and Clallam counties. The 13 paid claims for elk damage over the period 1995-2000 has been minimal, averaging \$1,240 per year (Table 9).

The Department of Fish and Wildlife tries to balance the desires of hunters for more animals and the problems of landowners with elk damage. The issue of elk damage and the best method to alleviate such damage is one of the most vexing problems of elk management. Options for dealing with damage problems vary from non-lethal options including hazing with pyrotechnics, herding, fencing, and trapping, capturing and relocation of elk causing damage, to lethal means (shooting).

Table 9. Elk Damage Claims (Annual Summary)					
Year	No. Claims	Claim Amount	No. Paid	Amount Paid	Claims Rejected
95-96	5	\$5,522.81	5	\$3,388.11	0
96-97	0	\$0.00	0	\$0.00	0
97-98	3	\$4,396.90	2	\$1,242.82	1
98-99	4	\$14,000.00	2	\$1,569.38	2
99-00	1	\$2,000.00	-	-	open
Total	13	\$25,919.71	9	\$6,200.31	3

Table 10. Number of Elk Damage Complaints by County						
Year	Clallam	Grays Harbor	Jefferson	Mason	Kitsap	Total
1995	6	0	7	0	0	13
1996	10	4	16	0	1	31
1997	11	2	8	0	0	21
1998	9	0	3	0	0	12
1999	6	2	12	3	0	23
Total	42	8	46	3	1	100
Avg	8.2	1.6	9.2	.6	.2	20

Non-lethal options

Hazing or harassment is one non-lethal option strategy. Scare devices such as cracker shells and propane cannons to harass animals away from agricultural crops are usually effective for a short period of time, if at all. Hazing is sometimes a preferred option when quick action is needed in high value crops. A little used option on the Olympic Peninsula for addressing elk damage is herding. This has been used at times in the Bell Hill area near Sequim. This amounts to a structured hazing program, but requires funds to pay herders. The drawback is that populations are not reduced unless hazing/herding is coupled with increased harvest.

Winter feeding has not been used to address damage in the Olympic herd area. Given the generally mild winters in the lower elevations of the Olympic Peninsula, elk are not concentrated enough to make winter-feeding effective.

Fencing of small parcels to protect individual crops has been used to a limited degree. Since there are no major elk seasonal migration routes or corridors, large-scale fencing is likely to be ineffective in preventing agricultural damage. Fencing may be an option under special circumstances; however, WDFW has limited funds for fencing. If the fencing option is selected, WDFW typically provides the fencing materials and the landowner constructs the fence. The

landowner is committed to maintain the fence for a specific period of time.

Haystacks may be vulnerable to damage by elk during severe winter weather. WDFW can supply panels for haystack protection.

Improvement of habitat on lands away from damaged areas may provide a solution. WDFW may work with either public or private landowners to do controlled burns to improve habitat. Burning has a fertilization effect, and elk in particular tend to be attracted to forage on burned areas.

WDFW may also work with landowners to develop “Green Forage” areas to draw animals away from damage areas. In this program, preferred grasses or forbs are seeded, and fertilized.

Landowners suffering pasture damage may choose to receive hay, as a replacement for lost crops. WDFW may supply the hay in lieu of payment for damage claim.

The relocation of damage causing elk is very expensive and involves risks to handlers and elk alike. Foremost, sufficient funds are needed to cover the cost of capture and relocation. There is a possibility of some elk mortality during handling and transport. Any remaining elk must be managed to prevent them from quickly increasing back to their former numbers.

In 1995, severe damage problems in the Bell Hill area near Sequim resulted in the capture and relocation of 17 elk. Landowners complained about elk grazing pastures and ornamental plants. All 17 elk were captured by darting from a helicopter and loaded into horse trailers for relocation to the Dosewallips area. Results of the transplant were controversial. The relocated elk began using pastures and gardens in the Dosewallips River drainage. Some landowners felt WDFW relocated “problem animals” to their area. One year after the transplant only eight of the original 17 animals were still alive.

Another damage problem in the Willapa Hills Elk Herd area resulted in a transplant to the Olympic Elk Herd area. In March of 1997, a total of 24 elk (20 cows and 4 bulls) were captured in the Chehalis Valley between Elma and Oakville. The relocation project was a joint project of the Point No Point Treaty Council and WDFW. Half of the relocated elk (12) were equipped with radio collars for follow-up monitoring. Four mortalities resulted from the translocation. Radio telemetry studies by Nickelson et al., (2003) indicated none of the transplanted elk joined the resident elk herd. Most of the transplanted elk moved long distances out of the Skokomish River drainage in the general direction of the capture site. Elk transplanted to the Skokomish moved an average of 20 km from the release site. By January of 2000, only 4 of the 12 collared elk survived, and each had joined a separate herd outside GMU 636 (Skokomish).

Lethal removal of animals

To reduce the number of elk in a damage area the following options are considered: 1) liberalize general and or permit hunting seasons by length, timing, or permit level, 2) issue kill permits to the landowner, 3) landowner preference permits, 4) landowner access permit, and 5) hot spot permit hunts.

Of these options the liberalized hunting season approach is usually the option of first choice. This includes permit-only seasons that can be extended to cover the time of maximum damage. Such permit-only seasons have the advantage of not only taking animals but, just as importantly, of harassing elk out of the damage area for an extended period of time, thus reducing the damage caused by all elk. These hunts are advertised in the WDFW Big Game Hunting Seasons and Rules pamphlet.

Unfortunately, many of the damage problems cannot be forecast in advance, and timing does not always allow the Fish and Wildlife Commission to establish a special hunting season. When this occurs, there are other damage control options.

Landowner Permit(s) – Where a landowner has a damage problem verified by the local agent, one or more Landowner Permits may be issued to the landowner in lieu of a damage claim. The permits are for antlerless animals only. The Fish and Wildlife Commission has established a maximum of 200 elk permits statewide (Appendix D). The landowner can give these permits to friends or family or charge a fee (for access) to utilize these permits (with a valid hunting license and tag). These allow the harvest of an antlerless elk on the landowner's property. From 1997 to 2000 only 6 Landowner Permits were issued in the Olympic Herd area, and only 6 elk were killed. All the permits were issued in GMU 607 (Sol Duc).

Hot Spot Permits - The local agent and the landowner may decide that a certain number of hot spot permits will solve the damage problem. The number of permits varies but is usually limited to one to start. If this option is selected WDFW establishes the dates and boundary for the hunt. Participants are selected from a pool of hunters that were unsuccessful during earlier hunting opportunities that season. The local agent will call the hunters (in order selected in the drawing) and ask if they want to participate in the hot spot hunt. The local agent will call as many people as necessary to get the permit target quota. Hunters may retain harvested animals.

Kill Permits - The landowner may not want hunters on his/her property and may prefer kill permit(s). If kill permit method is selected, the landowner may kill the number of animals authorized on the permit but the landowner may not keep the animals. The landowner may kill the animal, field dress the animal, and call WDFW to come and get the carcass. The meat is donated to a tribe or non-profit charitable organization. The landowner retains the right to file a damage claim.

Habitat Management

Current Condition and Trend in Habitat

Elk habitat includes all features of the landscape necessary to support a viable elk herd. The maximum number of elk that can exist in any habitat is generally controlled by forage, both in terms of quantity and quality. Important components of elk habitat are forage availability, and its location, size, and juxtaposition in relation to escape cover (Washington Department of Fish and Wildlife 2002b).

Previous studies of habitat use by Roosevelt elk on the Olympic Peninsula indicated that old-age coniferous forests, deciduous forests, and younger age classes of regenerating even age conifer

stands (6-15 year old stands) were important habitats (Witmer and DeCalesta 1985, Jenkins and Starkey 1984, Schroer 1987, Brunt et al. 1989, Schroer et al. 1993, Lemkuhl 1996). Mature deciduous forests and coniferous/deciduous stands in valley bottoms and riparian areas were reported as “key” habitats selected year round due to the presence of abundant forage, however, old age western hemlock forests were generally avoided except during winter (Schroer et al. 1993). It is speculated that forage productivity differences might account for differences in elk use between old age river bottom habitats and upland habitats.

Logging on the Olympic Peninsula is an important factor effecting elk habitats. Most low elevation old-age forests outside of Olympic National Park (>150 years) within the range of Roosevelt elk have been cut for wood products and converted to even-age stands harvested on short rotations (Juday 1977, Meslow et al. 1981). Even age stands receive little use by elk except for 6-15 year old clear-cuts that contain the most abundant forage (Schroer et al. 1993, Lemkuhl 1996). The benefits of these stands are short-lived. Succession of young coniferous stands to pole-sized and mature stands reduces forage quantity as the canopy closes and understory vegetation diminishes. Thus, assuming a 60-year rotation cycle for cutting, only 17% of the cutting cycle would include the age class most important to elk, while 83% of the cycle would provide minimal forage for elk. Regardless of the duration of forage production in regenerating stands, past large-scale timber harvest in old growth western hemlock forests resulted in an increase in available foraging habitats for elk. Thus, elk populations probably increased in areas that historically contained poor quality habitat prior to logging.

Current information regarding elk habitat on the Olympic Peninsula indicates a declining overall trend for areas outside of Olympic National Park. Private industrial owners, the State of Washington, and the U.S. Forest Service own the vast majority of available elk habitat on the Olympic Peninsula outside of Olympic National Park. Timber harvest trends on these lands are good predictors of current and future habitat trends for elk. Recent analysis of timber inventory and harvest level projections for Clallam and Jefferson Counties indicate an increase in volumes for all forests and a decline in future harvest levels (Atterbury Consultants, Inc. 2000). The average timber harvest from 1990-1999 declined to approximately 367 million board feet (MMBF) from approximately 826 MMBF during 1979-1989 (55 % decline). In 2000, 20% of the land base was estimated to be between 6-15 years of age. This age class provides abundant forage and is heavily utilized by elk (Schroer et al. 1993). By 2019, only 10% of the land base is predicted to be in this age class. Thus, the trend in suitable foraging habitat on the Olympic Peninsula is expected to decline.

Regulation of forest management activities was identified by Atterbury Consultants, Inc. (2000) as the primary contributor to declining timber harvest levels. The “Forest and Fish” rules will reduce harvest on private industrial timberlands slightly to approximately 191 MMBF from 2000-2019 over current levels (215 MMBF from 1995-1999), by requiring retention of timber in riparian buffers around streams and wetlands. This level of timber harvest is substantially below the annual average from 1979-1989 (approximately 282 MMBF). Timber harvest on lands owned by the State of Washington have declined and will remain below historical levels to satisfy requirement of the Habitat Conservation Plan (Washington Department of Natural Resources 1997). Harvest on state owned land is expected to average 55 MMBF from 2000-2016 compared to approximately 328 MMBF from 1979-1989). Timber harvest on U.S. Forest

Service land (Olympic National Forest) has been limited to land under Adaptive Management under the Northwest Forest Plan (U.S. Department of Agriculture and U.S. Department of the Interior 1994). Timber harvest on U.S. Forest Service lands is expected to average 11 MMBF from 2000-2016 compared to approximately 126 MMBF from 1979-1989.

Reductions in timber harvest in riparian habitats may be beneficial to elk. Riparian forests will be restored to historical conditions and provide important elk habitat (Schroer et al. 1993). However, the quantity of foraging habitat for elk on managed forestlands is assumed to decline with timber harvest and remain significantly lower than recent historical levels, resulting in fewer elk. Further complicating a reduction in the quantity of foraging habitat is the pattern of timber harvest. On some private and public lands, expansive clear-cut result in large areas of coniferous forest whose canopies become closed at the same time (Washington Department of Fish and Wildlife 1996). Thus, localized “boom or bust” cycles of forage production are prevalent rather than an interspersed of forage and cover habitats distributed over the landscape, which are believed to provide better year round foraging habitat (B.C. Ministry of Forests 1990, Happe et al. 1990).

Habitat quality, in addition to the quantity of foraging habitat created by timber harvest, may be an important long-term factor affecting elk populations and abundance on the Olympic Peninsula. Reproductive success of elk has been linked to the nutritional value of the diet (Trainer 1971, Thorne et al. 1976, Nelson and Leege (1982). Nutritional influences are often assumed to rarely limit herd productivity (Marcum 1975, Wallmo et al. 1977, Leege 1984, Lyon et al. 1985, McCorquodale 1991, Christensen et al. 1993, Unsworth et al. 1996). The assumption that nutrition rarely limits herd productivity is being challenged (Merrill and Boyce 1991, Parker et al. 1999, Cook et al. 2001). Recent studies indicate that considerable increases in forage quantity resulting from any habitat treatment or disturbance that removes appreciable forest overstory are offset due to increases in toxic and digestion limiting “secondary compounds”, particularly in coastal and boreal forests (Hanley et al. 1987, Van Horne et al. 1988, Happe et al 1990). Furthermore, current ongoing research in the Dickey GMU by the Quileute Tribe gauged the body condition of 19 radio-collared cow elk. Results indicated that elk had an average of 8.4% body fat in November 2000 (range from 2.9 to 13.8%), the lowest scores recorded for any elk in the state of Washington (A. Kowalski, Pers. Comm.). Additionally, pregnancy rates were lower than recorded elsewhere in Washington. Rochelle and Cook (2001) indicated a link between percent body fat and pregnancy. When percent body fat drops below 9% the probability of breeding drops substantially. These results support a growing belief that forage quality, in addition to forage quantity, may be limiting herd size and productivity of elk on the Olympic Peninsula,(see previous section on nutrition).

Roads and Road Management

The Olympic Peninsula contains a high density of roads resulting from timber harvest and extraction. Roads can have a negative impact on elk both through removal of potential habitat and by disturbance from human traffic (Perry and Overly 1976). The most common form of disturbance is hunting. High open road densities allow easy access to elk for legal hunting and poaching (CEMG 1999) and can result in increased mortality rates (Unsworth and Kuck 1991) and population declines (Leege 1976, Theissen 1976). Disturbance can also interrupt elk forage and rest patterns and deplete energy reserves. If disturbance is sufficiently high, elk may

abandon or minimize use of areas with high open road density (Perry and Overly 1976, Geist 1978, Witmer and DeCalesta 1985, Czech 1991, and Hansen 1993).

Road closures are an effective management tool to restrict traffic and human disturbance. Witmer and DeCalesta (1985) reported no difference in habitat use of areas with closed roads as compared to roadless areas. Thus, in areas where elk are hunted, road obliteration, gates, and other road closures will help reduce elk vulnerability to human disturbance. However, when extensive road closures occur over large areas, this tends to concentrate both legal and illegal hunters in the remaining open areas to the detriment of herds utilizing habitats in these areas (CEMG 1999).

The current trend in open road density is generally positive. Open road densities have been reduced by permanent and seasonal road closures on both public and private lands. Substantial blocks of land that were formally open for access year round have been gated over the past 10 years to the benefit of elk populations. Additionally, access for hunting and other recreational activities is still permitted on most industrial timberlands.

Habitat Enhancement Projects

A number of habitat related projects have been undertaken in the Olympic Herd area for the benefit of elk and other wildlife. Many of these projects have been accomplished through a partnership with the Rocky Mountain Elk Foundation and other non-governmental organizations and volunteers (Appendix C). Projects include seasonal or year-round closure of roads to motorized vehicles, the seeding of elk forage, elk studies, and other special projects to benefit elk. Given the current and projected habitat matrix these projects continue to be viable habitat improvement options. In fact, the two most effective ways to improve current elk habitat are: 1) reduce open road densities (particularly in areas of elk winter use) and 2) increase quality forage during the early spring green-up period.

Research Needs

The high demand placed on this elk herd by recreational and tribal hunters requires scientific data for proper management. Some of this data is collected as part of ongoing management activities (such as composition surveys). Other information can only be obtained by new research. The Cooperative Elk Management Group made up of Washington Department of Fish and Wildlife and Olympic Peninsula tribal representatives has identified the following research needs:

1. Elk mortality data, as it relates to mortality rates and causes. The Cooperative Elk Management Group currently uses mortality estimates determined from an earlier study (Smith et al. 1994), which used the Olympic Elk Herd as part of a statewide study. Since then, the management strategy has changed for the Olympic Peninsula and the need for current data is compelling.
2. An elk habitat use study focusing on elk habitat use during the early spring period. This period of initial green-up is very important for pregnant cows, as they need to physiologically recover from the nutritional stresses of winter prior to giving birth. It is

presumed that this period has a significant impact on calf production and survival.

3. The Cooperative Elk Management Group has addressed the possible re-introduction of wolves into the Olympic Peninsula and concluded that this would require the monitoring of wolf impacts on elk populations outside Olympic National Park.

Herd Management Goals

Fundamental goals for the management of the Olympic Elk Herd are:

1. Preserve, protect, perpetuate, manage and enhance elk and their habitats to ensure healthy, productive populations and ecosystem integrity.
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. To manage the Olympic Elk Herd for a sustained yield.

In view of declining elk populations as well as the potential for further declines WDFW and the Olympic Peninsula tribes established the Cooperative Elk Management Group in 1996 with the stated objective to “reverse the decline in the Olympic Herd elk numbers and ensure elk populations throughout the Olympic Herd area that are huntable in perpetuity.” Technical accomplishments of the Cooperative Elk Management Group so far include: 1) deriving population estimates by GMU (using state and tribal data), 2) biologically based recommendations for maximum antlerless elk harvest (Appendix D), and 3) agreement on a common technical management document that outlines the technical management considerations to the policy group.

As part of their discussions the CEMG group developed five-year population goals for the management of the main population components of the Olympic Peninsula elk herd. These goals are shown in Table 1 (see page 8). The total population goal for the Olympic herd is 11,350 by the fall of 2008. This is a 26% increase over the current population. The individual GMU goals are based on an assessment of current habitat conditions, as well as projected habitat trends. It was concluded that given the current lack of evidence for unusual winter mortality elk numbers in most GMUs had not exceeded their carrying capacity. This conclusion, along with the intention to manage antlerless elk harvest conservatively resulted in population objectives that are somewhat above current levels. At the same time the CEMG Technical Advisory Group recognizes that ongoing studies of physical condition in adult cow elk on the Olympic Peninsula show very low body fat indices in late winter. The population objectives eventually need to be compared with new population estimates and additional herd health information.

Management Objectives, Problems and Strategies

Herd Management

Objective # 1

Increase the accuracy of the annual database for managing the Olympic Herd.

Problems

Much of the Olympic Peninsula is a dense forest with limited visibility. Elk population estimates rely on surveys that accurately represent the herd sex and age composition. There is also a lack of consistent survey effort on an annual basis. Using questionable data can result in large variances in estimates of populations. Past harvest estimates have been based on hunter report cards and a random questionnaire survey of State authorized hunters. These estimates have had insufficient precision for use at the GMU level of resolution. Harvest data is not currently available from all tribes, compounding harvest data concerns. Accurate population estimates and harvest data collection are the basic needs for predicting a population's response to hunting and making reliable scientifically sound management decisions

Strategies

1. Increase number of pre-hunting season composition surveys to include additional GMUs to more precisely document herd demographics.
2. Annually monitor select GMUs during spring surveys to better assess recruitment into the yearling class.
3. Increase precision and accuracy of annual recreational harvest by GMU. This may require a mandatory check of harvested elk if the new mandatory report by all elk hunters fails to achieve compliance rates.
4. Increase precision and accuracy of tribal harvest data by GMU.
5. Standardize data collection methods.

Objective # 2

Increase the accuracy of estimating long-term population parameters.

Problems

There is a lack of comparable long-term population estimates for various GMUs and a lack of precise mortality factors other than legal harvest. Information is not available on possible annual variation in these mortality factors.

Strategies

1. The periodic use of mark-resight surveys in select units to estimate population size and trend.
2. Monitor total elk mortality by sex and age through telemetry.
3. Determine mortality factors and possible changes through time.
4. Continue studies that focus on one or more aspect of elk mortality.

Objective # 3

Reverse the recent (1980s-1990s) decline in elk numbers and return to a combined GMU population of at least 11,350 elk outside of Olympic National Park.

Problems

Elk numbers in the Olympic Herd area are at least 20% below that of the mid 1980s. The actual decline may be in excess of 30%. Hunting opportunity has been curtailed. There has been a significant decline in timber harvest on Olympic National Forest and this habitat change could impact elk populations in the future.

Strategies

1. Maintain strict limits on the taking of antlerless elk as recommended by the Cooperative Elk Management Group.
2. Avoid hunting of bulls during the peak of the rut to insure optimal breeding.
3. Monitor population trends to assess effectiveness of management.
4. Monitor elk damage complaints and persistent problem areas so that damage control does not conflict with herd management goals.
5. Use lethal means of damage control as a last resort.

Objective # 4

Pursue management practices that will increase the proportion of adult bulls in the population.

Problems

State management guidelines for a post-season bull ratio of at least 12 bulls per 100 cows appear to be met for the area as a whole but probably not in all GMUs. The Cooperative Elk Management Group has taken a strong position on allowable antlerless harvest, but work on bull harvest guidelines is incomplete.

Strategies

1. Maintain the current 3-point or better antler restriction for state seasons.
2. Due to vulnerability minimize hunting of bull elk during the peak of the rut (last two weeks of September).
3. Explore all options for meeting bull escapement target in future 3-year hunting season package.
4. Cooperate, consult and coordinate with tribes to develop a harvest management strategy that can be supported by all user groups.
5. Focus road management techniques in GMUs chronically below bull escapement objectives.

Objective # 5

Work cooperatively with the tribes to implement the Olympic Elk Herd Plan.

Problem

Continue to develop ways to improve the working relationship with tribes in the Olympic herd area.

Strategies

1. Develop a framework of cooperation by meeting frequently and using open dialog to discuss management concerns for the Olympic Elk Herd.
2. Continue to be involved in the Cooperative Elk Management Group established for this purpose.
3. Maintain an atmosphere of mutual respect, trust, cooperation, and exchange of information.
4. Form partnerships for funding mutually acceptable projects to enhance and improve elk populations, habitat or advance research.

Objective # 6

Increase public awareness and opportunities to enjoy the Olympic elk resource including viewing, photographic and educational opportunities.

Problem

Elk population declines may reduce recreational viewing and photographic opportunities. The majority of the public in Washington is not aware of the value or challenges of managing the elk resource.

Strategies

1. Develop a brochure for the public with general information on current management issues, the relationship between Roosevelt elk and their habitat as well as likely places where they may be viewed.

Objective # 7

Minimize damage caused by elk.

Problems

While there are currently no widespread damage areas in the Olympic area there are a few, highly localized areas where conflicts between humans and elk occur. These include Bell Hill (impacts to residential areas) and Hoko Valley (impacts on livestock grazing fields), and in the Matlock area of the Satsop and Skokomish GMUs (impacts on livestock grazing fields).

Strategies

1. Use damage management strategies such as special seasons, hot-spot hunts, etc. to target elk causing damage.
2. When feasible capture and transplant animals to areas needing augmentation to build numbers.
3. Investigate the possibility of creating green forage areas to entice elk away from areas of conflict.
4. Consider the purchase of key foraging habitat.
5. On chronic damage sites consider payment of an annual fee to the landowner in lieu of damage claim.

Habitat Management

Objective # 1

Increase and improve habitat where it is a limiting factor on meeting the elk population objectives identified in this plan.

Problems

Cover/forage ratios vary throughout the Olympic Peninsula. The Olympic National Park is mainly dense old growth forest, but adjacent private industrial forestlands are extensively clear-cut. Olympic National Forest has had very limited timber harvest in recent years. Elk need a mix of forage and cover in their home range to reach population objectives.

Strategies

1. Work with landowners on landscape planning so that a mixture of clear-cuts and forest cover is available to elk throughout their range.
2. Develop mitigation proposals for critical habitat components.
3. Encourage lower seedling stocking rate following logging to lengthen the time a site will produce forage.
4. Encourage an increase of commercial thinning operations to provide more forage for elk.
5. Burning was historically used following timber harvest to remove debris and prepare the soil for planting seedlings. This practice is no longer used because of air pollution rules. An alternative pre-planting treatment needs to be developed to promote growth of elk forage and desirable tree seedlings.

Objective # 2

Work with landowners to reduce the open road densities.

Problems

Open roads affect elk by greatly increasing their vulnerability to hunting and poaching. Roads also negatively affect elk by causing them to avoid active roads and under utilize this habitat.

Strategies

1. Recommend road management strategies in high road density areas for consideration by landowners.
2. Support programs of decommissioning unnecessary roads and reseeded with palatable elk forage species.
3. Encourage landowners to consider the potential for cumulative negative impact of connecting road systems and encourage road densities of less than 1 mi/mi².

Objective # 3

Work with public and private landowners to enhance elk habitats and protect elk forage areas heavily utilized by elk during initial spring green-up.

Problems

Olympic Peninsula elk are generally in poor condition following the late winter. For pregnant cows the availability and quality of green forage in early spring must be considered a critical habitat need. The persistent spring use by elk of some agricultural areas is evidence of lack of alternate forage.

Strategies

1. Develop permanent meadows for late winter and early spring forage in all 10 major west side river drainages. This may require acquisition of small acreages in core home range areas.
2. Develop an incentive based green forage program for private and public landowners.
3. Involve volunteer groups in forage seeding and other forage development projects.
4. Work with Rocky Mountain Elk Foundation and other organizations to partner in developing and funding elk habitat enhancement projects.
5. Identify spring foraging areas for seeding of quality grasses.
6. Protect winter and early spring forage areas from disturbance by appropriate road management.
7. Acquisition of small acreages in critical winter and spring forage areas.

Spending Priorities

Priority # 1

Elk Herd Composition Surveys

These involve pre-season (September) and post season (April) aerial surveys. They are the single most important activity WDFW conducts for elk management and funding levels must be enhanced for more scientific management. Makah and Point No Point Treaty Council tribes have contributed time and money for herd composition surveys for the last several years. Cooperative Elk Management Group recognizes that valid survey data, along with accurate harvest data, will be needed for good management of this herd. The annual cost for surveying

elk on the Olympic Peninsula area will be \$21,000/year. A total of \$15,000 should be allocated to fall surveys in six GMUs and \$6,000 allocated to spring surveys in three GMUs.

Priority: High
Time line: Fall/Spring annually 2004-2008
Cost: \$21,000 year

Priority # 2

Direct Population Estimate

Use the mark-resight method to derive an estimate of population size by GMU. This serves as a check of indirect population estimates based on known kill. Since this method is expensive as well as labor intensive, one GMU per year on a rotation schedule should be identified for mark-resight surveys. This activity is dependent upon finding funding support from the tribes and other partners.

Priority: High
Time line: Annually 2006-2008
Cost: \$20,000 year

Priority # 3

Elk Mortality Monitoring

Through the use of telemetry, monitor the rates and causes of elk mortality. This annual monitoring should focus mainly on sex and age classes particularly important in achieving desired management goals. Thus, the mortality rate of cow elk impacts the rate of population growth or decline, while mortality rates among young bulls determine recruitment rates into older age classes. This activity is dependent upon finding funding support from the tribes and other partners.

Priority: High
Time line: Annually 2005-2006
Cost: \$30,000 per year to monitor two sex and age classes.

Priority # 4

Green Forage Program

Develop a program to determine the best ways in which early spring forage can be made available to elk. This would involve the delineation of optimal sites to be used for seeding early spring forage. This type of program would rely on outside funding for the ongoing seeding effort and such funding may be available through Rocky Mountain Elk Foundation and private landowners. The program should also look at the feasibility of contracting with private landowners for growing elk forage.

Priority: High
Time line: Annually 2004-2008
Cost: \$1000 per acre per year with an ultimate goal of 50 acres per year per major river drainage. Ten drainages would produce 500 acres per year (a total of 2500 acres involved on 5 year rotations) at a total cost of \$500,000 per year. One example currently in use is the Wynoochee mitigation, which costs about \$70,000 per year to manage 250 acres of prime winter and early spring forage. This effort would be initiated in 2004 and increased through 2008.

Priority # 5

Develop Partnerships To Reduce The Density Of Open Roads

Consult with public agencies and timber companies on options available to reduce the number of open roads. Coordinate such efforts through the Cooperative Elk Management Group. Seek funding from conservation organizations to cover costs associated with gates or tank traps. Involve volunteer groups in such efforts.

Priority: High
Time line: Annually 2004-2008
Cost: \$20,000 for the first year, then \$100,000 per year depending on the mix of gates, tank traps, and road decommissioning. Road densities on winter range on the coastal areas are particularly high. Several of the large timber companies are gating their roads to access as a means to reduce vandalism and dumping. On private industrial timberlands we need to work with landowners to reduce the road density to 1 mile of road per section.

Herd Plan Review and Amendment

The Olympic Elk Herd Plan is a five-year document subject to annual review and amendment. As new information is gathered and conditions change it will be necessary to maintain a free exchange of communication between Washington Department of Fish and Wildlife, Tribes, and cooperators. An annual review meeting with delegates from the Treaty Tribes will be arranged through the Pacific Northwest Indian Fish Commission and Washington Department of Fish and Wildlife Region 6 Wildlife Program Manager. Emergent issues can be addressed, as needed either at the technical or policy level.

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APPENDIX A. Elk Hunting Seasons in the Olympic Elk Herd Area

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
2004	601, 602, 603, 607, 612, 615, 618, 624, 627, 633, 638, 642, 648, 651 Elk Area 6063 E of Hwy 101 (AHE only)	09/08 - 09/21	14	3Pt. minimum	Early Archery General (WA) Permit only in PLWMA 600 in GMU 603.
	603, 612, 615, 638, 648	11/24 - 12/15	22	3Pt. minimum	Late Archery General (WA) Closed in PLWMA 600 in GMU 603.
	602, 603, 607	10/02 - 10/08	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/24 - 12/15	22	3Pt. minimum	Late Muzzleloader General (WM)
	601, 602, 603, 607, 612, 615, 618, 624 except E. area 6071, 627, 633, 638, 642, 648, 651 (Elk Area 6063 AHE only)	11/06 - 11/14	9	3Pt. minimum	Modern Firearm General (WF)
	651 Satsop A (30)	12/01 - 12/15	15	Antlerless	Modern Firearm Permit Only (WF)
	651 Satsop B (10)	01/05 - 01/15	10	Antlerless	Elk Area 6061
	618 Matheny (3)	10/01 - 10/10	10	3Pt. minimum	Modern Firearm Bull Permit Hunt (WF)
	621 Olympic A (21)	11/01 - 11/09	9	3Pt. minimum	
	636 Skokomish (6)	11/01 - 11/09	9	3Pt. minimum	
	621 Olympic B (3)	10/04 - 10/10	7	3Pt. minimum	Muzzleloader Bull Permit Hunt (WM)
	636 Skokomish (1)	10/04 - 10/10	7	3Pt. minimum	Muzzleloader Bull Permit Hunt (WM)
	Twin Satsop C, Elk Area 6061 (10)	10/06 - 10/10	5	Antlerless	Muzzleloader Elk Permit Hunt (WM)
	638 Quinault Ridge (5).	10/01 - 10/10	10	3Pt. min or antlerless	Special Permit AHE Only (Any Elk Tag).
	636 Skokomish C (6)	09/08 - 09/21	14	3Pt. minimum	Archery Permit Hunts (WA)
	Area 6071 Dungeness A (20)	09/08 - 09/29	22	Antlerless	WA AHE Master Hunter 2 nd Tag Hunts
	Area 6071 Dungeness B (20)	10/09 - 10/31	23	Antlerless	WM
Area 6071 Dungeness C (20)	11/12 - 12/12	30	Antlerless	WF	
Area 6071 Dungeness D (20)	12/18 - 01/09	30	Antlerless	WA	
Area 6071 Dungeness E (8)	01/22 - 02/28	17	Antlerless	WF	
603 Pysht North A (3)	09/15 - 09/30	16	Any bull any weapon	PLWMA 600 Raffle Hunt (Any Tag)	
603 Pysht North B (1)	09/01 - 09/14	14	Any elk, any tag		
603 Pysht North C (1)	10/01 - 10/10	10	Any elk, Muzzel. tag		
2003	601, 602, 603, 607, 612, 615, 618, 624, 627, 633, 638, 642, 648, 651 Elk Area 6063 E of Hwy 101 (AHE only)	09/08 - 09/21	14	3Pt. minimum	Early Archery General (WA) Permit only in PLWMA 600 in GMU 603.
	603, 612, 615, 638, 648 Elk Area 064 (AHE only)	11/19 - 12/15	27	3Pt. minimum	Late Archery General (WA) Closed in PLWMA 600 in GMU 603.
	602, 603, 607	10/04 - 10/10	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/19 - 12/15	27	3Pt. minimum	Late Muzzleloader General (WM)
	601, 602, 603, 607, 612, 615, 618, 624, 627, 633, 638, 642, 648, 651 (Elk Area 6063 AHE only)	11/01 - 11/09	9	3Pt. minimum	Modern Firearm General (WF)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	621 Dungeness A (10)	10/01 - 10/15	15	Antlerless	Modern Firearm Permit Only (WF)
	621 Dungeness B (10)	11/01 - 11/15	15	Antlerless	
	621 Dungeness C (20)	01/05 - 01/20	16	Antlerless	
	621 Dungeness D (20)	02/01 - 02/15	15	Antlerless	
	651 Satsop A (30)	12/01 - 12/15	15	Antlerless	
	651 Satsop B (10)	01/05 - 01/15	10	Antlerless	
	618 Matheny (3)	10/01 - 10/10	10	3Pt. minimum	Modern Firearm Bull Permit Hunt (WF)
	621 Olympic A (21)	11/01 - 11/09	9	3Pt. minimum	
	636 Skokomish (3)	11/01 - 11/09	9	3Pt. minimum	
	621 Olympic B (3)	10/04 - 10/10	7	3Pt. minimum	Muzzleloader Bull Permit Hunt (WM) Muzzleloader Bull Permit Hunt (WM) Muzzleloader Elk Permit Hunt (WM) Elk Area 6061
	651 Satsop B (10)	10/04 - 10/10	7	3Pt. minimum	
	Twin Satsop C (10)	10/06 - 10/10	5	Antlerless	
	638 Quinault Ridge (5).	10/01 - 10/10	10	3Pt. min or antlerless	AHE Only (Any Elk Tag).
	621 Olympic C (6)	09/08 - 09/21	14	3Pt. minimum	Archery Permit Hunts (WA)
	636 Skokomish C (3)	09/08 - 09/21	14	3Pt. minimum	
	Area 6071 Dungeness E (20)	09/02 - 09/15	14	Any Elk	
	Area 6071 Dungeness E (20)	09/16 - 09/30	15	Any Elk	
	Area 6071 Dungeness E (20)	11/19 - 12/15	27	Any Elk	
	Area 6071 Dungeness E (20)	12/16 - 12/31	16	Any Elk	
	603 Pysht North A (3)	09/15 - 09/30	16	Any bull any weapon	PLWMA 600 Raffle Hunt (Any Tag)
	603 Pysht North B (1)	09/01 - 09/14	14	Any elk, any tag	
	603 Pysht North C (1)	10/01 - 10/10	10	Any elk, Muzzel. tag	
2002	601, 602, 603, 612, 615, 618, 624, 627, 633, 638, 642, 648, 651 Elk Area 064 (AHE only)	09/01 - 09/14	14	3Pt. minimum	Early Archery General (WA) Permit only in PLWMA 600 in GMU 603.
	603, 612, 615, 638, 648 Elk Area 064 (AHE only)	11/20 - 12/15	25	3Pt. minimum	Late Archery General (WA) Closed in PLWMA 600 in GMU 603.
	602, 603, 607	10/05 - 10/11	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/20 - 12/15	25	3Pt. minimum	Late Muzzleloader General (WM)
	601, 602, 603, 607, 612, 615, 618, 624, 627, 633, 638, 642, 648, 651 (Elk Area 064 AHE only)	11/02 - 11/10	9	3Pt. minimum	Modern Firearm General (WF)
	621 Dungeness A (6)	11/28 - 12/02	5	Antlerless	Modern Firearm Permit Only (WF, WM)
	621 Dungeness B (6)	12/05 - 12/09	5	Antlerless	
	621 Dungeness C (6)	12/12 - 12/16	5	Antlerless	
	651 Satsop (30)	12/01 - 12/15	15	Antlerless	
	621 Olympic A (21)	11/02 - 11/10	9	3Pt. minimum	Modern Firearm Bull Permit Hunt (WF)
	621 Olympic B (3)	10/01 - 10/11	11	Bull	Muzzleloader Bull Permit Hunt (WM)
	651 Satsop B (10)	10/06 - 10/11	9	Antlerless	Muzzleloader Elk Permit Hunt (WM)
	638 Quinault Ridge (5).	10/01 - 10/10	10	3Pt. min or antlerless	AHE Only (Any Elk Tag).
	621 Olympic C (6)	09/01 - 09/14	14	3Pt. minimum	Archery Bull Permit Only (WA)
	638 Quinault D (20)	11/21 - 12/15	25	Antlerless	
651 Satsop (30)	09/01 - 09/14	14	3Pt min. or antlerless		
603 Pysht PLWMA (3)	09/15 - 09/30	16	Any bull any weapon	PLWMA 600 Raffle Hunt (Any Tag)	
2001	601, 602, 603, 612, 615, 618, 624, 627, 633, 638, 642, 648, 651 Elk Area 064 (AHE only)	09/01 - 09/14	14	3Pt. minimum	Early Archery General (WA)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	603, 612, 615, 638, 648 Elk Area 064 (AHE only)	11/21 - 12/15	25	3Pt. minimum	Late Archery General (WA) Closed in PLWMA 600 in GMU 603.
	602, 603, 607	10/06 - 10/12	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/21 - 12/15	25	3Pt. minimum	Late Muzzleloader General (WM)
	601, 602, 603, 607, 612, 615, 618, 624,627, 633, 638, 642, 648, 651 (Elk Area 064 AHE only)	11/03 - 11/11	9	3Pt. minimum	Modern Firearm General (WF)
	621 Dungeness A (6) 621 Dungeness B (6) 621 Dungeness C (6) 651 Satsop (15)	11/28 - 12/02 12/05 - 12/09 12/12 - 12/16 12/01 - 12/15	5 5 5 15	Antlerless Antlerless Antlerless Antlerless	Modern Firearm Permit Only (WF, WM)
	638 Quinault Ridge (5).	10/01 - 10/10	10	3Pt. min or antlerless	AHE Only (Any Elk Tag).
	621 Olympic C (6) 638 Quinault D (20)	09/01 - 09/14 11/21 - 12/15	14 25	3Pt. minimum Antlerless	Archery Bull Permit Only (WA)
	603 Pysht PLWMA (2)	09/15 - 09/30	16	Any bull	PLWMA 600 Raffle Hunt (Any Tag)
2000	601, 602, 603, 612, 615, 618, 624, 627, 633, 638, 642, 648, 651 Elk Area 064 (AHE only)	09/01 - 09/14	14	3Pt. minimum	Early Archery General (WA)
	603, 612, 615, 638, 648 Elk Area 064 (AHE only)	11/22 - 12/15	24	3Pt. minimum	Late Archery General (WA) Closed in PLWMA 600 in GMU 603.
	602, 603, 607	10/07 - 10/13	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/22 - 12/15	24	3Pt. minimum	Late Muzzleloader General (WM)
	601, 602, 603, 607, 612, 615, 618, 624,627, 633, 638, 642, 648, 651 (Elk Area 064 AHE only)	11/04 - 11/12	9	3Pt. minimum	Modern Firearm General (WF)
	621 Olympic A (14) 621 Dungeness A (9) 621 Dungeness B (4)	11/04 - 11/12 11/08 - 11/12 11/08 - 11/12	9 5 5	3Pt. minimum Antlerless 3Pt. minimum	Modern Firearm Permit Only (WF)
	621 Olympic B (2) 621 Dungeness C (1)	10/01 - 10/10 10/01 - 10/10	10 10	3Pt. minimum	Muzzleloader Permit Only (WM)
	638 Quinault Ridge (5)	10/01 - 10/10	10	3Pt. min or antlerless	AHE Only (Any Elk Tag).
	621 Olympic C (4). 621 Dungeness D (1)	09/01 - 09/14 09/01 - 09/14	14 14	3Pt. minimum 3Pt. minimum	Archery Bull Permit Only (WA)
	603 Pysht PLWMA (2)	09/15 - 09/30	16	Any bull	PLWMA 600 Raffle Hunt (Any Tag)
1999	601, 603, 612, 615, 618, 624, 638, 642, 648, 651 Elk Area 064 (AHE only)	09/01 - 09/14	14	3Pt. minimum	Early Archery General (WA)
	603, 612, 615, 638, 648 Elk Area 064 (AHE only)	11/24 - 12/15	22	3Pt. minimum	Late Archery General (WA) Closed in PLWMA 600 in GMU 603.
	603, 607	10/09 - 10/15	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/24 - 12/15	22	3Pt. minimum	Late Muzzleloader General (WM)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	601, 602, 603, 607, 612, 615, 618, 621, 624, 638, 642, 648, 651. (Elk Area 064 AHE only)	11/06 - 11/14	9	3Pt. minimum	Modern Firearm General (WF)
	Dickey A (54), Olympic A(13)	11/06 - 11/14	9	3Pt. minimum	Modern Firearm Permit Only (WF)
	Dungeness (9)	11/10 - 11/14	5	Antlerless	(WF or WM)
	Dickey B (6), Olympic B (3)	10/01 -10/10	10	3Pt. minimum	Muzzleloader Permit Only (WM)
	Quinault Ridge (5)	10/01 - 10/10	10	3Pt. minimum	AHE Only (Any Elk Tag).
	Dickey C (35), Olympic C (5)	09/01 - 09/14	14	3Pt. minimum	Archery Bull Permit Only (WA)
	Pysht (2)	09/01 - 09/14	14	Any bull	PLWMA 600 Raffle Hunt (Any Tag)
1998	601, 603, 612, 615, 618, 624, 638, 642, 648, 651 Elk Area 064 (AHE only)	09/01 - 09/14	14	3Pt. minimum	Early Archery General (WA)
	603, 612, 615, 638, 648 Elk Area 064 (AHE only)	11/25 - 12/15	21	3Pt. minimum	Late Archery General (WA) Closed in PLWMA 600 in GMU 603.
	603, 607	10/10 - 10/16	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/25 - 12/15	22	3Pt. minimum	Late Muzzleloader General (WM)
	601, 603, 607, 612, 615, 618, 624, 638, 642, 648, 651 (Elk Area 064 AHE only)	11/07 - 11/15	9	3Pt. minimum	Modern Firearm General (WG)
	Dickey A (46), Olympic A (14)	11/02 - 11/15	14	3Pt. minimum	Modern Firearm Permit Only (WG)
	Dickey B (8), Olympic B (2)	10/01 -10/10	10	3Pt. minimum	Muzzleloader Permit Only (WM)
	Dickey C (39), Olympic C (6)	09/01 - 09/14	14	3Pt. minimum	Archery Bull Permit Only (WA)
	Pysht (2)	09/09 - 09/14	14	Any bull	PLWMA 600 Raffle Hunt (Any Tag)
1997	601, 603, 612, 615, 618, 624, 638, 642, 648, 651 Elk Area 064 (AHE only)	09/01 - 09/14	14	3Pt. minimum	Early Archery General (WA)
	603, 612, 615, 638, 648 Elk Area 064 (AHE only)	11/25 - 12/15	21	3Pt. minimum	Late Archery General (WA) Closed in PLWMA 600 in GMU 603.
	603, 607	10/04 - 10/10	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/26 - 12/15	21	3Pt. minimum	Late Muzzleloader General (WM)
	601, 603, 607, 612, 615, 618, 624, 638, 642, 648, 651(Elk Area 064 AHE only)	11/08 - 11/16	9	3Pt. minimum	Modern Firearm General (WG)
		11/10 - 11/16	7	3Pt. minimum	Modern Firearm General (WP)
	Dickey A (53), Olympic A (11).	11/03 - 11/16	14	3Pt. minimum	Modern Firearm Permit Only (WG)
	Dickey B (18), Olympic B (8)	10/01 -10/10	10	3Pt. minimum	Muzzleloader Permit Only (WM)
	Dickey C (57), Olympic C (11)	09/01 - 09/14	14	3Pt. minimum	Archery Bull Permit Only (WA)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	638 Quinault Ridge (5)	10/01 - 10/10	10	3Pt. min or antlerless	AHE Permit Only Hunt (Any Tag)
	Pysht (2)	09/09 - 09/14	14	Any bull	PLWMA 600 Raffle Hunt (Any Tag)
1996	612, 615, 618, 642, 648, 651 601, 638	09/01 - 09/14	14	3Pt. minimum 3Pt. min or antlerless	Early Archery General (WA)
	603, 612, 615, 648 638	11/27 - 12/15 11/27 - 12/15	18 18	Either-sex 3Pt. min or antlerless	Late Archery General (WA)
	603 607	10/03 - 10/09 10/03 - 10/09	7	Bull only 3Pt. minimum	Early Muzzleloader General (WM)
	601	11/27 - 12/15	19	3Pt. minimum	Late Muzzleloader General (WM)
	601, 607, 638 603, 612, 615, 618, 624, 642, 648, 651	11/06 - 11/17 11/09 - 11/17	12 9	3Pt. minimum Bull/visible antler	Modern Firearm General (WG) Modern Firearm General (WP)
	Dickey Bull A (10) and Quinault Ridge (5) Dickey Bull B (75)	10/01 - 10/11 11/06 - 11/17	11 12	3Pt. minimum 3Pt. minimum	Modern Firearm Permit Only (WP or WM)
	Goodman (30), Matheny (30) & Wynoochee (30)	11/18 - 11/24	7	Antlerless only	Modern Firearm Permit Only (WL or WM)
	1995	615, 618, 642, 648, 651 601, 638	09/01 - 09/14	14	3Pt. minimum 3Pt. min or antlerless
603, 612, 615, 648 638 636		11/22 - 12/15 11/22 - 12/15 11/22 - 12/15	24 24 24	Either-sex 3Pt. min or antlerless 3Pt. minimum	Late Archery General (WA)
603, 612 636		10/05 - 10/11 10/05 - 10/11	7	Bull only 3Pt. minimum	Early Muzzleloader General (WM)
601		11/22 - 12/15	24	3Pt. minimum	Late Muzzleloader General (WM)
601, 607, 636, 638 603, 612, 615, 618, 624, 642, 648, 651		11/01 - 11/13 11/04 - 11/13	13 10	3Pt. minimum Bull/visible antler	Modern Firearm General (WB) Modern Firearm General (WC)
Dickey Bull A (10) and Quinault Ridge (5) Dickey Bull B (75)		10/01 - 10/13 11/01 - 11/13	13 13	3Pt. minimum 3Pt. minimum	Modern Firearm Permit Only (WC or WM)
Goodman (30), Matheny (40) & Wynoochee (50)		11/14 - 11/19	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
ML Area 962 (5) Elwha		12/15 - 01/15	32	Antlerless only	Muzzleloader Permit Only (WM)
1994		612, 615, 618, 642, 648, 651 601, 638	09/01 - 09/14 09/01 - 09/14	14 14	Either-sex Spike or antlerless
	603, 612, 615, 648 638 636	11/23 - 12/15 11/23 - 12/15 11/23 - 12/15	23 23 23	Either-sex 3Pt. min or antlerless 3Pt. minimum	Late Archery General (WA)
	607, 636	10/06 - 10/12	7	3Pt. minimum	Early Muzzleloader General (WM)
	601	11/23 - 12/15	23	3Pt. minimum	Late Muzzleloader General (WM)
	601, 607, 636, 638 603, 612, 615, 618, 624, 642, 648, 651	11/02 - 11/13 11/05 - 11/13	12 9	3Pt. minimum Bull with visible antler	Modern Firearm General (WE) Modern Firearm General (WL)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	Dickey Bull A (10) Quinault Ridge (5) Dickey Bull B (75)	10/01 - 10/09 10/01 - 10/13 11/01 - 11/13	9 13 13	3Pt. minimum 3Pt. minimum 3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	Soleduck (30), Goodman (50), Matheny (50), and Wynoochee (50)	11/15 - 11/20	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk Area 061 Mt Tebo (5)	10/01 - 10/13	13	3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	ML area 962 (5) Elwha Hoko River A (15) Hoko River B (15)	12/15 - 01/15 01/01 - 01/15 01/16 - 02/15	32 15 31	Antlerless only Antlerless only Antlerless only	Muzzleloader Permit Only (WM)
1993	615, 618, 642, 648, 651 601, 607, 638, 639	10/01 - 10/14 10/01 - 10/14	14 14	Either-sex Antlerless or 3Pt. Min.	Early Archery General (WA)
	603, 612, 615, 648 638 636	11/24 - 12/15 11/24 - 12/15 11/24 - 12/15	22 22 22	Either-sex Antlerless or 3Pt. Min. 3Pt. minimum	Late Archery General (WA)
	603, 612 636	10/08 - 10/14 10/08 - 10/14	7 7	Bull only 3Pt. minimum	Early Muzzleloader General (WM)
	601	11/24 - 12/15	22	3Pt. minimum	Late Muzzleloader General (WM)
	601, 607, 636, 638, 639 603, 612, 615, 618, 624, 642, 648, 651	11/03 - 11/14 11/06 - 11/14	12 9	3Pt. minimum Bull/visible antler	Modern Firearm General (WE) Modern Firearm General (WL)
	Dickey Bull A (10) and Quinault R. (5) Dickey Bull B (75)	10/03 - 10/14 10/03 - 10/14 10/30 - 11/10	12 12 12	3Pt. minimum 3Pt. minimum 3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	Soleduck (30), Goodman (50), Matheny (50), Humpstulips (15), and Wynoochee (50)	11/16 - 11/21	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk Area 061 Mt Tebo (5)	10/03 - 10/14	12	3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	ML area 962 Elwha (5) ML area 961 Hoko A (15) ML area 961 Hoko B (15)	12/15 - 01/15 01/01 - 01/15 01/16 - 02/15	32 15 31	Antlerless only Antlerless only Antlerless only	Muzzleloader Permit Only (WM)
	1992	615, 618, 642, 648, 651 601, 607, 638, 639	10/01 - 10/14 10/01 - 10/14	14 14	Either-sex Antlerless or 3Pt. Min.
603, 612, 615, 648 638 636		11/25 - 12/15 11/25 - 12/15 11/25 - 12/15	21 21 21	Either-sex Antlerless or 3Pt. Min. 3Pt. minimum	Late Archery General (WA)
603, 612 636		10/08 - 10/14 10/08 - 10/14	7 7	Bull only 3Pt. minimum	Early Muzzleloader General (WM)
601		11/25 - 12/15	21	3Pt. minimum	Late Muzzleloader General (WM)
601, 607, 621, 636, 638, 639 603, 612, 615, 618, 624, 642, 648, 651		11/04 - 11/15 11/07 - 11/15	12 9	3Pt. minimum Bull/visible antler	Modern Firearm General (WE) Modern Firearm General (WL)
Dickey Bull A (10) and Quinault Ridge (5) Dickey Bull B (75)		10/04 - 10/16 10/04 - 10/16 10/28 - 11/08	13 13 12	3Pt. minimum 3Pt. minimum 3Pt. minimum	Modern Firearm Permit Only (WL or WM)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	Soleduck (30), Goodman (50), Matheny (50), Humptulips (15), Wynoochee (50)	11/17 - 11/22	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk Area 061 Mt Tebo (5)	10/04 - 10/16	13	3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	ML area 962 Elwha A (5)	12/15 - 01/15	32	Antlerless only	Muzzleloader Permit Only (WM)
	ML area 962 Elwha B (5)	01/16 - 02/15	31	Antlerless only	
ML area 961 Hoko A (15)	01/01 - 01/15	15	Antlerless only		
ML area 961 Hoko B (15)	01/16 - 02/15	31	Antlerless only		
1991	615, 618, 642, 648, 651 601, 607, 638, 639 621	09/28 - 10/11 09/28 - 10/11 09/28 - 10/11	14 14 14	Either-sex Antlerless or 3Pt. Min. 3Pt. minimum	Early Archery General (WA)
	603, 612, 615, 648 638 636	11/27 - 12/15 11/27 - 12/15 11/27 - 12/15	19 19 19	Either-sex Antlerless or 3Pt. Min. 3Pt. minimum	Late Archery General (WA)
	603, 612 636	10/05 - 10/11 10/05 - 10/11	7 7	Bull only 3Pt. minimum	Early Muzzleloader General (WM)
	601	11/27 - 12/15	19	3Pt. minimum	Late Muzzleloader General (WM)
	601, 607, 621, 636, 638, 639 603, 612, 615, 618, 624, 642, 648, 651	11/06 - 11/17 11/09 - 11/17	12 9	3Pt. minimum Bull/visible antler	Modern Firearm General (WE) Modern Firearm General (WL)
	Dickey Cow (30) Dickey Bull A (10) Quinault R. (5) Dickey Bull B (75)	11/12 - 11/17 09/28 - 10/11 09/28 - 10/11 10/30 - 11/10	6 14 14 12	Antlerless only 3Pt. minimum 3Pt. minimum 3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	Soleduck (30), Goodman (50), Matheny (50), Humptulips (15), Wynoochee (50)	11/12 - 11/17	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk Area 061 Mt Tebo (5)	09/28 - 10/11	14	3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	ML area 066 Twin V. (20) ML area 962 Elwha A (5) ML area 962 Elwha B (5) ML area 961 Hoko A (15) ML area 961 Hoko B (15)	01/16 - 02/15 12/15 - 01/15 01/16 - 02/15 01/01 - 01/15 01/16 - 02/15	31 32 31 15 31	Antlerless only Antlerless only Antlerless only Antlerless only Antlerless only	Muzzleloader Permit Only (WM)
	1990	615, 618, 642, 648, 651 601, 607, 638, 639 621	09/28 - 10/11 09/28 - 10/11 09/28 - 10/11	14 14 14	Either-sex Antlerless or 3Pt. Min. 3Pt. minimum
603, 612, 615, 648 638, 636		11/21 - 12/09 11/21 - 12/09	19 19	Either-sex Antlerless or 3Pt. Min.	Late Archery General (WA)
603, 612 636		10/06 - 10/12 10/06 - 10/12	7 7	Bull only 3Pt. minimum	Early Muzzleloader General (WM)
601		11/21 - 12/09	19	3Pt. minimum	Late Muzzleloader General (WM)
601, 607, 621, 636, 638, 639 603, 612, 615, 618, 624, 642, 648, 651		10/31 - 11/11 11/03 - 11/11	12 9	3Pt. minimum Bull/visible antler	Modern Firearm General (WE) Modern Firearm General (WL)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	Dickey Cow (30) Dickey Bull A (10) Quinault R. (5) Dickey Bull B (75)	11/13 - 11/18 09/29 - 10/12 09/29 - 10/12 10/31 - 11/11	6 14 14 12	Antlerless only 3Pt. minimum 3Pt. minimum 3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	Soleduck (30), Goodman (50), Matheny (50), Humptulips (30), Wynoochee (50)	11/13 - 11/18	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk Area 061 Mt Tebo (5) Elk Area 066 Twin Valley A (20)	09/29 - 10/12 01/01 - 01/15	14 15	3Pt. minimum Antlerless only	Modern Firearm Permit Only (WL or WM)
	ML area 066 Twin V. B(20) ML area 962 Elwha A (5) ML area 962 Elwha B (5) ML area 961 Hoko A (15) ML area 961 Hoko B (15)	01/16 - 02/15 12/15 - 01/15 01/16 - 02/15 01/01 - 01/15 01/16 - 02/15	31 32 31 15 31	Antlerless only Antlerless only Antlerless only Antlerless only Antlerless only	Muzzleloader Permit Only (WM)
1989	615, 618, 642, 648, 651 601, 607, 621, 638, 639	09/30 - 10/13 09/30 - 10/13	14 14	Either-sex Antlerless or 3Pt. Min.	Early Archery General (WA)
	603, 612, 615, 648 638, 636	11/22 - 12/15 11/22 - 12/15	24 24	Either-sex Antlerless or 3Pt. Min.	Late Archery General (WA)
	603, 612 636	10/07 - 10/13 10/07 - 10/13	7 7	Bull only 3Pt. minimum	Early Muzzleloader General (WM)
	601, 621	11/22 - 12/10	19	3Pt. minimum	Late Muzzleloader General (WM)
	601, 607, 621, 636, 638, 639 603, 612, 615, 618, 624, 642, 648, 651	11/01 - 11/12 11/04 - 11/12	12 9	3Pt. minimum Bull/ visible antler	Modern Firearm General (WE) Modern Firearm General (WL)
	Dickey Cow (30) Dickey Bull A (10) Quinault R. (5). Dickey Bull B (75)	11/14 - 11/19 09/30 - 10/03 09/30 - 10/13 11/01 - 11/12	6 4 14 12	Antlerless only 3Pt. minimum 3Pt. minimum 3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	Soleduck (30), Goodman (50), Matheny (50), Humptulips (30), Hoquiam (25), Wynoochee (50)	11/14 - 11/19	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk Area 061 Mt Tebo (5)	09/30 - 10/13	14	3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	ML area 066 Twin V. (20) ML area 961 Hoko A (15) ML area 961 Hoko B (15)	01/16 - 02/15 01/01 - 01/15 01/16 - 02/15	31 15 31	Antlerless only Antlerless only Antlerless only	Muzzleloader Permit Only (WM)
	1988	603, 615, 618, 624, 625, 642, 645, 648, 651 601, 607, 621, 638, 639	10/01 - 10/14 10/01 - 10/14	14 14	Either-sex Either-sex; 3Pt. Min.
603, 612, 615 636 648 638		11/23 - 12/11 11/23 - 12/11 11/23 - 12/31 11/23 - 12/31	19 19 39 39	Either-sex Either-sex; 3Pt. Either-sex Either-sex; 3Pt. Min.	Late Archery General (WA)
612 636		10/08 - 10/14 10/08 - 10/14	7 7	Bull only 3Pt. minimum	Early Muzzleloader General (WM)
601, 621		11/23 - 12/11	19	3Pt. minimum	Late Muzzleloader General (WM)
601, 607, 621, 636, 638, 639 603, 612, 615, 618, 624, 625, 642, 645, 648, 651		11/02 - 11/13 11/05 - 11/13	12 9	3Pt. minimum Bull/visible antler	Modern Firearm General (WE) Modern Firearm General (WL)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	Dickey Cow (30) Dickey Early Bull (10) Quinault R. (5) Dickey Late Bull (75)	12/14 - 12/18 10/01 - 10/14 10/01 - 10/14 11/02 - 11/13	5 14 14 12	Antlerless only 5Pt. Minimum 5Pt. Minimum 3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	Soleduck (40), Goodman (50), Matheny (50), Humptulips (30), Hoquiam (30), Wynoochee (50)	11/14 - 11/19	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk Area 061 Mt Tebo (5)	10/01 - 10/14	14	5Pt. Minimum	Modern Firearm Permit Only (WL or WM)
	ML area 066 Twin V. (20) ML area 961 Hoko A (20)	01/16 - 02/15 11/23 - 12/11	31 19	Antlerless only Antlerless only	Muzzleloader Permit Only (WM)
1987	603, 615, 618, 624, 625, 642, 645, 648, 651 601, 607, 621, 638, 639	10/01 - 10/16 10/01 - 10/16	16 16	Either-sex 3Pt. min or antlerless	Early Archery General (WA)
	603, 612, 615, 648 636B	11/23 - 12/11 11/23 - 12/11	19 19	Either-sex Either-sex; 3Pt. Min.	Late Archery General (WA)
	612 636	10/10 - 10/16 10/10 - 10/16	7 7	Bull only Branched Antler Only	Early Muzzleloader General (WM)
	601, 621	11/25 - 12/10	16	3Pt. minimum	Late Muzzleloader General (WM)
	601, 607, 621, 636, 638, 639 603, 612, 615, 618, 624, 625, 642, 645, 648, 651	11/04 - 11/15 11/07 - 11/15	12 9	3Pt. minimum Bull/visible antler	Modern Firearm General (WE) Modern Firearm General (WL)
	Dickey Cow (30) Dickey Early Bull (10) Colonel Bob Bull (10) Dickey Late Bull (75)	11/18 - 11/22 10/01 - 10/16 10/01 - 10/16 11/04 - 11/15	5 16 16 12	Antlerless only 5Pt. Minimum 5Pt. Minimum 3Pt. minimum	Modern Firearm Permit Only (WL or WM)
	Soleduck (40), Goodman (50), Matheny (50), Humptulips (30), Hoquiam (30), Wynoochee (50)	11/18 - 11/22	5	Antlerless only	
	Elk Area 061 Mt Tebo (5)	10/01 - 10/16	16	5Pt. Minimum	Modern Firearm Permit Only (WL or WM)
	ML area 066 Twin V. (25)	01/16 - 02/15	31	Antlerless only	Muzzleloader Permit Only (WM)
	1986	.603, 607, 612, 615, 618, 621, 624, 625, 638*, 639, 642, 645, 648, 651	09/03 - 09/07 09/08 - 09/17	5 10	Bull only *3Pt. Min. Either-sex
603, 615, 648		12/06 - 12/31	26	Either-sex.	Late Archery General (WA)
601 603, 607, 636*, 639 621		12/06 - 12/14 10/04 - 10/10 12/06 - 12/14	9 7 9	3Pt. minimum Bull only (*3Pt. Min.) Bull only	Late Muzzleloader General (WM)
603, 607, 612, 615, 618, 621, 624, 625, 639, 642, 645, 648, 651 601*, 636*, 638*		11/05 - 11/16 11/08 - 11/16	12 9	Bull with visible antler Except *3Pt. minimum.	Modern Firearm General (WE) Modern Firearm General (WL)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	602 Dickey B (75) 638 Colonel Bob B (5) Elk Area 061 Mt Tebo (5) 602 Dickey C (40), 607 Soleduck (50), 612 Goodman (50), 618 Matheny (50), 638 Colonel Bob C (20), 639 Humptulips (40), 645 Hoquiam (40), 648 Wynoochee (50)	11/05 - 11/16 10/04 - 10/10 10/04 - 10/10 11/29 - 12/04	12 7 7 6	3t. Minimum 5Pt. Minimum 5Pt. Minimum Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk Area 066Twin Val. (30)	01/01 - 01/18	18	Antlerless only	Modern Firearm Permit Only (WL or WM)
	636 Skokomish (20)	12/06 - 12/14	9	Antlerless only	Muzzleloader Permit Only (WM)
1985	603, 607, 612, 615, 618, 621, 624, 625, 638*, 639, 642, 645, 648, 651	09/04 - 09/08 09/09 - 09/18	5 10	Bull only *(3Pt. Min.) Either-sex	Early Archery General (WA)
	603, 615, 648	12/07 - 12/31	26	Either-sex.	Late Archery General (WA)
	601 603, 607, 636*, 639 621	12/07 - 12/15 10/05 - 10/11 12/07 - 12/15	9 7 9	3Pt. minimum Bull only (*3Pt. Min.) Bull only	Late Muzzleloader General (WM)
	603, 607, 612, 615, 618, 621, 624, 625, 639, 642, 645, 648, 651 601*, 636*, 638*	11/06 - 11/17 11/09 - 11/17	12 9	Bull with visible antler Except *3Pt. minimum.	Modern Firearm General (WE) Modern Firearm General (WL)
	602 Dickey B (75) 638 Colonel Bob (5) Elk Area 061 Mt Tebo (5)	11/06 - 11/17 10/05 - 10/11 10/05 - 10/11	12 7 7	3t. Minimum 5Pt. Minimum 5Pt. Minimum	
	601 Hoko (40), 602 Dickey C (40), 607 Soleduck (50), 612 Goodman (50), 618 Matheny (75), 638 Colonel Bob C (20), 639 Humptulips (40), 645 Hoquiam (540), 648 Wynoochee (50)	11/30 - 12/05	6	Antlerless only	Modern Firearm Permit Only (WL or WM)
	Elk area 066 Twin V. (50)	01/01 - 01/19	19	Antlerless only	Modern Firearm Permit Only (WL or WM)
	636 Skokomish (20)	12/07 - 12/15	9	Antlerless only	Muzzleloader Permit Only (WM)
1984	603, 607, 612, 615, 618, 621, 624, 625, 638*, 639, 642, 645, 648, 651.	09/05 - 09/09 09/10 - 09/19	5 10	Bull only *(3Pt. Min.) Either-sex	Early Archery General (WA)
	603, Bow Area 835 Wishkah. 615, 636	12/08 - 12/31	23	Either-sex. Antlerless or 3Pt Bull	Late Archery General (WA)
	607 603, 621, 639, 645	12/08 - 12/23 10/06 - 10/11	16 6	3Pt. minimum Bull only	Muzzleloader General (WM)
	603, 607, 612, 615, 618, 621, 624, 625, 639, 642, 645, 648, 651 601*, 636*, 638*	11/07 - 11/18 11/10 - 11/18	12 9	Bull /visible antler Except *3Pt. minimum.	Modern Firearm General (WE) Modern Firearm General (WL)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	602 Dickey B (75) 638 Colonel Bob (5) Elk Area 061 Mt Tebo (5) 601 Hoko (40), 602 Dickey C (40), 607 Soleduck(50), 612 Goodman (50), 618 Matheny (75), 639 Humpstulips (75), 645 Hoquiam (50), 648 Wynoochee (100)	11/07 - 11/18 10/06 - 10/11 10/06 - 10/11 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05	12 6 6 6	3t. Minimum 5Pt. Minimum 5Pt. Minimum Antlerless only	Modern Firearm Permit Only (WL or WM)
1983	Bow Area 835 Wishkah 603 Pysht 615 Clearwater Bow Area 833 Sitkum	12/03...01/01 12/03 - 01/01 12/03 - 01/15 09/10 - 09/25	29 29 43 16	Either-sex. Either-sex Antlerless or branch Branched antler bull	Archery (Any Tag) Archery Stamp required.
	ML area 909 Elwha	12/03 - 02/26	85	Either-sex	Muzzleloader General (WM)
	603, 607, 612, 615, 618, 621, 624, 625, 638, 639, 642, 645, 648, 651. 636	11/05 - 11/15	11	Bull/visible antler 3Pt. minimum.	Modern Firearm General (W)
	600 Ozette (100), 600 Ozette(50), 607 Soleduck(75), 618 Matheny (75), 639 Humpstulips (75), 645 Hoquiam (50), 648 Wynoochee (100)	11/05 - 11/15 11/26 - 11/30	11 5	3t. Minimum Antlerless only	Modern Firearm Permit Only (W)
1982	Bow Area 835 Wishkah 603 Pysht. 615 Clearwater Bow Area 833 Sitkum	12/04...01/02 12/04 - 01/02 12/04 - 01/02 09/11 - 09/26	29 29 30 16	Either-sex. Either-sex Antlerless Branched antler only	Archery (Any Tag) Archery Stamp required.
	ML area 909 Elwha	12/03 - 02/26	85	Either-sex	Muzzleloader General (MKWXY)
	600 603, 607, 612, 615, 618, 621, 624, 625,, 638, 639, 642, 645, 648, 651 636	11/06 - 11/16 11/06 - 11/16	11 11	Bull with visible antler 3Pt. minimum.	Modern Firearm General (W)
	600 Ozette(50), 607 Soleduck(100), 618 Matheny (75), 639 Humpstulips (75), 645 Hoquiam (50), 648 Wynoochee (100)	11/27 - 12/01	5	Antlerless only	Modern Firearm Permit Only (MKWY)
1981	Bow Area 835 Wishkah. 603 Pysht. 615 Clearwater Bow Area 833 Sitkum	12/14...01/31 12/05 - 01/03 12/05 - 01/03 09/12 - 09/20	49 29 30 9	Either-sex. Either-sex Either-sex Bulls only	Archery (Any Tag) Archery Stamp required.
	ML area 9 Elwha	12/05 - 02/28	86	Either-sex	Muzzleloader General (MKWXY)
	600, 603, 607, 612, 615, 618, 621, 624, 625, 636, 638, 639, 642, 645, 648, 651	11/07 - 11/17	11	Bull/visible antler	Modern Firearm General (W)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	Elk Area 21 Duckabush (25) 600 Ozette(75), 607 Soleduck(75), 618 Matheny (50), 639 Humptulips (75), 645 Hoquiam (50), 648 Wynoochee (100)	11/18 - 12/31 11/28 - 12/02	44 5	Antlerless only Antlerless only	Modern Firearm Permit Only (MKWY)
1980	603 Pysht. 615 Clearwater Bow Area 833 Sitkum	12/06 - 01/04 12/06 - 01/04 09/13 - 09/21	29 30 9	Either-sex Either-sex Bulls Only	Archery (Any Tag) Archery Stamp required.
	ML area 9 Elwha	12/06 - 02/28	85	Either-sex	Muzzleloader General (MKWXY)
	600, 603, 607, 612, 615, 618, 621, 624, 625, 636, 638, 639, 642, 645, 648, 651	11/09 - 11/19	11	Bull/visible antler	Modern Firearm General (W)
	Elk Area 18 Quinalt (50) Elk Area 21 Duckabush (25) 600 Ozette(125), 607 Soleduck(100), 612 Goodman (50) 639 Humptulips (100) 645 Copalis (50) 648 Wynoochee (100) 651 Satsop (50) 618 Matheny (75) 636 Skokomish (50)	12/01 - 01/31 11/20 - 12/31 11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 12/04 - 12/07 12/04 - 12/07	62 42 5 5 5 5 5 5 5 5 4 4	Either-sex Either-sex Antlerless only Antlerless only Antlerless only Antlerless only Antlerless only Antlerless only Antlerless only Antlerless only Antlerless only Antlerless only	Modern Firearm Permit Only (MKWY)
1979	603 Pysht. 615 Clearwater Bow Area 833 Sitkum	12/08 - 12/31 12/08 - 12/31 09/08 - 09/16	24 24 9	Either-sex Either-sex Bull visible antler	Archery (Any Tag) Archery Stamp required.
	ML area 9 Elwha	12/08 - 02/29	84	Either-sex	Muzzleloader General (MKWXY)
	600, 603, 607, 612, 615, 618, 621, 624, 625, 636, 638, 639, 642, 645, 648, 651	11/11 - 11/25	15	Bull with visible antler	Modern Firearm General (W)
	Elk Area 7 Skokomish (50) Elk Area 18 Quinalt (50) 600 Ozette(125) 607 Soleduck(100) 612 Goodman (75) 636 Skokomish (50) 639 Humptulips (100) 645 Copalis (50) 648 Wynoochee (100) 651 Satsop (50) 618 Matheny (75)	12/08 - 01/31 12/08 - 01/31 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 12/04 - 12/07	55 55 5 5 5 5 5 5 5 5 5 4	Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Antlerless only	Modern Firearm Permit Only (MKWY)
1978	603 Pysht 615 Clearwater Bow Area 31 Dose../Duck	12/09 - 12/31 12/09 - 12/31 01/01 - 01/31	23 23 31	Either-sex Either-sex Either-sex	Archery (Any Tag) Archery Stamp required.
	ML area 9 Elwha	12/09 - 02/28	82	Either-sex	Muzzleloader special muzzleloader license required.
	600, 603, 607, 612, 615, 618, 621, 624, 625, 636, 638, 639, 642, 645, 648, 651	11/06 - 11/19	14	Bull/visible antler	Modern Firearm General (W)

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	Elk Area 7 Skokomish (50) Elk Area 18 Quinault (50) Elk Area 21 Duckabush (50) Elk Area 22 Quillayute (50) 600 Ozette(100), 607 Soleduck(100), 612 Goodman (75) 636 Skokomish (50) 639 Humpstulips (100) 645 Copalis (50) 648 Wynoochee (100) 651 Satsop (50) 618 Matheny (75)	12/09 - 01/31 12/09 - 01/31 12/09 - 01/31 12/09 - 01/31 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15	54 54 54 44 5 5 5 5 5 5 5 5 5	Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Permit Only (MKWY)
1977	603 Pysht. 615 Clearwater Bow Area 31 Dose../Duck	11/26 - 12/31 12/10 - 12/31 01/01 - 01/31	36 22 31	Either-sex Either-sex Either-sex	Archery (Any Tag) Archery Stamp required.
	600, 603, 607, 612, 615, 618, 621, 624, 625, 636, 638, 639, 642, 645, 648, 651 Elk Area 9 Elwha	10/31 - 11/13 11/21 - 01/31	14 72	Bull/visible antler Either-sex	Modern Firearm General (W) Open to all elk hunters.
	Elk Area 7 Skokomish (50) Elk Area 18 Quinault (50) Elk Area 21 Wishkah (50) Elk Area 22 Quillayute (75) 607 Soleduck(75) 612 Goodman (50) 618 Matheny (50) 639 Humpstulips (50) 645 Hoquiam (75) 648 Wynoochee (150) 651 Satsop (75)	11/21 - 01/31 11/21 - 01/31 11/21 - 01/31 11/21 - 01/31 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06	72 72 72 72 5 5 5 5 5 5 5 5	Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Permit Only (MKWY)
1976	603 Pysht 615 Clearwater	12/11 - 12/31 12/11 - 12/31	21 21	Either-sex Either-sex	Archery (Any Tag) Archery Stamp required.
	600, 603, 607, 612, 615, 618, 621, 624, 625, 636, 638, 639, 642, 645, 648, 651 Elk Area 9 Elwha	11/01 - 11/14 11/22 - 01/31	14 71	Bull/visible antler Either-sex	Modern Firearm General (W) Open to all elk hunters.
	Elk Area 7 Skokomish (50) Elk Area 18 Quinault (50) Elk Area 21 Wishkah (50) Elk Area 22 Quillayute (75) 607 Soleduck(75) 639 Humpstulips (75) 645 Hoquiam (75) 648 Wynoochee (150) 651 Satsop (75)	11/22 - 01/31 11/22 - 01/31 11/22 - 01/31 11/22 - 01/31 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06	71 71 71 71 5 5 5 5 5	Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Permit Only (MKWY)
1975	603 Pysht 615 Clearwater	12/11 - 12/31 12/11 - 12/31	21 21	Either-sex Either-sex	Archery (Any Tag) Archery Stamp required.
	600, 603, 607, 612, 615, 618, 621, 624, 625, 636, 638, 639, 642, 645, 648, 651 Elk Area 9 Elwha	11/01 - 11/14 11/22 - 01/31	14 71	Bull/visible antler Either-sex	Modern Firearm General (W) Open to all elk hunters.

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	Elk Area 7 Skokomish (50) Elk Area 18 Quinalt (50) Elk Area 21 Wishkah (50) Elk Area 22 Quillayute (75) 607 Soleduck(75) 639 Humptulips (75) 645 Hoquiam (75) 648 Wynoochee (150) 651 Satsop (75)	11/22 - 01/31 11/22 - 01/31 11/22 - 01/31 11/22 - 01/31 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06 11/02 - 11/06	71 71 71 71 5 5 5 5 5	Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Permit Only (MKWY)
1974	10KN Jefferson 10B Clallam	12/07 - 12/31 12/08 - 12/31	25 24	Either-sex	Archery (Any Tag) Archery License required.
	7D, 10A, 10B, 10D, 10C, 10EE, 10EW, 10JE, 10JW, 10L, 10TE, 10TW, 10KS, 10KN, 10N, 10UE, 10UW Elk Area 9 Elwha	11/04 - 11/17 11/18 - 01/31	14 74	Bull/visible antler Either-sex	Modern Firearm General
	10A Clallam/Jefferson (100), 10B Clallam (50), 10EE Mason, GH, Thurston (100), 10EW Grays Harbor (100), 10JE Grays Harbor (50)	11/07 - 11/10	4	Either-sex	Either-sex Permit Controlled Elk Season
	Elk Area 7 Skokomish (50) Elk Area 11 Humptulips (50) Elk Area 18 Quinalt (50)	11/18 - 01/31 11/18 - 01/31 11/18 - 01/31	74 74 74	Either-sex Either-sex Either-sex	
1973	10KN Jefferson 10B Clallam	12/08 - 12/31	24	Either-sex	Archery (Any Tag) Archery License required.
	7D, 10A, 10B, 10D, 10C, 10EE, 10EW, 10JE, 10JW, 10L, 10TE, 10TW, 10KS, 10KN, 10N, 10UE, 10UW Elk Area 9 Elwha	11/05 - 11/18 11/19 - 01/31	14 73	Bull/visible antler Either-sex	Modern Firearm General
	10A Clallam/Jefferson (100) 10B Clallam (50) 10EE Mason, GH, Thurston (100), 10EW Grays Harbor (100), 10JE Grays Harbor (50), 10JW Grays H. (50) Elk Area 7 Skokomish (50) Elk Area 11 Humptulips (50) Elk Area 16 Dosewallips/ Duckabush (50)	11/08 - 11/11 11/19 - 01/31 11/19 - 01/31 11/19 - 01/31	4 73 73 73	Either-sex Either-sex Either-sex Either-sex	Either-sex Permit Controlled Elk Season
	10KN Jefferson. 10H Thurston, Grays Harbor	12/02 - 12/31 12/02 - 01/31	30 61	Either-sex	Archery (Any Tag) Archery License required.
1972	7D, 10A, 10B, 10D, 10C, 10EE, 10EW, 10JE, 10JW, 10L, 10TE, 10TW, 10KS, 10KN, 10N, 10UE, 10UW. Elk Area 9 Elwha	10/30 - 11/12 11/13 - 01/31	14 80	Bull/ visible antler Either-sex	Modern Firearm General

YEAR	GMU # & PERMIT (#s)	DATES	DAYS	LEGAL ANIMAL	HUNTING DESCRIPTION AND TAG TYPE
	10A Clallam/Jefferson (100), 10B Clallam (50), 10EE Mason, GH, Thurston (100), 10EW Grays Harbor (100), 10JE Grays Harbor (50), 10JW Grays Harbor (50) Elk Area 1Anderson/Helm (50) Elk Area 7 Skokomish (50) Elk Area 11Humptulips (50)	11/04 - 11/07 11/13 - 01/31 11/13 - 01/31 11/13 - 01/31	4 79 79 79	Either-sex Either-sex Either-sex Either-sex	Either-sex Permit Controlled Elk Season
1971	10B Clallam 10H Thurston, Grays Harbor 10KN Jefferson.	12/04 - 12/31	30	Either-sex	Archery (Any Tag) Archery License required.
	7D, 10A, 10B, 10D, 10C, 10EE, 10EW, 10JE, 10JW, 10L, 10TE, 10TW, 10KS, 10KN, 10N, 10UE, 10UW Elk Area 9 Elwha	11/01 - 11/14 11/27 - 01/31	14 66	Bull/visible antler Either-sex	Modern Firearm General
	10A Clallam/Jefferson (100), 10B Clallam (50), 10EE Mason, GH, Thurston (100), 10EW Grays Harbor (100), 10JE Grays Harbor (50), 10JW Grays Harbor (50), 10KN Jefferson (50), 10KS Jeff/G.H.(50), 10UE Clallam (50), 10UW Clallam (50) Elk Area 1Anderson/Helm (50) Elk Area 7 Skokomish (50)	11/06 - 11/09 11/27 - 01/31 11/13 - 01/31	4 66 66	Either-sex Either-sex Either-sex	Either-sex Permit Controlled Elk Season
	10B Clallam 10H Thurston, Grays Harbor 10KN Jefferson	12/12 - 12/31	20	Either-sex	Archery (Any Tag) Archery License required.
1970	7D, 10A, 10B, 10D, 10C, 10EE, 10EW, 10JE, 10JW, 10L, 10TE, 10TW, 10KS, 10KN, 10N, 10UE, 10UW Elk Area 8 Soleduck, Elk Area 9 Elwha, Elk Area 10 Hoko	11/07 - 11/22 11/23 - 01/31	16 71	Bull /visible antler Either-sex	Modern Firearm General
	10A Clallam/Jefferson (100), 10B Clallam (50), 10EE Mason, GH, Thurston (100), 10EW Grays Harbor (50), 10JE Grays Harbor (50), 10JW Grays Harbor (50), 10KN Jefferson (75), 10KS Jeff/G.H.(50), 10UE Clallam (50), 10UW Clallam (50) Elk Area 1Anderson/Helm (50) Elk Area 7 Skokomish (50)	11/18 - 11/22 11/23 - 01/31 11/23 - 01/31	5 70 70	Either-sex Either-sex Either-sex	Either-sex Permit Controlled Elk Season

APPENDIX B. Management Authority for Controlling Elk Damage

Authority:

RCW 77.36.005

Findings. (Expires June 30, 2004.)

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, rangeland suitable for grazing or browsing of domestic livestock, 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, commercially productive agricultural and horticultural crops, and rangeland suitable for grazing or browsing of domestic livestock, 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, and rangeland used for grazing or browsing of domestic livestock is beneficial to the claimant and the state.

[2001 c 274 § 1; 1996 c 54 § 1.]

NOTES:

Expiration date -- 2001 c 274 §§ 1-3: "The following expire June 30, 2004:

(1) Section 1, chapter 274, Laws of 2001;

(2) Section 2, chapter 274, Laws of 2001; and

(3) Section 3, chapter 274, Laws of 2001." [2001 c 274 § 5.]

Effective date -- 2001 c 274: "This act is necessary for the immediate preservation of the public peace, health, or safety, or support of the state government and its existing public institutions, and takes effect July 1, 2001." [2001 c 274 § 6.]

RCW 77.36.005

Findings. (Effective June 30, 2004.)

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. (Expires June 30, 2004.)

The definitions in this section apply throughout this chapter unless the context clearly requires otherwise.

(1) "Crop" means (a) a growing or harvested horticultural and/or agricultural product for commercial purposes; or (b) rangeland forage on privately owned land used for grazing or browsing of domestic livestock for at least a portion of the year for commercial purposes. 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.

[2001 c 274 § 2; 1996 c 54 § 2.]

NOTES:

Expiration date -- 2001 c 274 §§ 1-3: See note following RCW [77.36.005](#).

Effective date -- 2001 c 274: See note following RCW [77.36.005](#).

RCW 77.36.010

Definitions. (Effective June 30, 2004.)

Unless otherwise specified, the following definitions

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. (*Expires June 30, 2004.*)

(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 by deer or elk to commercially raised agricultural or horticultural crops, or rangeland forage on privately owned land used for grazing or browsing

of domestic livestock for at least a portion of the year. 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.

(3) Of the total funds available each fiscal year under subsection (1) of this section and RCW [77.36.070](#), no more than one-third of this total may be used to pay animal damage claims for rangeland forage on privately owned land.

(4) Of the total funds available each fiscal year under subsection (1) of this section and RCW [77.36.070](#) that remain unspent at the end of the fiscal year, fifty percent shall be utilized as matching grants to enhance habitat for deer and elk on public lands.

[2001 c 274 § 3; 1996 c 54 § 9.]

NOTES:

Expiration date -- 2001 c 274 §§ 1-3: See note following RCW [77.36.005](#).

Effective date -- 2001 c 274: See note following RCW [77.36.005](#).

RCW 77.36.080

Limit on total claims from general fund per fiscal year -- Emergency exceptions. (Effective June 30, 2004.)

(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 C Cooperative Projects Funded For the Olympic Herd Area

Year	Project Name	Cooperator(s)	RMEF \$\$	Project \$\$
1986	Forage seeding	ONF, WDFW	\$2,000.00	\$2,000.00
1987	Wynoochee elk wallow seeding	ONF	\$2,000.00	\$4,000.00
1989	Elk mortality study (yr 1)	WDFW	\$15,000.00	\$64,000.00
1989	Polson Camp forage seeding	WDFW	\$2,750.00	\$4,130.00
1989	Wynoochee Reservoir revegetation	ONF, WDFW	\$0.00	\$5,400.00
1990	Polson Camp forage seeding	WDFW	\$7,640.00	\$8,920.00
1992	Sequim Bay elk herd study	ONF, WDFW	\$0.00	\$4,660.00
1992	Price Lake/Lilliwaup access management.	DNR	\$586.00	\$1,500.00
1992	Elk mortality study (yr 2)	WDFW	\$7,500.00	\$35,500.00
1992	Matheny elk ecology study	USFS, ONF, ONP, WSB, WDFW, DNR, UW, KBH, Quinault Tribe	\$5,000.00	\$192,000.00
1992	Sequim, Dungeness elk monitoring	ONF, ONP, WDFW	\$5,398.00	\$13,500.00
1992	E. Olympic elk conservation project	ONP, WDFW	\$3,000.00	\$47,100.00
1992	Simpson access management	Simpson, WDFW	\$10,000.00	\$47,000.00
1993	South Elma access management	WDFW, DNR, Campbell Group, Elma Game Assoc., Weyerhaeuser, Port Blakely	\$3,814.00	\$13,314.00
1993	South Elma forage enhancement	WDFW, Campbell Group.	\$4,285.00	\$9,285.00
1993	Olympic Pen. elk mortality study	WDFW	\$9,100.00	\$44,100.00
1993	Matheny elk ecology study	WDFW	\$10,000.00	\$28,950.00
1994	Olympic Pen./Mt St Helens study	WDFW	\$5,000.00	\$12,500.00
1994	Hoh/Clearwater access management.	DNR	\$1,500.00	\$7,034.00
1995	Clearwater elk population estimate	WDFW	\$5,000.00	\$10,000.00
1995	Dungeness-Greywolf elk study	WDFW, ONP, ONF, UW. Pt. No Pt Treaty Council	\$4,997.00	\$88,057.00
1996	Olympic mature bull mortality study.	ONP, WDFW, KBH	\$0.00	\$50,000.00
1996	Sequim City elk crossing signs	WDOT	\$360.00	\$1,010.00
1997	Skokomish elk transplant	WDFW, Pt No Pt,	\$1,161.00	\$28,000.00
1997	West Fork Satsop forage enhancement		\$5,000.00	\$10,270.00
1998	North River elk telemetry study	WDFW	\$4,800.00	\$10,320.00
1998	East Olympic seeding/fertilization	WDFW	\$4,679.00	\$4,679.00
1998	Sequim elk displacement project	ONF, DNR	\$14,900.00	\$49,000.00
1999	Olympic Pen. elk recovery survey	WDFW, DNR, KBH, PT.NO PT., Eyes in the Woods	\$9,935.00	\$9,935.00
2000	Clearwater elk mortality study	WDFW	\$11,250.00	\$82,061.00
2000	Hoko elk research project	Makah Tribe	\$8,000.00	\$80,973.00
Total			\$164,655.00	\$969,198.00

APPENDIX D. WAC 232-28-266

Landowner Damage Hunts

Deer:

Tag Required: Deer hunter must have a current valid, unaltered, un-notched deer tag on his/her person.

Hunting Method: Any legal weapon

Season Framework: 2000-2001 August 1 - March 31
2001-2002 August 1 - March 31
2002-2003 August 1 - March 31

Location: Statewide

Legal Deer: Antlerless only

Kill Quota: 600 Statewide

Elk:

Tag Required: Elk hunter must have a current valid, unaltered, un-notched elk tag on his/her person.

Hunting Method: Any legal weapon

Season Framework: 2000-2001 August 1 - March 31
2001-2002 August 1 - March 31
2002-2003 August 1 - March 31

Location: Statewide

Legal Elk: Antlerless only

Kill Quota: 100 Statewide

Special Notes: A landowner with deer/elk damage will enter into a cooperative agreement with Washington Department of Fish and Wildlife and establish a boundary for deer/elk hunt, season dates within the framework and number of animals to be removed. Landowner agrees not to claim damage payments and will allow access to hunters during the general hunting seasons. Landowner selects hunters. A landowner damage access permit provided by the landowner will authorize the hunter to use an unused general deer/elk tag to hunt and kill a legal animal during the prescribed damage hunt season.