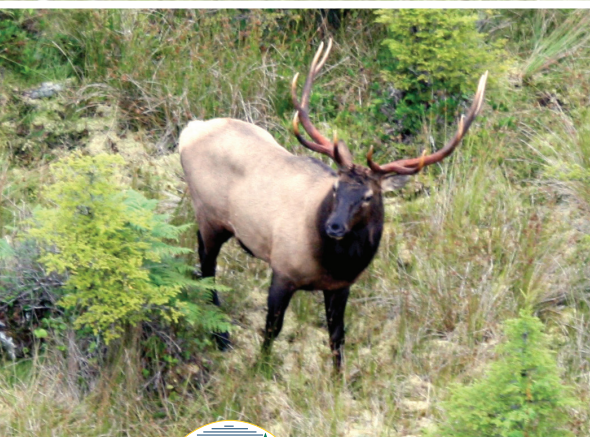


Willapa Hills Elk Herd Management Plan



Washington State Elk Herd Plan

WILLAPA HILLS ELK HERD

November 2014

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

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October 28, 2014

Date

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Drafting a management document for an elk herd that occurs in two administrative regions requires cooperation and input from many individuals. In the case of this plan, biologists in Regions 5 and 6, as well as, Headquarters staff in the Wildlife Program participated to varying degrees in writing and reviewing this management plan. District Wildlife Biologist Max Zahn (retired) and Assistant District Wildlife Biologists Warren Michaelis and Bryan Murphie assisted with earlier versions of this document. We appreciate review and editorial comments by Jerry Nelson, Scott McCorquodale, Mick Cope, Sandra Jonker, Stefanie Bergh, and Brian Calkins. Private Lands Biologists Scott Harris and Nicholle Stephens provided valuable insight into hunter access issues on private timber company lands. Special thanks to Tom Owens for producing harvest and hunter participation estimates at the herd level.

WILLAPA HILLS ELK HERD PLAN

EXECUTIVE SUMMARY

The Willapa Hills elk (*Cervus elaphus*) herd is one of ten herds identified in Washington State. The Willapa Hills elk herd area consists of portions of Regions 5 and 6, and is located in the southwest corner of Washington bounded roughly by State Highways 8 and 12 to the north, Interstate Highway 5 to the east, the Columbia River to the south, and the Pacific Ocean to the west. This herd is an important resource that provides many ecological, recreational, aesthetic, cultural, and economic benefits. Current distribution of the Willapa Hills elk herd is consistent with its historical range; however, localized changes in elk use and movements have occurred.

The purpose of the Willapa Hills Elk Herd Plan is to provide direction for managing the Willapa Hills elk herd. This plan is subject to amendment and should be updated, reevaluated, amended, and extended as new information becomes available. The Willapa Hills Elk Herd Plan will serve as a valuable reference document and provide management guidelines for the Washington Department of Fish and Wildlife (Department), Tribes, agency cooperators, landowners, and the public. Priority management activities will be carried out as funding and resources are available.

The Willapa Hills elk herd was not actively managed prior to creation of the State Game Department in 1933. In the mid-1930s Pautzke et al. (1939) reported elk populations had, for the most part, been extirpated from areas north of the Willapa River, but were thriving south of this region. When industrial timber management practices peaked in the Willapa Hills elk herd area during the 1950s, the herd responded with dramatic population increases, and the area became a popular elk hunting destination. The winter of 1968–1969 caused heavy losses, but the Willapa Hills elk herd recovered during the early and mid-1970s (Kuttel 1975). Since then, the Department believes the population has remained relatively stable at the herd level, although localized changes in density have occurred in association with changes in habitat. Today elk occur throughout the Willapa Hills elk herd area, although their distribution is not uniform.

The Willapa Hills Elk Herd Plan consists of three primary management goals: (1) preserve, protect, perpetuate, and manage elk and their habitats to ensure healthy, productive populations; (2) manage elk for a variety of recreational, educational and aesthetic purposes including hunting, scientific study, subsistence, cultural and ceremonial uses by Native Americans, wildlife viewing, and photography; (3) manage elk populations for a sustainable annual harvest.

This plan identifies management priorities that need to be addressed to effectively manage the Willapa Hills elk herd and achieve the three primary management goals. It also identifies management objectives and a variety of strategies to address each priority. The Department will work collaboratively with Treaty Tribes, other governmental entities and the public to achieve the following management objectives:

1. Implement a standardized and statistically valid survey protocol that will generate reliable estimates or indices of population size for the Willapa Hills elk herd by 2015.
2. Implement a standardized and statistically valid survey protocol that will generate unbiased estimates of herd composition (i.e. age and sex ratios, age structure, etc.) for the Willapa Hills elk herd by 2015.
3. By 2015, develop a Standard Operating Procedure (SOP) for managing and tracking Damage Prevention Cooperative Agreements, associated permits, and resulting harvest in the Willapa Hills elk herd area using the Department's contracting system.

4. Keep the Willapa Hills elk herd at its current level by maintaining harvest levels during general hunting seasons between 900 and 1,300 elk.
5. Maintain pre-season populations within a range of 15 to 35 bulls per 100 cows and/or post-season populations within a range of 12 to 20 bulls per 100 cows. In addition, manage for a post-season bull population where mature bulls make up 2% to 10% of the bull population.
6. Determine the distribution, prevalence, and cause of hoof disease in the Willapa Hills elk herd area and collaborate with affected Tribes and the public to identify potential management options. The Department will inform affected Tribes and the public of the Department's most recent findings as they emerge.
7. Continue to strive to mitigate elk damage and minimize the number of elk damage complaints.
8. Identify at least one landowner or land management agency every two years that is willing to work, or enter into a cooperative agreement, with the Department to maintain, enhance, or increase elk habitat in the Willapa Hills elk herd area.
9. In collaboration with affected Tribes who have a Hunting Co-Management Agreement with the Department, work cooperatively with timber companies to maintain hunter access.
10. Increase public awareness of the elk resource by creating an informative brochure similar to the Audubon Society's Great Washington State Birding Trail brochure that identifies routes and key points along those routes that provide the best opportunity to observe and photograph elk in the Willapa Hills elk herd area.
11. Cooperate and collaborate with Treaty Tribes to implement the Willapa Hills Elk Herd Plan and to coordinate season setting and herd management in traditional hunting areas.
12. Work cooperatively with Julia Butler Hansen National Wildlife Refuge (JBH) staff and affected tribes to limit the number of elk on JBH to ≤ 20 individuals.

Spending priorities have been identified for the first five years following adoption of the Willapa Hills Elk Herd Plan. Achieving spending levels will be contingent upon the availability of funds and creation of partnerships. The recommended annual prioritized expenditures for the Willapa Hills elk herd are as follows:

Priority Expenditures	Management Objectives	1st Year Cost	5 Year Cost
Population Monitoring	Objectives 1 and 2	\$40,000	\$200,000
Disease Monitoring	Objective 6	\$200,000*	TBD
Landowner/Elk Conflicts	Objective 7	\$10,000	\$50,000
Hunter Access	Objective 10	\$75,000	\$375,000
Watchable Wildlife	Objective 11	\$0	\$5,000
Total		\$125,000	\$630,000

* At the time of writing, a 2014 supplemental budget proposal has been submitted to the legislature that includes \$200,000 for hoof disease monitoring in the Willapa Hills and Mount St. Helens elk herd areas for the 13-15 Biennium. How those funds will be appropriated between the two areas has not been determined; nor has an estimate of future management costs.

WILLAPA HILLS ELK HERD PLAN

INTRODUCTION

The Willapa Hills Elk Herd Plan is a planning document under the umbrella of the Washington Department of Fish and Wildlife (Department) Game Management Plan (WDFW 2008) subject to annual review and amendment. Once approved, the plan will remain in effect until revised or canceled. The purpose of this plan is to identify objectives and strategies related to elk (*Cervus elaphus*) management priorities within the Willapa Hills elk herd area.

The Willapa Hills elk herd is one of ten herds formally identified by the Department that wholly or mostly resides in the State of Washington. For management and administrative purposes, Washington State is divided into Game Management Units (GMUs). The Willapa Hills elk herd consists of 12 GMUs which includes 501 (Lincoln), 504 (Stella), 506 (Willapa Hills), 530 (Ryderwood), 658 (North River), 660 (Minot Peak), 663 (Capitol Peak), 672 (Fall River), 673 (Williams Creek), 681 (Bear River), 684 (Long Beach), and 699 (Long Island). Following the adoption of this plan, the Willapa Hills elk herd will be managed as a single population.

HERD AREA DESCRIPTION

Location

The Willapa Hills elk herd area is located in southwest Washington bounded roughly by State Highways 8 and 12 to the north, Interstate Highway 5 to the east, the Columbia River to the south, and the Pacific Ocean to the west (Figure 1). Most of the area falls within the Coast Range Physiographic Province described by Franklin and Dyrness (1973). The herd name is derived from the Willapa Hills, which extend over much of the area and represents the northern-most extension of the coast range.

Ownership and Land Use

The Willapa Hills elk herd area covers more than 1.7 million acres. Nearly 22% is in public ownership, and the Washington Department of Natural Resources (DNR) manages 89% of the publicly held land (Table 1). Other public agencies each control <1% of the public land. Private land, 78% of the herd area, is mostly industrial forestland (Table 2 and Table 3, Figure 2), owned by a variety of private corporations including: Weyerhaeuser, Rayonier Forest Resources, Rayonier Timberlands Operating Co., TC&I – Chinook, John Hancock Ins., Manulife & John Hancock Ins., Hancock Timberlands, Port Blakely Tree Farms, Green Diamond Resource Co., Salmon Timberlands, Sierra Pacific Industries, and Bascom Pacific. In addition, small private timber holdings occur along the major drainages. Small farms are also common along the major drainages and in the northern and western portions of the herd area (Figure 2).

Under the Open Space Taxation Act, enacted in 1970, property owners may have their open space, farm and agricultural, and timberlands valued at their current use rather than their highest and best use (RCW 84.34.020). Tables 2 and 3 use several of these Washington State Department of Revenue classifications in the land use totals. Open space is defined either by comprehensive land use planning, by meeting one of several preservation criteria or by meeting the definition of "farm and agricultural conservation land".

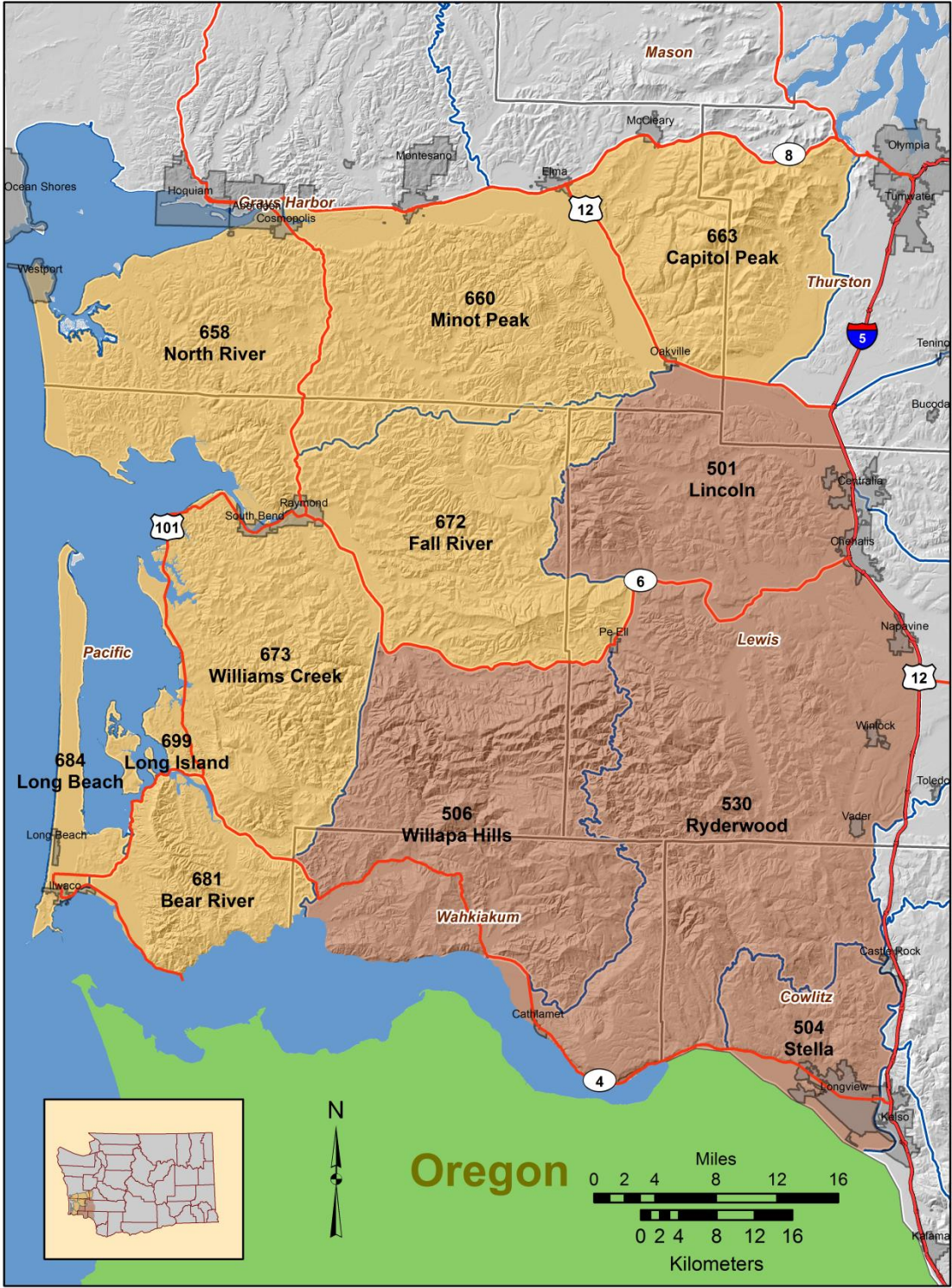


Figure 1. Willapa Hills elk herd area. Region 6 GMUs are shown with tan shading and Region 5 GMUs are brown.

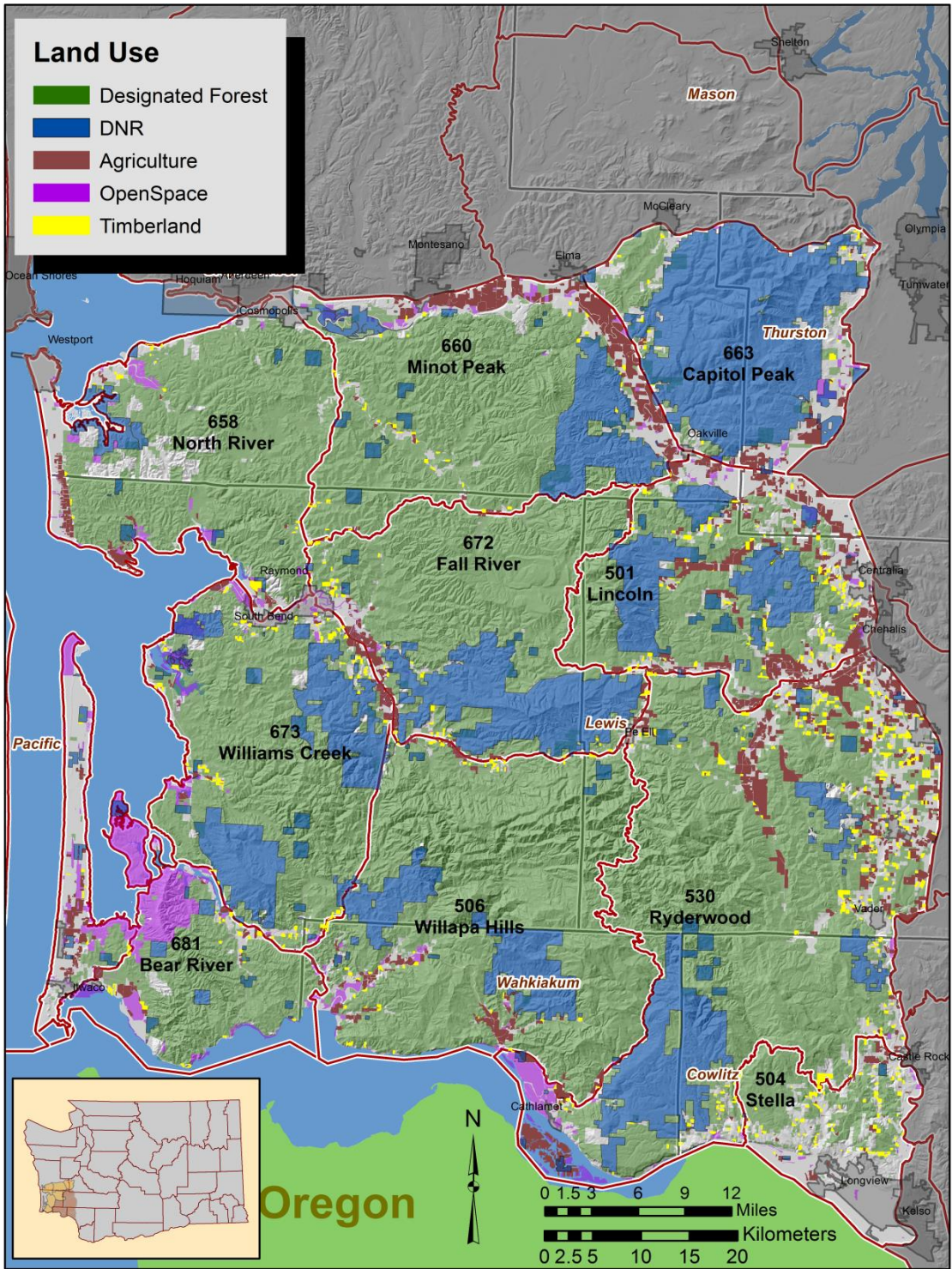


Figure 2. Primary land uses in the Willapa Hills elk herd area. Agriculture, open space and timberland are defined in RCW 84.34.020. Designated forest is defined in RCW 84.33.035.

Table 1. Public and tribal ownership for the Willapa Hills elk herd area. Table values are acres.

GMU	Total Land Base	Total in Public Ownership	Percent in Public Ownership	DNR ^a	County	USFWS ^b	WDFW ^c	State Parks	Tribal	Other State	BLM ^d	DOD ^e
501	148,669	39,265	26.4%	34,974	0	0	0	83	4,027	181	0	0
504	64,179	543	0.8%	330	0	0	214	0	0	0	0	0
506	242,863	28,841	11.9%	28,699	0	0	42	0	0	100	0	0
530	352,916	53,720	15.2%	50,794	0	2,474	282	79	0	91	0	0
Region 5	808,627	122,370	15.1%	114,797	0	2,474	538	162	4,027	371	0	0
658	164,430	23,076	14.0%	7,850	10,972	20	2,483	949	316	466	20	0
660	193,099	33,193	17.2%	30,951	202	0	1,125	0	279	636	0	0
663	134,505	95,327	70.9%	94,120	981	0	219	0	0	6	0	0
672	166,204	44,565	26.8%	44,192	0	0	4	0	0	369	0	0
673	170,414	44,091	25.9%	43,128	40	0	884	0	0	39	0	0
681	87,451	5,854	6.7%	3,218	0	1,190	829	617	0	0	0	0
684	32,740	9,077	27.7%	1,741	0	2,964	70	3,052	0	6	1,076	168
699	5,403	5,403	100.0%	0	0	5,403	0	0	0	0	0	0
Region 6	954,246	260,585	27.3%	225,200	12,195	9,576	5,614	4,619	595	1,522	1,096	168
Total	1,762,873	382,955	21.7%	339,997	12,195	12,050	6,152	4,781	4,623	1,894	1,096	168

a. DNR = Department of Natural Resources

b. USFWS = U.S. Fish and Wildlife Service

c. WDFW = Washington Department of Fish and Wildlife

d. BLM = U.S. Bureau of Land Management

e. DOD = U.S. Department of Defense

Table 2. Land use for the Willapa Hills elk herd area. Table values are acres.

GMU	Forest	Developed	Open Space ^a	Agriculture	Fishing	Mining	Not Defined ^b	Total
501	101,191	15,107	9,024	19,561	0	118	3,668	148,669
504	25,655	22,416	8,364	1,339	0	0	6,404	64,179
506	223,607	3,124	3,903	5,422	0	0	6,806	242,863
530	268,059	26,112	16,105	29,770	76	22	12,772	352,916
Region 5	618,513	66,759	37,396	56,092	78	141	29,650	808,627
658	138,064	7,132	12,088	2,969	7	0	4171	164,430
660	155,161	10,009	9,047	13,770	0	17	5,096	193,099
663	105,513	16,002	7,616	3,762	0	69	1,543	134,505
672	154,566	3,488	3,788	3,267	0	0	1094	166,204
673	151,304	4,344	8,889	2,213	864	45	2,756	170,414
681	49,602	3,243	15,044	1,361	92	0	18107	87,451
684	4,222	10,450	13,533	2,387	54	0	2095	32,740
699	0	0	5,375	0	28	0	0	5,404
Region 6	758,431	54,667	75,379	29,729	1,046	133	34,861	954,247
Total	1,376,944	121,426	112,775	85,821	1,123	273	64,511	1,762,874

^a Includes undeveloped. ^b Includes open water and public roadways.

Table 3. Forest land use for the Willapa Hills elk herd area. Table values are acres.

GMU	Designated Forest	Public Forest	Timberland	Non-commercial Forest	Total
530	217,272	45,018	5,654	115	268,059
506	196,171	26,479	794	163	223,607
501	67,338	30,429	2,271	1,153	101,191
504	24,179	388	1,088	0	25,655
Region 5	504,960	102,314	9,807	1,432	618,513
660	129,746	24,305	668	442	155,161
672	112,536	41,222	808	0	154,566
673	111,244	38,619	1,434	8	151,304
658	121,849	14,938	510	768	138,064
663	19,260	85,643	428	181	105,513
681	47,093	1,990	520	0	49,602
684	3,893	159	170	0	4,222
699	0	0	0	0	0
Region 6	545,621	206,874	4,538	1,399	758,431
Total	1,050,581	309,188	14,345	2,830	1,376,944

Farm and agricultural land is land devoted to commercial livestock production or agricultural commodities, although it may also include housing and support infrastructure. Timberland is a parcel that is five or more acres in size, devoted primarily to the growth and harvest of forest crops for commercial purposes. Non-commercial forest is loosely defined, and while interpretation may change somewhat from county to county, generally represents forest reserves and other timbered areas not being managed for commercial use of the trees.

Under RCW 84.33.035 commercial forest landowners may apply to have their land listed as designated forest. The biggest advantage of this designation is that it protects the owner from high property tax assessments based on a land use other than forestry. Forest land taxes are based on actual use of the land for growing timber. Timber on designated forest land is exempt from real property taxes but is subject to timber excise taxes, which are more favorable to the landowner. Designated forest land is defined as a parcel of land 20 or more acres in size used primarily for growing and harvesting timber. Land use must conform to forest practice laws and regulations.

Topography and Climate

Topography in the Willapa Hills elk herd area ranges from level to rolling along major drainages and in the northern portion of the herd area, to mountainous in the core of the Willapa Hills. Elevation ranges from sea level to just over 3,000 feet. A distinctive feature of the herd area is the 30-mile-long Long Beach Peninsula which meets the ocean on its western side and Willapa Bay, with its extensive tidal flats, on its inland side. Other prominent features include Grays Harbor on the northern border and the Columbia River on the southern border.

Annual precipitation averages >80 inches with the majority occurring as rainfall from October through April. Snowfall events are rare with average annual accumulations of less than 2.5 inches that typically persist for no more than a few days. On average, there are more than 200 days with measurable precipitation, and 125 sunny days per year. Average temperatures range from a high of 70°F in July to a low of 35°F in February.

Vegetation

There are 43 ecological systems present in the Willapa Hills elk herd area (Appendix A). Thirteen of these ecological systems are forest types, totaling 1.4 million acres, and more than 33% of this total (587,890 acres) is forest regeneration. Several other important habitats are present in the Willapa Hills elk herd area. There are nearly 91,000 acres of lowland riparian habitat, and more than 74,000 acres of wetland and swampland, including 13,500 acres of tidal salt and brackish marsh and 11,500 acres of intertidal freshwater wetland (Appendix A). For descriptions of Washington's ecological systems refer to Rocchio and Crawford (2008).

Most of the Willapa Hills elk herd area falls within one of two major plant communities described by Franklin and Dyrness (1973). Coastal sites below 500 feet in elevation often are part of the Sitka spruce (*Picea sitchensis*) zone, whereas the majority of the area is within the western hemlock (*Tsuga heterophylla*) zone. Both of these plant communities are very productive and have been heavily logged. Following removal of the climax tree species most suitable sites were replanted with Douglas fir (*Pseudotsuga menziesii*), a species that may be dominant or co-dominant on unlogged timber stands in the western hemlock zone. On lower elevation mesic sites, western red cedar (*Thuja plicata*) is often an important component of the tree layer. Deciduous trees such as vine maple (*Acer circinatum*), big-leaf maple (*Acer macrophyllum*), and red alder (*Alnus rubra*) also occur and have been identified as valuable elk forage (Cook 2002).

Common understory plant species include a variety of grasses, forbs, ferns, and shrubs. Dominant shrubs and ferns include salmonberry (*Rubus spectabilis*), devil's club (*Oplopanax horridum*), Pacific rhododendron (*Rhododendron macrophyllum*), huckleberry (*Vaccinium* spp.), sword fern (*Polystichum munitum*), salal (*Gaultheria shallon*), Oregon oxalis (*Oxalis oregano*), lady-fern (*Athyrium filix-femina*), and violets (*Viola* spp.). Shrub species that have been identified as valuable elk forage include salal, salmonberry, and huckleberry. Grasses, sedges, and forbs that have been identified as valuable elk forage include redbud (*Agrostis alba*), vernalgrass (*Anthoxanthum odoratum*), windseed sedge (*Carex ablata*), orchardgrass (*Dactylis glomerata*), California danthonia (*Danthonia californica*), and wildrye (*Elymus* spp.). For a complete list of plants identified as valuable forage species for Roosevelt elk (*C. e. roosevelti*), we refer the reader to Cook (2002).

Human Influences

The greatest influences humans exert on the Willapa Hills elk herd are related to harvest mortality and industrial timber management. Today, the Willapa Hills elk herd area is dominated by second-growth forests and clearcuts, which are different in structure and composition than old-growth forests that once dominated the landscape (Edmonds 1979). This change in forest structure and composition has influenced the Willapa Hills elk herd by increasing the quantity and quality of forage available to elk as well as the juxtaposition of foraging habitats to security cover. Industrial timber management practices have also resulted in a high density road system that has increased human access to remote areas. Consequently, this has increased the vulnerability of the Willapa Hills elk herd to harvest and human disturbance, which may reduce elk use of otherwise suitable habitats (Cole et al. 2004).

Urbanization of the rural landscape in the Willapa Hills elk herd area has also led to increases in conflicts with landowners with subsequent needs to control elk numbers in localized areas to alleviate damage. The Department attempts to minimize damage in these localized areas by providing more opportunities to harvest antlerless elk.

Other Ungulates

The Willapa Hills elk herd shares its range with Columbian black-tailed deer (*Odocoileus hemionus columbianus*), Washington's most common deer subspecies. Black-tails occur from the crest of the Cascades west to the ocean, preferring brushy, logged lands and coniferous forests (WDFW 2012). Black-tailed deer populations seem to be stable across their range (WDFW 2008).

The Willapa Hills elk herd also shares its range with Columbian white-tailed deer (*O. virginianus columbianus*), which utilize habitats adjacent to the Columbia River. The Columbian white-tailed deer was federally listed as endangered in 1968. The Julia Butler Hanson National Wildlife Refuge (JBH) was created in 1972 with the specific objective of protecting Columbian white-tailed deer. The habitat and security provided by JBH attracted a small segment of the Willapa Hills elk herd. Between 1984 and 2001 the Department and the U.S. Fish and Wildlife Service (USFWS) attempted to limit the number of elk on JBH by translocating 290 elk to other parts of Wahkiakum County. Since translocation efforts were discontinued, elk numbers on JBH have been controlled by providing limited hunting opportunities on JBH's Mainland Unit; hunts occur when elk numbers exceed 20 individuals (USFWS 2004). The hunt is a joint effort by the Department and the USFWS. Elk hunts have been authorized on JBH from 2005–2010, but hunts only occurred in 2005 and 2006, resulting in the harvest of six antlerless elk. As of winter 2012, elk numbers on JBH were approximately 20 animals. JBH was being threatened by the potential failure of a dike along the Columbia River, which would inundate the refuge with up to six feet of water. In response to the potential threat, the USFWS translocated many of the Columbian white-tailed deer located on JBH to other safe locations. Only 50-60 Columbian white-tailed deer remain on JBH.

Predators

Predators that occur throughout the Willapa Hills elk herd area and that are known to prey on elk include bobcat (*Lynx rufus*), coyote (*Canis latrans*), black bear (*Ursus americanus*), and cougar (*Puma concolor*). In rural counties, domestic dogs can also be a source of predation. In recent years, the presence of gray wolves (*Canis lupus*) has been confirmed within the range of some Washington elk herds, but their overall impact is not yet known. Currently, there are no confirmed or suspected gray wolf packs [defined as “two or more animals traveling together” (Wiles et al. 2011)] in western Washington. There have been no formal studies to specifically evaluate predation rates from resident predators on elk in the Willapa Hills. However, findings from a recent study to evaluate bull survival in GMU 673 indicated predation was a minimal factor affecting the survival of bull elk; < 1% of all bull mortalities were attributed to predation (W. Michaelis, WDFW, unpublished data).

Black Bear

Black bear predation on elk typically comes in the form of predation on calves that are only a few weeks old and is highly variable across western elk populations. Black bears are classified as game animals and are hunted under the big game hunting season structure. The Willapa Hills elk herd area is part of the Coastal Black Bear Management Unit (BBMU), which is one of ten BBMUs defined by the Department. The current black bear hunting season guidelines for the Coastal BBMU are designed to maintain black bear populations at their current level, which is not expected to result in increased impacts to the Willapa Hills elk herd (see WDFW 2008). The metrics used to direct black bear harvest include proportion of harvested bears that were female, median age of harvested females, and median age of harvested males.

Cougar

Cougar predation on both juvenile and adult elk is common. For management purposes, the Department has divided Washington into Cougar Management Units (CMUs) and the Willapa Hills elk herd area is part of the Coastal CMU (see WDFW 2008). Cougars are classified as game animals and are hunted under the big game hunting season structure. The Coastal CMU is managed with the primary objective of maintaining a stable cougar population. Population objectives are met by managing for an annual female harvest quota in each CMU (WDFW 2008).

Bobcat

Although not typically thought of as preying on elk, bobcats are capable of preying on young calves. The bobcat hunting season runs from September 1 to March 15. A small game license is required to hunt bobcat. The Department assesses bobcat harvest via trapper catch reports and the Convention on International Trade in Endangered Species (CITES) carcass checks. Reported bobcat harvest has declined since 2000 when voter Initiative 713 made trapping more restrictive.

Coyote

Coyote predation is mostly limited to calves that are only a few weeks old. Currently there are no closed seasons or bag limits for coyotes in Washington. However, hunters must possess either a small or big game license to hunt coyotes. Coyote harvest is often opportunistic and ancillary to other hunting activities. Hunters that specifically target coyotes are most active during winter months, but those numbers are likely small. The Department assesses coyote harvest via the small game harvest survey and trapper catch reports. Reported coyote harvest has declined since 2000 when voter Initiative 713 made trapping more restrictive.

Gray Wolf

In the Willapa Hills elk herd area, the primary prey species of gray wolves would be elk and deer. Secondary prey would likely include rabbits, rodents, and birds. Gray wolves are naturally dispersing into Washington from Idaho, Montana, Oregon, and British Columbia. At the time of this writing there are no confirmed gray wolf packs in southwest Washington (Wiles et al. 2011). Under state law the gray wolf is classified as an endangered species throughout Washington (WAC 232-12-014); under federal law it is classified as an endangered species in the western two-thirds of the state (Endangered Species Act).

HERD DISTRIBUTION

Historic Distribution

The Willapa Hills elk herd area is entirely within the historic range of Roosevelt elk. Originally, this subspecies was the only species of elk occurring west of the Cascade Crest and in coastal forests from Vancouver Island south to northern California. By the late 1800s uncontrolled subsistence and market hunting by settlers for meat, hides, and teeth caused a general decline in elk populations throughout the West. In 1905, the Washington legislature made it unlawful for a period of 10 years to kill elk in Washington (Laws of Washington 1905). The Willapa Hills elk herd area had not been extensively logged prior to the 1900s and it is believed the Willapa Hills elk herd consisted of small groups of elk that were widely distributed across the landscape. However, Pautzke et al. (1939) noted there were very few elk north of the Willapa River and the majority of the Willapa Hills elk herd was located in the southern portions of its range. The Willapa Hills elk herd increased in size and expanded its range during the 1950s as clear cut logging and other forestry practices increased the quantity and quality of elk foraging habitats.

Current Distribution

Elk occur throughout the Willapa Hills elk herd area, although their distribution is not uniform. While all GMUs in the Willapa Hills elk herd area have some elk, portions of some units have very few. As indicated by the number of bulls harvested per square mile during the 2012 general modern firearm, archery, and muzzleloader seasons combined, the highest elk densities likely occur in GMUs 506 (0.71 bulls/mi²), 673 (0.61 bulls/mi²), and 681 (0.61 bulls/mi²).

Proposed Distribution

Given the historical occurrence of elk throughout much of the Willapa Hills elk herd area, the Department's objective for the Willapa Hills elk herd is to maintain its current distribution. In some locations, however, elk have increasingly used agricultural lands as foraging areas. For these areas the Department will implement special damage hunts to control elk numbers where damage occurs. For example, GMU 501, in the northeast part of the Willapa Hills elk herd area, contains a small number of elk but also has very high levels of residential and agricultural development resulting in many elk damage complaints. A reduction of elk numbers is the Department's management objective for this GMU. Other areas where elk numbers will be controlled to minimize agriculture damage include GMU 504, Elk Areas 5054 and 5061 (portions of GMU 530), and Elk Area 6010 (portions of GMUs 506, 672, and 673).

HERD MANAGEMENT

History

Elk populations in the Willapa Hills elk herd area were not managed prior to creation of the State Game Department in 1933. By the mid-1930s the Willapa Hills elk herd had largely been extirpated from areas north of the Willapa River (Pautzke et al. 1939). In 1938 and 1939 the Department and the U.S. Forest Service translocated 52 elk from the Olympic Peninsula to areas north of the Willapa River to encourage the expansion and growth of the Willapa Hills elk herd (Pautzke et al. 1939). In contrast, portions of the herd located south of the Willapa River were relatively abundant and thriving at this time. During the late 1930s Pautzke et al. (1939) estimated there were nearly 2,000 elk in southern portions of the Willapa Hills elk herd area and populations were increasing rapidly.

When industrial timber management practices peaked in the Willapa Hills elk herd area during the 1950s, the herd responded with dramatic population increases, and the area became a popular elk hunting destination. Although the winter of 1968–1969 caused heavy losses, the Willapa Hills elk herd recovered during the early and mid-1970s (Kuttel 1975). Since then, the Department believes the population has remained relatively stable overall, although localized changes in population density have occurred in association with changes in habitat.

Current Status

Population Size

The actual size of the Willapa Hills elk herd is not known. In the past, biologists attempted to estimate population size using reconstruction modeling as described in Bender and Spencer (1999). The reconstruction model assumes all adult bull mortality comes from human harvest, assumes all sex and age ratios are unbiased, and assumes accurate reporting of harvest (Skalski et al. 2005). Violation of these assumptions leads to biased estimates of the pre-season bull population and the total elk population. Millspaugh et al. (2009) reported that when model assumptions were violated, the 95% confidence interval on the true population could exceed the total population size. Compounding this problem is the fact that a standardized survey protocol has been lacking in the Willapa Hills elk herd area (see Appendix B). Thus, use of reconstruction models here could be misleading. Therefore, a defensible estimate of herd size is still pending.

Statistically valid population estimates or trend estimates are inherent to successful management of the Willapa Hills elk herd and are needed to better inform management decisions. However, the abundance of dense and heavily canopied forests in the Willapa Hills elk herd area present a challenging environment for detecting elk. Elk that use these habitats have extremely low sighting probabilities, and survey results not corrected for these biases are likely to be misleading. Estimation techniques that account for detection probabilities are primarily limited to sightability correction models (Samuel et al. 1987, Gilbert and Moeller 2008), distance sampling (Thomas et al. 2002), and mark-resight techniques (McCorquodale et al. 2012); the application of one of these approaches is likely to be the most appropriate to generate formal population or trend estimates for the Willapa Hills elk herd. A primary objective of this plan is to identify which of these techniques is most appropriate in the Willapa Hills elk herd area.

Herd Composition

The Department typically conducts pre-season (August–September) or post-season (March–April) aerial composition surveys to assess herd composition and status. Pre-season surveys index herd productivity (calf:cow ratios), herd sex ratios (bull:cow ratios), and age structure of the bull subpopulation prior to general hunting seasons, while post-season surveys index calf recruitment and bull escapement subsequent to harvest. The Department’s management objective is to maintain a range of 15 to 35 bulls:100 cows in the pre-season population and 12 to 20 bulls:100 cows in the post-season population (WDFW 2008).

Survey efforts in the Willapa Hills elk herd area have lacked a standardized design and consistency, which limits the utility of historical survey data (see Appendix B). For example, surveys have not been conducted in 500 series GMUs since 2007. GMU 673 is the only GMU in the Willapa Hills elk herd area that has been surveyed recently and consistently enough to assess long-term trends in population sex ratios, population productivity, and calf recruitment. Since 1995, and in years when sample size was ≥ 90 elk ($n=8$), pre-season bull:cow ratios averaged 25 bulls:100 cows and varied minimally among years. Pre-season and post-season calf:cow ratios averaged 41 and 35 calves:100 cows, respectively.

The data indicate that productivity and recruitment rates have been relatively stable at moderate levels for the portion of the Willapa Hills elk herd located in GMU 673. Bull:cow ratios in GMU 673 also seem to indicate the Department is meeting its management objective of maintaining a pre-season population that has a range of 15 to 35 bulls:100 cows, but additional information is needed to accurately assess effectiveness of management actions.

Because most management decisions are based on ratio estimates derived during pre-season or post-season composition surveys, it is important that estimates are statistically rigorous (Rabe et al. 2002, Mason et al. 2006). With this in mind, a primary objective in this plan will be to develop a standardized survey protocol capable of generating defensible age and sex ratio estimates for the Willapa Hills elk herd.

Survival and Cause Specific Mortality

Knowledge of survival and cause-specific mortality rates of elk is important to management of elk populations. Sources of mortality for elk commonly include legal and illegal harvest, predation, malnutrition, parasites and disease, and collisions with vehicles. Without formal estimates of survival and cause-specific mortality rates, management prescriptions that aim to increase survival may be ineffective because they may not address the foremost cause of mortality.

The greatest source of mortality for bulls in the Willapa Hills elk herd is likely recreational harvest. Mean annual survival rate for 78 adult bulls monitored in GMU 673, 2005–2009, was 37% (95% C.I. = 27%–48%), with 93% of all mortality attributed to legal harvest (W. Michaelis, WDFW, unpublished data). Poaching, wounding loss, predation, and malnutrition combined, accounted for <6% of adult bull mortality. However, because this study only occurred in GMU 673 and the western third of GMU 506, estimated cause-specific mortality and survival rates may not be representative of the entire Willapa Hills elk herd.

No studies have occurred in the Willapa Hills elk herd area with the specific goal of estimating annual survival rates of cow elk. However, 22 female elk in GMUs 506 and 672 were monitored in 2001 and 2002 as part of a larger study evaluating the relationship between nutritional condition and survival of adult female elk in the Pacific Northwest. During that study Bender et al. (2008) reported a mean annual adult female elk survival rate of 92% (95% C.I. = 82%–100%).

Disease

An increasing incidence of hoof deformity in elk has been reported in southwest Washington. These elk show severely overgrown and deformed claws, and often marked emaciation. The cause of this condition has not yet been determined. Although reports of deformed hooves in elk have occurred sporadically in southwest Washington for over a decade, the number and geographical distribution of these reports increased dramatically in 2008.

During the winter of 2008-2009, Department biologists surveyed groups of elk and interviewed landowners to estimate the prevalence and distribution of affected elk and to map locations of positive cases. Approximately 80% of all groups observed had between 30% and 90% of elk within the group affected, with a broad range of severity. Affected elk represented all age and sex classes. In addition, during the winter of 2009-2010, the Department undertook an investigation to better characterize the lesions and examine possible causes. In this study, five affected cow elk from three locations, and three apparently unaffected cow elk from one location were collected. Necropsies were performed on these elk and their lower limbs were collected for further analysis. Necropsy, radiology, histopathology, and parasitology were unremarkable and failed to identify an underlying cause of the hoof deformity. Selenium and copper levels in the liver were severely deficient based on domestic livestock normal values and a variety of aerobic and anaerobic organisms were cultured from the hoof lesion.

Currently, the Department is collaborating with the Washington State University College of Veterinary Medicine and other specialists from around the world to identify the cause of hoof disease in southwest Washington elk herds. With guidance from this technical team of specialists, the Department collected samples from affected (Regions 5 and 6) and non-affected areas (Regions 3 and 6) during three separate sampling periods (February-March 2013, July-August 2013, and January 2014). Preliminary results suggest the involvement of an infectious bacterium. Current diagnostic efforts are focused on specialized bacteriology testing to rule out infectious organisms including several types of bacteria that are the most common causes of infectious hoof diseases in domestic livestock. The Department is also developing investigations into survival, prevalence, distribution, and management strategies for this hoof disease. For more information visit the Department's Wildlife Health website; wdfw.wa.gov/conservation/health/.

Enteric infection has caused mortalities along the floodplain of the Columbia River, roughly from the Cathlamet area downstream. At least one of these deaths was attributable to bacillary hemoglobinuria (Redwater Disease; Bender et al. 1999), and the others while not verified, fit the same pattern of mortality. Redwater Disease is an acute, infectious, toxemic disease caused by *Clostridium haemolyticum* and is found most commonly in cattle. Typically a bacterial infection in the liver releases toxins into the blood stream and causes red blood cell destruction and death. The presence of this condition is associated primarily with inundated or saturated agricultural pastures during the wet spring months. The number of reported mortalities from enteric infection has been low and the population effects have likely been negligible.

Other diseases known to affect elk in other parts of their range include leptospirosis, anaplasmosis, bluetongue/epizootic hemorrhagic disease, and Johne's disease. However, opportunistic screening of elk during capture and relocation events has not documented the presence of any of these conditions in the Willapa Hills elk herd area.

Management Activities

Harvest Implementation

The three-year hunting package serves as the Department's basic harvest plan. Major changes to objectives and season structures are generally set on a three-year cycle with minor adjustments made during the off years. The process for developing a three-year hunting season package is an expanded version of the annual season-setting process; permit level adjustments can be made annually to respond to population changes and other factors. Establishment of all hunting seasons is guided by goals, objectives, and strategies contained in the Game Management Plan (WDFW 2008). After public meetings where proposals are presented, Department staff reviews comments and develops hunting season recommendations for consideration by the Fish and Wildlife Commission. These recommendations are based on biological needs, input collected from the public, and agreements with the affected Treaty Tribes.

Harvest Restrictions

Until 1982 all GMUs in the Willapa Hills elk herd area were open to the harvest of any bull elk. After 1982 selected GMUs were managed with 3-point-or-better antler restrictions to improve bull escapement. In 1997 spike-only management was implemented but was not popular with the public, and so 3-point management subsequently became the standard throughout the Willapa Hills elk herd area. This has remained in place through the present. Also in 1997, the modern firearm season was reduced from 12 to 9 days to increase bull elk survival. In 2010 the season was lengthened to 11 days, and in 2012 reverted back to 12 days. In some GMUs where elk damage complaints are more common, seasons include general season antlerless harvest, in other GMUs antlerless harvest is by permit only. Appendix C describes elk season regulations from 1970 to 2012 for GMUs within the Willapa Hills elk herd area.

Since 1984 when the Department implemented resource allocation, hunting opportunity has been apportioned among user groups. Today elk hunters in Washington State must choose either an eastern Washington or western Washington elk tag and also must select a specific weapon type: modern firearm, archery, or muzzleloader. Beginning in 2006 a limited number of multi-season permits have allowed a hunter to hunt with all three weapon types; 1,000 permits were issued statewide during a special draw in 2012.

Harvest Reporting and Estimation

From 1965 through 2000, the Department recorded elk harvest data using a variety of methods including hunter report cards, questionnaires, and phone surveys. The quality of these data was limited by the number of hunters that would respond and provide accurate harvest information. In response, the Department initiated a mandatory reporting system in 2001 that requires all hunters to report their hunting activity which dramatically increased the hunter response rate.

From 2001 to 2013, annual elk harvest within the Willapa Hills elk herd area during the general seasons averaged 1,187 elk (Figure 3). On average, 26% were antlerless elk and 74% were bulls. The number of elk hunters hunting the Willapa Hills elk herd area has been fairly consistent since 2001, averaging 10,255 hunters (Figure 4). Modern firearm hunters were the largest group comprising, on average, 56% of the Willapa Hills elk hunters, whereas archery hunters comprise 28%, and muzzleloader hunters comprise 15%. Elk harvest reflects participation by weapon-type; on average, modern firearm hunters harvest 50%, archery hunters 35%, and muzzleloader hunters 13% of all elk harvested annually during the general season hunts that occur within the Willapa Hills elk herd area.

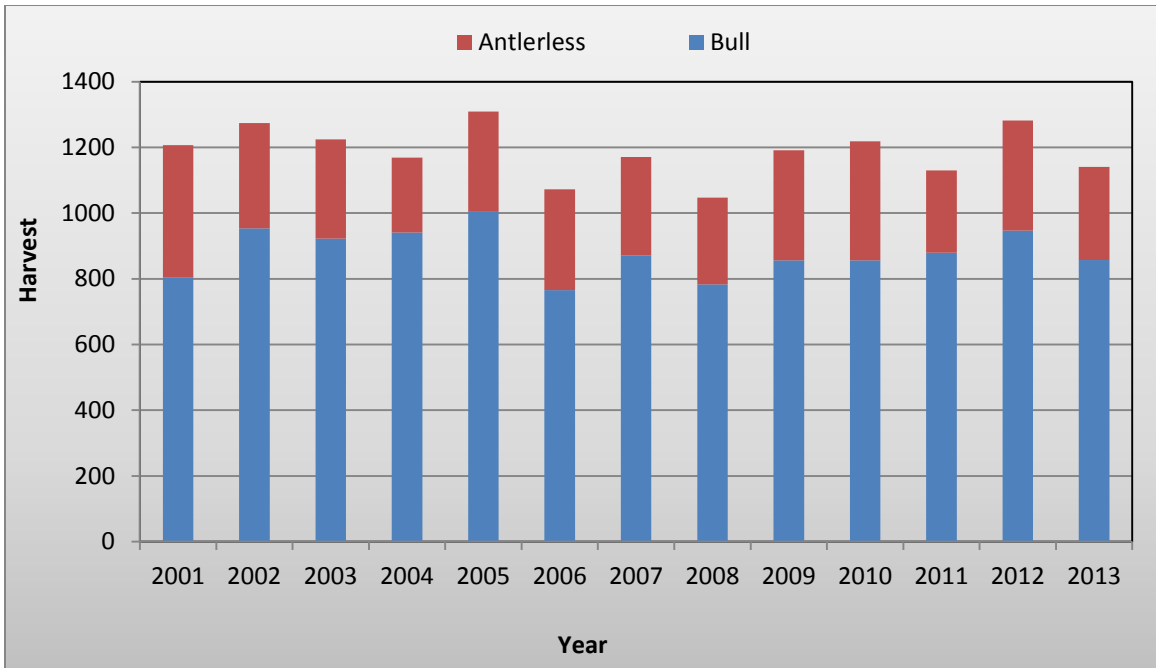


Figure 3. Estimated number of bull and antlerless elk harvested during general hunting seasons in the Willapa Hills elk herd area, 2001–2013.

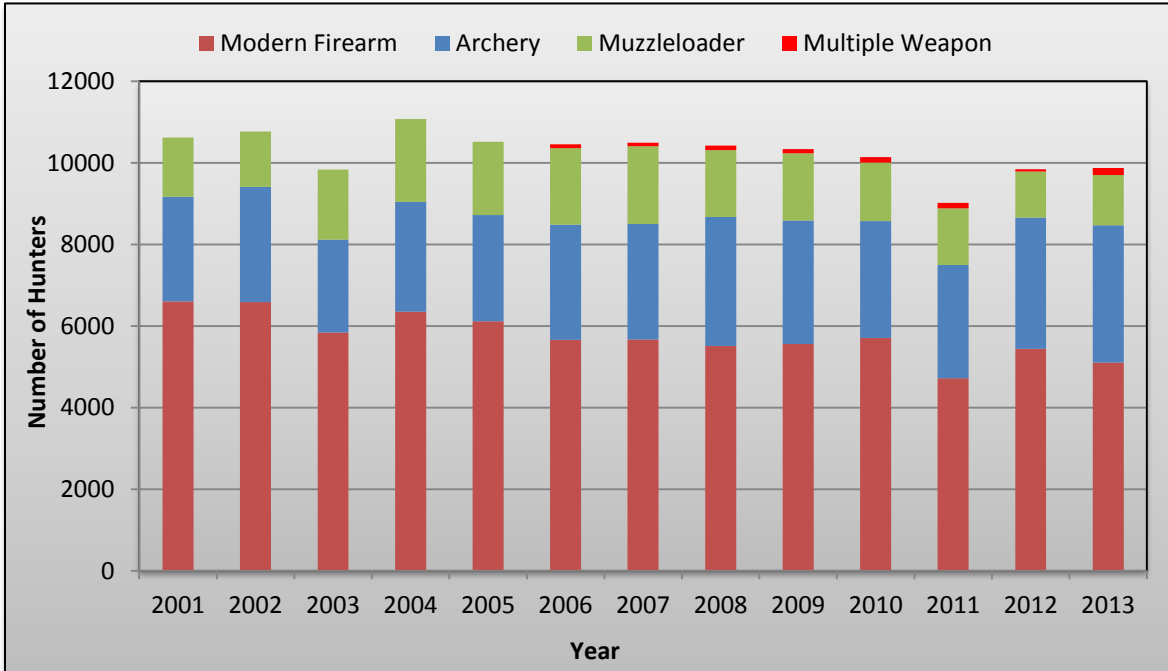


Figure 4. Estimated number of general season elk hunters by weapon type in the Willapa Hills elk herd area, 2001–2013.

Archery hunters are generally the most successful group (Figure 5). Average hunter success for general season archery hunters was 15% from 2001–2013, whereas both modern firearm and muzzleloader hunter success averaged 10%.

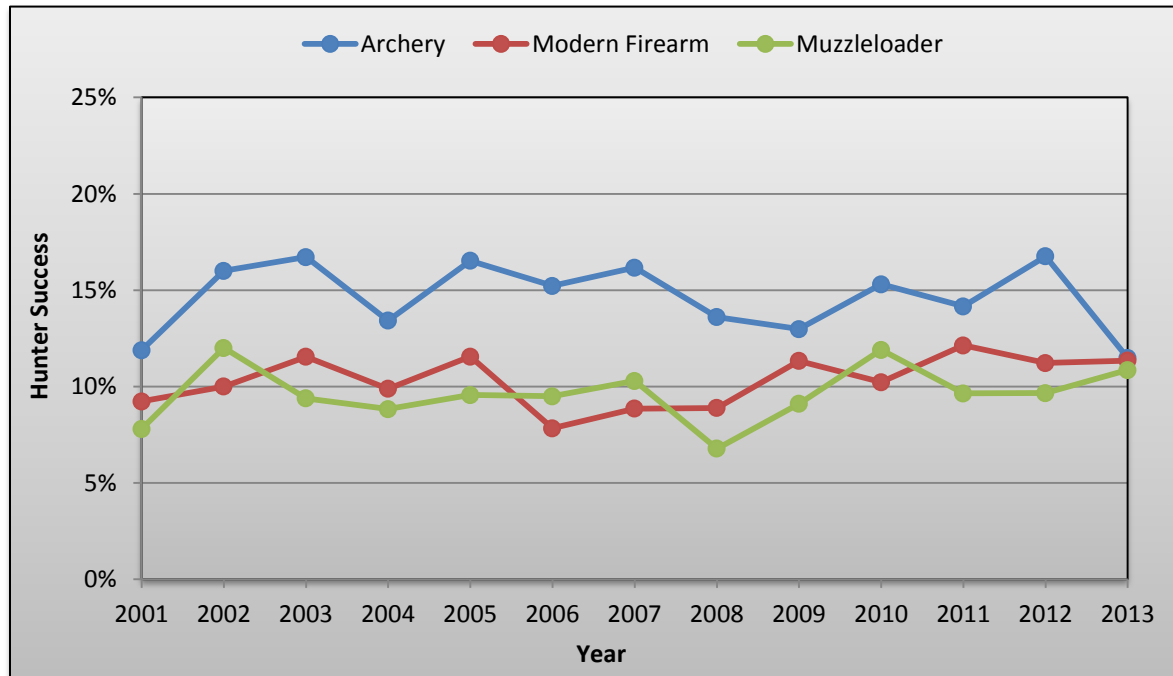


Figure 5. Estimated success rates by weapon type for elk hunters in the Willapa Hills elk herd area, 2001–2013.

Damage

Preventing and mitigating elk damage on private lands has been an ongoing management challenge in Washington. Problems associated with elk include damage to tree farms and conifer plantations, hay and alfalfa fields, orchards, cranberry bogs, and other agricultural crops. When frightened, elk may damage wire fences by running through them. The Washington State legislature has directed the Department to financially compensate landowners, up to the level of appropriations, to pay for commercial crop damage caused by elk (RCW 77.36.100). The Department has used many control alternatives designed to mitigate wildlife-landowner conflicts. Elk managers prefer non-lethal methods because they maintain recreational hunting opportunity, but often only lethal methods can effectively target specific elk groups. Damage-control hunts are becoming increasingly unpopular with the public, which does not favor continued reductions in elk numbers in areas where damage control hunts do not appear to be reducing damage.

Figure 6 shows the four Elk Areas located within the Willapa Hills elk herd area. These areas provide the Department opportunities during the season setting process, to assign special permits aimed at reducing elk numbers in the targeted damage areas. The Department has also increased opportunities in entire GMUs during general seasons to harvest antlerless elk, and in some instances combined GMUs, to mitigate elk damage. These hunts are designed to reduce local elk populations.

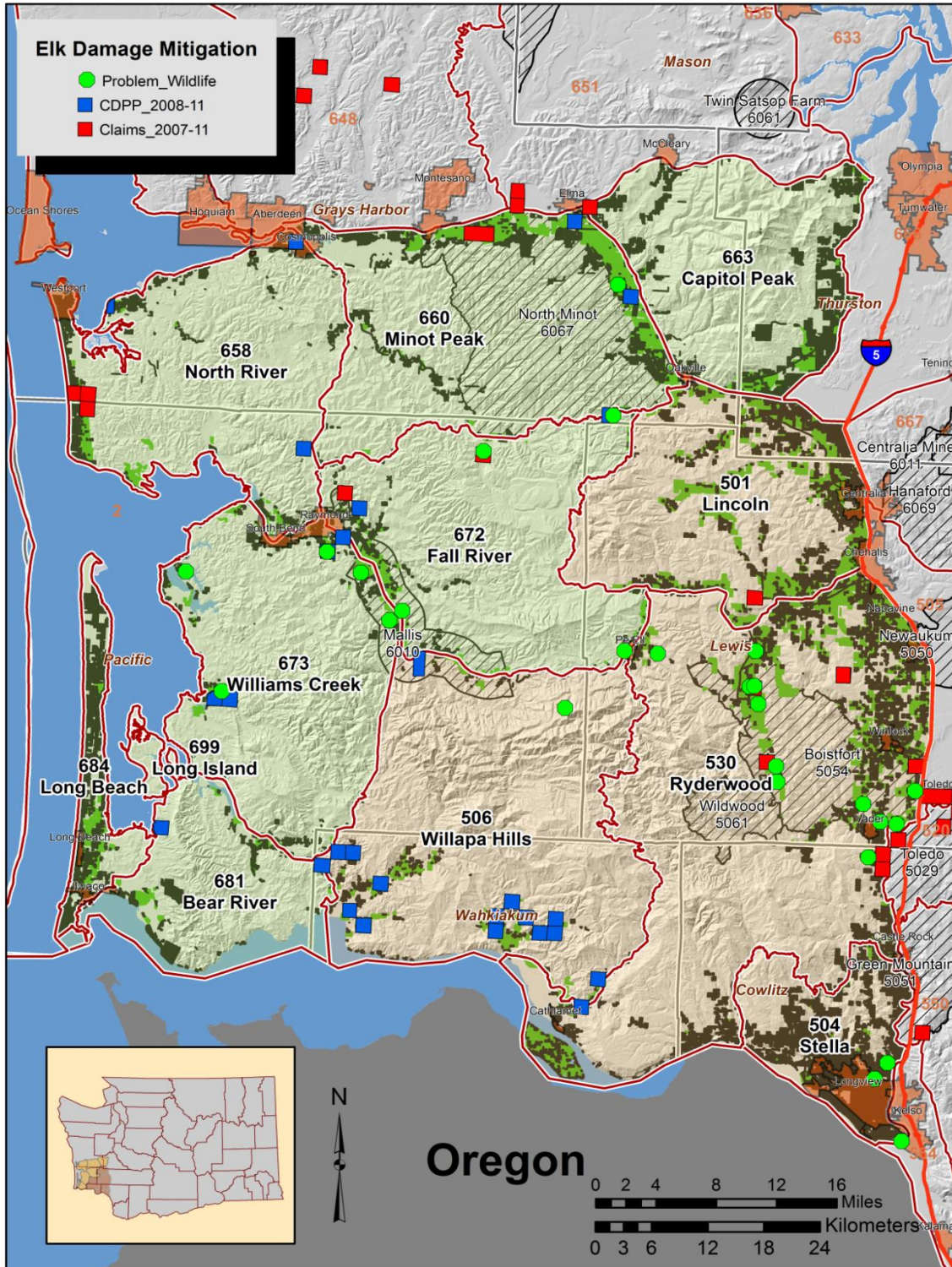


Figure 6. Special Elk Areas and locations of problem wildlife incident reports, damage claims and CDPPs in the Willapa Hills elk herd area. Elk Areas are shown by diagonal lines. Cropland is shaded green and developed areas are shaded dark brown.

Negative human/elk interactions can occur in any GMU in the herd area, but landowners in the northern and southern portions report more elk damage than those in other portions of the Willapa Hills elk herd area. Figure 6 shows the locations of problem wildlife incident reports, elk damage claims, and Cooperative Damage Prevention Permits (CDPP) for the years 2007–2011. Along the Chehalis River from Montesano to Oakville (GMU 660), some elk winter on agricultural lands where they impact pasture land and a large commercial plant nursery.

In recent years in GMU 504, more landowners have reported elk damage to commercial horticultural crops, particularly to Christmas tree plantations in the Longview area. Development near the Longview-Kelso area continues to encroach into forest land west of the urban center and negative human/elk interactions here are increasing. Elk depredation on commercial agricultural lands in the Willapa Valley has occurred for many years, and in pastures along the Grays River, landowner complaints, which subsided in the 1990s, are now increasing. Agricultural depredation has also been chronic in portions of GMU 530, particularly in the Boistfort, Long, and Lost Valley areas of western Lewis County. Long-standing depredation control hunts in Elk Areas 5054 and 5061 have reduced some local elk populations, but have not solved the chronic damage problems on agricultural crops and nearby conifer plantations.

When elk cause damage to commercial crops, a landowner may report the damage to the Department, and a Department representative will investigate, assess the problem claim, and suggest solutions. The Department may offer compensation to eligible landowners (RCW 77.36.110), either in the form of cash or non-cash compensation (RCW 77.36.100). Under WAC 232-28-266, the Department and the landowner may enter into a Damage Prevention Cooperative Agreement (DPCA). Under the DPCA, the landowner may be issued CDPPs or “kill” permits to help alleviate elk damage. CDPPs and “kill” permits may provide extra hunting opportunity, such as antlerless harvest and extended seasons, and give landowners a means to direct hunting pressure to mitigate elk damage. In 2008, there were 32 CDPPs issued for 36 antlerless elk. In 2009, seventeen CDPPs were issued for 32 antlerless elk. In 2010, ten CDPPs were issued for 25 elk, and in 2011, five CDPPs were issued for 12 elk. While harvest records are not complete, it appears that less than 50% of the permitted numbers of elk were harvested.

SOCIAL AND ECONOMIC VALUES

Hunting

As evidenced by the more than 99,000 elk licenses sold during the 2011 hunting season, there are strong social and economic values associated with hunting elk in Washington. In the Willapa Hills elk herd area, elk are hunted from September through December, with some hunts designed to address elk depredation issues occurring as late as March. Hunting seasons are currently available for all weapon types and to both resident and non-resident hunters. In 2013, 9,873 elk hunters reported hunting in the Willapa Hills elk herd area, and they spent 55,551 hunter days pursuing elk (Figure 7). As such, one of the primary goals of this plan is to manage the Willapa Hills elk herd in a manner that promotes recreational elk hunting opportunities.

Increasingly limited access to hunting areas has become an issue state-wide. In the Willapa Hills elk herd area most of the land ownership is private, with timber companies controlling more than 70% of the land base. In the past, hunters enjoyed open access to many of these lands, but as vandalism, littering, and other liabilities have increased, many timber companies have become reluctant to allow open access. Motorized vehicle restrictions are becoming common. Permitted access to only a limited number of hunters and leased hunting are also being implemented. The Department will continue to represent the interests of the hunting public by working to maintain unrestrictive access to timber company lands.

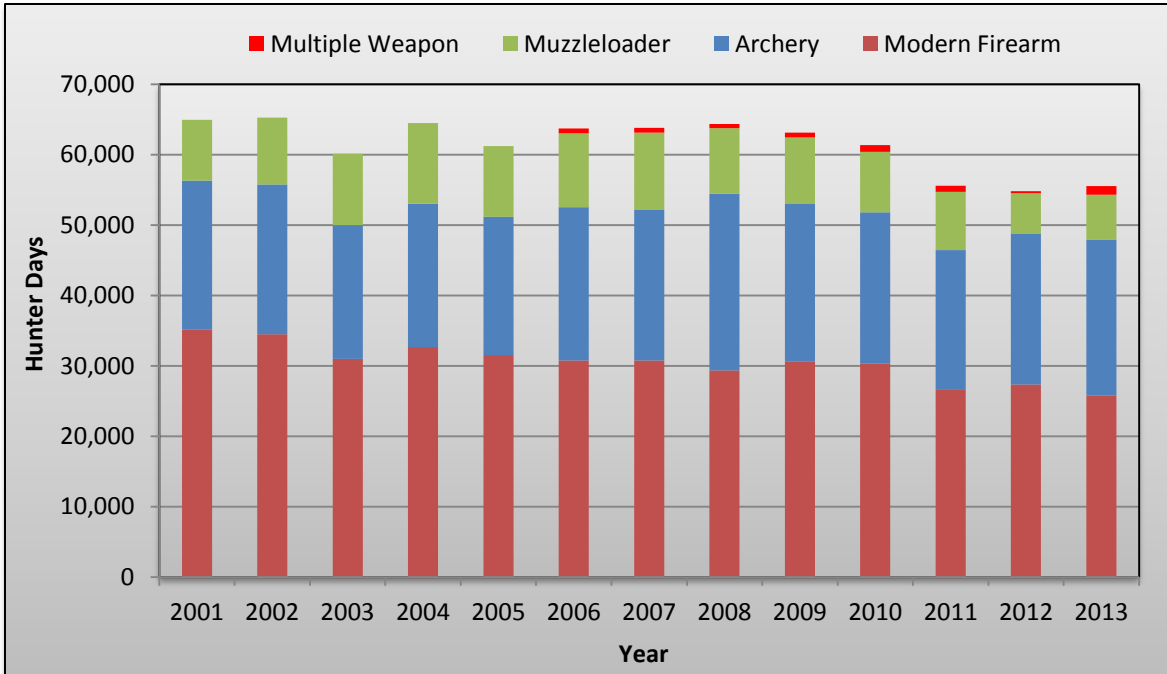


Figure 7. Estimated number of days hunters spent pursuing elk during general hunting seasons in the Willapa Hills elk herd area, 2001–2013.

The 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (U.S. Dept. of Interior, et al. 2006) reported that trip and equipment expenditures for big game hunting in 2006 averaged \$1,100 per hunter. Using the 9,873 hunters (Figure 7) who reported hunting the Willapa Hills elk herd in 2013, more than \$10.8 million is projected to have been added to the local and state economies in 2013.

Tribal Values

Elk serve an important role in the cultural and religious life of northwest Native Americans. Besides providing food, elk are used for ceremonial purposes and in clothing and drum making. By signing treaties with the U.S. Government in the 1850s, several tribes agreed to relinquish title to lands they occupied. However, they retained specific hunting, gathering, and fishing rights, including the right to hunt on open and unclaimed lands. Not all tribes were included in the treaties of the 1850s. The Chehalis, Shoalwater, and Cowlitz tribes consider southwest Washington their native land and are recognized by the U.S. Government, but because they were not a party to any of the treaties they do not have treaty hunting rights.

The Treaty of Medicine Creek (Muckleshoot, Puyallup, Nisqually, and Squaxin Island tribes) and the Treaty of Point No Point (Skokomish, Port Gamble S’Klallam, Jamestown S’Klallam, and Lower Elwha Klallam tribes) extend into the Willapa Hills elk herd area. However, tribal harvest constitutes a marginal proportion of total harvest for the Willapa Hills elk herd. For example, tribal hunting from 1997 through 2013, on average, only accounted for 0.29% of the total elk harvest in the Willapa Hills elk herd area. It is imperative that the Department work collaboratively with Treaty Tribes to develop management objectives for the Willapa Hills elk herd that meet the needs of both tribal and non-tribal hunters.

Watchable Wildlife

Nearly one-third of the U.S. population enjoyed wildlife watching in 2006; elk, deer, bears, and coyotes, were observed, fed, or photographed by 70% of all away-from-home survey participants (U. S. Department of Interior et al. 2006). Elk viewing is a popular recreational activity throughout Washington, and the Game Management Plan (WDFW 2008) calls for strategies to increase opportunities for the public to view elk. The most substantial viewing occurs in the winter and spring when elk forage in open meadows and fields. Many people view elk from public roadways overlooking lowland pastures, clearcuts and natural meadows on industrial forest land or on USFWS lands. There is great potential to promote elk viewing opportunities in the Willapa Hills elk herd area. The Willapa National Wildlife Refuge already attracts numerous wildlife viewers for a number of species, including elk.

HABITAT CONSERVATION

Food, cover, water, and space are the basic components that define elk habitat. The availability, spatial arrangement, and quality of these components, in turn, influence the distribution and abundance of elk. Water and space are not limited in most areas of the Willapa Hills elk herd area, so food and cover are the primary components that define elk habitat. However, the quantity, quality, and spatial arrangement of these components changes annually.

The quantity and quality of elk forage is important because it strongly influences the physical condition of elk, which is an important determinant of reproductive success (Cook et al. 2001, Cook et al. 2004). Cover is important because it provides protection from predators and hunters, aids thermoregulation, and provides areas where elk can rest and conserve energy. Consequently, there is a direct link between productivity of the Willapa Hills elk herd and its habitat. Managers must understand that relationship in order to implement management strategies that will effectively benefit elk.

Industrial timber management practices represent the dominant land use in the Willapa Hills elk herd area and have played an important role in affecting the quantity and quality of elk habitat. Timber management practices have benefited elk, and continue to do so, by increasing the quantity and quality of forages consumed by elk. There have been concerns that changes in timber management practices, that include shorter stand times and the use of herbicides, have negatively affected forage availability and quality in the Willapa Hills elk herd area. However, changes in understory composition and structure following the use of herbicides is not simply an effect of the herbicide, but rather an interaction between the management treatment and herbivory by deer and elk (Riggs et al. 2005, Wisdom et al. 2006). Little is understood about the interaction deer and elk have with current forest management practices in coastal regions of western Washington, but that relationship is the focus of ongoing research.

Although industrial timber management practices continue to benefit elk, they have also resulted in a very dense road system in the Willapa Hills elk herd area. This has important implications when managing elk habitat because roads have the potential to reduce the use of certain critical habitats. Elk may avoid otherwise suitable habitats to evade hunters and other human disturbances (Cole et al. 2004). Consequently, roads and the use they receive should also be considered as important habitat conservation issues. The Department does not currently have a comprehensive understanding of how roads affect elk habitat use patterns or elk vulnerability to harvest in the Willapa Hills elk herd area.

There are a variety of tools the Department can use to promote habitat conservation in the Willapa Hills elk herd area which include acquisition, voluntary protection, regulatory protection, ownership by a local land trust or other local entity, financial incentives, or education. Identifying which of these conservation alternatives is the most effective strategy requires careful consideration and depends on the desired result.

In many situations, land acquisition can be an effective tool to conserve valuable wildlife habitat. However, acquisitions also come at a substantial cost and require long-term maintenance. All potential Department land acquisitions must be evaluated based on their contribution towards the conservation of fish and wildlife and the provision of fish and wildlife related recreational opportunities for the public. Department Policy 6011 (Appendix D) and Procedure 6011 (Appendix E) outline a review process for Department, or Department-sponsored, acquisitions and are related to a cross-program effort to develop guiding principles that will help Department staff evaluate potential acquisitions. There are a limited number of parcels in the Willapa Hills elk herd area that meet acquisition priorities, so it is unlikely that the Department will utilize acquisition as a conservation alternative in the Willapa Hills.

The Department must work cooperatively with other land management agencies and private landowners to effectively conserve elk habitat in the Willapa Hills elk herd area. Therefore, conservation alternatives that are likely to be the most effective at promoting the conservation of elk habitat include voluntary protection, financial incentives, and education. For example, from 1989 through 2009 the Department collaborated with the Rocky Mountain Elk Foundation (RMEF), Elma Game Association and a variety of other non-government conservation organizations, timber companies, and private landowners to complete several forage enhancement projects to benefit the Willapa Hills elk herd. These projects generated \$200,000 that has been spent to improve elk habitat in the herd area. The projects primarily consisted of planting abandoned pastures and decommissioned roads with elk forages that were highly palatable and high in nutritional value. Habitat enhancements could also include a reduction in the density of conifer plantings, an increased use of fire in site preparation, maintaining stands in early seral stages for a longer period of time, or implementing road closures.

The Westside Elk Nutrition and Habitat Use models (Boyd et al. 2011) have the potential to identify priority lands where habitat enhancements are likely to have the most benefit to elk productivity. The models were developed with the intent of providing managers with a tool that would allow them to evaluate how potential management activities may affect elk. For example, these models allow managers to predict how elk might respond to road closures or how silvicultural practices might affect the amount of quality forage available to elk. The models must be run at a regional scale ($\geq 25,000$ acres), but local landscape scale ($\geq 2,000$ acres) analysis may be done on a subset of the regional scale output. The models utilize currently available GIS layers (e.g. vegetation grid, potential vegetation, slope, and transportation), and provide predictions of nutrition and relative habitat use in summer, which may help focus habitat conservation actions in the Willapa Hills elk herd area.

The Westside Elk Nutrition model predicts dietary digestible energy (DDE) that elk can acquire from each plant community during summer, and creates a plot of DDE, which can be classified into poor, marginal, good and excellent based upon the findings of Cook et al. (2001). The output of this model shows that the vast majority of the summer habitat within the Willapa Hills elk herd area falls within the marginal classification or worse, which is typical of western Washington environments. This is supported by body condition indices recorded from elk that were sampled in the Willapa Hills elk herd area (John G. Cook, Pacific Northwest Research Station, personal communication).

Lastly, economic incentives will facilitate the Department's ability to find private landowners that are willing to enhance elk habitat on their property. The U.S. Department of Agriculture (USDA) offers a number of programs that provide economic incentives for enhancing wildlife habitat including the Wetlands Reserve Program (WRP), Voluntary Public Access and Habitat Incentives Program (VPA-HIP) and the Conservation Reserve Program (CRP) which also includes the State Acres for Wildlife Enhancement (SAFE) program. These conservation based programs in addition to other federal and state programs, will provide needed funding to enhance or maintain elk habitat on privately owned lands.

RESEARCH NEEDS

Research on the Willapa Hills elk herd has been limited to examinations of harvest rates and the reproductive ecology of cow elk during the 1970s (Kuttell 1974 and 1975), cow survival and nutritional condition, 2001–2002 (Bender et al. 2008), and bull survival rates in GMU 673, 2005–2009 (W. Michaelis, unpublished data). Unfortunately, inferences that can be derived from the results of these projects are either outdated or limited to a small geographic area within the Willapa Hills elk herd area. Consequently, there is a need for research that informs management decisions at the herd level. The following list includes research needs that are not included in this plan as objectives and will be addressed as funding becomes available.

1. Determine cause-specific mortality and survival rates of cow and calf elk.
2. Determine population level effects of hoof disease (e.g. to what degree does it reduce survival rates and limit population growth?).
3. Determine if elk habitat use patterns and cause-specific mortality rates change in response to cooperative road closures.

HERD MANAGEMENT GOALS

The Game Management plan (WDFW 2008) defines the statewide management goals for elk. These have been adopted as the overarching management goals for the Willapa Hills elk herd. They are:

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

MANAGEMENT OBJECTIVES AND STRATEGIES

Population Monitoring

Issue Statement: Formal estimates of herd demographics (i.e. population size, age and sex ratios, survival rates, etc.) are useful in elk management. However, developing a survey protocol that generates reliable estimates for the Willapa Hills elk herd remains a considerable challenge. Past efforts to monitor the Willapa Hills elk herd lacked a standardized and statistically valid survey design, which resulted in estimates that were imprecise, lacked consistency, and were unreliable. Consequently, there is a need for a standardized survey protocol that will generate reliable estimates of herd demographics.

Objective 1

Implement a standardized and statistically valid survey protocol that will generate reliable estimates or indices of population size for the Willapa Hills elk herd by 2015.

Strategies:

1. Collaborate with Department and Tribal biologists and statisticians to assess population estimation techniques currently being used by the Department to estimate population size for the Nooksack and Mount Saint Helens elk herds and evaluate the need for a new approach in the Willapa Hills elk herd area.

2. If there is a need to develop a survey technique that is unique to the Willapa Hills elk herd, then initiate development of that technique by 2015.

Objective 2

Implement a standardized and statistically valid survey protocol that will generate unbiased estimates of herd composition (i.e. age and sex ratios, age structure, etc.) for the Willapa Hills elk herd by 2015.

Strategies:

1. Collaborate with Department and Tribal biologists and statisticians to identify a sampling protocol to generate ratio estimates that is complementary to population estimation techniques developed in Objective 1.
2. If Objective 1 is not met due to fiscal or logistical constraints then collaborate with Department and Tribal biologists and statisticians to develop a standardized survey protocol that will generate statistically valid estimates of herd composition in the Willapa Hills elk herd area by 2015.

Issue Statement: Accurate estimates of annual harvest are important when monitoring herd status and forming management recommendations for the Willapa Hills elk herd. A system is already in place to provide incentives for general season elk hunters to report harvest, and compliance across the state is good. However, not all permits (CDPPs or “kill” permits) issued to landowners as part of DPCAs are tracked by the harvest reporting system at this time, and although landowners are required to report the number of elk taken, compliance varies. Each DPCA is essentially a contract between the Department and the landowner and should be recorded into the Department’s contracting system. This would then provide a permanent and standardized record for each CDPP or “kill” permit issued, which would provide efficient tracking of permit numbers, permit locations, and resulting harvest.

Objective 3

By 2015, develop a Standard Operating Procedure (SOP) for managing and tracking DPCAs, associated permits, and resulting harvest in the Willapa Hills elk herd area using the Department’s contracting system.

Strategies:

1. Develop a procedure to manage all DPCAs using the Department’s contracting system.
2. Standardize the contracting system data entry fields to include the number of CDPPs or “kill” permits issued as part of the DPCA.
3. Standardize the contracting system data entry fields to include reported harvest or absence of harvest.
4. Standardize the contracting system data entry fields to include location fields.
5. Link reissuance of succeeding years’ permits to reporting compliance.

Herd Management

Issue Statement: A key aspect of the herd management goals identified for the Willapa Hills elk herd includes managing for stable to increasing elk populations that maximize hunter opportunity without compromising ecosystem integrity and biodiversity, or increasing elk damage conflicts. Although population estimates are lacking, ancillary data from harvest reports and surveys provide at least some indication the Willapa Hills elk herd has been productive enough to maintain population stability and sustain annual harvest rates that have been relatively consistent from 2001 to present. Thus, current population size and harvest rates appear to be at levels that promote stable to increasing elk populations

and sustainable harvest rates. Therefore, this plan aims to keep the Willapa Hills elk herd at its current level by retaining current harvest opportunities until formal estimates or indices of population size are developed that indicate a different approach is needed.

Objective 4

Keep the Willapa Hills elk herd at its current level by maintaining harvest levels during general hunting seasons between 900 and 1,300 elk.

Strategies:

1. Maintain current season lengths, season dates, and antler point restrictions for general modern firearm, muzzleloader, and archery seasons.
2. In the absence of formal population estimates and in consultation with affected Tribes, decrease antlerless opportunities if trends in harvest and hunter success rates have been declining for at least three consecutive years and those declines are independent of hunter numbers, hunting season structure (i.e. length and timing), inclement weather events, and/or hunter access.

Issue Statement: Management guidelines provided in Table 4 were established by the Department with the intent of promoting healthy and productive elk herds, while also maintaining herd demographics that promote high hunter satisfaction (e.g., the number of bulls maintained in the population). A primary objective of this plan will be to manage harvest rates in accordance with those guidelines. However, monitoring of bull:cow ratios and bull age structure will not be achievable until Objective 2 is completed.

Objective 5

Maintain pre-season populations within a range of 15 to 35 bulls per 100 cows and/or post-season populations within a range of 12 to 20 bulls per 100 cows. In addition, manage for a post-season bull population where mature bulls make up greater than 2% of the bull population.

Strategies:

1. Develop season guidelines with the intent of achieving this objective in each GMU.
2. Maintain 3-point minimum antler point restrictions during general hunting seasons.
3. If bull:cow ratios are above management objectives identify limited opportunities to increase bull harvest.
4. If bull:cow ratios are below management objectives decrease bull harvest by reducing general season hunting opportunities.

Table 4. Elk management guidelines that affect decisions pertaining to hunting season structure and which class of animals would be impacted by a change in season structure, WDFW Game Management Plan 2009–2015 (WDFW 2008).

Criteria	Class of elk targeted by season change	Consider liberalizing season	Acceptable range	Consider restricting season
Pre-hunt bull:cow ratio	Both	>35 bulls:100 cows	15 to 35 bulls: 100 cows	< 15
Post-hunt bull:cow ratio	Both	>20 bulls:100 cows	12 to 20 bulls: 100 cows	< 12
Total bull mortality ^a	Bulls	<40%	≤ 50%	>50%
Percent mature bulls in the post-hunt bull sub-population ^b	Bulls	>10%	2 to 10%	< 2%
Population objective ^c	Cows	Above Objective	At Objective	Below Objective

a. This is only a management criterion when the population being monitored includes radio-collared bulls. Total bull mortality = mortality from all sources including state hunting, tribal hunting, predation, winter kill disease, etc.

b. Mature bulls are defined as having antlers with at least five points on one side.

c. This will not be a management criterion unless formal population estimates exist.

Disease

Issue Statement: The number of reports received by the Department pertaining to elk with hoof deformities in southwest Washington increased sharply in 2008. Elk afflicted with hoof disease commonly show severely overgrown and deformed claws, and marked emaciation. The cause of this condition has not yet been determined. Most reports have been concentrated in GMUs 504, 506, and 530, as well as in neighboring GMUs associated with the Mount Saint Helens elk herd (GMUs 520, 550, and 556). However, more recent observations of this condition have also included GMUs in the northern portion of the Willapa Hills elk herd area (e.g. GMUs 660, 672, and 673). In response to the increasing trend in hoof disease reports the Department is currently working with specialists from a variety of state and federal agencies to identify the cause and anticipated impacts of this condition.

Objective 6

Determine the distribution, prevalence, and cause of hoof disease in the Willapa Hills elk herd area and collaborate with affected Tribes and the public to identify potential management options. The Department will inform affected Tribes and the public of the Department’s most recent findings as they emerge.

Strategies:

1. Continue to collaborate with specialists from a variety of state and federal agencies to gain a better understanding of the potential causes of hoof disease.
2. Develop a monitoring strategy that will provide a better understanding of the distribution and prevalence of hoof disease.
3. Be proactive and evaluate a variety of management options or treatments that can be implemented after the distribution, prevalence, and cause are identified.
4. Develop a monitoring strategy to evaluate the effectiveness of selected management or treatment options.
5. Maintain and improve the online reporting tool where the general public and hunters can report incidences of hoof disease.

6. Keep information on the Department website that pertains to hoof disease current and use social media to disseminate this information so the public can be well informed on the current status of the situation.
7. Consider developing strategies that would allow members of the public to donate money that would be used specifically to research and manage hoof disease.

Damage

Issue Statement: Human-elk conflicts in the Willapa Hills elk herd area are primarily associated with damage to tree farms and conifer plantations, hay and alfalfa fields, orchards, and other agricultural crops. When frightened, elk may also damage fences by running through them. Negative human-elk interactions can occur in any GMU in the herd area, but landowners in the northern and southern portions report more elk damage than do landowners in other parts of the herd area. The Department has worked diligently with landowners to minimize elk damage and has, in some areas, been successful in alleviating damage complaints. Therefore, these efforts will continue.

Objective 7

Continue to strive to mitigate elk damage and minimize the number of elk damage complaints.

Strategies:

1. Where feasible use non-lethal methods (e.g. hazing, herding, etc.) to address damage complaints.
2. Continue to use Damage Prevention Cooperative Agreements (DPCAs) to assist landowners in minimizing elk damage to their property.
3. Use Master Hunters to help alleviate damage and/or repair fences when and where appropriate.
4. For landowners who have worked with the Department to prevent elk damage and have a DPCA, provide cost share alternatives to help minimize the costs of repairing fences damaged by elk.
5. Work with affected Tribes that have off reservation hunting rights and who have a Hunting Co-Management Agreement with the Department to continue long-standing depredation control hunts in Elk Areas 5054, 5061, and 6010.
6. Continue to limit herd growth in GMU 504 in an effort to minimize human-elk conflicts associated with urban development near Longview-Kelso.
7. Provide cash compensation to landowners who have worked with the Department to prevent elk damage and have a DPCA, but continue to experience losses.

Habitat Conservation

Issue Statement: The Department actively manages < 1% of the land within the Willapa Hills elk herd area, which limits its ability to implement habitat management actions that would benefit elk at the herd level. Therefore, the Department must work cooperatively with other land management agencies (e.g., DNR) to effectively manage habitat on public lands to benefit the Willapa Hills elk herd. In addition, the Department is working to encourage private timber companies and other private landowners to manage their lands in a way that promotes long-term benefits to elk.

Economic incentives will facilitate the Department's ability to find private landowners that are willing to work with the Department to enhance elk habitat on their property. The U.S. Department of Agriculture (USDA) offers a number of programs that provide economic incentives for enhancing wildlife habitat including the Wetlands Reserve Program (WRP), Voluntary Public Access and Habitat Incentives

Program (VPA-HIP) and the Conservation Reserve Program (CRP) which also includes the State Acres for Wildlife Enhancement (SAFE) program. These conservation based programs in addition to other federal and state programs, will be needed in order to enhance elk habitat on privately owned lands.

Information pertaining to the quality of habitats, elk habitat use patterns, and effects of roads is not currently available and limits the ability of the Department to identify effective management strategies. However, the Westside Elk Nutrition and Habitat Use Models can facilitate assessments of habitat quality and predict elk habitat use in summer without conducting in-depth scientific studies. Consequently, these models have the potential to be an important management tool and should be utilized to identify areas where habitat enhancements are likely to have the most benefit to elk.

Objective 8

Identify at least one landowner or land management agency every two years that is willing to work, or enter into a cooperative agreement, with the Department to maintain, enhance, or increase elk habitat in the Willapa Hills elk herd area.

Strategies:

1. Use the Westside Elk Nutrition and Habitat Use Models to identify areas where management activities will provide the most benefit to elk.
 - a. Develop and update GIS-based vegetation maps utilized by the Westside Elk Nutrition and Habitat Use Models for all areas within the Willapa Hills elk herd area by 2015.
 - b. Utilize the models to characterize current elk summer habitat condition.
 - c. Utilize the models to characterize potential effects road closures would have on elk distribution and habitat use patterns.
 - d. Utilize the models to identify quality foraging areas.
 - e. Use the models to identify areas that would benefit from habitat enhancements.
2. Work with Tribes and DNR to identify site-specific management actions that will benefit elk on state lands.
3. Encourage private timber companies and other private landowners to enhance elk habitat on property they own.
 - a. Identify conservation based programs (e.g., CRP, VPA-HIP, etc.) that will offer economic incentives to landowners that enhance wildlife habitat.
4. Develop partnerships with appropriate land-managers to determine applicability of forage enhancements.
5. Measure the benefit derived from forage enhancement projects for at least five years after completion.

Recreation

Issue Statement: Private timber companies own >70% of the Willapa Hills elk herd land base. Consequently, recreational harvest of the Willapa Hills elk herd has largely been dependent on the willingness of these companies to allow hunters access. Recently, the willingness of timber companies to allow access has declined. Reasons for reduced access varies among timber companies, but is most commonly associated with increases in incidences of vandalism, timber theft, littering, and safety or liability concerns. Approaches to limiting hunter access have included: not allowing motorized access, leasing hunting rights for designated parcels, and/or only providing access to a limited number of hunters who purchase access permits from the timber company. In the presence of this dynamic environment the Department must be adaptive and establish non-traditional agreements with timber companies in order to secure and maintain hunter access. Examples include providing incentives or monetary benefits in exchange for allowing hunter access or working cooperatively with timber companies to limit vehicle

traffic. Positive attributes of both approaches include greater hunter dispersal, possible increases in hunt quality, and fewer roads to maintain, which reduces maintenance costs.

Objective 9

In collaboration with affected Tribes who have a Hunting Co-Management Agreement with the Department, work cooperatively with timber companies to maintain open, low-cost hunter access.

Strategies:

1. Meet with each individual timber company and identify ways to maintain or facilitate access.
2. Work with landowners to facilitate motorized access on main roads by providing gates to prevent motorized access to spur roads.
3. To compete with a leased hunting option, offer incentives to the landowner (e.g., additional enforcement patrol, assistance with security, gates, road maintenance, garbage clean-up, etc.).
4. Where incentives are not enough for the landowner, consider developing fund sources to facilitate public access.
5. Negotiate hunting access agreements with landowners on a portion of their ownership on a trial basis.

Issue Statement: A goal of this plan is to manage the Willapa Hills elk herd for a variety of recreational, educational, cultural, and aesthetic purposes, including wildlife viewing and photography. Elk viewing opportunities in this part of the state are less predictable than those found in areas where elk congregate on core winter ranges. Instead, viewing opportunities are often impromptu because elk tend to occur in small groups that are widely distributed across the landscape. However, there are places, at certain times of the year, where elk are readily visible year after year. Thus, elk viewing and photographic opportunities do exist and enhanced public participation could be promoted. However, because elk in the Willapa Hills elk herd area do not congregate in large numbers in a concentrated area, the benefit of establishing permanent viewing stations is limited. Instead, people seeking elk viewing opportunities in the Willapa Hills elk herd area would benefit the most from an informative brochure similar to the Audubon Society's Great Washington State Birding Trail brochure. The Great Washington State Birding Trail brochures provide maps that identify driving, biking, or hiking routes and key locations along those routes that provide the best opportunity to watch and photograph birds. In addition, these brochures provide important information about important habitats, access, and the best time of year to go.

Objective 10

Increase public awareness of the elk resource by creating an informative brochure similar to the Audubon Society's Great Washington State Birding Trail brochure that identifies routes and key points along those routes that provide the best opportunity to observe and photograph elk in the Willapa Hills elk herd area.

Strategies:

1. Identify areas where elk are regularly observed from year to year and provide a reliable opportunity to observe elk.
2. Use ArcGIS to create driving, biking, or hiking routes that will direct people to key viewing areas.
3. For each key viewing area, provide information related to habitat, access, and wildlife viewing opportunities.

4. Work with the Public Outreach program to create a brochure design that uniquely presents the information developed in strategies 1, 2, and 3.
5. Identify sources of funding and cooperators to help cover printing costs.
6. Use available media outlets to make the public aware of where they can obtain copies of the brochure.

Intergovernmental Coordination

Issue Statement: State harvest goals may need to be adjusted to account for tribal harvest. The Medicine Creek and Point No Point Treaty tribes retained the right to hunt on open and unclaimed lands in parts of the Willapa Hills elk herd area. The Department respects all governing laws and agreements in the treaty areas.

Objective 11

Cooperate and collaborate with Treaty Tribes to implement the Willapa Hills Elk Herd Plan and to coordinate season setting and herd management in traditional hunting areas.

Strategies:

1. Include Treaty Tribes in development, review, and implementation of elk management within their traditional hunting areas.
2. Provide opportunity for discussion of elk management at coordination meetings.
3. Share harvest and survey data, and promote joint enforcement efforts with the Treaty Tribes to achieve management goals.

Issue Statement: The Julia Butler Hansen National Wildlife Refuge (JBH) was established to protect the threatened Columbian white-tailed deer and its habitat. However, elk numbers on JBH have, at times, increased to levels that impact Columbian white-tailed deer habitat and jeopardize recovery efforts.

Objective 12

Work cooperatively with JBH staff and affected tribes to limit the number of elk on JBH to ≤ 20 individuals.

Strategies:

1. When elk numbers on JBH exceed 20 individuals, cooperate with refuge personnel in administering a hunt on the refuge to reduce elk numbers.

SPENDING PRIORITIES

Population Monitoring

Objectives 1 and 2—Formal estimates of herd demographics (i.e. population size, age and sex ratios, survival rates, etc.) are inherent to elk management and there is a need for a standardized survey protocol that will generate unbiased estimates of herd demographics for the Willapa Hills elk herd.

Priority: High
Time line: By 2015
Cost: \$40,000 per year

Disease Monitoring

Objective 6—The number of reports of elk with hoof disease received by the Department has increased sharply since 2008. The cause of this condition has not yet been determined. In response to the increasing trend in hoof disease reports the Department is currently working with specialists from a variety of state and federal agencies to identify the cause and anticipated impacts of this condition. Once the cause and anticipated impacts are identified, the Department will develop appropriate management options, treatments, and monitoring strategies. Until that occurs, the costs associated with managing and monitoring elk hoof disease in the Willapa Hills elk herd area is unknown. However, a budget proposal that includes \$200,000 for monitoring hoof disease in the Willapa Hills and Mount Saint Helens elk herd areas during 2014 has been approved, but how those funds will be appropriated between the two areas has not been determined.

Priority: High
Time line: Ongoing
Cost: TBD

Damage

Objective 7—Human-elk conflicts in the Willapa Hills elk herd area are primarily associated with damage to tree farms and conifer plantations, hay and alfalfa fields, orchards, and other agricultural crops. The Department has worked diligently with landowners to minimize elk damage and has, in some areas, been successful in alleviating damage complaints. Therefore, these efforts should continue.

Priority: Medium
Time line: Ongoing
Cost: \$10,000 per year

Hunter Access

Objective 9—Recreational harvest of the Willapa Hills elk herd has largely been dependent on the willingness of timber companies to allow hunters access. Recently, the willingness of timber companies to allow access has declined. Reasons for this varies among timber companies, but is most commonly associated with increases in incidences of vandalism, timber theft, littering, and safety/liability concerns. In the presence of this dynamic environment the Department must be adaptive and establish non-traditional agreements with timber companies in order to secure and maintain hunter access.

Priority: High
Time line: Ongoing
Cost: \$75,000 per year

Watchable Wildlife

Objective 10—A goal of this plan is to manage the Willapa Hills elk herd for a variety of recreational, educational, cultural, and aesthetic purposes, including wildlife viewing and photography. Elk viewing opportunities in this part of the state are often impromptu and less predictable than those found in areas where elk congregate on core winter ranges. Nevertheless, elk viewing and photographic opportunities do exist and enhanced public participation may be developed.

Priority: Low
Time line: By 2017
Cost: \$5,000

HERD PLAN REVIEW AND AMENDMENT

The Willapa Hills Elk Herd Plan is a document subject to annual review and amendment and will be updated as necessary. The plan will remain in effect until revised. As new information is gathered and conditions change, it will be necessary to maintain a free exchange of communication among the Department, cooperators, and Tribes. Meetings with affected Tribes, the Northwest Indian Fisheries Commission and the Department will occur when proposed changes in elk harvest or habitat management strategies deviate substantially from the objectives and strategies outlined in this document. Emergent issues can be addressed, as needed, either at the technical or policy level through regular meetings among the cooperative managers.

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APPENDICES

APPENDIX A-1. Ecological systems found in the 500 series GMUs of the Willapa Hills herd area. Areas are in acres.

Ecological System	Game Management Unit				Total
	501	504	506	530	
Maritime Mesic-Wet Douglas Fir-W. Hemlock Forest	51,729	20,091	55,887	111,359	239,065
Harvested Forest- Shrub Regen	18,744	9,243	39,042	60,215	127,244
Maritime Dry-Mesic Douglas Fir W. Hemlock Forest	21,318	2,754	36,479	58,883	119,434
Harvested Forest- Conifer Regen	12,260	2,306	48,066	35,600	98,232
Pasture/Hay	19,853	10,200	9,001	33,593	72,647
Lowland Riparian Forest & Shrub	8,391	2,148	7,491	14,944	32,974
Harvested Forest- Grass/Forb Regen	4,645	1,765	1,499	8,734	16,643
Hypermaritime Sitka Spruce Forest	0	0	14,738	0	14,738
Developed Low Intensity	2,429	7,657	301	2,709	13,096
Open Water (Fresh)	176	3,719	1,945	7,099	12,939
Hypermaritime W. Red Cedar-W. Hemlock Forest	0	0	12,544	0	12,544
Cropland	3,131	0	4	6,693	9,827
Lowland Mixed Hardwood-Conifer Forest & Woodland	0	1,615	4,003	1,192	6,810
Freshwater Emergent Marsh	3,197	287	395	2,482	6,361
Shrub Swamp	774	594	1,169	2,210	4,747
Dry-Mesic Silver Fir-W. Hemlock-Douglas Fir Forest	25	0	1,893	1,608	3,527
Broadleaf Landslide Forest & Shrub	168	53	1,768	937	2,925
Intertidal Freshwater Wetland	0	736	685	1,254	2,674
Open Water (Brackish / Salt)	0	0	2,637	0	2,637
Hardwood-Conifer Swamp	511	245	573	1,066	2,395
Dry Douglas Fir (Madrone) Forest & Woodland	393	0	470	1,183	2,046
Recently Burned Grassland	0	535	626	314	1,474
Freshwater Mudflat	0	3	885	72	961
Maritime Coastal Sand Dune & Strand	0	195	393	366	955
Developed High Intensity	274	9	8	151	443
Oak Woodland	341	0	0	39	380
Mesic W. Hemlock-Silver Fir Forest	0	0	305	0	305
Unconsolidated Shore	126	21	29	50	226
Developed Open Space	62	2	0	146	210
Willamette Valley Upland Prairie & Savanna	90	0	0	0	90
Montane Shrubland	0	0	19	11	30
Montane Wet Meadow	26	0	0	0	26
Freshwater Aquatic Bed	6	0	0	6	12
Intertidal Mudflat	0	0	3	2	5
Disturbed Non-specific	0	2	0	0	2
Tidal Salt & Brackish Marsh	0	0	2	0	2
Total	148,669	64,179	242,863	352,916	808,627

APPENDIX A-2. Ecological systems found in the 600 series of GMUs in the Willapa Hills herd area. Areas are in acres.

Ecological System	Game Management Unit								Total
	658	660	663	672	673	681	684	699	
Harvested Forest- Conifer Regen	49,816	50,090	19,793	42,807	36,339	12,574	302	104	211,825
Maritime Mesic-Wet Douglas Fir-W. Hemlock Forest	8,884	48,388	52,043	43,118	11,439	15	0	0	163,888
Harvested Forest- Shrub Regen	17,664	21,375	18,072	35,158	18,610	7,622	851	409	119,762
Maritime Dry-Mesic Douglas Fir W. Hemlock Forest	9,313	19,932	19,771	22,990	16,579	4,837	431	0	93,853
Hypermaritime Sitka Spruce Forest	26,166	391	0	118	29,945	18,163	7,234	2,292	84,309
Hypermaritime W. Red Cedar-W. Hemlock Forest	16,841	1,694	0	884	31,297	9,773	822	757	62,068
Lowland Riparian Forest & Shrub	9,936	17,528	7,013	10,743	9,218	5,368	900	86	60,792
Pasture/Hay	439	6,929	4,317	4,199	1,865	3,111	701	0	21,561
Open Water (Brackish / Salt)	460	0	0	0	448	14,131	140	10	15,189
Harvested Forest- Grass/Forb Regen	1,289	3,542	4,785	2,047	1,403	453	657	8	14,184
Tidal Salt & Brackish Marsh	5,394	3	7	506	4,161	1,737	906	862	13,576
Shrub Swamp	2,484	1,407	798	716	1,448	663	5,647	0	13,164
Freshwater Emergent Marsh	1,104	5,307	1,416	806	1,034	365	1,724	25	11,779
Hardwood-Conifer Swamp	3,100	1,134	1,405	294	1,531	445	2,441	474	10,824
Developed Low Intensity	2,602	2,117	944	529	1,346	467	2,357	0	10,363
Intertidal Freshwater Wetland	1,365	4,795	0	459	620	1,193	160	299	8,891
Maritime Coastal Sand Dune & Strand	4,609	0	0	0	0	787	3,429	2	8,826
Cropland	1,030	4,685	1,194	18	5	0	346	0	7,279
Open Water (Fresh)	533	1,737	17	220	459	1,399	319	0	4,683
Broadleaf Landslide Forest & Shrub	195	1,098	257	349	323	243	2	0	2,467
Volcanic Rock & Cinder	0	0	0	0	0	0	2,002	0	2,002
Dry-Mesic Silver Fir-W. Hemlock-Douglas Fir Forest	344	87	619	212	255	257	0	0	1,775
Freshwater Mudflat	0	0	0	0	0	1,693	7	0	1,700
Lowland Mixed Hardwood-Conifer Forest & Woodland	0	0	0	0	0	930	576	0	1,505
Intertidal Mudflat	353	0	5	0	610	51	94	69	1,183
Mesic W. Hemlock-Silver Fir Forest	0	0	0	0	1,040	38	0	0	1,078
Recently Burned Grassland	0	0	0	0	0	836	234	0	1,070
Unconsolidated Shore	83	313	36	11	192	216	7	0	857
Developed High Intensity	235	253	41	20	114	2	87	0	751
Willamette Valley Upland Prairie & Savanna	0	21	696	0	0	0	0	0	717
Dry Douglas Fir (Madrone) Forest & Woodland	0	0	700	0	0	0	0	0	700
Oak Woodland	0	159	396	0	0	0	0	0	555
Bog & Fen	8	0	0	0	0	0	340	0	348

Appendix A-2 continued

HERBACEOUS Bald & Bluff	0	16	157	0	0	0	0	0	173
Developed Open Space	58	79	23	0	7	0	1	0	169
Hypermaritime Shrub & Herbaceous Headland	82	0	0	0	1	50	19	0	152
Disturbed Non-specific	0	0	0	0	110	15	0	0	125
Maritime Eelgrass Bed	29	0	0	0	4	1	3	0	37
Coastal Cliff and Bluff	6	0	0	0	3	18	4	5	36
Freshwater Aquatic Bed	0	19	0	1	1	0	0	0	21
Cliff, Canyon & Massive Bedrock	4	0	0	0	8	0	0	0	12
Total	164,430	193,099	134,505	166,204	170,414	87,451	32,740	5,403	954,248

APPENDIX B-1. Summary of pre-season composition surveys completed in the Willapa Hills elk herd area, 1995–2011. Results are listed by population management unit and include the number of spikes, branch antlered bulls (Branched), cows, and calves observed and resulting bull:cow (B:C) and calf:cow (C:C) ratio estimates. Ratios are based on the number of bulls or calves per 100 cows and values in parentheses are associated 90% confidence intervals.

Region 5								
Year	GMU(s)	Spike	Branched	Cow	Calf	Total	B:C	C:C
1995	506	11	10	50	20	91	42 (±18)	40 (±17)
	530	14	14	72	34	134	39 (±14)	47 (±16)
1996	506	10	6	56	21	93	29 (±13)	38 (±15)
	530	10	8	84	33	135	21 (±10)	39 (±14)
1997	506	16	14	115	57	202	26 (±9)	50 (±13)
	530	14	8	72	28	122	31 (±13)	39 (±14)
1998	530	8	8	62	29	107	26 (±12)	47 (±17)
1999	530	16	8	66	37	127	36 (±15)	56 (±19)
2000	504	0	1	4	2	7	n/a	n/a
	506	20	11	82	41	154	38 (±13)	50 (±16)
	530	30	12	67	36	145	63 (±20)	54 (±18)
2001	No data							
2002	506	14	11	62	28	115	40 (±15)	45 (±17)
	530	30	19	92	55	196	53 (±15)	60 (±17)
2003	506	11	7	78	36	133	23 (±10)	46 (±15)
	530	7	5	43	23	78	28 (±15)	53 (±22)
2004	No data							
2005	506	26	15	144	67	253	28 (±8)	47 (±12)
	530	25	17	93	44	179	45 (±14)	47 (±14)
2006	504	0	3	3	1	7	n/a	n/a
	530	9	6	51	21	87	29 (±14)	41 (±17)
2007	506	15	12	119	55	201	14 (±6)	46 (±13)
	530	6	2	47	20	75	17 (±11)	43 (±17)
2008-present	No surveys							
Region 6								
Year	GMU(s)	Spike	Branched	Cow	Calf	Total	B:C	C:C
1996	673	5	3	20	10	38	40 (±28)	50 (±32)
1997	658	16	8	107	28	159	22 (±9)	26 (±9)
	673	13	9	89	38	149	25 (±9)	43 (±13)
	699	0	4	0	0	4	n/a	n/a
1998	673	3	6	39	27	75	23 (±14)	69 (±29)
	681	4	5	25	12	46	36 (±23)	48 (±28)
	699	0	2	3	3	8	n/a	n/a
1999	No surveys							
2000	658	9	7	100	41	157	16 (±7)	41 (±13)
	673	16	10	105	45	176	25 (±9)	43 (±12)
	681	5	1	24	15	45	25 (±19)	63 (±33)
2001	673	1	14	53	22	90	28 (±14)	42 (±17)
	681	8	3	35	18	64	31 (±18)	51 (±25)
2002	673	6	14	96	41	157	21 (±8)	43 (±13)
	681	5	8	38	17	68	34 (±18)	45 (±21)
2003	673	8	14	88	29	139	25 (±10)	33 (±12)
2004–2006	No surveys							
2007	658	9	9	102	32	152	18 (±7)	31 (±11)
	673	11	7	79	34	131	23 (±10)	43 (±15)
2008	658	3	5	47	14	69	17 (±11)	30 (±15)
	673	7	7	53	27	94	26 (±13)	51 (±20)
2009	673	7	8	57	18	90	26 (±13)	32 (±14)
2010	No surveys							
2011	673	3	4	36	6	49	19 (±14)	17 (±12)

APPENDIX B-2. Summary of post-season composition surveys completed in the Willapa Hills elk herd area, 1997–2011. Results include the number of spikes (spike), branch antlered bulls (Branched), cows, and calves observed and resulting bull:cow (B:C) and calf:cow (C:C) ratio estimates. Ratios are based on the number of bulls or calves per 100 cows and values in parentheses are associated 90% confidence intervals.

Year	GMU(s)	Spike	Branched	Cow	Calf	Total	B:C	C:C
1997	673	7	1	80	34	122	10 (±6)	43 (±14)
1998	658	4	6	203	69	282	5 (±3)	34 (±8)
	673	8	8	202	60	278	8 (±3)	30 (±7)
	699	2	1	20	3	26	15 (±15)	15 (±15)
1999	No surveys							
2000	No surveys							
2001	673	21	2	159	63	245	14 (±6)	40 (±9)
	681	15	2	40	15	72	43 (±20)	38 (±18)
2002	673	31	3	139	53	226	24 (±8)	38 (±10)
	681	19	3	77	28	127	29 (±11)	36 (±14)
2003	673	32	10	181	68	291	23 (±7)	38 (±8)
2004	673	19	2	149	50	220	14 (±5)	34 (±9)
	681	8	1	70	27	106	13 (±7)	39 (±14)
2005	673	28	8	205	82	323	18 (±5)	40 (±9)
2006	658	19	3	183	55	260	12 (±4)	30 (±8)
	673	18	7	80	24	129	31 (±12)	30 (±11)
2007	673	28	8	171	53	260	21 (±6)	31 (±8)
	681	20	4	126	29	179	19 (±7)	23 (±8)
2008	658	8	5	89	37	139	15 (±7)	42 (±13)
	673	30	5	184	75	294	19 (±6)	41 (±9)
2009	658	23	4	191	43	261	14 (±5)	23 (±6)
	673	27	4	218	56	305	14 (±5)	26 (±6)

APPENDIX C. Summary of elk hunting seasons in the Willapa Hills elk herd area from 1970 to present.

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type	
1970	10-H Bow area 2, Long Island	12/12 - 12/31 10/10 - 11/22	20 44	Either-sex Either-sex.	Archery Either-sex Hunts	
	8-C west of I5, 8-H, 9-A, 9-H, 9-M, 10-GS, 10-S, 10-R, 10-PS, 10-PN, 10-W, 10-MW, 10-ME, 10-GN, 10-H	11/07 - 11/22	16	Bull elk with visible antler	Modern Firearm General (W)	
	8-C 10-H	11/12 - 11/22 11/07 - 11/22	11 16	Either-sex	Either-sex Elk Season (W)	
	10-MW (50) 10-R (75)	11/18 - 11/22 11/18 - 11/22	5 5	Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)	
1971	Bow area 2, Long Island	10/16 - 11/21	36	Either-sex	Archery Either-sex Hunts	
	8-C west of I5, 8-H, 9-A, 9-H, 9-M, 10-GS, 10-S, 10-R, 10-PS, 10-PN, 10-W, 10-MW, 10-ME, 10-GN, 10-H	11/01 - 11/14	14	Bull elk with visible antler	Modern Firearm General (W)	
	8-C	11/04 - 11/14	11	Either-sex	Either-sex Elk Season (W)	
	9-A (125) Elk Area 6 Wahkiakum (250) Elk Area 8 Wildwood (300)	11/06 - 11/09 12/04 - 01/31 11/27 - 01/31	4 59 66	Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)	
1972	Bow area 2, Long Island Bow area 8 Chinook	10/14 - 11/12 11/13 - 01/31	30 80	Either-sex Either-sex.	Archery Either-sex Hunts	
	8-C west of I5, 8-H, 9-A, 9-H, 9-M, 10-GS, 10-S, 10-R, 10-PS, 10-PN, 10-W, 10-MW, 10-ME, 10-GN, 10-H	10/30 - 11/12	14	Bull elk with visible antler	Modern Firearm General (W)	
	8-C	11/02 - 11/12	11	Either-sex	Either-sex Elk Season (W)	
	9-A (150) 10-PS (75) 10-R (50) Elk Area 6 Wahkiakum (150) Elk Area 8 Wildwood (300) Elk Area 12 Palix (50) Elk Area 13 Mid. Nemah (50) Elk Area 14 Willapa (125)	11/04 - 11/12 11/08 - 11/11 11/08 - 11/11 12/01 - 01/31 12/02 - 01/31 11/13 - 01/31 11/13 - 01/31 11/13 - 01/31	9 4 4 62 61 90 90 90	Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)	
	1973	Bow area 2, Long Island Bow area 8 Chinook Bow area 13 Middle Nemah	10/20 - 12/02 11/19 - 01/31 11/19 - 01/31	14 74 74	Either-sex Either-sex. Either-sex	Archery Either-sex Hunts
		8-C west of I5, 8-H, 9-A, 9-H, 9-M, 10-GS, 10-S, 10-R, 10-PS, 10-PN, 10-W, 10-MW, 10-ME, 10-GN, 10-H	11/05 - 11/18	14	Bull elk with visible antler	Modern Firearm General (W)
		8-C	11/08 - 11/18	11	Either-sex	Either-sex y Elk Season (W)
9-A (150) 10-PS (75) 10-R (50) Elk Area 6 Wahkiakum (150) Elk Area 12 Palix (25) Elk Area 14 Willapa (125) Elk Area 15 S. Bend (50)		11/10 - 11/18 11/08 - 11/11 11/08 - 11/11 12/01 - 01/31 11/19 - 01/31 11/19 - 01/31 11/19 - 01/31	9 4 4 62 74 74 74	Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)	
1974		Bow area 2, Long Island Bow area 8 Chinook Bow area 13 Middle Nemah	10/19 - 12/02 11/18 - 01/31 11/18 - 01/31	15 75 75	Either-sex Either-sex. Either-sex	Archery Either-sex Hunts

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	8-C west of I5, 8-H, 9-A, 9-H, 9-M, 10-GS, 10-S, 10-R, 10-PS, 10-PN, 10-W, 10-MW, 10-ME, 10-GN, 10-H	11/04 - 11/17	14	Bull elk with visible antler	Modern Firearm General (W)
	8-C	11/07 - 11/17	11	Either-sex	Either-sex Elk Season (W)
	9-A (150) 10-MW (50) 10-PS (50) 10-R (50) Elk Area 6 Wahkiakum (185) Elk Area 10 Naselle (50) Elk Area 14 Willapa (125)	11/09 - 11/17 11/04 - 11/07 11/04 - 11/07 11/04 - 11/07 12/02 - 01/31 11/18 - 01/31 11/18 - 01/31	9 4 4 4 61 75 75	Either-sex Either-sex Ether-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)
1975	Bow area 2, Long Island Bow area 17 Wehkiakum Bow area 19 Willapa	10/18 - 11/30 12/01 - 01/31 11/17 - 01/31	44 62 76	Either-sex Either-sex. Either-sex	Archery Either-sex Hunts
	500,502,504 west of Hwy I5, 528, 532, 536, 540, 544, 654, 657, 660, 663, 669, 672, 675, 678	11/03 - 11/16	14	Bull elk with visible antler	Modern Firearm General (W)
	504 Napavine	11/06 - 11/16	11	Either-sex	Either-sex Elk Season (W)
	532 Bear River (50) 536 Altoona (50) 540 Elokomin (50) 544 Abernathy (150) 669 Palix (50) 675 Grays River (50) 678 Nemah (50)	11/12 - 11/16 11/12 - 11/16 11/12 - 11/16 11/08 - 11/16 11/05 - 11/09 11/05 - 11/09 11/05 - 11/09	5 5 5 9 5 5 5	Either-sex Either-sex Ether-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)
	Bow area 2, Long Island Bow area 17 Wehkiakum Bow area 24 Willapa	10/23 - 11/30 12/01 - 01/31 12/06 - 01/31	39 62 57	Either-sex Either-sex. Either-sex	Archery Either-sex Hunts
1976	500,502,504 west of Hwy I5, 528, 532, 536, 540, 544, 654, 657, 660, 663, 669, 672, 675, 678	11/01 - 11/14	14	Bull elk with visible antler	Modern Firearm General (W)
	504 Napavine	11/04 - 11/14	14	Either-sex	Either-sex Elk Season (W)
	536 Altoona (50) 540 Elokomin (50) 544 Abernathy (150) 669 Palix (50) 675 Grays River (50) 678 Nemah (50) Williams Cr, Elk Area 23 (50) Willapa, Elk Area 24 (75)	11/10 - 11/14 11/10 - 11/14 11/06 - 11/14 11/03 - 11/07 11/03 - 11/07 11/03 - 11/07 11/22 - 01/31 11/22 - 12/05	5 5 9 5 5 5 71 14	Either-sex Either-sex Ether-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)
	Bow area 2, Long Island Bow area 17 Wehkiakum Bow area 24 Willapa 681 Bear River	10/22 - 11/30 01/01 - 02/05 12/15 - 01/31 12/11 - 01/31	40 35 49 52	Either-sex Either-sex. Either-sex Either-sex	Archery Either-sex Hunts.
	ML Area 6 Chinook	12/01 - 12/10	10	Either-sex	Muzzleloader Rifle Season
1977	500,502,504 west of Hwy I5, 538, 544, 654, 657, 660, 663, 669, 672, 675, 678, 681, 684	10/31 - 11/13	14	Bull elk with visible antler	Modern Firearm General (W)
	504 Napavine	10/31 - 11/13	14	Either-sex	Either-sex Elk Season (W)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	538 Skamokawa (100) 544 Abernathy (150) 669 Palix (100) 660 Minot Peak (50) 675 Grays River (100) 672 Fall River (50) 678 Nemah (100) 681 Bear River (75) Naselle, Elk Area 23 (50) East Valley., Elk Area 27 (50)	11/11 - 11/19 11/11 - 11/19 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 01/01 - 01/31 12/13 - 12/31	9 9 5 5 5 5 5 5 31 19	Antlerless Antlerless Antlerless Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)
1978	Bow area 2, Long Island Bow area 17 Wehkiakum Bow area 24 Willapa 681 Bear River	10/21 - 11/30 01/01 - 02/04 12/11 - 01/31 12/09 - 12/31	41 35 52 23	Either-sex Either-sex. Either-sex Either-sex	Archery Either-sex Hunts
	ML Area 6 Menlo-Raymond	12/01 - 12/10	10	Either-sex	Muzzleloader Rifle Season
	500,502,504 west of Hwy I5, 538, 544, 654, 657, 660, 663, 669, 672, 675, 678, 681, 684	11/06 - 11/19	14	Bull elk with visible antler	Modern Firearm General (W)
	504 Napavine	11/06 - 11/19	14	Either-sex	Either-sex Elk Season (W)
	538 Skamokawa (100) 544 Abernathy (150) 669 Palix (100) 660 Minot Peak (50) 675 Grays River (100) 672 Fall River (50) 678 Nemah (100) 681 Bear River (75) Naselle, Elk Area 23 (50) East Valley., Elk Area 27 (50)	11/11 - 11/19 11/11 - 11/19 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 11/11 - 11/15 01/01 - 01/31 12/13 - 12/31	9 9 5 5 5 5 5 5 31 19	Antlerless Antlerless Antlerless Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)
1979	Bow area 2, Long Island Bow area 17 Wehkiakum Bow area 24 Willapa 681 Bear River	10/20 - 11/25 12/08 - 01/11 12/08 - 01/31 12/08 - 12/31	37 35 56 24	Either-sex Either-sex. Either-sex Either-sex	Archery Either-sex Hunts
	ML Area 6 Menlo-Raymond	11/29 - 12/07	10	Either-sex	Muzzleloader Rifle Season
	500,502,504 west of Hwy I5, 538, 544, 654, 657, 660, 663, 669, 672, 675, 678, 681, 684	11/11 - 11/25	15	Bull elk with visible antler	Modern Firearm General (W)
	504 Napavine	11/11 - 11/25	15	Either-sex	Either-sex Elk Season (W)
	538 Skamokawa (100) 544 Abernathy (100) 669 Palix (100) 675 Grays River (100) 675 Fall River (50) 678 Nemah (100) 681 Bear River (75) Naselle, Elk Area 23 (50) East Valley, Elk Area 27 (50)	11/14 - 11/25 11/14 - 11/25 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 11/17 - 11/21 01/01 - 01/31 01/12 - 01/31	12 12 5 5 5 5 5 31 20	Antlerless Antlerless Antlerless Either-sex Either-sex Either-sex Either-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)
1980	Bow area 2, Long Island Bow area 17 Wehkiakum Bow area 24 Willapa 681 Bear River, 544Abernathy	09/06 - 11/19 12/06 - 01/04 12/06 - 01/31 12/06 - 01/04	65 30 57 30	Either-sex Either-sex. Either-sex Either-sex	Archery Either-sex Hunts
	502,504 west half, 538, 544, 654, 657, 660, 663, 669, 672, 675, 678, 681, 684	11/09 - 11/19	11	Bull elk with visible antler	Modern Firearm General (W)
	504 Napavine	11/09 - 11/19	11	Either-sex	Either-sex elk season (W)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	538 Skamokawa (50) 669 Palix (100) 675 Grays River (100) 678 Nemah (100) 681 Bear River (75) Naselle, Elk Area 23 (50) Williams Cr., Elk Area 35 (50)	11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 11/20 - 11/24 01/01 - 01/31 12/01 - 01/31	5 5 5 5 5 31 62	Antlerless Antlerless Antlerless Either-sex Ether-sex Either-sex Either-sex	Modern Firearm Elk Permits Hunt (MKWY)
1981	504, 681 Bow area 2 Long Island Bow area 17 Wehkiakum Bow area 24 Willapa Bow area 24 Willapa 504 Napavine	12/05 - 01/03 09/12 - 11/17 12/05 - 01/03 12/14 - 01/31 09/12 - 10/04 09/12 - 10/04	30 67 33 49 23 23	Either-sex Either-sex Either-sex. Either-sex Either-sex Either-sex	Archery Either-sex Hunts
	S Willapa, Muz. Elk Area 13	12/05 - 12/13	9	Either-sex	Muzzleloader General (elk stamp MKWXY)
	500,504, 538, 544, 654, 657, 660, 663, 669, 672, 675, 678, 681, 684	11/07 - 11/17	11	Bull elk with visible antler	General Bull Elk Season (W)
	538 Skamokawa (25) 544 Abernathy (75) 669 Palix (100) 675 Grays River (75) 678 Nemah (75)	11/28 - 12/02 11/28 - 12/02 11/28 - 12/02 11/28 - 12/02 11/28 - 12/02	5 5 5 5 5	Antlerless Only Antlerless Only Antlerless Only Antlerless Only Antlerless Only	Antlerless Only Permit Controlled Season (MKWY)
	Naselle, Elk Area 23 (25)	01/04 - 01/31	2	Either-sex	Either-sex Permit Controlled Season
1982	672, 681, 538, 544 504 802 Long Island 536 654, 836 Artic	12/04 - 01/02 12/04 - 12/26 09/11 - 10/03 09/11 - 11/16 12/03 - 01/15 09/11 - 09/26	30 23 22 67 44 16	Either-sex Either-sex Either-sex. Either-sex Antlerless or 3 Pt. Min. Bull only	Archery Either-sex Hunts
	S. Willapa, Muzz. Elk Area 913	12/04 - 12/12	9	Either-sex	Muzzleloader General (elk stamp MKWXY)
	500,504,538, 544, 654, 657, 660, 663, 669, 672, 675, 678, 681, 684 536	11/06 - 11/16 11/06 - 11/16	11 11	Bull elk with visible antler 3 pt. minimum	Modern Firearm General (W)
	504 Napavine (50) 536 Altoona (25) 669 Palix (50) 675 Grays River (25) 678 Nemah (25) Wildwood, Elk Area 026 (50)	11/24 - 12/01 11/27 - 12/01 11/27 - 12/01 11/27 - 12/01 11/27 - 12/01 01/01 - 01/09	8 5 5 5 5 9	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (W)
	672, 681, 538, 544 504 802 Long Island 536 654, Bow Area 836, Artic	12/03 - 01/01 09/10 - 10/02 09/10 - 11/15 12/03 - 01/15 09/10 - 09/25	30 22 67 44 16	Either-sex Either-sex. Either-sex Antlerless or 3 Pt. Min. Bull only	Archery Either-sex Hunts
	S. Willapa, Muzz. Elk Area 913	12/03 - 12/11	9	Either-sex	Muzzleloader General
1983	500,502, 506,538, 544, 654, 657, 660, 663, 669, 672, 675, 678, 684 504 536, 681	11/05 - 11/15 11/05 - 11/15 11/01 - 11/15	11 11 11	Bull elk with visible antler Either-sex 3 pt. minimum	Modern Firearm General (W)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	504 Napavine (50) 536 Altona (50) 538 Skamakowa (50) 544 Abernathy (50) 669 Palix (75) 675 Grays River (50) 678 Nemah (50) Wahkiakum. Elk Area 056 (50)	01/07 - 01/29 11/26 - 11/30 11/26 - 11/30 11/26 - 11/30 11/26 - 11/30 11/26 - 11/30 11/26 - 11/30 01/07 - 01/29	23 5 5 5 5 5 5 23	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (W)
1984	500, 502, 504, 636, 538, 544, 654, 655, 660, 663, 669, 672, 675, 678, 684, Bow area 802	09/05 - 09/09 09/10 - 09/19	5 10	Bull only Either-sex	Early Archery General Hunts
	536, 681	09/04 - 09/18	15	3 pt. min. or antlerless	
	504, 538, 544, 672, 684 536 681 Bow Area 802	12/08 - 12/31 12/07 - 12/31 12/08 - 01/13 09/05 - 09/09 09/10 - 11/15	24 25 37 5 67	Either-sex Antlerless or 3pt. Bull Antlerless or 3pt. Bull Bull only Either-sex	Western Washington Special Archery Elk Hunts
	684 S. Willapa, Muzz. Elk Area 913	09/29 - 10/11 ? 31	13 ?	Either-sex Either-sex	Early Muzzleloader General (WM)
	500,502, 504, 506,536, 538, 544, 654, 655, 660, 663, 669, 672,675, 678, 684 504 536, 681	11/07 - 11/18 11/10 - 11/18 11/10 - 11/18 11/07 - 11/18 11/09 - 11/17	12 9 9 12 9	Bull elk with visible antler Either-sex 3 pt. minimum 3 pt. minimum	Modern Firearm General (WE) Modern Firearm General (WL) Modern Firearm & Muzzleloader (WE, WL, WM) Modern Firearm General (WE) Modern Firearm General (WL)
	504 Napavine (50) 536 Altona (50) 538 Skamakowa (30) 544 Abernathy (50) 669 Palix (75) 675 Grays River (50) 678 Nemah (50) Williams Cr. Elk Area 035 (50) Willapa V., Elk Area 065 (50)	01/05 - 01/27 12/01 - 12/05 12/01 - 12/05 12/01 - 12/05 12/01 - 12/05 12/01 - 12/05 12/01 - 12/05 12/01 - 12/31 12/01 - 12/31	23 5 5 5 6 6 6 31 31	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)
	656 Johns River B (20) 656 Johns River E (20) Elk Area 050 Stella (50)	11/07 - 11/18 12/08 - 12/31 09/25 - 10/11	12 24 17	Bull only Either-sex Antlerless Only	Muzzleloader Permit Hunt (WM)
1985	500, 502, 504, 636, 538, 544, 654, 655, 660, 663, 669, 672, 675, 678, 684, Bow area 802.	09/04 - 09/08 09/09 - 09/18	5 10	Bull only Either-sex	Early Archery General Hunts
	536, 681,	09/04 - 09/18	15	3 pt. min. or antlerless	
	504, 536, 538, 544, 672 681 Bow Area 802	12/07 - 12/31 12/07 - 12/31 09/04 - 11/15	25 25 72	Either-sex 3pt bull or antlerless Either-sex	Late Archery Elk Hunts
	684	09/28 - 10/11	14	Either-sex	Early Muzzleloader General (WM)
	500,502, 504, 506,536, 538, 544, 654, 655, 660, 663, 669, 672,675, 678, 684 504 536, 681	11/06 - 11/17 11/09 - 11/17 11/09 - 11/17 11/06 -11/ 08 11/09 - 11/17	12 9 9 3 9	Bull elk with visible antler Either-sex 3 pt. minimum 3 pt. minimum	Modern Firearm General (WE) Modern Firearm General (WL) Modern Firearm and Muzzleloader (WE, WL, WM) Modern Firearm General (WE) only Modern Firearm General (WE and WL)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type	
	504 Napavine (50) 536 Altona (50) 538 Skamakowa (50) 544 Abernathy (50) 669 Palix (50) 675 Grays River (50) 678 Nemah (50) Williams Cr. Elk Area 035 (50) Willapa V., Elk Area 065 (50) S. Willapa, Elk Area 067 (30)	01/04 - 01/26 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 11/30 - 12/05 01/01 - 01/19 01/01 - 01/19 01/01 - 01/19	23 6 6 6 6 6 6 19 19 19	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)	
	656 Johns River B (20) 656 Johns River E (20)	11/06 - 11/17 12/07 - 12/31	12 25	Bull only Either-sex	Muzzleloader Permit Hunt (WM) Muzzleloader Permit Hunt (WM)	
1986	500, 502, 504, 636, 538, 544, 654, 655, 660, 663, 669, 672, 675, 678, 684, Bow area 802	09/03 - 09/07 09/08 - 09/17	5 10	Bull only Either-sex	Early Archery General (WA)	
	506, 536, 681	09/03 - 09/17	15	3 pt. minimum Bull	Early Archery General (WA)	
	504, 538, 544, 672, 684 506,536, 681, Bow Area 802	12/06 - 12/31 12/06 - 12/31 09/03 - 11/15	26 26 73	Either-sex 3 pt bull or antlerless Either-sex	Late Archery General (WA) Late Archery General (WA)	
	684 Muzz Area 921, Baleville	09/27 - 10/10 09/27 - 10/10	14 14	Either-sex Either-sex	Early Muzzleloader General (WM)	
	Muzz Area 921, Baleville	12/06 - 12/31	26	Either-sex	Late Muzzleloader General (WM)	
	500,502, 504, 506,536, 538, 544, 654, 655, 660, 663, 669, 672,675, 678, 684 504 506, 536, 681	11/05 - 11/16 11/08 - 11/16 11/08 - 11/16 11/02 - 11/13 11/05 - 11/13	12 9 9 12 9	Bull elk with visible antler Either-sex 3 pt. minimum	Modern Firearm General (WE) Modern Firearm General (WL) Modern Firearm & Muzzleloader (WE, WL, WM) Modern Firearm General (WE) Modern Firearm General (WL)	
	504 Napavine (25) 536 Altona (50) 538 Skamakowa (50) 544 Abernathy (50) 660 Minot Peak (20) 669 Palix (50) 675 Grays River (50) 678 Nemah (50) Boisfort, Elk Area 054 (50) Willapa V., Elk Area 065 (50) S. Willapa, Elk Area 067 (30) Williams Cr. Elk Area 035 (50)	01/03 - 01/25 11/29 - 12/04 11/29 - 12/04 11/29 - 12/04 11/29 - 12/04 11/29 - 12/04 11/29 - 12/04 11/29 - 12/04 01/03 - 01/25 01/01 - 01/18 01/01 - 01/31 01/01 - 01/18	23 6 6 6 6 6 6 6 15 18 31 18	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)	
	656 Johns River B (20) 656 Johns River E (20)	11/05 - 11/16 12/06 - 12/31	12 26	Bull only Either-sex	Muzzleloader Permit Hunt (WM) Muzzleloader Permit Hunt (WM)	
	1987	503, 537, 544, 654, 658, 660, 663, 669, 672, 678, 681, 684 501	10/01 - 10/16 10/01 - 10/16	16 16	Either-sex Either-sex; 3 pt. Bull	Early Archery General (WA) Early Archery General (WA)
		501 503B, 537B, 544, 672, 681	11/25 - 12/10 11/25 - 12/10	16 16	Either-sex; 3 pt. Bull Either-sex	Late Archery General (WA) Late Archery General (WA)
501		10/10 - 10/16	7	Bull only	Early Muzzleloader General (WM)	
684 Muzz Area 921, Baleville		11/25 - 12/10 11/25 - 12/10	16 16	Either-sex Either-sex	Late Muzzleloader General (WM) Late Muzzleloader General (WM)	
501		11/07 - 11/15	9	Either-sex	Elk Hunts Open to All Specified Tag Holders (WE, WL)	
501, 544, 654, 658, 660, 663, 669, 672, 678, 684		11/02 - 11/13 11/05 - 11/13	12 9	Bull elk with visible antler	Modern Firearm General (WE) Modern Firearm General (WL)	
503, 537, 681		11/02 - 11/13 11/05 - 11/13	12 9	3 pt. minimum	Modern Firearm General (WE) Modern Firearm General (WL)	

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type	
	501 Lincoln (25) 537 Mt. K.M. (50) 544 Abernathy (50) 660 Minot Peak (20) 669 Palix (50) 675 Grays River (25) 678 Nemah (50) Boisfort, Elk Area 054 (50) Willapa V., Elk Area 065 (50) S. Willapa, Elk Area 067 (30) Chinook, Elk Area 069 (10)	11/16 - 11/21 11/16 - 11/21 11/16 - 11/21 11/18 - 11/22 11/18 - 11/22 11/18 - 11/22 11/18 - 11/22 01/03 - 01/25 01/01 - 01/15 01/01 - 01/15 01/01 - 01/15	5 5 5 5 5 5 23 15 15 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)	
1988	537, 544, 654, 658, 660, 663, 669, 672, 678, 684	10/01 - 10/14	14	Either-sex	Early Archery General (WA)	
	503, 537, 681	10/01 - 10/14	14	Either-sex; 3pt bull	Early Archery General (WA)	
	501, Bow Area 802	11/23 - 12/11	12	Either-sex	Late Archery General (WA)	
	503, 681	11/22 - 12/15	24	Either-sex; 3 pt. Bull	Late Archery General (WA)	
	544, 660, 672, Bow Area 802	11/23 - 12/31	39	Either-sex	Late Archery General (WA)	
	684	10/08 - 10/14	7	Either-sex	Early Muzzleloader General (WM)	
	501	10/08 - 10/14	7	Bull only	Early Muzzleloader General (WM)	
	554, 684	11/23 - 12/11	19	Either-sex	Late Muzzleloader General (WM)	
	Muzzleloader Area 921	11/23 - 12/11	19	Either-sex	Late Muzzleloader General (WM)	
	501	11/05 - 11/13	9	Either-sex	Elk Hunts Open to All Specified Tag Holders (WE, WL)	
501, 544, 654, 658, 660, 663, 669, 672, 678, 684	11/02 - 11/13	12	Bull elk with visible antler	Modern Firearm General (WE)		
	11/05 - 11/13	9		Modern Firearm General (WL)		
	503, 537, 681	11/02 - 11/13	12	3 pt. minimum	Modern Firearm General (WE)	
	11/05 - 11/13	9		Modern Firearm General (WL)		
501 Lincoln (25) 537 Mt. K.M. (50) 544 Abernathy (50) E. Valley, Elk Area 055 (50) 669 Palix (50) 675 Grays River (25) 678 Nemah (50) Boisfort, Elk Area 054 (50) Willapa V., Elk Area 065 (50) S. Willapa, Elk Area 067 (25) Naselle, Elk Area 068 (30) Chinook, Elk Area 069 (10)	11/16 - 11/20 11/16 - 11/20 11/16 - 11/20 01/01 - 01/21 11/16 - 11/20 11/16 - 11/20 11/16 - 11/20 01/03 - 01/25 01/01 - 01/15 01/01 - 01/15 12/14 - 12/18 01/01 - 01/15	5 5 5 21 5 5 5 23 15 15 5 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)		
	S. Bank E, ML Area 962 (10) S. Bank L, ML Area 962 (10)	01/01 - 01/15 01/16 - 02/15	15 31	Antlerless Only Antlerless Only	Muzzleloader Permit Only (WM)	
	1989	504, 658, 660, 669, 678, Bow Area 802	09/30 - 10/13	14	Either-sex	Early Archery General (WA)
		506, 530, 681	09/30 - 10/13	14	3 pt. min. or antlerless	Early Archery General (WA)
		501	09/30 - 10/06	7	Either-sex	Early Archery General (WA)
		672, Bow Area 802	11/22 - 12/15	24	Either-sex	Late Archery General (WA)
		530, 681	11/22 - 12/15	24	3 pt. min. or antlerless	Late Archery General (WA)
		684	10/07 - 10/13	7	Either-sex	Early Muzzleloader General (WM)
		506	10/07 - 10/13	7	3 pt. minimum	Early Muzzleloader General (WM)
	501, 504, 684	11/22 - 12/10	19	Either-sex	Late Muzzleloader General (WM)	
Muzzleloader Area 921	11/22 - 12/10	19	Either-sex	Late Muzzleloader General (WM)		
501	11/04 - 11/12	9	Either-sex	Elk Hunts Open to All Specified Tag Holders (WE, WL)		
501, 504, 658, 660, 663, 669, 672, 678, 684	11/01 - 11/12	12	Bull elk with visible antler	Modern Firearm General (WE)		
	11/04 - 11/12	9		Modern Firearm General (WL)		
	506, 530, 681	11/01 - 11/12	12	3 pt. minimum	Modern Firearm General (WE)	
	11/04 - 11/12	9		Modern Firearm General (WL)		

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	501 Lincoln (25) 506 Willapa Hills (50) 660 Minot Peak (20) 669 Palix (50) 678 Nemah. (50) Boisfort, Elk Area 054 (50) Willapa V., Elk Area 065 (50) S. Willapa, Elk Area 067 (25) Naselle, Elk Area 068 (30) Chinook, Elk Area 069 (10)	11/14 - 11/19 11/14 - 11/19 11/14 - 11/19 11/14 - 11/19 11/14 - 11/19 01/02 - 01/23 01/01 - 01/15 01/01 - 01/15 11/14 - 11/19 01/01 - 01/15	6 6 6 6 6 22 15 15 6 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)
1990	504, 658, 660, 663, 669, 678, Bow Area 802	09/29 - 10/12	14	Either-sex	Early Archery General (WA)
	530, 681	09/29 - 10/12	14	3 pt. min. or antlerless	Early Archery General (WA)
	672, Bow Area 802.	11/21 - 12/09	21	Either-sex	Late Archery General (WA)
	530, 681	11/21 - 12/09	21	3 pt. min. or antlerless	Late Archery General (WA)
	684	10/06 - 10/12	7	Either-sex	Early Muzzleloader General (WM)
	506	10/06 - 10/12	7	3 pt. minimum	Early Muzzleloader General (WM)
	501, 684	11/21 - 12/09	19	Either-sex	Late Muzzleloader General (WM)
	504	11/21 - 12/09	19	Bull only	Late Muzzleloader General (WM)
	501	10/31 - 11/11	12	Either-sex	Elk Hunts Open to All Specified Tag Holders (WE,WL, WM)
	501, 504, 658, 660, 663, 669, 672, 678, 684	10/31 - 11/11 11/03 - 11/11	12 9	Bull elk with visible antler	Modern Firearm General (WE) Modern Firearm General (WL)
506, 530, 681	10/31 - 11/11 11/03 - 11/11	12 9	3 pt. minimum	Modern Firearm General (WE) Modern Firearm General (WL)	
501 Lincoln (25) 506 Willapa Hills (50) 660 Minot Peak (20) 669 Palix (40) 678 Nemah. (50) Boisfort, Elk Area 054 (50) Willapa V., Elk Area 065 (50) S. Willapa, Elk Area 067 (25) Chinook, Elk Area 069 (10)	11/13 - 11/18 11/13 - 11/18 11/13 - 11/18 11/13 - 11/18 11/13 - 11/18 01/02 - 01/23 01/01 - 01/15 01/01 - 01/15 01/01 - 01/15	6 6 6 6 6 22 15 15 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)	
658 North River (20) 681 E Area 069 Chinook (10)	11/21 - 12/09 01/16 - 02/15	19 31	Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)	
1991	504, 658, 660, 663, 669, 678, Bow Area 802.	09/28 - 10/11	14	Either-sex	Early Archery General (WA)
	530, 681	09/28 - 10/11	14	3 pt. min. or antlerless	Early Archery General (WA)
	672, Bow Area 802	11/27 - 12/15	21	Either-sex	Late Archery General (WA)
	530, 681	11/27 - 12/15	21	3 pt. min. or antlerless	Late Archery General (WA)
	684	10/05 - 10/11	7	Either-sex	Early Muzzleloader General (WM)
	506	10/05 - 10/11	7	3 pt. minimum	Early Muzzleloader General (WM)
	501, 684	11/27 - 12/15	19	Either-sex	Late Muzzleloader General (WM)
	504	11/27 - 12/15	19	Bull only	Late Muzzleloader General (WM)
501	11/06 - 11/17	12	Either-sex	Elk Hunts Open to All Specified Tag Holders (WE, WL)	
501, 504, 658, 660, 663, 669, 672, 678, 684	11/06 - 11/17 11/09 - 11/17	12 9	Bull elk with visible antler	Modern Firearm General (WE) Modern Firearm General (WL)	
506, 530, 681	11/06 - 11/17 11/09 - 11/17	12 9	3 pt. minimum	Modern Firearm General (WE) Modern Firearm General (WL)	

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	501 Lincoln (25) 506 Willapa Hills (50) 660 Minot Peak (20) 669 Palix (40) 678 Nemah. (50) Curtis, Elk Area 050 (50) Boisfort, Elk Area 054 (50) Willapa V., Elk Area 065 (25) S. Willapa, Elk Area 067 (10)	11/19 - 11/24 11/19 - 11/24 11/12 - 11/17 11/12 - 11/17 11/12 - 11/17 12/21 - 12/31 01/02 - 01/19 01/01 - 01/15 01/01 - 01/15	6 6 6 6 6 11 18 15 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)
	658 North River (30) 681 E Area 069 Chinook (10)	11/20 - 12/08 01/16 - 02/15	19 31	Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)
1992	504, 658, 660, 663, 669, 678, Bow Area 802	09/01 - 09/14	14	Either-sex	Early Archery General (WA)
	530, 681	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)
	672, Bow Area 802 530, 681	11/25 - 12/15 11/25 - 12/15	21 21	Either-sex 3 pt. min. or antlerless	Late Archery General (WA) Late Archery General (WA)
	501, 684 506	10/08 - 10/14 10/08 - 10/14	7 7	Either-sex 3 pt. minimum	Early Muzzleloader General (WM) Early Muzzleloader General (WM)
	501, 684 504	11/25 - 12/15 11/25 - 12/15	21 21	Either-sex Bull only	Late Muzzleloader General (WM) Late Muzzleloader General (WM)
	501	11/04 - 11/15	12	Either-sex	Elk Hunts Open to All Specified Tag Holders (WE, WL)
	501, 504, 658, 660, 663, 669, 672, 678, 684	11/04 - 11/15 11/07 - 11/15	12 9	Bull elk with visible antler 3 pt. minimum	Modern Firearm General (WE) Modern Firearm General (WL)
	506, 530, 681	11/04 - 11/15 11/07 - 11/15	12 9		Modern Firearm General (WE) Modern Firearm General (WL)
	501 Lincoln (25) 506 Willapa Hills (50) 530 Ryderwood (50) 660 Minot Peak (20) 669 Palix (40) 678 Nemah. (50) Curtis, Elk Area 050 (50) Boisfort A, Elk Area 054 (50) S. Willapa, Elk Area 067 (10)	11/17 - 11/22 11/17 - 11/22 11/17 - 11/22 11/17 - 11/22 11/17 - 11/22 11/17 - 11/22 12/21 - 12/31 01/02 - 01/17 01/01 - 01/15	6 6 6 6 6 12 11 16 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)
	504 Stella (50) 658 North River (30) 530 E Area 054 Boisfort B (50) 681 E Area 069 Chinook (10)	11/25 - 12/15 11/20 - 12/08 11/16 - 11/24 01/16 - 02/15	21 19 9 31	Either-sex Antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)
1993	504, 658, 663, 669, 678, Bow Area 802	09/01 - 09/14	14	Either-sex	Early Archery General (WA)
	530, 681	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)
	672, Bow Area 802 530, 681	11/24 - 12/15 11/24 - 12/15	23 23	Either-sex 3 pt. min. or antlerless	Late Archery General (WA) Late Archery General (WA)
	501, 684 506	10/08 - 10/14 10/08 - 10/14	7 7	Either-sex 3 pt. minimum	Early Muzzleloader General (WM) Early Muzzleloader General (WM)
	501, 684 504	11/24 - 12/15 11/24 - 12/15	22 22	Either-sex Bull only	Late Muzzleloader General (WM) Late Muzzleloader General (WM)
	501	11/02 - 11/13	12	Either-sex	Elk Hunts Open to All Specified Tag Holders (WE, WL)
	501, 504, 658, 660, 663, 669, 672, 678, 684	11/03 - 11/14 11/06 - 11/14	12 9	Bull elk with visible antler 3 pt. minimum	Modern Firearm General (WE) Modern Firearm General (WL)
	506, 530, 681	11/03 - 11/14 11/06 - 11/14	12 9		Modern Firearm General (WE) Modern Firearm General (WL)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	501 Lincoln (25)	11/16 - 11/21	6	Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)
	506 Willapa Hills (50)	11/16 - 11/21	6	Antlerless	
	530 Ryderwood (50)	11/16 - 11/21	6	Antlerless	
	669 Palix (40)	11/16 - 11/21	6	Antlerless	
	678 Nemah. (50)	11/16 - 11/21	6	Antlerless	
	Curtis, Elk Area 050 (50)	12/20 - 12/31	12	Antlerless	
	Boisfort A, Elk Area 054 (50)	01/01 - 01/16	16	Antlerless	
	East Valley, Elk Area 055 (25)	01/04 - 01/16	13	Antlerless	
	S. Willapa, Elk Area 067 (10)	01/01 - 01/15	15	Antlerless	
	504 Stella (50)	11/24 - 12/14	21	Either-sex	Muzzleloader Elk Permit Hunt (WM)
	658 North River (30)	11/20 - 12/08	19	Antlerless	
	660 Minot Peak (30)	10/09 - 10/14	6	Antlerless	
	530 E Area 054 Boisfort B (50)	01/16 - 01/31	16	Either-sex	
	681 E Area 069 Chinook (10)	01/16 - 02/15	31	Antlerless	
660 E. Area 063 S. Elma (50)	10/01 - 10/13	13	Antlerless		
1994	504, 658, 660, 663, 669, 678, Bow Area 802	09/01 - 09/14	14	Either-sex	Early Archery General (WA)
	530, 681	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)
	672	11/23 - 12/15	23	Either-sex	Late Archery General (WA)
	506, 530, 681, Bow Area 802	11/23 - 12/15	23	3 pt. min. or antlerless	Late Archery General (WA)
	501, 684	10/06 - 10/12	7	Either-sex	Early Muzzleloader General (WM)
	506	10/06 - 10/12	7	3 pt. minimum	Early Muzzleloader General (WM)
	501, 684	11/23 - 12/15	23	Either-sex	Late Muzzleloader General (WM)
	504	11/23 - 12/15	23	Bull only	Late Muzzleloader General (WM)
	501	11/02 - 11/13	12	Either-sex	Elk Hunts Open to All Specified Tag Holders (WG, WP)
	501, 504, 658, 660, 663, 669, 672, 678, 684	11/02 - 11/13	12	Bull elk with visible antler	Modern Firearm General (WE)
	506, 530, 681	11/05 - 11/13	9	3 pt. minimum	Modern Firearm General (WL)
		11/02 - 11/13	12		Modern Firearm General (WE)
		11/05 - 11/13	9		Modern Firearm General (WL)
	501 Lincoln (25)	11/15 - 11/20	6	Antlerless	Modern Firearm Elk Permits Hunt (WL or WM)
506 Willapa Hills (50)	11/15 - 11/20	6	Antlerless		
530 Ryderwood (50)	11/15 - 11/20	6	Antlerless		
660 Minot Peak (100)	11/15 - 11/20	6	Antlerless		
669 Palix (30)	11/15 - 11/20	6	Antlerless		
678 Nemah. (50)	11/15 - 11/20	6	Antlerless		
Curtis, Elk Area 050 (50)	12/20 - 12/31	12	Antlerless		
Boisfort A, Elk Area 054 (50)	01/01 - 01/15	15	Antlerless		
East Valley, Elk Area 055 (25)	01/01 - 01/15	15	Antlerless		
S. Willapa, Elk Area 067 (10)	01/01 - 01/15	15	Antlerless		
504 Stella A (50)	11/23 - 12/13	21	Either-sex	Muzzleloader Elk Permit Hunt (WM)	
658 North River (30)	11/19 - 12/07	19	Antlerless		
530 E Area 054 Boisfort B (50)	01/16 - 01/31	16	Antlerless		
681 E Area 069 Chinook (5)	01/16 - 02/15	31	Antlerless		
660 E. Area 063 S. Elma (50)	10/01 - 10/13	13	Antlerless		
1995	504, 658, 660, 663, 669, 672, 678, Bow area 802	09/01 - 09/14	14	Either-sex	Early Archery General (WA)
	530, 681	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)
	672	11/22 - 12/08	17	Either-sex	Late Archery General (WA)
	506, 530, 681	11/22 - 12/15	24	3 pt. min. or antlerless	Late Archery General (WA)
	Bow Area 802 (Long Is.)	11/22 - 12/15	24	Either-sex	Late Archery General (WA)
	501, 684	10/05 - 10/11	7	Either-sex	Early Muzzleloader General (WM)
	506	10/05 - 10/11	7	3 pt. minimum	Early Muzzleloader General (WM)
	501, 684	11/22 - 12/15	24	Either-sex	Late Muzzleloader General (WM)
	501	11/01 - 11/13	13	Either-sex	Elk Hunts Open to All Specified Tag Holders (WG, WP)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type	
	501, 504, 658, 660, 663, 669, 672, 678, 684 506, 530, 681	11/01 - 11/13 11/04 - 11/13 11/01 - 11/13 11/04 - 11/13	13 10 13 10	Bull elk with visible antler 3 pt. minimum	Modern Firearm General (WB) Modern Firearm General (WC) Modern Firearm General (WB) Modern Firearm General (WC)	
	501 Lincoln (25) 506 Willapa Hills (100) 530 Ryderwood (75) 669 Palix (30) 678 Nemah. (50) Curtis, Elk Area 050 (50) Boisfort A, Elk Area 054 (50) East Valley, Elk Area 055 (25) S. Willapa, Elk Area 067 (2)	11/14 - 11/19 11/14 - 11/19 11/14 - 11/19 11/14 - 11/19 11/14 - 11/19 12/20 - 12/31 01/01 - 01/15 01/01 - 01/15 01/01 - 01/15	6 6 6 6 6 12 15 15 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WP or WM)	
	504 Stella A (75) 658 North River (20) 530 E Area 054 Boisfort B (50) 681 E Area 069 Chinook (2) 660 E. Area 063 S. Elma (50)	11/22 - 12/12 11/18 - 12/06 01/16 - 01/31 01/16 - 02/15 10/01 - 10/13	21 19 16 31 13	Either-sex Antlerless Antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)	
	Elk Area 062, S. Bank A (3) Elk Area 062, S. Bank B (3) Elk Area 062, S. Bank C (3) Elk Area 062, S. Bank D (3) Elk Area 062, S. Bank E (3)	09/16 - 09/20 09/23 - 09/27 12/16 - 12/27 01/06 - 01/10 01/20 - 01/24	5 5 12 5 5	Antlerless Antlerless Antlerless Antlerless Antlerless	Advanced Hunter Education Elk Permit Hunt (Any elk tag)	
1996	504, 658, 660, 663, 669, 672, 678, Bow Area 802 530, 681	09/01 - 09/14 09/01 - 09/14	14 14	Either-sex 3 pt. minimum	Early Archery General (WA) Early Archery General (WA)	
	672, Bow Area 802 506, 530, 681	11/27 - 12/15 11/27 - 12/15	19 19	Either-sex 3 pt. min. or antlerless	Late Archery General (WA) Late Archery General (WA)	
	501, 684	10/03 - 10/09	7	Either-sex	Early Muzzleloader General (WM)	
	501, 684	11/27 - 12/15	19	Either-sex	Late Muzzleloader General (WM)	
	501	11/06 - 11/17	12	Either-sex	Elk Hunts Open to All Specified Tag Holders (WG, WP)	
	501, 504, 658, 660, 663, 672, 669, 678, 684 506, 530, 681	11/06 - 11/17 11/09 - 11/17 11/06 - 11/17 11/09 - 11/17	12 7 12 7	Bull elk with visible antler 3 pt. minimum	Modern Firearm General (WG) Modern Firearm General (WP) Modern Firearm General (WG) Modern Firearm General (WP)	
	501 Lincoln (25) 506 Willapa Hills (100) 530 Ryderwood (75) 660 Minot Peak (100) 669 Palix (30) 678 Nemah. (50) Curtis, Elk Area 050 (50) Boisfort A, Elk Area 054 (50) East Valley, Elk Area 055 (25)	11/18 - 11/24 11/18 - 11/24 11/18 - 11/24 10/03 - 10/09 11/18 - 11/24 11/18 - 11/24 12/20 - 12/31 01/01 - 01/15 01/01 - 01/15	7 7 7 7 7 7 12 15 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WP or WM)	
	504 Stella A (100) 658 North River (20) 530 E Area 054 Boisfort B (50)	11/22 - 12/12 11/18 - 12/06 01/16 - 01/31	21 19 16	Either-sex Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)	
	Elk Area 062, S. Bank A (5) Elk Area 062, S. Bank B (5)	01/06 - 01/10 01/20 - 01/24	5 5	Antlerless Antlerless	Advanced Hunter Education Elk Permit Hunt (Any elk tag)	
	South Bank C-Elk Area 062 (3)	12/16 - 12/20	5	Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)	
	1997	658, 660, 663, 672, 673, 684 501 506, 530, 681 Bow Area 802	09/01 - 09/14 09/01 - 09/14 09/01 - 09/14 09/02 - 09/14	14 14 14 13	Spike bull or Antlerless Any elk 3 pt. minimum Spike bull or Antlerless	Early Archery General (WA) Early Archery General (WA) Early Archery General (WA) Early Archery General (WA)
		530, 681 Bow Area 802 Long Island	11/26 - 12/15 11/26 - 12/15	20 20	3 pt. min. or antlerless Spike bull or Antlerless	Late Archery General (WA) Late Archery General (WA)

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	684	10/04 - 10/10	7	Spike bull or Antlerless	Early Muzzleloader General (WM)	
	530	10/04 - 10/10	7	3 pt. minimum		
	501	10/04 - 10/10	7	Any elk		
	501	11/26 - 12/15	20	Any elk	Late Muzzleloader General (WM)	
		684	11/26 - 12/15	20		Spike bull or antlerless
		504	11/26 - 12/15	20		Spike Bull only
	501	11/08 - 11/16	9	Any elk	Elk Hunts Open to All Specified Tag Holders (WG, WP)	
	504	11/08 - 11/16	9	Spike Bull only	Modern Firearm General (WG) Modern Firearm General (WP)	
		11/10 - 11/16	7	Spike Bull only		
		501	11/08 - 11/16	9		Any elk
		11/10 - 11/16	7	Any elk		
		506, 530	11/08 - 11/16	9		3 pt. minimum
		11/10 - 11/16	7	3 pt. minimum		
		658, 660, 663, 672,673,684	11/08 - 11/16	9		Spike Bull only
11/10 - 11/16		7	Spike Bull only			
681	11/08 - 11/16	9	3 pt. minimum	Modern Firearm General (WG) Modern Firearm General (WP)		
	11/10 - 11/16	7	3 pt. minimum			
506 Willapa H. (100) 530 Ryderwood (75) 660 Minot Peak (10) 673 Williams Cr. (80) Curtis, Elk Area 050 (50) Boisfort A, Elk Area 054 (50) East Valley, Elk Area 055 (25)	11/12 - 11/16	5	Antlerless	Modern Firearm Elk Permits Hunt (WP or WM)		
	11/12 - 11/16	5	Antlerless			
	11/12 - 11/16	5	Antlerless			
	11/12 - 11/16	5	Antlerless			
	12/20 - 12/31	12	Antlerless			
	01/01 - 01/15	15	Antlerless			
504 Stella A (100) 658 North River (20) 530 E Area 054 Boisfort B (50)	11/26 - 12/15	20	3 pt. min. or antlerless	Muzzleloader Elk Permit Hunt (WM)		
	11/26 - 12/15	20	Antlerless			
	01/16 - 01/31	16	Antlerless			
660 Minot Peak, S. Bank A (5) 660 Minot Peak, S. Bank B (5)	01/01 - 01/15	15	Antlerless	Advanced Hunter Education Elk Permit Hunt (Any elk tag)		
	01/16 - 01/31	16	Antlerless			
South Bank C, Elk Area 062 (3)	12/10 - 12/20	11	Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)		
1998	501, 504, 506,530,660, 663, 672, 673, 684, and Long Is.	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)	
	658	09/01 - 09/14	14	3 pt. minimum	Early Archery General (WA)	
	506, 530, 672, 681, Long Island	11/25 - 12/15	21	3 pt. min. or antlerless	Late Archery General (WA)	
	684 530, 660 501	10/10 - 10/16	7	Any elk	Early Muzzleloader General (WM)	
		10/10 - 10/16	7	3 pt. minimum		
		10/10 - 10/16	7	3 pt. min. or antlerless		
	501 684 504	11/25 - 12/15	21	3 pt. min. or antlerless	Late Muzzleloader General (WM)	
		11/25 - 12/15	21	Any elk		
		11/25 - 12/15	21	3 pt. minimum		
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/07 - 11/15	9	3 pt. minimum	Modern Firearm General (WF)	
		501	11/07 - 11/15	9		3 pt. min. or antlerless
	506 Willapa H. (100) 530 Ryderwood (75) 660 Minot Peak (10) 673 Williams Cr. (50) 501 Elk Area 050 Curtis (50) 530 E.Area 054 Boisfort A (50) 506 E.Area 055 E. Valley (25)	11/11 - 11/15	5	Antlerless	Modern Firearm Elk Permits Hunt (WF or WM)	
		11/11 - 11/15	5	Antlerless		
		11/11 - 11/15	5	Antlerless		
11/11 - 11/15		5	Antlerless			
12/20 - 12/31		12	Antlerless			
01/01 - 01/15		15	Antlerless			
01/01 - 01/15		15	Antlerless			
504 Stella A (100) 658 North River (20) 530 E Area 054 Boisfort B (20)	11/26 - 12/15	20	3 pt. min. or antlerless	Muzzleloader Elk Permit Hunt (WM)		
	11/26 - 12/15	20	Antlerless			
	01/16 - 01/31	16	Antlerless			
660 Minot Peak, S. Bank A (5) 660 Minot Peak, S. Bank B (5)	01/01 - 01/15	15	Antlerless	Advanced Hunter Education Elk Permit Hunt (Any elk tag)		
	01/16 - 01/31	16	Antlerless			

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	South Bank C, Elk Area 062 (3)	12/10 - 12/20	11	Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)
1999	501, 504, 506,530,660, 663, 672, 673, 684, and Long Is.	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)
	658	09/01 - 09/14	14	3 pt. minimum	Early Archery General (WA)
	506, 530, 672, 681, Long Island	11/24 - 12/15	22	3 pt. min. or antlerless	Late Archery General (WA)
	684	10/09 - 10/15	7	Any elk	Early Muzzleloader General (WM)
	530, 660	10/09 - 10/15	7	3 pt. minimum	
	501	10/09 - 10/15	7	3 pt. min. or antlerless	
	501	11/24 - 12/15	22	3 pt. min. or antlerless	Late Muzzleloader General (WM)
	684	11/24 - 12/15	22	Any elk	
	504	11/24 - 12/15	22	3 pt. minimum	
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/06 - 11/18	13	3 pt. minimum	Modern Firearm General (WF)
501	11/06 - 11/14	9	3 pt. min. or antlerless		
506 Willapa H. (100) 530 Ryderwood (75) 660 Minot Peak (20) 673 Williams Cr. (40)	11/10 - 11/14 11/10 - 11/14 10/09 - 10/15 11/10 - 11/14	5 5 7 5	Antlerless	Modern Firearm Elk Permits Hunt (WF or WM)	
504 Stella A (100) 658 North River (20) 530 Elk Area 054 Boisfort (20)	11/26 - 12/15 11/26 - 12/15 01/01 - 01/16	20 20 16	3 pt. min. or antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)	
660 Minot Peak, S. Bank (10)	01/01 - 01/30	30	Antlerless	Advanced Hunter Education Elk Permit Hunt (Any elk tag)	
South Bank B -Elk Area 062 (3)	12/10 - 12/20	11	Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)	
2000	501, 504, 506,530,660, 663, 672, 673, 684, and Long Is.	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)
	658, 681	09/01 - 09/14	14	3 pt. minimum	Early Archery General (WA)
	672, 681, Long Island. 530	11/22 - 12/15 11/22 - 12/15	24 24	3 pt. min. or antlerless 3 pt. minimum	Late Archery General (WA) Late Archery General (WA)
	684 504, 530, 660	10/07 - 10/13 10/07 - 10/13	7 7	Any elk 3 pt. minimum	Early Muzzleloader General (WM)
	501 684	11/22 - 12/08 11/22 - 12/15	17 24	3 pt. min. or antlerless Any elk	Late Muzzleloader General (WM)
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/04 - 11/12	9	3 pt. minimum	Modern Firearm General (WF)
	501	11/04 - 11/12	9	3 pt. min. or antlerless	
	506 Willapa H. (50) 530 Ryderwood (40) 673 Williams Cr. (40)	11/08 - 11/12	5	Antlerless	Modern Firearm Elk Permits Hunt (WF or WM)
	504 Stella A (100) 504 Stella B (25) 658 North River (20) 660 Minot Peak (30) 530 Elk Area 054 Boisfort (20)	11/26 - 12/15 01/01 - 01/16 11/26 - 12/15 10/07 - 10/13 01/01 - 01/16	20 16 20 7 16	Antlerless Antlerless Antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)
	506,673 Raymond A (10) 506,673 Raymond B (25)	12/01 - 12/31 01/01 - 01/31	31 31	Antlerless Antlerless	Archery elk Permits Hunt (WA)
	South Bank B-Elk Area 062 (3) 658 N. Shore A (5) 658 N. Shore B (5) 658 N. Shore C (5)	12/10 - 12/20 10/01 - 10/31 12/01 - 12/31 01/01 - 01/31	11 31 31 31	Antlerless Antlerless Antlerless Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type	
2001	501, 504, 660, 663, 672, 673, 684, and Long Is.	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)	
	506, 530, 658, 681	09/01 - 09/14	14	3 pt. minimum	Early Archery General (WA)	
	672, 681, Long Island. 506, 530	11/21 - 12/15 11/21 - 12/02	25 12	3 pt. min. or antlerless 3 pt. min. or antlerless	Late Archery General (WA) Late Archery General (WA)	
	504, 530, 660	10/06 - 10/12	7	3 pt. minimum	Early Muzzleloader General (WM)	
	501 684 504	11/21 - 12/08 11/21 - 12/15 11/21 - 12/15	18 25 25	3 pt. min. or antlerless Any elk 3 pt. minimum	Late Muzzleloader General (WM)	
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/03 - 11/11	9	3 pt. minimum	Modern Firearm General (WF)	
	501	11/03 - 11/11	9	3 pt. min. or antlerless		
	506 Willapa Hills (50) 506/673 Raymond C (15) 506/673 Raymond D (15) 506/673 Raymond E (15) 530 Ryderwood (40) 673 Williams Cr. (40)	11/07 - 11/11 12/01 - 12/31 01/01 - 01/31 02/01 - 02/28 11/07 - 11/11 11/07 - 11/11	5 31 31 28 5 5	Antlerless	Modern Firearm Elk Permits Hunt (WF or WM)	
	504 Stella A (100) 504 Stella B (25) Raymond A (15) 658 North River (20) Elk area 067, N. Minot B (30) Elk Area 054 Boisfort (20)	11/26 - 12/15 01/01 - 01/16 10/01 - 10/31 11/26 - 12/15 10/06 - 10/14 01/01 - 01/16	20 16 31 20 7 16	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)	
	506, 673 Raymond B (15)	11/16 - 11/30	14	Antlerless	Archery Elk Permits Hunt (WA)	
	658 N. Shore A (5) 658 N. Shore B (5) 658 N. Shore C (5)	10/01 - 10/31 12/01 - 12/31 01/01 - 01/31	31 31 31	Antlerless Antlerless Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)	
	2002	501, 504, 660, 663, 672, 673, 684, and 699 (Long Is.)	09/01 - 09/14	14	3 pt. min. or antlerless	Early Archery General (WA)
		506, 530, 658, 681	09/01 - 09/14	14	3 pt. minimum	Early Archery General (WA)
672, 681, 699, elk area 066, 506, 530		11/20 - 12/15 11/21 - 12/02	24 12	3 pt. min. or antlerless 3 pt. min. or antlerless	Late Archery General (WA) Late Archery General (WA)	
504, 530, 660 501		10/05 - 10/11 10/05 - 10/11	7 7	3 pt. minimum 3 pt. min. or antlerless	Early Muzzleloader General (WM)	
501 684 504		11/20 - 12/08 11/20 - 12/15 11/20 - 12/15	17 24 24	3 pt. min. or antlerless Any elk 3 pt. minimum	Late Muzzleloader General (WM)	
504, 506, 530, 658, 660, 663, 672, 673, 681, 684		11/02 - 11/10	9	3 pt. minimum	Modern Firearm General (WF)	
501		11/02 - 11/10	9	3 pt. min. or antlerless		
506 Willapa Hills (50) 506/673 Raymond A (20) 506/673 Raymond B (30) 506/673 Raymond C (15) 506/673 Raymond D (15) 530 Ryderwood (40) Elk Area 067 N. Minot A (60) Williams Cr. (40) North Shore A (5)		11/06 - 11/10 11/06 - 11/10 12/16 - 12/31 01/01 - 01/31 02/01 - 02/28 11/06 - 11/10 10/20 - 10/31 11/07 - 11/11 11/06 - 11/10	5 5 16 31 28 5 12 5 5	Antlerless 3 pt. min. or antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WF)	

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	504 Stella A (100)	11/26 - 12/15	20	Antlerless	Muzzleloader Elk Permit Hunt (WM)
	504 Stella B (25)	01/01 - 01/16	16	Antlerless	
	Boisfort-Elk Area 054 (40)	01/01 - 01/16	16	Antlerless	
	Raymond E (30)	10/01 -10/31	31	Antlerless	
	658 North River (20)	11/26 - 12/15	20	Antlerless	
	N. Minot B-Elk Area 067 (30)	10/06 - 10/14	7	Antlerless	
	Chehalis Valley A – 066 (10)	09/15 - 09/30	16	Antlerless	
	Chehalis Valley B – 066 (10)	10/01 -10/31	31	Antlerless	
	Chehalis Valley C – 066 (30)	11/06 -11/10	5	Antlerless	
	Chehalis Valley E – 066 (15)	11/15 -11/30	16	Antlerless	
	Chehalis Valley F – 066 (15)	01/01 - 01/31	31	Antlerless	
	Chehalis Valley G – 066 (15)	02/01 - 02/28	28	Antlerless	
	506, 672, 673 Raymond F (60)	11/16 - 11/30	15	Antlerless	Archery Elk Permits Hunt (WA)
	658 N. Shore B (5)	10/01 - 10/31	31	Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)
658 N. Shore C (5)	12/16 - 12/31	16	Antlerless		
658 N. Shore D (5)	01/01 - 01/31	31	Antlerless		
658 N. Shore E (5)	02/01 - 02/28	28	Antlerless		
Chehalis Valley D – 066 (15)	12/01 -12/31	31	Antlerless		
2003	501, 504, 660, 663, 672, 673, 684, and 699 (Long Is.)	09/08 - 09/21	14	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530,658, 681	09/08 - 09/21	14	3 pt. minimum	Early Archery General (WA)
	672, 681, 699, elk area 6066	11/19 - 12/15	27	3 pt. min. or antlerless	Late Archery General (WA)
	506, 530	11/19 - 12/07	19	3 pt. min. or antlerless	Late Archery General (WA)
	504, 530, 660, 672	10/04 - 10/10	7	3 pt. minimum	Early Muzzleloader General (WM)
	501, 663	10/04 – 10/10	7	3 pt. min. or antlerless	
	501	11/19 - 12/08	18	3 pt. min. or antlerless	Late Muzzleloader General (WM)
	684	11/19 - 12/15	27	Any elk	
	504	11/19 - 12/15	27	3 pt. minimum	
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/01 - 11/09	9	3 pt. minimum	Modern Firearm General (WF)
	501	11/01 - 11/09	9	3 pt. min. or antlerless	
	506 Willapa Hills A (35)	11/01 - 11/09	9	Antlerless	Modern Firearm Elk Permits Hunt (WF)
	506/673 Raymond A (20)	11/06 - 11/10	5	3 pt. min. or antlerless	
	506/673 Raymond B (30)	12/16 - 12/31	16	Antlerless	
	506/673 Raymond C (15)	01/01 - 01/31	31	Antlerless	
	506/673 Raymond D (15)	02/01 - 02/28	28	Antlerless	
	530 Ryderwood (32)	11/01 - 11/09	9	Antlerless	
	6066 Chehakis Valley A (10)	09/15- .09/30	15	Antlerless	
	6066 Chehalis Valley B (10)	10/01 - 10/31	31	Antlerless	
	6066 Chehalis Valley C (30)	11/06 - 11/10	5	Antlerless	
	6066 Chehalis Valley D (15)	11/15-11/30	16	Antlerless	
	6066 Chehalis Valley E (15)	02/01-02/28	28	Antlerless	
	Elk Area 6 067 N. Minot A (60)	10/20-10/31	11	Antlerless	
	673 Williams Cr. (40)	11/05-11/09	5	Antlerless	
	6068 North Shore A (5)	11/05-11/09	5	Antlerless	
	504 Stella A (75)	11/26 - 12/15	20	Antlerless	
	504 Stella B (50)	01/01 - 01/16	16	Antlerless	
	Boisfort-Elk Area 5054 (40)	01/01 - 01/16	16	Antlerless	
	Raymond E (30)	10/01 -10/31	31	Antlerless	
	658 North River (20)	11/26 - 12/15	20	Antlerless	
	N. Minot B-Elk Area 067 (30)	10/06 - 10/14	7	Antlerless	

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	Chehalis Valley A – 066 (10) Chehalis Valley B – 066 (10) Chehalis Valley C – 066 (30) Chehalis Valley E – 066 (15) Chehalis Valley F – 066 (15) Chehalis Valley G – 066 (15)	09/15 - 09/30 10/01 -10/31 11/06 -11/10 11/15 -11/30 01/01 - 01/31 02/01 - 02/28	16 31 5 16 31 28	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	AHE Special Elk Permit Hunts (AHE only)
	506, 672, 673 Raymond F (60)	11/16 - 11/30	15	Antlerless	Archery Elk Permits Hunt (WA)
	658 N. Shore B (5) 658 N. Shore C (5) 658 N. Shore D (5) 658 N. Shore E (5) Chehalis Valley D – 066 (15)	10/01 - 10/31 12/16 - 12/31 01/01 - 01/31 02/01 - 02/28 12/01 -12/31	31 16 31 28 31	Antlerless Antlerless Antlerless Antlerless Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)
2004	501, 504, 660, 663, 672, 673, 684, and 699 (Long Is.)	09/08 - 09/21	14	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530,658, 681	09/08 - 09/21	14	3 pt. minimum	Early Archery General (WA)
	672, 681, 699, elk area 6066	11/19 - 12/15	27	3 pt. min. or antlerless	Late Archery General (WA)
	506, 530	11/24 - 12/07	14	3 pt. min. or antlerless	Late Archery General (WA)
	504, 530, 660, 672	10/02 - 10/08	7	3 pt. minimum	Early Muzzleloader General (WM)
	501, 663	10/02 – 10/08	7	3 pt. min. or antlerless	
	501 684	11/24 - 12/08 11/24 - 12/15	15 22	3 pt. min. or antlerless Any elk	Late Muzzleloader General (WM)
	504	11/24 - 12/15	22	3 pt. minimum	
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/06 - 11/14	9	3 pt. minimum	Modern Firearm General (WF)
	501	11/06 - 11/14	9	3 pt. min. or antlerless	
	506 Willapa Hills A (35) 506/673 Raymond A (20) 506/673 Raymond B (30) 506/673 Raymond C (15) 506/673 Raymond D (15) 530 Ryderwood (32) 6066 Chehakis Valley A (10) 6066 Chehalis Valley B (10) 6066 Chehalis Valley C (30) 6066Chehalis Valley D (15) 6066 Chehalis Valley E (15) Elk Area 6 067 N. Minot A (60) 673 Williams Cr. (40) 6068 North Shore A (5)	11/06 – 11/14 11/06 - 11/10 12/16 - 12/31 01/01 - 01/31 02/01 - 02/28 11/06 – 11/14 09/15- .09/30 10/01- 10/31 11/06 - 11/10 11/15-11/30 02/01-02/28 10/20-10/31 11/05-11/09 11/05-11/09	9 5 16 31 28 9 15 31 5 16 28 11 5 5	Antlerless 3 pt. min. or antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WF)
	504 Stella A (75) 504 Stella B (50) Boisfort-Elk Area 5054 (40) 506 Willapa Hills B (15) 530 Ryderwood B (8) Raymond E (30) 658 North River (20) N. Minot B-Elk Area 6067 (60) 6066 Chehalis Valley (15) 663 Capitol Peak A (10) 663 Capitol Peak B (10)	11/24 - 12/15 01/01 - 01/16 01/01 - 01/16 11/24-12/15 10/02-10/08 10/01 -10/31 11/26 - 12/15 10/02 - 10/08 01/01-01//31 11/19-12/15 12/16-12/31	22 16 16 22 7 30 20 7 31 26 16	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)
	6068 N. Shore B (5) 6068 N. Shore C (5) 6068 N. Shore D (5) 6068 N. Shore E (5) 6066 Chehalis Valley F (15)	10/01 - 10/31 12/16 - 12/31 01/01 - 01/31 02/01 - 02/28 12/16 -12/31	31 16 31 28 21	Antlerless Antlerless Antlerless Antlerless Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
2005	501, 504, 660, 663, 672, 673, 684, and 699 (Long Is.)	09/08 - 09/21	14	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530, 658, 681	09/08 - 09/21	14	3 pt. minimum	Early Archery General (WA)
	672, 681, 699, elk area 6066,	11/23 - 12/15	23	3 pt. min. or antlerless	Late Archery General (WA)
	506, 530	11/23 - 12/07	15	3 pt. min. or antlerless	Late Archery General (WA)
	504, 530, 660, 672	10/01 - 10/07	7	3 pt. Minimum	Early Muzzleloader General (WM)
	684	10/01-10/07	7	Any elk	
	501, 663	10/01 - 10/07	7	3 pt. min. or antlerless	
	501	11/23 - 12/08	16	3 pt. min. or antlerless	Late Muzzleloader General (WM)
	684	11/23 - 12/15	24	Any elk	
	504	11/23 - 12/15	24	3 pt. minimum	
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/05 - 11/13	9	3 pt. minimum	Modern Firearm General (WF)
	501	11/05 - 11/13	9	3 pt. min. or antlerless	
	506 Willapa Hills A (35)	11/05 - 11/13	9	Antlerless	Modern Firearm Elk Permits Hunt (WF)
	506/673 Raymond A (20)	11/05- 11/10	6	3 pt. min. or antlerless	
	506/673 Raymond B (30)	12/16 - 12/31	16	Antlerless	
	506/673 Raymond C (15)	01/01 - 01/31	31	Antlerless	
	506/673 Raymond D (15)	02/01 - 02/28	28	Antlerless	
	530 Ryderwood A (32)	11/05 - 11/13	9	Antlerless	
	6066 Chehakis Valley A (10)	09/15- .09/30	15	Antlerless	
	6066 Chehalis Valley B (10)	10/01- 10/31	31	Antlerless	
6066 Chehalis Valley C (30)	11/05 - 11/10	6	Antlerless		
6066 Chehalis Valley D (15)	11/15-11/30	16	Antlerless		
6066 Chehalis Valley E (15)	02/01-02/28	28	Antlerless		
Elk Area 6 067 N. Minot A (60)	10/20-10/31	11	Antlerless		
673 Williams Cr. (40)	11/05-11/09	5	Antlerless		
6068 North Shore A (5)	11/05-11/09	5	Antlerless		
504 Stella A (75)	11/24 - 12/15	22	Antlerless	Muzzleloader Elk Permit Hunt (WM)	
504 Stella B (50)	01/01 - 01/16	16	Antlerless		
Boisfort-Elk Area 5054 (40)	01/01 - 01/16	16	Antlerless		
506 Willapa Hills B (15)	11/23-12/15	23	Antlerless		
530 Ryderwood B (8) 6010	10/01-10/07	7	Antlerless		
Raymond E (30)	10/01 -10/31	30	Antlerless		
658 North River (20)	11/26 - 12/15	20	Antlerless		
N. Minot B-Elk Area 6067 (60)	10/01 - 10/07	7	Antlerless		
6066 Chehalis Valley (15)	01/01-01/31	31	Antlerless		
663 Capitol Peak A (10)	11/19-12/15	26	Antlerless		
663 Capitol Peak B (10)	12/16-12/31	16	Antlerless		
6066 Chehalis G (10)	08/01/05-02/28/06		Antlerless	AHE Specials Permit Hunts (administered by a Hunt Master)	
6068 N. Shore B (5)	10/01 - 10/31	31	Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)	
6068 N. Shore C (5)	12/16 - 12/31	16	Antlerless		
6068 N. Shore D (5)	01/01 - 01/31	31	Antlerless		
6068 N. Shore E (5)	02/01 - 02/28	28	Antlerless		
6066 Chehalis Valley F (15)	12/16 -12/31	21	Antlerless		
2006	501, 504, 660, 663, 672, 673, 684, and 699 (Long Is.)	09/08 - 09/21	14	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530, 658, 681	09/08 - 09/21	14	3 pt. minimum	Early Archery General (WA)
	672, 681, 699, elk area 6066,	11/22 - 12/15	24	3 pt. min. or antlerless	Late Archery General (WA)
	506, 530	11/22 - 12/07	16	3 pt. min. or antlerless	Late Archery General (WA)
	504, 530, 658, 660, 672	10/07 - 10/13	7	3 pt. Minimum	Early Muzzleloader General (WM)
	684	10/07/10/13	7	Any elk	
	501, 663	10/07 - 10/13	7	3 pt. min. or antlerless	

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	501 684 504	11/22 - 12/08 11/22 - 12/15 11/22 - 12/15	17 25 25	3 pt. min. or antlerless Any elk 3 pt. minimum	Late Muzzleloader General (WM)
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684 501	11/04 - 11/13 11/04- 11/13	10 10	3 pt. minimum 3 pt. min. or antlerless	Modern Firearm General (WF)
	506 Willapa Hills A (35) 506/673 Raymond A (20) 506/673 Raymond B (30) 506/673 Raymond C (15) 506/673 Raymond D (15) 530 Ryderwood A (32) 6066 Chehakis Valley A (10) 6066 Chehalis Valley B (10) Elk Area 6067 N. Minot A (60) 673 Williams Cr. (50) 6068 North Shore A (5)	11/04 – 11/12 11/05- 11/10 12/16 - 12/31 01/01 - 01/31 02/01 - 02/28 11/04 – 11/12 10/01- .0/31 11/05- 11/10 10/20-10/31 11/08-11/13 11/05-11/09	9 6 16 31 28 9 31 6 12 6 5	Antlerless 3 pt. min. or antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Modern Firearm Elk Permits Hunt (WF)
	504 Stella A (75) 504 Stella B (50) Boisfort-Elk Area 5054 (40) 506 Willapa Hills B (15) 530 Ryderwood B (8) 6010 Raymond E (30) 658 North River (20) N. Minot B-Elk Area 6067 (60) 6066 Chehalis Valley C (15) 663 Capitol Peak A (10) 663 Capitol Peak B (10)	11/24 - 12/15 01/01 - 01/16 01/01 - 01/16 11/22-12/15 10/07-10/13 10/01 -10/31 11/26 - 12/15 10/01 - 10/07 01/01-01//31 11/19-12/15 12/16-12/31	22 16 16 24 7 31 20 7 31 26 16	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)
	6066 Chehalis Valley D (20) 6010 Raymond F (10) 658 North River B (10) JBH C Elk Area 5090 (20) Boisfort B-Elk Area 5054 (5) Boisfort C (5) Boisfort D (5) Boisfort E (5) JBH A Elk Area 5090 (5) JBH B (5)	08/01-02/28/07 12/01-02/28/07 12/16-02/28/07 12/16-02/28/07 08/01-08/07 08/08-08/14 08/15-08/21 08/22-08/28 11/13-11/17 12/11-12/15	 7 7 7 7 5 5	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	AHE Specials Permits (Hunt Master) AHE Special Permits
	6068 N. Shore B (5) 6068 N. Shore C (5) 6068 N. Shore D (5) 6068 N. Shore E (5) 6066 Chehalis Valley E (15)	10/01 - 10/31 12/16 - 12/31 01/01 - 01/31 02/01 - 02/28 12/16 -12/31	31 16 31 28 21	Antlerless Antlerless Antlerless Antlerless Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)
2007	501, 504, 660, 663, 672, 673, 684, and 699 (Long Is.) 506, 530,658, 681 672, 681, 699, elk area 6066, 506, 530	09/08 - 09/21 09/08 - 09/21 11/21 - 12/15 11/21 - 12/07	14 14 25 17	3 pt. min. or antlerless 3 pt. minimum 3 pt. min. or antlerless 3 pt. min. or antlerless	Early Archery General (WA) Early Archery General (WA) Late Archery General (WA) Late Archery General (WA)
	504, 530, 658, 660, 672 684 501, 663	10/06 - 10/12 10/06 – 10/12 10/06 – 10/12	7 7 7	3 pt. Minimum Any elk 3 pt. min. or antlerless	Early Muzzleloader General (WM)
	501 684 504	11/22 - 12/08 11/21 - 12/15 11/21 - 12/15	17 25 25	3 pt. min. or antlerless Any elk 3 pt. minimum	Late Muzzleloader General (WM)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/03 - 11/12	10	3 pt. minimum	Modern Firearm General (WF)
	501	11/03- 11/12	10	3 pt. min. or antlerless	
	506 Willapa Hills A (35)	11/03 – 11/12	10	Antlerless	Modern Firearm Elk Permits Hunt (WF)
	Elk Area 6010 Raymond A (20)	11/05- 11/10	6	3 pt. min. or antlerless	
	Elk Area 6010 Raymond B (30)	12/16 - 12/31	16	Antlerless	
	Elk Area 6010 Raymond C (15)	01/01 - 01/31	31	Antlerless	
	Elk Area 6010 Raymond D (15)	02/01 - 02/28	28	Antlerless	
	530 Ryderwood A (35)	11/03 – 11/12	10	Antlerless	
	6066 Chehakis Valley A (5)	10/01- .10/31	31	Antlerless	
	6066 Chehalis Valley B (5)	11/05- 11/10	6	Antlerless	
	Elk Area 6 067 N. Minot A (20)	10/20-10/31	12	Antlerless	
	658 North River (10)	11/08-11/13	6	Antlerless	
	673 Williams Cr. (50)	11/08-11/13	6	Antlerless	
	6068 North Shore A (5)	11/04-11/08	5	Antlerless	
	504 Stella A (150)	11/21 - 12/15	25	Antlerless	Muzzleloader Elk Permit Hunt (WM)
	504 Stella B (100)	01/01 - 01/16	16	Antlerless	
	Boisfort-Elk Area 5054 (40)	01/01 - 01/16	16	Antlerless	
	506 Willapa Hills B (15)	11/21-12/15	25	Antlerless	
	530 Ryderwood B (15) 6010	10/06-10/12	7	Antlerless	
	Raymond E (30)	10/01 -10/31	31	Antlerless	
	658 North River (20)	11/26 - 12/15	20	Antlerless	
	N. Minot B-Elk Area 6067 (20)	10/01 - 10/07	7	Antlerless	
	6066 Chehalis Valley C (15)	01/01-01//31	31	Antlerless	
	663 Capitol Peak A (15)	11/19-12/15	26	Antlerless	
	6066 Chehalis Valley D (20)	08/01-02/28/08		Antlerless	AHE Specials Permits (Hunt Master)
	6010 Raymond F (10)	12/01-03/31/08		Antlerless	
	658 North River B (10)	12/16-02/28/08		Antlerless	
	JBH Elk Area 5090 (20)	11/12-02/28/08		Antlerless	AHE Special Permits
	Boisfort B-Elk Area 5054 (5)	08/01-08/07	7	Antlerless	
	Boisfort C (5)	08/08-08/14	7	Antlerless	
	Boisfort D (5)	08/15-08/21	7	Antlerless	
	Boisfort E (5)	08/22-08/28	7	Antlerless	
	6068 N. Shore B (5)	10/01 - 10/31	31	Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)
	6068 N. Shore C (5)	12/16 - 12/31	16	Antlerless	
	6066 Chehalis Valley E (15)	12/16 -12/31	21	Antlerless	
2008	501, 504, 660, 663, 672, 673, 684, and 699 (Long Is.)	09/08 - 09/21	14	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530,658, 681	09/08 - 09/21	14	3 pt. minimum	Early Archery General (WA)
	672, 681, 699, Elk Area 6066	11/19 - 12/15	27	3 pt. min. or antlerless	Late Archery General (WA)
	506, 530	11/19 - 12/07	19	3 pt. min. or antlerless	Late Archery General (WA)
	504, 530, 658, 660, 672	10/04 - 10/10	7	3 pt. Minimum	Early Muzzleloader General (WM)
	684	10/04 – 10/10	7	Any elk	
	501, 663	10/04 – 10/10	7	3 pt. min. or antlerless	
	501	1119 - 12/08	19	3 pt. min. or antlerless	Late Muzzleloader General (WM)
684	11/19 - 12/15	27	Any elk		
504	11/19 - 12/15	27	3 pt. minimum		
	504, 506, 530, 658, 660, 663, 672, 673, 681, 684	11/01 - 11/10	10	3 pt. minimum	Modern Firearm General (WF)
	501	11/01- 11/10	10	3 pt. min. or antlerless	

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	506 Willapa Hills (35)	11/01 – 11/10	10	Antlerless	Modern Firearm Elk Permits Hunt (WF)
	Elk Area 6010 Raymond (20)	11/05- 11/10	6	3 pt. min. or antlerless	
	Elk Area 6010 Raymond (30)	12/16 - 12/31	16	Antlerless	
	Elk Area 6010 Raymond (15)	01/01 - 01/31	31	Antlerless	
	Elk Area 6010 Raymond (15)	02/01 - 02/28	28	Antlerless	
	530 Ryderwood (35)	11/01 – 11/10	10	Antlerless	
	Elk Area 6066 Chehalis Valley (5)	10/01- .10/31	31	Antlerless	
	Elk Area 6066 Chehalis Valley (5)	11/05- 11/10	6	Antlerless	
	Elk Area 6067 North Minot (20)	10/20-10/31	12	Antlerless	
	658 North River (10)	11/08-11/13	6	Antlerless	
	673 Williams Creek (50)	11/08-11/13	6	Antlerless	
Elk Area 6068 North Shore (5)	11/04-11/08	5	Antlerless		
	504 Stella (100)	11/19 - 12/15	27	Antlerless	Muzzleloader Elk Permit Hunt (WM)
	504 Stella (100)	01/01 - 01/16	16	Antlerless	
	Elk Area 5054 Boisfort (40)	01/01 - 01/16	16	Antlerless	
	506 Willapa Hills (15)	11/19-12/15	27	Antlerless	
	530 Ryderwood (15)	10/04-10/10	7	Antlerless	
	Elk Area 6010 Raymond (30)	10/01 -10/31	31	Antlerless	
	658 North River (20)	11/26 - 12/15	20	Antlerless	
	Elk Area 6067 North Minot (20)	10/01 - 10/07	7	Antlerless	
Elk Area 6066 Chehalis Valley (5)	01/01-01//20	20	Antlerless		
	Elk Area 6066 Chehalis Valley (10)	08/01-02/28/09		Antlerless	AHE Specials Permits (Hunt Master)
	Elk Area 6010 Raymond (10)	12/01-03/31/09		Antlerless	
	Elk Area 5090 JBH (20)	11/12-02/28/09		Antlerless	
	Elk Area 5054 Boisfort (5)	08/01-08/07	5	Antlerless	AHE Special Permits
	Elk Area 5054 Boisfort (5)	08/08-08/14	5	Antlerless	
	Elk Area 5054 Boisfort (5)	08/15-08/21	5	Antlerless	
	Elk Area 5054 Boisfort (5)	08/22-08/28	5	Antlerless	
	Elk Area 6068 North Shore (5)	10/01 - 10/31	31	Antlerless	Persons of Disability Special Elk Permit Hunt (Any elk tag)
	Elk Area 6068 North Shore (5)	12/16 - 12/31	16	Antlerless	
Elk Area 6066 Chehalis Valley (10)	12/16 -12/31	21	Antlerless		
2009	501, 504, 660, 663, 672, 673, 681, 684 and 699 (Long Is.)	09/08 - 09/20	13	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530, 658, 663	09/08 - 09/20	13	3 pt. minimum	Early Archery General (WA)
	672, 681, 699	11/25 - 12/15	21	3 pt. min. or antlerless	Late Archery General (WA)
	506, 530	11/25 - 12/07	13	Antlerless	Late Archery General (WA)
	530, 658, 660, 663, 672	10/03 - 10/09	7	3 pt. Minimum	Early Muzzleloader General (WM)
	684	10/03 – 10/09	7	Any elk	
	501, 504	10/03 – 10/09	7	3 pt. min. or antlerless	
	501, 504	11/25 - 12/08	14	3 pt. min. or antlerless	Late Muzzleloader General (WM)
684	11/25 - 12/15	21	Any elk		
658	11/25 - 12/15	21	3 pt. minimum		
506, 530, 658, 660, 663, 672, 673, 681, 684	11/07 - 11/17	10	3 pt. minimum	Modern Firearm General (WF)	
501, 504	11/07- 11/17	10	3 pt. min. or antlerless		

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
	506 Willapa Hills (35)	11/07 – 11/17	10	Antlerless	Modern Firearm Elk Permits Hunt (WF)
	Elk Area 6010 Raymond (10)	11/05- 11/10	6	3 pt. min. or antlerless	
	Elk Area 6010 Raymond (20)	12/16 - 12/31	16	Antlerless	
	Elk Area 6010 Raymond (10)	01/01 - 01/20	20	Antlerless	
	Elk Area 6010 Raymond (5)	02/01 - 02/28	28	Antlerless	
	530 Ryderwood (35)	11/07 – 11/17	10	Antlerless	
	Elk Area 6067 North Minot (10)	10/20-10/31	12	Antlerless	
	658 North River (10)	11/08-11/13	6	Antlerless	
673 Williams Creek (50)	10/26-10/31	6	Antlerless		
	504 Stella (75)	11/25 - 12/15	21	Antlerless	Muzzleloader Elk Permit Hunt (WM)
	504 Stella (75)	01/01 - 01/16	16	Antlerless	
	Elk Area 5054 Boisfort (40)	01/01 - 01/16	16	Antlerless	
	506 Willapa Hills (15)	11/19-12/15	27	Antlerless	
	530 Ryderwood (30)	10/03-10/11	9	Antlerless	
	Elk Area 6010 Raymond (10)	10/01 -10/31	31	Antlerless	
	658 North River (20)	11/26 - 12/15	20	Antlerless	
	Elk Area 6067 North Minot (10)	10/01 - 10/07	7	Antlerless	
Elk Area 5061 Wildwood (30)	01/01-01/16/12	16	Antlerless		
	Elk Area 6066 Chehalis Valley (10)	08/01-02/28/09 and 12/01-03/31/10		Antlerless	AHE Specials Permits (Hunt Master)
	Elk Area 6010 Raymond (5)			Antlerless	
	Elk Area 5090 JBH (20)	11/18-02/28/10		Antlerless	
	Elk Area 5056 Grays River (15)	08/01-09/07 12/15-02/28/10		Antlerless	AHE Special Permits
	Elk Area 5054 Boisfort (5)		7	Antlerless	
	Elk Area 5054 Boisfort (5)	08/01-08/07	7	Antlerless	
	Elk Area 5054 Boisfort (5)	08/08-08/14	7	Antlerless	
	Elk Area 5054 Boisfort (5)	08/15-08/21	7	Antlerless	
	658 North River C (10)	08/22-08/28 12/16-02/28/10	7	Antlerless	
2010	501, 504, 660, 672, 673, 681, 684 and 699 (Long Is.)	09/07 - 09/19	13	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530, 658, 663	09/07 - 09/19	13	3 pt. minimum	Early Archery General (WA)
	672, 681, 699	11/24 - 12/15	22	3 pt. min. or antlerless	Late Archery General (WA)
	506, 530	11/24 - 12/07	14	Antlerless	Late Archery General (WA)
	530, 660, 663, 672	10/03 - 10/09	7	3 pt. Minimum	Early Muzzleloader General (WM)
	684	10/02 – 10/08	7	Any elk	
	501, 504	10/02 – 10/08	7	3 pt. min. or antlerless	
	501, 504	11/24 - 12/08	15	3 pt. min. or antlerless	Late Muzzleloader General (WM)
	684	11/24 - 12/15	22	Any elk	
	658	11/24 - 12/15	22	3 pt. minimum	
	506, 530, 658, 660, 663, 672, 673, 681, 684	11/06 - 11/16	10	3 pt. minimum	Modern Firearm General (WF)
	501, 504	11/06- 11/16	10	3 pt. min. or antlerless	
506 Willapa Hills (35)	11/06 – 11/16	10	Antlerless	Modern Firearm Elk Permits Hunt (WF)	
Elk Area 5054 Boisfort (50)	11/06-11/16	10	Antlerless		
Elk Area 6010 Raymond (10)	12/16- 12/31	16	Antlerless		
Elk Area 6010 Raymond (5)	01/01 – 01/20/11	20	Antlerless		
Elk Area 6010 Raymond (5)	02/01 – 02/28/11	28	Antlerless		
530 Ryderwood (50)	11/06 – 11/16	12	Antlerless		
Elk Area 6067 North Minot (5)	10/20-10/31	6	Antlerless		
658 North River (10)	11/08-11/13	6	Antlerless		
673 Williams Cr. (50)	11/08-11/16	9	Antlerless		

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
2011	504 Stella (75) Elk Area 5054 Boisfort (50) 506 Willapa Hills (15) 530 Ryderwood (30) 658 North River (20) Elk Area 6067 N. Minot (10) Elk Area 5061 Wildwood (30)	01/01 - 01/16 01/01 - 01/16 12/08-12/19 10/02-10/08 11/25-12/15 10/02-10/08 01/01-01/15/12	16 16 22 7 21 7 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)
	Elk Area 6010 Raymond (5) Elk Area 5090 JBH (20) Elk Area 5056 Grays River (15)	10/01-03/31/11 11/17-02/28/11 08/01-09/06 and 12/06-02/28/11		Antlerless Antlerless Antlerless	AHE Specials Permits (Hunt administered by a Hunt Coordinator)
	501, 504, 660, 672, 673, 681, 684 and 699 (Long Is.)	09/06 - 09/18	13	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530, 658, 663	09/06 - 09/18	13	3 pt. minimum	Early Archery General (WA)
	672, 681, 699 506, 530	11/23 - 12/15 11/23 - 12/07	23 15	3 pt. min. or antlerless Antlerless	Late Archery General (WA) Late Archery General (WA)
	530, 660, 663, 672 684 501, 504	10/01 - 10/07 10/01 - 10/07 10/01 - 10/07	7 7 7	3 pt. Minimum Any elk 3 pt. min. or antlerless	Early Muzzleloader General (WM)
	501, 504 684 658	11/23 - 12/08 11/23 - 12/15 11/23 - 11/30	16 23 8	3 pt. min. or antlerless Any elk 3 pt. minimum	Late Muzzleloader General (WM)
	506, 530, 658, 660, 663, 672, 673, 681, 684 501, 504	11/05 - 11/15 11/05- 11/15	11 11	3 pt. minimum 3 pt. min. or antlerless	Modern Firearm General (WF)
	506 Willapa Hills or 530 Ryderwood (1)	9/19-9/23	5	Any bull	Modern Firearm Elk Permits Hunt (WF)
	506 Willapa Hills (35) Elk Area 5054 Boisfort (75) Elk Area 5061 Wildwood (50) Elk Area 6010 Raymond (10) Elk Area 6010 Raymond (5) Elk Area 6010 Raymond (5) 530 Ryderwood (100) Elk Area 6067 North Minot (5) 658 North River (10) 673 Williams Cr. (50)	11/05 - 11/15 11/05-11/15 01/16-01/30 12/16- 12/31 01/01 - 01/20/11 02/01 - 02/28/11 11/05 - 11/15 10/20-10/31 11/08-11/13 11/08-11/16	10 10 15 16 20 28 12 6 6 9	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	
	504 Stella (75) Elk Area 5054 Boisfort (75) 506 Willapa Hills (15) 530 Ryderwood (50) 658 North River (20) Elk Area 6067 N. Minot (10) Elk Area 5061 Wildwood (15)	01/01 - 01/16 01/01 - 01/16 12/08-12/19 10/02-10/08 11/26-12/15 10/01-10/07 01/01-01/15/12	16 16 22 7 20 7 15	Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless Antlerless	Muzzleloader Elk Permit Hunt (WM)
	658 North River (10) Elk Area 6010 Raymond (5) Designated areas Region 5 (20) Designated areas Region 6 (10)	12/16-02/28/12 10/01-03/31/12 08/01-03/31/12 08/01-03/31/12		Antlerless Antlerless Antlerless Antlerless	AHE Specials Permits (Hunt administered by a Hunt Coordinator)

Year	GMU # & Permit (#s)	Dates	Days	Legal Animal	Hunt Description and Tag Type
2012	501, 504, 660, 672, 673, 681, 684 and 699 (Long Is.)	09/04 - 09/16	13	3 pt. min. or antlerless	Early Archery General (WA)
	506, 530, 658, 663	09/04 - 09/16	13	3 pt. minimum	Early Archery General (WA)
	672, 681, 699	11/21 - 12/15	25	3 pt. min. or antlerless	Late Archery General (WA)
	506, 530	11/21 - 12/15	25	Antlerless	Late Archery General (WA)
	530, 660, 663, 672	10/06 - 10/12	7	3 pt. Minimum	Early Muzzleloader General (WM)
	684	10/06 - 10/12	7	Any elk	
	501, 504	10/06 - 10/12	7	3 pt. min. or antlerless	
	501, 504	11/21 - 12/08	18	3 pt. min. or antlerless	Late Muzzleloader General (WM)
	684	11/21 - 12/15	25	Any elk	
	658	11/21 - 12/15	25	3 pt. minimum	
	506, 530, 658, 660, 663, 672, 673, 681, 684	11/03 - 11/14	12	3 pt. minimum	Modern Firearm General (WF)
	501, 504	11/03- 11/14	12	3 pt. min. or antlerless	
	506 Willapa Hills or 530 Ryderwood (1)	9/17-9/30	14	Any bull	Modern Firearm Elk Permits Hunt (WF)
	506 Willapa Hills (35)	11/03 - 11/14	10	Antlerless	
Elk Area 5054 Boisfort (75)	11/03-11/14	12	Antlerless		
Elk Area 5061 Wildwood (50)	01/16-01/30/12	15	Antlerless		
Elk Area 6010 Raymond (10)	12/16- 12/31	16	Antlerless		
Elk Area 6010 Raymond (5)	01/01 - 01/20/11	20	Antlerless		
Elk Area 6010 Raymond (5)	02/01 - 02/28/11	28	Antlerless		
530 Ryderwood (100)	11/03 - 11/14	12	Antlerless		
Elk Area 6067 North Minot (5)	10/20-10/31	6	Antlerless		
658 North River (10)	11/06-11/11	6	Antlerless		
673 Williams Cr. (50)	11/06-11/14	9	Antlerless		
504 Stella (75)	01/01 - 01/16	16	Antlerless	Muzzleloader Elk Permit Hunt (WM)	
Elk Area 5054 Boisfort (75)	01/01 - 01/16	16	Antlerless		
506 Willapa Hills (15)	12/08-12/20	22	Antlerless		
530 Ryderwood (50)	10/06-10/12	7	Antlerless		
658 North River (20)	11/21-12/15	25	Antlerless		
Elk Area 6067 North Minot (10)	10/06-10/12	7	Antlerless		
Elk Area 5061 Wildwood (50)	01/01-01/15/12	15	Antlerless		
658 North River (10)	12/16-02/28/12		Antlerless	AHE Specials Permits (Hunt administered by a Hunt Coordinator)	
6010 Raymond (5)	10/01-03/31/12		Antlerless		
Designated areas Region 5 (40)	08/01-03/31/12		Antlerless		
Designated areas Region 6 (50)	08/01-03/31/12		Antlerless		

APPENDIX D. Washington Department of Fish and Wildlife policy for selecting conservation and recreational lands to acquire.

Effective Date:	POLICY - 6011	
Updates:		
See Also: PRO 6011		
POL - 6010	RCW 77.12.210; RCW 77.12.220	Approved By: /s/ Joe Stohr 4/16/13

POL-6011 SELECTING CONSERVATION AND RECREATION LANDS TO ACQUIRE

This policy applies to all WDFW employees, except if policies and procedures are in conflict with or are modified by a bargaining unit agreement, the agreement language shall prevail.

Intent:

This policy applies to all future land acquisition projects, (regardless of fund source, ownership or sponsorship), including donations, exchange of properties, fee simple, mitigation lands, conservation easements, and pass-through grants. This policy updates the 2005 Lands 20/20: A Clear Vision for the Future. The intent is to ensure that future WDFW land acquisition projects are consistent with WDFW's Mission Statement: Preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities.

Land acquisition projects will be consistent with the Conservation Initiative Strategic Acquisition Priorities and will be evaluated through Procedure (PRO) 6011, which provides more detail for implementing foundational values.

Department Acquisition Principles:

- Optimize, pursue, and use partnerships to identify and prioritize land acquisitions, nurture collaborative support, and leverage capacity.
- Evaluate whether acquisition is the best conservation alternative to achieve the desired result. Evaluate alternative tools prior to acquisition– e.g. incentives, different land stewardship by current owner, or education. If acquisition is the best alternative, then evaluate options to acquire the real property interests (e.g., easement, fee title, donation, exchange).
- Pursue lands that provide long-term opportunities for public recreation or that create access to existing public land.
- Pursue lands that will provide long-term ecological value in light of climate change impacts, such as sea level rise and possible range shifts.
- Place a higher value on acquisitions that create blocks of ownership that increase function, value and resiliency to disturbance and make management more efficient.
- As we move, spatially, further away from existing public holdings, particularly with smaller tracts, pursue easements or other non-fee title protection.
- Prioritize lands that are ecologically or socially important and that are at risk to loss in the near term.

Definitions:

Geographic Envelope: An identified geographic area that includes parcel(s) of land the Department is potentially interested in acquiring for common or related purposes.

Land Acquisition Project Proposals: Any proposal that would result in the acquisition of real property interests by WDFW, or utilizes WDFW to facilitate the acquisition of real property interest by others (e.g., pass through grants).

Pass-through Grants: Department sponsored and administered land acquisition grants that are funded by another agency (such as USFWS, RCO); but, implemented by a third party.

Acquisition Project: A project that would result in the acquisition of real property interests by WDFW (e.g., conservation easement, donation, fee title purchase).

1. **Department Staff Identify Parcels for Acquisition and Complete the Lands 20/20 Procedure Prior to Applying for Funding**

Consistent with Department Priorities, staff will identify parcels to be considered for acquisition in a Land Acquisition Project Proposal and follow the Lands 20/20 procedure to complete the review and approval process prior to applying for acquisition funding. If this would create a hardship for individual landowners, jeopardize acquisitions, or if employees do not know all potential parcels available for acquisition, employees instead may identify a geographic envelope containing parcels under consideration. Project proposals, whether individual parcels or geographic envelopes, must demonstrate consistency with department Acquisition Principles (see description above). A proposed geographic envelope must also follow the Lands 20/20 procedure to complete review and approval.

2. **Regional and Headquarters Staff from Multiple Programs Review Acquisition Proposals**

All acquisition proposals must be reviewed by both applicable regional and headquarters staff from multiple programs. The review will, at minimum, include the three resource programs.

3. **Executive Management Team or Designated Committee Reviews and Approves Acquisition Proposals**

Executive Management Team (EMT) or a designated committee will review and approve land acquisition proposals.

4. **Department Staff Coordinate a Public Review of Land Acquisition Proposals**

Once projects are approved by EMT and the Director, department staff will:

- Comply with all mandatory notification requirements (e.g., State Office of Financial Management).
- Conduct public outreach at existing forums (e.g., State Land Acquisition Coordinating Forum).
- Coordinate a public review (e.g., posted on the WDFW website or other means) to provide opportunity for the public to evaluate and comment on the Land Acquisition Project Proposals.

5. **The Department Will Consult with the Fish and Wildlife Commission on Proposed Acquisitions**

The Department will consult with the Fish and Wildlife Commission on proposed acquisitions prior to requesting final action.

6. **Certain Acquisition Projects Exempt from Policy**

- A. This policy does not apply to:
 - 1. Acquisition projects for which grants or funds were approved and/or awarded before the adoption of this policy.
 - 2. Properties for which the agency received signed letters of intent or option agreements before the adoption of this policy.
 - 3. Geographic envelopes once they have been approved. Individual parcels within a geographic envelope still require Regional review and approval and approval by the Wildlife Program Assistant Director.

- B. The Director, with advice from the Wildlife Program Assistant Director and appropriate Regional Director, may directly authorize pursuit of individual parcels as necessary.

APPENDIX E. Washington Department of Fish and Wildlife procedure for selecting conservation and recreational lands to acquire.

Effective Date:	PROCEDURE – 6011
Cancels:	
See Also: POLICY 6011	Approved By: <u>/s/ Joe Stohr 4/16/13</u>

PRO-6011 SELECTING CONSERVATION AND RECREATION LANDS TO ACQUIRE

This procedure applies to all WDFW employees, and to all potential WDFW land acquisition projects including donations for which WDFW funds, WDFW spending authority or grants received by WDFW are used for the acquisition. This does not include acquisition projects or grants that were funded or awarded, respectively, prior to the effective date of this procedure.

The selection process will follow the timeline included in this procedure.

ACTION BY:		ACTION
Agency	1.	Conservation targets (species and habitats) and priority areas are identified in department plans. Acquisition is identified as one potential conservation tool. Acquisitions will be consistent with the Acquisition Principles as outlined in the Policy and the current Conservation Initiative Acquisition Priorities.
Lands Division Manager	2.	Prepares announcement and application, to be sent to staff by the Director, requesting that employees provide their proposals for land acquisition projects. The current Conservation Initiative Strategic Acquisition Priorities document is also sent to employees for guidance.
Employee	3.	Identifies parcel for potential acquisition-any project that would result in the acquisition of real property interests by WDFW (e.g., conservation easement, donation, fee title purchase).
	4.	Coordinates with appropriate regional staff, including the Regional Director and Regional Management Team.
	5.	Identifies potential funding source.
Regional Management Team	6.	Identifies Project Manager.
Project Manager	7.	Collects evaluation information and identifies project geographic envelope and/or target parcel(s) as needed.
	8.	Conducts partner and community outreach, along with the Regional Management Team, to develop local support for the acquisition proposal early in the proposal process.
	9.	Completes the Land Transaction Application (each section in its entirety by the due date), including estimating operations and maintenance costs and funding source(s), and forwards it to the Regional Wildlife Program Manager.

Regional Wildlife Program Manager	10.	<p>Reviews Land Transaction Application for completeness and consistency with land acquisition policy and program guidance.</p> <p>If not complete or consistent, returns Application to the Project Manager to complete.</p> <p>If complete and consistent, forwards to Regional Director for Regional Management Team Review.</p>
Regional Director/Regional Management Team	11. 12. 13. 14. 15. 16. 17.	<p>Directs and/or conducts regional/Headquarters cross-program review. Ensures acquisition proposal has been reviewed by appropriate district team, wildlife area manager, and affected programs at the district level.</p> <p>Coordinates with Real Estate, Habitat and Fish Program staff to identify potential concerns, which may include existing culverts, fish screens, sedimentation, water rights, fencing and public safety concerns.</p> <p>Regional Director convenes Regional Management Team meeting to review Acquisition Principles and determine if acquisition is the right conservation tool.</p> <p>Regional Director conducts local government outreach concerning proposed transaction.</p> <p>Regional Director approves or denies application. If approved, Regional Director signs the application and forwards the proposal and regional recommendations to the Lands Division Manager.</p> <p>If parcel is within a previously approved geographic envelope, the application can proceed to funding and/or acquisition (Step 28).</p> <p>Regional Management Teams should rank the projects and/or identify alternative funding sources if more than one proposal exists for the same fund source.</p>
Lands Division Manager	18. 19. 20. 21.	<p>Confirms completed Land Transaction Application: Assigns Lands Stewardship & Operations Section to review applications for completeness.</p> <p>Consistent with WWRP process, in odd years (e.g., 2013):</p> <ul style="list-style-type: none"> • Forms a cross-program Technical Team and Facilitates Team review to develop/recommend project priorities and appropriate grant sources. The Technical Team will provide information to proponent on strengthening grant proposals. • Summarizes Technical Team meeting and prepares for EMT Policy Review. <p>Convenes a committee of EMT members designated by the Director to evaluate the Technical Team/Regional recommendations and finalize a list of project priorities related to appropriate funding sources.</p>

	22.	Along with the Wildlife Program Assistant Director, presents final list to the Director and applicable policy advisors for approval prior to external and Commission review.
	23.	Solicits/coordinates public review (posts to WDFW website). Incorporates comments and reviews with the Director prior to consulting with the Commission.
Director	24.	Provides proposed land acquisition list to Office of Financial Management.
	25.	Consults with the Fish and Wildlife Commission on proposed acquisitions prior to requesting final action.
Lands Division Manager	26.	Provides opportunity for additional public comment by participating in public outreach forums (e.g. State Land Acquisition Coordinating Forum).
	27.	Notifies acquisition project manager of approval and funding opportunities.
Project Manager	28.	Submits land acquisition proposals to appropriate funding sources.
	29.	After grants are awarded, works with appropriate Real Estate property acquisition specialist on land transactions.
Wildlife Program Assistant Director	30.	Requests approval of land transaction items at the appropriate Fish and Wildlife Commission meeting.



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Department of
**FISH and
WILDLIFE**