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MOUNT ST. HELENS WILDLIFE AREA
MANAGEMENT PLAN

Washington Department of Fish and Wildlife

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2006

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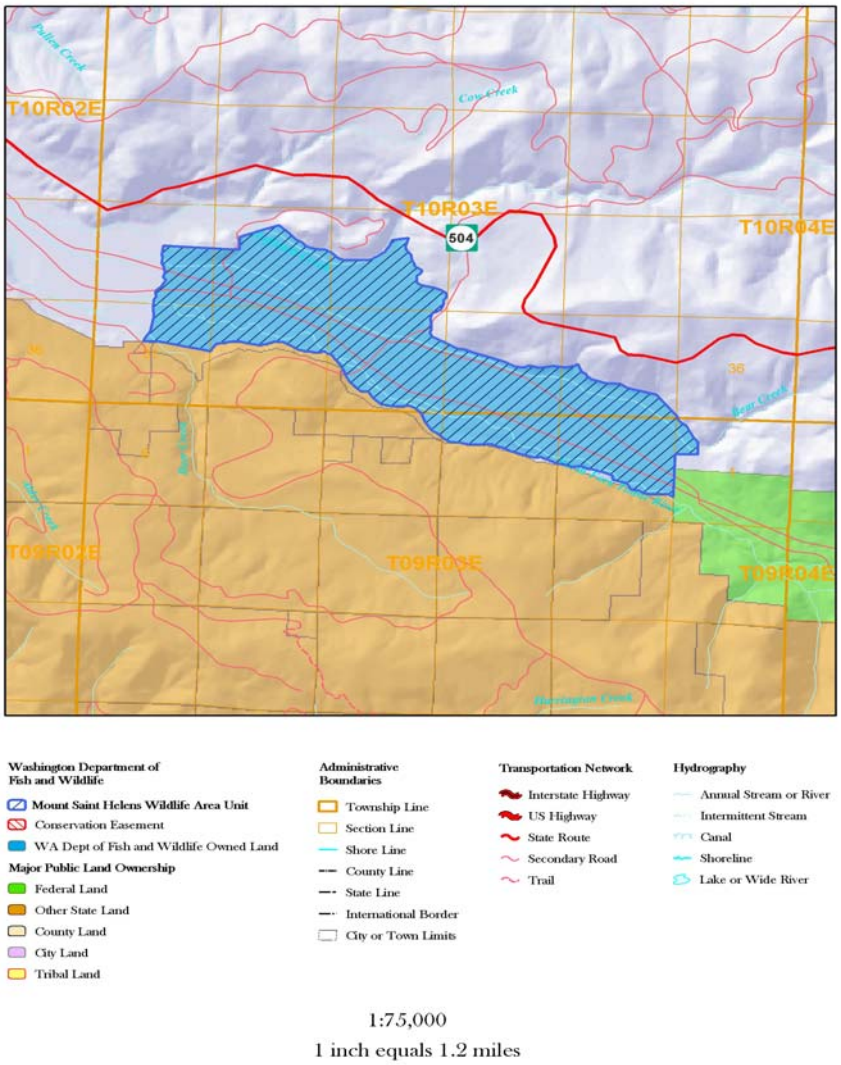
CHAPTER I: INTRODUCTION

This plan provides management direction for the Mt. St. Helens State Wildlife Area Complex including the Mt St Helens State Wildlife Area (MSHWA) (Figure 1) in Cowlitz County Washington and numerous smaller "satellite" wildlife areas located in Skamania, Clark, Cowlitz, Lewis, and Wahkiakum Counties. The plan will be updated annually. It identifies needs and guides activities on the area based on the Washington Department of Fish and Wildlife (WDFW) Mission of *"Sound Stewardship of Fish and Wildlife"* and its underlying statewide goals and objectives as they apply to local conditions.

Figure 1 Mount St. Helens Wildlife Area



1.1 Agency Mission Statement

The Washington Department of Fish and Wildlife serves Washington's citizens by protecting, restoring and enhancing fish and wildlife and their habitats, while providing sustainable fish and wildlife-related recreational and commercial opportunities.

1.2 Agency Goals and Objectives

The following goals and objectives directly apply to the management of this wildlife area. These goals and objectives are found in the Agency's Strategic Plan.

Goal I: Healthy and diverse fish and wildlife populations and habitats

- Objective 2: Protect, restore and enhance fish and wildlife populations and their habitats.
- Objective 3: Ensure WDFW activities, programs, facilities and lands are consistent with local, state and federal regulations that protect and recover fish, wildlife and their habitats.

Goal II: Sustainable fish and wildlife-related opportunities

- Objective 6: Provide sustainable fish and wildlife-related recreational and commercial opportunities compatible with maintaining healthy fish and wildlife populations and habitats.
- Objective 7: Improve the economic well being of Washington by providing diverse, high quality recreational and commercial opportunities.

Goal III: Operational Excellence and Professional Service

- Objective 11: Provide sound operational management of WDFW lands, facilities and access sites.

1.3 Agency Policies

The following agency policies provide additional guidance for management of agency lands.

- Commission Policy 6003: Domestic Livestock Grazing on Department Lands
- Policy 6010: Acquiring and disposing of real property
- Policy 5211: Protecting and Restoring Wetlands: WDFW Will Accomplish Long-Term Gain of Properly Functioning Wetlands Where Both Ecologically and Financially Feasible on WDFW-Owned or WDFW-Controlled Properties
- Policy 5001: Fish Protection At Water Diversions/Flow Control Structures And Fish Passage Structures
- Policy: Recreation management on WDFW Lands
- Policy: Commercial Use of WDFW Lands
- Policy: Forest Management on WDFW Lands
- Policy: Weed Management on WDFW Lands
- Policy: Fire Management on WDFW Lands
- Other policies/contractual obligations/responsibilities

1.4 Mt. St. Helens State Wildlife Area Goals

Management goals for the MSHWA Complex mirror the agency goals as outlined in Section 1.2 particularly as they apply to the objectives of preserving habitat and species diversity for both fish and wildlife resources, maintaining healthy populations of game and non-game species, protection and restoration of native plant communities, and also providing diverse opportunities

for the public to encounter, utilize, and appreciate wildlife and wild areas. Specific management goals and objectives for the Mt. St. Helens Wildlife Area can be found in Chapter 3.

1.5 Planning Process

A multifaceted approach has been undertaken to identify management strategies proposed for management of the MSHWA Complex. This process includes identifying agency goals and objectives that apply to these areas; a review of the purpose for purchasing each of the areas, existing habitat conditions and species present; the formation of a Wildlife Area Advisory Group; input and review by an internal "District Team" consisting of local representatives from each WDFW program. The district team also helped to identify other species or habitat plans and documents pertinent to the management of these areas.

Public participation, through the formation of a Citizens Advisory Group (CAG), will be used as an ongoing means to identify social, cultural, and economic issues important to the people of Southwest Washington and the management of the MSHWA. The group will also provide input in helping to resolve current and future management issues and conflicts. The input of this group, representing various interests, will help also help lend credibility and build constituencies and support for decision making and wildlife area management. One representative from each identified major stakeholder group was asked to be a representative on the MSHWA CAG.

Groups/Interests represented on the Mount St. Helens Wildlife Area Citizens Advisory Group*
Mt. St. Helens Preservation Society
Local tourism business operator
Cascade Paragliders
Back Country Horsemen
Rocky Mountain Elk Foundation
Local fish/stream restoration advocate
Adjoining private timber company
US Forest Service
Local community members (2)

*Some individuals represent more than one group or interest.

Because of the smaller size, wide geographic distribution and diversity of the satellite wildlife areas included in this plan and generally lower levels of public interest, it would have been extremely difficult to incorporate each of these sites into a meaningful advisory group. Efforts will be made before this plan is finalized to contact local governments and persons who have previously expressed an interest in these sites and offer them an opportunity to comment on proposed management strategies.

Internal WDFW cross-program review was first incorporated through the district teams for district 9 and 10 and subsequently by regional and headquarters staff representing the habitat, wildlife, fish and enforcement programs. Pertinent information from existing species plans, habitat recommendations (including the Comprehensive Wildlife Conservation Strategy), watershed plans, ecoregional assessments, and other documents were also used to identify local

issues and needs and ensure that the plan is consistent with other WDFW statewide and regional priorities.

The MSHWA Complex plan will be reviewed annually with additional input from the CAG and district team to monitor performance and progress toward desired results. Strategies and activities will be modified where necessary to accomplish management objectives.

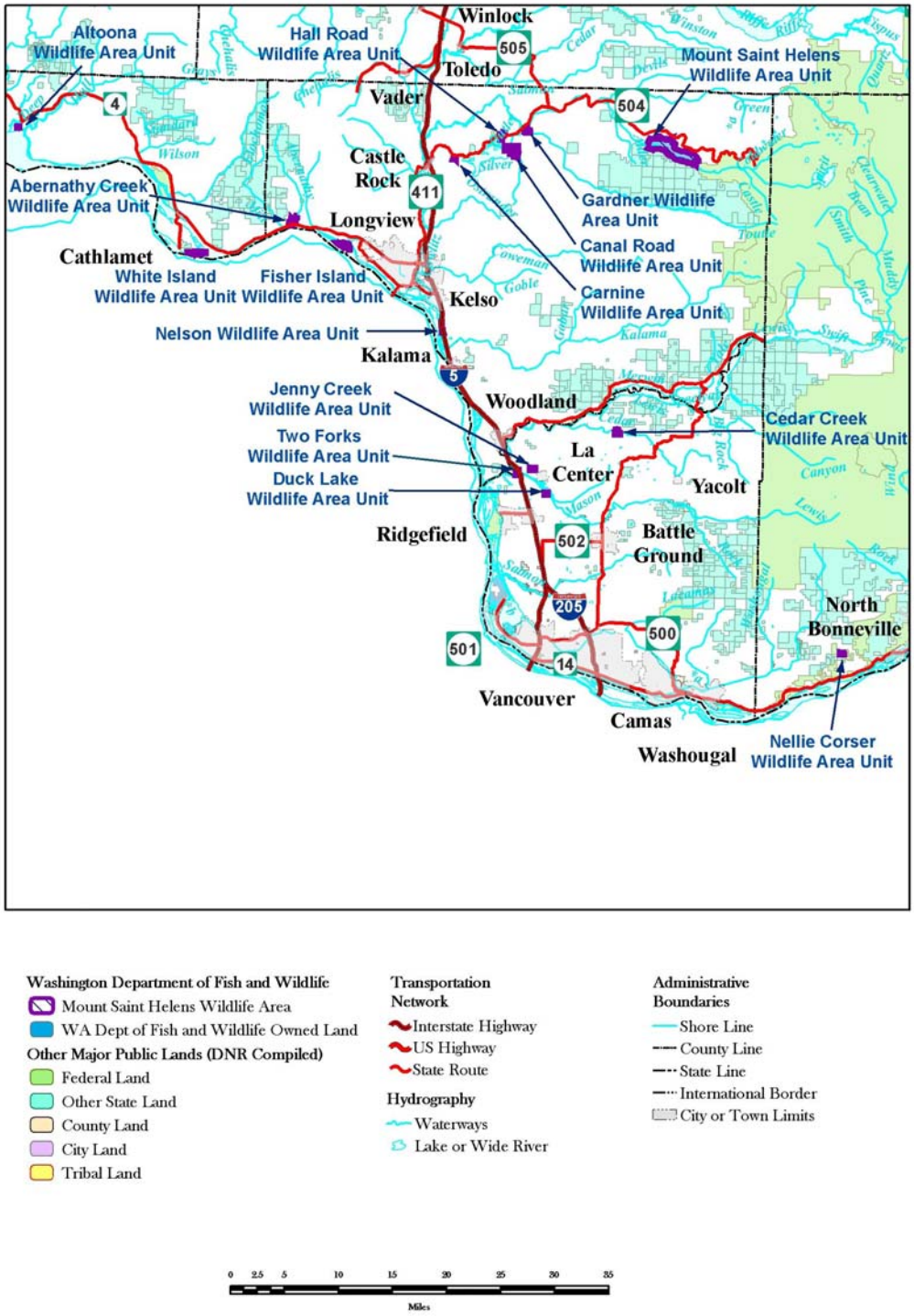
CHAPTER II: AREA DESCRIPTION AND MAP

2.1 Property Location and Size

The 2,744-acre Mount St. Helens Wildlife Area (MSHWA) is located primarily in Cowlitz County along the North Fork Toutle River lying just west of and adjacent to the Mount St. Helens National Volcanic Monument (Monument). MSHWA Satellite Units totaling 1,197.5-acres are scattered throughout Cowlitz, Clark, Skamania and Wahkiakum Counties. The wildlife area (Figure 2) includes lands located in the following sections:

Unit Name	Location	Size (ac.)
Mt. St. Helens	Cowlitz County Sections 28-35, T10N, R3E Section 1-4, T9N, R3E	2,744
Cedar Creek	Clark County Sec. 11, T.5N, R.2E	127
Jenny Creek	Clark County Sec. 33, T.5N, R1E	20
Two Forks	Clark County Sec. 32, T.5N, R.1E	48.5
Duck Lake	Clark County Sec. 11, T.4N, R.1E	39
Nellie Corser	Skamania County Sec. 20,21 T.2N, R.6E	59
Carnine	Cowlitz County Sec. 6, T.9N, R.1W	37 (two tracts)
Canal Road	Cowlitz County Sec. 6, T.9N, R.1E	121
Hall Road	Cowlitz County Sec. 25/26, T.10N, R.1W	132
Gardner	Cowlitz County Sec. 20/29, T.10N, R.1E	43
Nelson	Cowlitz County Sec. 25/30, T.7N, R.1,2W	20
Abernathy Creek	Cowlitz County Sec. 3,10, T.8N, R.4W	138
Fisher Island	Cowlitz County Sec. 20,21,22, T.8N, R.3W	257
White Island	Wahkiakum County Sec. 29,30, T.8N, R.5W	130
Altoona	Wahkiakum County Sec. 32, T.10N, R.8W	26

Figure 2 Mount St. Helens Wildlife Area Complex



In the future a land transfer from the Washington Department of Transportation could add approximately 4,000-acres of land to the wildlife area. This area is west of the existing wildlife area and includes lands within the sediment retention area behind the Toutle River Sediment Retention Structure (SRS) that have filled in with sediment moving down the river over time along with a surrounding forested buffer area.

2.2 Purchase History and Purpose

The Mount St. Helens Wildlife Area was established as an area to be managed for elk winter range in 1990 when WDFW acquired 2,533 acres from the Weyerhaeuser Company through a land exchange, made possible through the efforts of the Rocky Mountain Elk Foundation (RMEF). WDFW traded two parcels in Cowlitz and Yakima Counties for 2,212 acres. Weyerhaeuser also donated an additional 321 acres at that time.

In 1996 WDFW acquired an additional 240 acres in the valley floor from Weyerhaeuser. The Rocky Mountain Elk Foundation was also instrumental in this transaction by acting as an intermediate purchaser. They purchased the property and retained ownership until the agency was able to fund the purchase of this land. The 240-acre property was also acquired to manage as elk habitat for winter range forage.

The purchase history and purpose of the MSHWA Satellite Units are identified in Table 1.

Table 1. Mount St. Helens Wildlife Area Satellite Units

Unit Name	Date Acquired	Purpose	Management notes
Cedar Creek	1960	Band-tailed pigeon	Maintain mineral spring; Stream restoration
Jenny Creek	1959	Band-tailed pigeon	Mineral spring not currently used
Two Forks	1990	Stream access Riparian Habitat	Protect, maintain riparian habitat
Duck Lake	1994	Waterfowl/wetland habitat	Protect, maintain wetland habitat
Nellie Corser	1969	Natural Habitat	Protect post-mature forest; Unique waterfalls, Trail maintenance; Access road closed in 2003
Carnine	1980	"Non-hunting wildlife area"	Protect older forest habitat, natural succession of old fields
Canal Road	1955	Silver Lake flooding	Wetland/waterfowl habitat; Waterfowl hunting
Hall Road	1964/1966	Silver Lake flooding	Wetland and associated upland forest habitat One part approved for surplus sale
Gardner	1968	Fishing access and Launch	Buried by Toutle R. debris flow; Riparian habitat
Nelson	1982	Waterfowl production/hunting	Columbia R. floodplain
Abernathy Creek	1933	Fishing access, Launch and Habitat	Protect riparian and forest habitat; Access closed in 2004
Fisher Island	1996	Natural floodplain habitat	Protect existing forested floodplain; Columbian white-tailed deer
White Island	1987	White-tailed deer Floodplain habitat	Protect existing floodplain habitat
Altoona	1991	Bald Eagle habitat	Lowland spruce forest

2.2.1 Area History

Prior to the eruption, the river valley was made up primarily of a mixture of private, state and federally owned commercial forests. It was an important recreation area for fishers, hunters and other users. The state highway followed the river bottom into the national forest to Spirit Lake, which was one of the more heavily used destinations in the forest.

The Toutle River was one of the more popular fishing streams in the region particularly for summer and winter run steelhead, sea run cutthroat and Coho salmon. The valley was the winter home of elk populations, many of which spent other times of the year at higher elevations.

Wildlife habitats in the area were typical for western Washington managed forests and included a mixture of clear-cuts, regenerating forests and some areas of old growth. The area was heavily roaded and a few homes and cabins were located in the area. The Weyerhaeuser Company operated a major logging camp near the highway that was the center for their logging operations in the area.

The eruption of Mt. St. Helens on May 18, 1980 changed the landscape vegetation and wildlife of the area at the same time. The laterally directed blast removed the top peak and one side of the mountain and sent a plume of ash and debris skyward. Trees and other vegetation were instantly blown over for several miles. A lahar or mudflow was also created which rushed down the North Fork Toutle River Valley destroying and burying everything in its path. Other smaller flows took place on the South Fork Toutle and other streams. A lifeless moonscape stretching for miles was all that was left after the eruption. Beyond the blast zone a deep layer of volcanic ash covered the ground and vegetation.

Virtually every living creature within the blast zone, including humans, perished during the eruption. Simple wooden crosses or other monuments mark the locations where human lives were lost around the mountain.

For several years after the eruption, efforts centered on trying to prevent further damage and salvaging what could be of the valuable timber that was lost. While timber owners moved in to salvage logs within the blast zone the federal government set up a plan to prevent silt from moving downstream and causing flooding in the Longview/Kelso area and clogging shipping channels in the Columbia River.

One of the first actions taken was to seed bare soils left by the mudflow in an effort to stabilize these areas. A grass/legume mixture was applied by air. The establishment of this new vegetation attracted wandering elk herds almost immediately. The vegetation on the seeded mudflow has changed little since that time.

A temporary sediment dam was built to help slow and trap some of the downstream movement of silt while a larger permanent structure was designed and built. Because the sediment retention structure (SRS) provided no fish passage facilities, the US Army Corps of Engineers funded the construction of a fish collection facility downstream. Upstream migrating fish were trapped and subsequently trucked upstream to spawn.

The lands necessary for the SRS and its sediment retention area were condemned through the Washington Department of Transportation (DOT). The bill permitting the condemnation stated that once the project was completed the lands would be transferred to another agency for management. Although WDFW and DOT agreed in principal several years ago to a transfer, the transaction has never occurred because staff time has not been available to prepare the necessary documents.

The US Congress established the Monument in 1982, with the intent to protect it's "distinctive features for interpretation, recreation, and research." The Monument adjoins the wildlife area to the east and encompasses 110,330 acres including the mountain and its unique surrounding areas. Human access is restricted in many parts of the Monument including the area adjoining WDFW lands to allow studies of natural regeneration in the blast zone.

One of the features necessary to develop the recreational and interpretive component of the Monument was the reconstruction of SR 504 that also had been previously known as the Spirit Lake Highway. The new road followed a path different than the original highway that followed the river bottom for a greater distance than it does today. Five public and private interpretive visitors centers have been developed along the route. Commercial developments servicing the influx of tourists are now beginning to develop. Two of these visitor centers overlook the wildlife area making it one of the most observed wildlife areas in the state.

2.3 Ownership and Use of Adjacent Lands

The MSHWA is bordered by Weyerhaeuser Corporation lands to the north and by lands owned by the Washington Department of Natural Resources (DNR) to the south. Following the eruption of Mount St. Helens the impacted lands were replanted with trees and are currently managed for commercial timber production. The Mount St. Helens National Volcanic Monument (Monument) is located east of the WA and includes areas of young forest, exposed soils and vegetated areas in the Toutle Valley and adjoining slopes. Management of this area includes control of invasive plants and scientific studies. Public visitor access is highly restricted and limited to visitor centers and developed trails to avoid impacts to the natural succession of the volcanic landscape. The sediment retention dam is located west of the wildlife area and includes - surrounding lands that are managed by the Army Corps of Engineers.

With the exception of the area within the Monument, some of the surrounding lands were replanted as commercial forests. Because of the natural plant succession and commercial reforestation, WDFW focused primarily on maintaining and enhancing forage habitat for elk on the WA because forage availability was looked upon as the limiting factor for the population.

2.4 WDFW Management History

Immediately following the 1990 acquisition, there were no state funds allocated for management of the new wildlife area or a manager who would be responsible for its management. In lieu of this, a team of agency employees including biologists, enforcement personnel, wildlife area managers and vegetation management specialists were assembled to develop an interim plan to address immediate issues and needs (Appendix 7). This document identified three primary goals:

1) Eliminate motorized vehicle traffic, except for administrative purposes, to reduce disturbance to elk.

2) The highest priority will be the production of high quality forage for elk, with the emphasis on availability in winter through spring.

   Secondarily, manage cover to improve the use of the area during the summer and fall by elk and other wildlife species.

3) Provide viewing and interpretation from the new State Route 504-Geotech Ridge Site.

A small amount of state funding was secured that enabled WDFW to install gates to limit vehicle access and to implement a small amount of forage enhancements in the form of seeding and fertilizing. Both Weyerhaeuser and the Rocky Mountain Elk Foundation provided monetary and in-kind support for these efforts.

Due to the lack of funding, WDFW was not able to participate in the development of the Geotech Ridge Interpretive Site overlooking the wildlife area. Instead there was a joint venture between Weyerhaeuser, the Rocky Mountain Elk Foundation and the Washington Department of Transportation to develop the site. This heavily used site is operated and maintained by Weyerhaeuser.

In 1992, Brian Calkins was hired as the first wildlife area manager for the Shillapoo and MSHWA as well as its satellite units located in Cowlitz, Clark, Skamania, Lewis and Wahkiakum Counties. A small budget was provided which was used to manage the wildlife areas. Initial management activities on the MSHWA were limited almost entirely to efforts to control scotch-broom.

Significant flooding occurred throughout Southwest Washington in 1996 and 1997, which impacted the wildlife area. The flooding caused major shifts in the Toutle River channel eroding hundreds of acres of the original mudflow that was a productive area for elk forage. The eroded areas now consist of extensive gravel bars producing little or no forage. Roadways that previously allowed easy access for management to the western part of the area were lost. The loss of forage habitat, canopy closure and reduced forage production in the surrounding commercial forestlands complicated the situation. In response, several areas were identified as having potential for seeding to increase forage production and a small trial seeding of 20 acres was successfully established in a disturbed area that had once been used as a gravel sorting area.

The combined forage losses and a somewhat severe winter in 1998/99 with an early persistent snowfall led to circumstances that reshaped management and public interest in the wildlife area. During that winter 79 elk winterkill mortalities were documented on the wildlife area. Numerous other elk deaths occurred due to starvation in the immediate area and other drainages around Mt. St. Helens. Despite calls from the public to feed the animals and a great deal of media attention WDFW decided not to conduct emergency winter-feeding because it was seen as being too late to help. Attention was drawn to the wildlife area and the need for additional help and funding to attempt to reestablish some of the forage that had been lost. A winter monitoring plan was also developed to help managers understand the severity of winter conditions

(Appendix 7). Severe conditions may lead to emergency feeding as described by policy (Appendix 8).

Because planning efforts in the complex had previously been focused on the Shillapoo Wildlife Area the need for revisiting management guidance and securing funds became clearly evident. Members of the public requested a white paper (Appendix 9), which WDFW prepared outlining short-term actions that could be taken to address the problem of increasing winter forage production. This document recommended continued scotch broom removal, fertilization, erosion control to prevent further forage loss, increasing the acreage to produce forage, increasing the overall area to disperse elk use, addressing human disturbance, increasing forage production and diversity in young forest stands on the wildlife area, and over-seeding existing forage areas to increase productivity.

A great deal of private funding and volunteer support occurred over the next few years which focused primarily on expanding forage production acreage which included seeding large acreages of the gravel bar areas in addition to activities previously discussed. The planting sites that were protected from erosion damage were successful at various degrees. Almost all of the gravel bar seeding efforts were unsuccessful because of the shifting Toutle River channel.

Since 2003 the emphasis has shifted toward erosion control measures to protect existing forage. A linear four-mile area along the edge of the remaining mudflow was planted with a grass/legume seed mix, trees and shrubs. By 2004 approximately half of this previously bare "bank" had established vegetation.

Since WDFW acquired the land, it has issued two commercial permits to private individuals that provide tours of the mudflow area. One vendor provides the tours by horse-drawn wagon and the other on horseback. Neither of the operations proved to be financially viable.

2.5 Funding

Funding for management of the WA comes from two sources including Federal Aid in Restoration Funds and State General Funds. State General Funds provide a 25% match for Federal Aid dollars. The budget for the 2006 fiscal year is $38,367, which supports all operations and maintenance including salaries (0.5 fte), fuel and materials on the area and it's satellite units.

The budget for fiscal year 2005 does not reflect hundreds of volunteer hours and the numerous grants from RMEF, private donations and other funding sources that have been secured to accomplish other specific projects on the wildlife area. Implementation of many of activities will require continued efforts to secure additional funding from both state and outside sources.

2.6 Climate

The climate is typical of those in the lower elevations of the Cascade foothills. Annual precipitation is between 60 to 80 inches. Significant snow accumulations are rare on the wildlife area because of its elevation below 1,000 feet; however, surrounding areas at higher elevations have frequent snow accumulations.

2.7 Soils and Geology

The soils within the wildlife area are unique and are in their early stages of development. The parent material was deposited during the 1980 mudflow and is highly variable. A thin organic layer has developed in the vegetated areas, while the soils in the remaining non-vegetated areas consist of either natural or human caused depositions of cobble, sand, volcanic ash or silt. The human caused depositions are primarily the result of a temporary sediment retention dam constructed within the current boundaries of the wildlife area and spoil areas from early gravel mining operations during the reconstruction of SR-504.

2.8 Hydrology and watersheds

The Toutle Sub-basin covers approximately 513 square miles in portions of Lewis, Cowlitz and Skamania Counties. The North Fork Toutle flows through the wildlife area where it merges with one of its major tributaries, Hoffstadt Creek. Bear Creek, a tributary of Hoffstadt, flows along the northern border of the wildlife area for a distance of approximately 3 ½ miles. Peak flows associated with these streams are driven by snowmelt, and occur from November to April.

A portion of the Bear Creek channel on the wildlife area is generally dry during the late summer months. Numerous small depressional wetlands are found on the wildlife area. A few of which hold surface water year-round while the others are dry by late summer.

As mentioned earlier the channel of the North Fork Toutle within the boundaries of the wildlife area is highly unstable and often shifts unpredictably with only modestly high flows. Significant flooding occurred throughout Southwest Washington in 1996 and 1997, which impacted the wildlife area. The flooding caused major shifts in the Toutle River channel eroding hundreds of acres of the original mudflow that was a productive area for elk forage. The eroded areas now consist of extensive gravel bars producing little or no forage.

2.9 Vegetation Characterization

The MSHWA is within an area that is dominated by commercial forest production. The surrounding area is primarily early-seral stage, due to the 1980 eruption impacts. The WA is unique because it was not replanted for lumber production following the eruption, but instead was seeded with a grass legume mixture as an erosion control measure in the early 1980's. The Washington Department of Natural Resources and the Weyerhaeuser Company also established a few small experimental plots of planted trees during this time. Some portions of the wildlife area near the lower

Grasses, Legumes And Early-Seral Stage Forest

portions of Bear and Hoffstadt Creeks are dominated by stands of red alder often with an herbaceous understory. Vegetated wetlands dispersed throughout the area often include willow, sedge and rush communities.

2.10 Important Habitats

Riparian—Areas adjacent to flowing water that support both aquatic and terrestrial life forms. These areas provide cover, create stream channel diversity and provide bank stability and generally support a wider diversity of fish and wildlife than surrounding habitats.

Wetland—Areas with surface water present or saturated soils during a portion of the growing season that generally support primarily hydrophytic plants. Like riparian areas, wetlands generally support a high diversity of fish and wildlife species.

Elk Winter Range—While not a specific vegetative type, areas where large winter concentrations of elk occur on a regular basis are considered important habitat by WDFW. These areas generally are at lower elevations and provide forage, thermal cover or a combination of the two that elk rely on to maintain energy reserves in order to survive winter conditions.

Important Winter Range Habitat For Elk

2.11 Fish and Wildlife

Since WDFW established the wildlife area, elk have received most of the agency and public's attention because of the areas critical role as winter range habitat.

The other significant species known to occur include anadromous fish such as steelhead (federally threatened), Coho salmon (federally threatened) and cutthroat trout (federal species of concern). Fish passage around the sediment retention dam was not a part of the original design and WDFW currently operates a collection facility downstream and trucks the fish to tributaries including Hoffstadt and Bear Creeks and releases them to spawn. Several years ago, a WDFW stream habitat survey crew discovered Eastern Brook trout in a tributary to Bear Creek.

No attempt has been made in recent times to inventory all wildlife utilization. However, a wide variety of animals have been observed including amphibians such as the western toad (federal species of concern) and pacific tree frog, reptiles including northwestern garter snakes and northern alligator lizard, birds including western meadowlark, mallard, wood duck, common nighthawk and bald eagle (federally threatened) and mammals including black-tailed deer, coyote, and cougar.

CHAPTER III: MANAGEMENT OBJECTIVES, ISSUES & STRATEGIES

Statewide goals, and objectives listed in Chapter 1 shape management priorities on wildlife areas. Specific wildlife area information including why the area was acquired, habitat conditions, species present, and public issues and concerns were evaluated to identify wildlife area activities or strategies. *Public issues from past planning efforts and the Wildlife Area Advisory Group are noted in italics.*

WDFW's management goals for the Mt. St. Helens Wildlife Area are described below under corresponding agency objectives. Prioritized tasks and strategies are listed which further define the location, anticipated time frame, and scope of activities which need to take place in order to achieve each goal. Items that are considered to be unfunded are underlined in the text.

Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats

1. Increase Forage Production For Elk.

The Mt. St. Helens Wildlife Area was established to provide winter range for elk. The area is a low elevation flat valley bottom surrounded by higher slopes making it a natural area for elk to escape more severe winter conditions. Elk summer range condition is also believed to be a limiting factor in the watershed in addition to winter range. This is based on body condition analysis conducted in conjunction with elk trapping that occurred in October 2003 and 2005. Forage conditions in the higher volcanic slopes generally sparsely vegetated and there is little good quality feed in the areas replanted as commercial forest In general the body condition was the poorest measured in Washington at a time of year when the elk should be in their best health. The St. Helens Herd plan calls for a reduction in the herd from current levels to better balance herd size with available habitat. Because winter forage has been lost both on the wildlife area and in surrounding areas for a number of reasons efforts will be needed to increase the quality and quantity of forage produced on the site to help the animals survive during the winter. *Providing adequate winter forage is the key public issue for this wildlife area.*

A. Strategy: Periodically conduct soil analysis in managed areas to determine the best treatments to improve plant growth and nutritional value. Timeframe: Every 1-2 years, generally in spring.

B. Strategy: Identify and map areas suitable for ground-based intensive management in 2006. Annually implement 50 acres of intensive treatments to increase production and value of existing forage stands, which may include liming, fertilizing and harrowing to stimulate plant growth. Timeframe: 2006

C. Strategy: Annually treat additional acreage when funding is available. In 2006 grant funding was available to treat up to 125-acres as identified in 3.1.1.2.

D. Strategy: Maintain and Improve forage production on an estimated 700 acres that remain of the original mudflow area by applying fertilizer by air as funding allows.

E. Strategy: Approximately 100 acres of additional areas at five locations show particular promise in expanding the forage producing acreage. Some have been

planted in the past but production at these locations has diminished. Scarify as needed and reseed these sites with a forage mixture.

F. Strategy: In 2006 continue to pursue completion of the transfer of approximately 4,000-acres of WDOT lands to the west of the wildlife area which has high potential for improvement of elk winter range and instream/riparian habitat. This transfer would require little funding but does require action by both WDFW and WDOT real estate sections. Timeframe: 2006-2007

2. Manage Elk Population

Winter mortality of elk on the wildlife area and surrounding area is a common occurrence. While some level of mortality is expected each year in any big game population, many believe that it is more pronounced here. Because these mortalities occur in an area where they are highly visible it generates a lot of public concern. Elk body condition surveys done both here and around the state indicate that elk in this area are in poor condition before winter. This may be due at least in part because the herd in the local area is at or near its carrying capacity. The wildlife area and surrounding lands have been the source area for elk relocated to another part of the state, which is a short-term measure reducing elk numbers here. Hunting occurred on the wildlife area in 2004 for the first time since 1980 when ten antlerless elk permits were issued to persons with disabilities. This hunt continued in 2005. *Implementing long-term measures to manage the population level was an important issue recommended by the Wildlife Area's advisory group.*

A. Strategy: Work with the agency's game management division in 2006 and beyond to evaluate options for expanded hunting opportunities to manage the herd within the limits of available habitat within the Wildlife Area and surrounding lands. Timeframe: 2006 and beyond.

B. Strategy: Monitor annual winter mortality and provide annual report (Appendix 7).

3. Implement measures to control erosion and resulting additional loss of elk forage areas.

Approximately one half of the original mudflow that was seeded in the early 1980's has been eroded leaving an expansive gravel bar. Several hundred acres were washed downstream during flooding that occurred in 1996 and 1997. Approximately four linear miles are considered highly prone to additional erosion. About half of this area has been planted with grasses, legumes trees and shrubs and barring a major flood event in the near future might be considered relatively stable. Man made structures downstream intended to prevent sediment from moving down the Toutle River may be exacerbating the unstable nature of the river as it flows through the wildlife area. River avulsions have not only affected elk habitat but have also severely damaged riparian and instream habitat in Hoffstadt creek, which was an important area for salmonid recovery in the basin. *Some members of the citizens advisory group expressed concern that plantings of trees and shrubs would not be effective and would like to see other measures pursued to control erosion.*

A. Strategy: Prevent additional erosion loss of forage producing acreage by establishing herbaceous and woody vegetation along approximately four miles of

the mudflow "bank". Apply treatments to 1to 2 miles each year until well established. Include palatable shrubs in the planting to further improve forage conditions on the site. Timeframe: Annually

B. Strategy: Obtain technical advice in 2006 to determine the feasibility of and, if appropriate, funding needed to import large wood or construct other features as erosion control measures. Timeframe: 2006.

C. Strategy: Install structures identified as a result of technical consultation identified in 3.1.3.2 above beginning in 2007. Timeframe: 2007

D. Strategy: Continue working with other agencies to resolve issues related to the sediment retention structures downstream and seek appropriate corrective actions in cooperation with WDFW's Fish and Habitat programs. Timeframe: Ongoing

4. Implement habitat management measures that contribute to the recovery of fish populations in the Toutle River Basin.

Recovery of listed fish is a key statewide and regional goal of the Washington Department of Fish and Wildlife. Instream and riparian habitat was destroyed during the 1980 eruption of Mt. St. Helens and continues to be hampered by man made structures intended to control sediment movement further downstream. A sediment retention dam blocks passage of upstream migrating adult fish and fish must be trucked around this structure in order to reach their spawning grounds. The sediment retention structures also may be contributing to frequent shifts in the river channel and avulsions, which have destroyed suitable spawning and rearing habitat.

A. Strategy: Continue to provide access for agency personnel to release adult fish in Bear Creek. Timeframe: Ongoing

B. Strategy: Protect existing woody riparian vegetation along Bear and Hoffstadt Creeks to foster the long-term recruitment of woody debris, increase bank stability and provide shade and cover. Timeframe: Ongoing

C. Strategy: Implement strategies 3.1.3.1 and 3.1.3.2 above, which directly relate to the recovery of overall stream health within the wildlife area. Timeframe: Ongoing

D. Strategy: Plant or otherwise encourage the establishment of approximately one thousand feet of woody riparian vegetation below the Bear Creek Bridge by 2016.

E. Strategy: Plant or otherwise encourage the establishment of approximately one-half mile of woody riparian vegetation below where Bear Creek enters the wildlife area by 2016.

G. Strategy: Establish woody vegetation or other structure at the upper end of previous avulsion areas so as to lessen the chances of future catastrophic events that could cause further losses of suitable anadromous fish habitat by 2011.

H. Strategy: Pursue removal of the spillway of the N-1 dam spillway, which is within the boundaries of the wildlife area that in some years is an obvious barrier to fish movement and may be contributing to the unstable nature of the river within its floodplain thus impeding recovery of riparian habitat. (Note: The Corps Engineers may own the structure and this action may require their involvement.) Timeframe: Ongoing

Agency Objective: Provide Sustainable Fish and Wildlife-Related Recreational and Commercial Opportunities Compatible With Maintaining Healthy Fish and Wildlife Populations and Habitats.

1. Provide Public access, education, trails, viewing opportunities and reduce elk harassment.

The Mt. St. Helens Wildlife Area is a very popular area for elk viewing, antler gathering, horseback riding and hiking. It has also been an important landing area for paragliders that fly in the area. Two public visitor centers overlook the wildlife area and provide the public with excellent wildlife viewing opportunities. The presence of humans on the site through either inadvertent or intentional harassment can cause them to leave the area. During the winter months, the energy expended due to disturbance can exacerbate an animal's negative energy balance that occurs during winter possibly resulting in increased levels of winter mortality within a herd. *Harassment of elk by humans was a key issue expressed by members of the Wildlife Area Advisory Group. This concern was based on elk having to leave their feeding area and that they are no longer present for others to view.*

A. Strategy: Upon approval of this plan, implement an annual closure of the wildlife area to the public from December 1 through April 30 each year. This is necessary to address the concern that elk are being driven off of forage areas and the extra energy expended by elk due to human disturbance increases the energy deficit in individual animals, possibly leading to increased winter mortality in the herd.

B. Strategy: Upon approval of this plan, implement a year-round closure of the area to dogs. A large proportion of the complaints and reports of elk harassment are associated with individuals with dogs. *The advisory group specifically recommended this measure beyond the current rule requiring dogs to be on leash.* Since elk hunting, by permit only, is the only hunting allowed on the wildlife area the recreational impact of this rule would be minimal.

C. Strategy: Work with Olympia program staff to upgrade information about the wildlife area on the agency website by 2007. Better information is needed regarding the areas purpose, how it is managed, access and restrictions.

D. Strategy: Work with Weyerhaeuser to provide a location for an information board at the upper end of the 3100 road for posting wildlife area information and rules so as to inform users before they travel into the wildlife area in 2006. Provide smaller information sites at less frequently used locations.

E. Strategy: Develop and produce a basic black and white paper flyer with general information about the wildlife area by the end of 2007. <u>A higher quality color pamphlet would require additional long-term funding.</u>

F. Strategy: Develop and post informational signage in 2006 that educates and encourages all users to avoid harassing elk and causing them to flee.

G. Strategy: W<u>ork with the advisory group and adjoining landowners to determine the feasibility of and need for establishing trails with viewpoints (possibly off of the wildlife area) that may help to avoid inadvertent disturbance of elk.</u> *Note: The advisory group recommended at least two trail routes that were primarily located on lands not within the boundaries of the wildlife area.*

H. Strategy: Evaluate the need for closing, relocating or improving all, or portions of, the informal trail that has developed leading from the mouth of bear Creek upstream to the 3100 road bridge. This route is located in very close proximity to the stream and is quite muddy for about half of its length, where it traverses relatively high quality wetlands and small tributaries at several locations. Timeframe: Ongoing

I. Strategy: Pursue funding to restore the access site on the Abernathy Creek Wildlife Area, which has been closed due to insufficient resources to control public abuse of the site resulting in degradation of ESA listed fish habitat. Timeframe: Ongoing

Agency Objective: Provide Sound Operational Management of WDFW Lands, facilities and access sites.

1. Monitor for and control weeds within the wildlife area.

Noxious weeds compete with and limit elk forage production on the wildlife area. Weed management is one of the top priorities of WDFW's land management program. Weeds of particular concern that are known to occur include scotch broom, diffuse knapweed, spotted knapweed and Canada thistle. Additional information on this topic can be found in Appendix 2. *Scotch Broom is a highly visible problem on the wildlife area and a key issue with the public. The district team has recommended that this be the top priority for management of the wildlife area.*

A. Strategy: Closely monitor, and conduct control efforts annually at the two known small knapweed infestations (1/4 acre each). Timeframe: Annually

B. Strategy: Continue efforts to control scotch broom by hand pulling, cutting and/or ground spraying a minimum 40-acre area with scattered plants or small stands each year. Scattered plants occur throughout the wildlife area and large stands of approximately 20 acres each are found at three different locations. If left unchecked the scattered plants can spread resulting in large stands.

C. Strategy: Aerially spray large dense stands when funding is available. Estimated need is for forty acres each year until the large stands are under control and consist primarily of young plants sprouting from residual seed that can be easily controlled from the ground. Grant funding is available for this work in 2006.

D. Strategy: Coordinate additional ground spraying or pulling/cutting with agency weed crew and DNR WCC program beyond levels identified above. Also consider the use of inmate labor, which may require additional funding. Timeframe: Requires additional funding.

E. Strategy: Monitor existing biological control (seed head weevil) of Canada thistle as plants are encountered. Conduct control activities in locations where biological controls are not effective. Note: It is not known how this biological control organism was introduced however it has been effective to date in controlling Canada thistle on the site. Timeframe: Annually, generally Summer

F. Strategy: Himalayan and evergreen blackberry occur as scattered occurrences throughout the wildlife area. These plants do provide suitable elk forage and are not considered a serious problem at this time. However, plants will be controlled annually in the course of control of other plants on the site because if larger stands

develop it would result in a net loss of forage available on the site. Timeframe: Annually

2. Establish an administrative access to the portion of the wildlife area South of the Toutle River.

Due to it's inaccessibility the portion of the wildlife area on the south side of the Toutle River has remained largely unmanaged. Areas are present that were eroded in 1996 and 97 that may be suitable for forage enhancement. The open gravel bars are prime for establishment of Scotch Broom, which has been increasing in this part of the wildlife area.

A. Strategy: Evaluate existing roadbeds in 2006 to determine the most effective route for either vehicles or ATVs to the south side of the river in order to facilitate efficient access for weed control and enhancement activities. Once the desired route(s) are determined, seek approval for use by the appropriate landowners. Purchase easement if required.

3. Provide for basic maintenance needs on the satellite units of the Mt. St. Helens Wildlife Area.

Due to limited time and resources the satellite units have remained largely unmanaged. This has resulted in increases in weeds in some cases and severe abuse by the public in one case that resulted in closure of a somewhat popular water access site. In other cases increased effort is needed to restore or maintain the function that the smaller parcels were acquired to serve.

A. Strategy: Survey for weeds and conduct legally required control as required. Additional skilled labor is needed to fully address weed control needs on these sites.

B. Strategy: Maintain clear area around mineral spring and existing plantings for riparian and band-tailed pigeon habitat on the Cedar Creek wildlife area. Clear as necessary each year.

C. Strategy: Attempt to rehabilitate the mineral spring for band-tailed pigeons on the Jenny Creek Wildlife Area. (The initial phase of this project has been funded by a migratory bird stamp grant.) Timeframe: End of 2007.

D. Strategy: Work with the district teams and other interested parties to identify needs for habitat or access enhancement on the various sites. Begin these assessments in 2006.

E. Strategy: Due to public concern, reevaluate the proposed surplus sale of a portion of the Hall Rd. property on Silver Lake in 2006. Consider development as a wildlife-viewing site.

F. Strategy: In 2006 begin working with the Toutle Valley Community Association to identify projects on satellite units in their focus area that may be mutually beneficial to WDFW and the people of the Toutle Valley.

G. Strategy: Identify potential stakeholders for each of the satellite units that may be concerned with the future management of the sites. Refine management goals for the satellites as this plan is updated. Timeframe: Ongoing, as time permits.

CHAPTER IV: PERFORMANCE MEASURES, EVALUATION AND UPDATES

Performance measures for the Mt. St. Helens Wildlife Area Plan are listed below. Accomplishments and progress toward desired outcomes will be monitored and evaluated to produce an annual performance report each calendar year. The plan will be considered a working document that will evolve as habitat and species conditions change, as new regulations are enacted, and as public issues and concerns change. Updates will be considered annually and added to the plan as needed.

1. Performance measures for the Mt. St. Helens Wildlife Area in 2006

1) Identify "Intensive Forage Management Areas" and improved prescriptions for forage enhancement based upon soil tests and other monitoring.
2) 50 acres of intensive treatments to enhance elk forage annually utilizing some or all of the following techniques: Mowing, harrowing, liming, over-seeding, and fertilizing.
3) Initiate the DOT land transfer. Action required by both WSDOT and WDFW Real Estate Programs.
4) Provide current level hunting opportunities for disabled hunters and work with the District Wildlife Biologist to evaluate if increased opportunity can or should be provided within the context of the Mt. St. Helens Elk Herd Plan and habitat limitations.
5) Implement measures over a two-mile area that includes, at a minimum, seeding and tree planting to lessen the risk of further major losses of riparian and elk forage habitat due to river avulsions/erosion and leading toward long-term improvement in anadromous fish habitat in the Toutle River.
6) Control a minimum of 40 acres of Scotch Broom and other noxious weeds on the wildlife area.
7) Provide better information materials about the wildlife area that are readily available to the public in the form of a fact sheet or pamphlet and signage at various locations around the site.
8) Evaluate the wildlife habitat and human access needs on the satellite units of the Mt. St. Helens Wildlife Area located in the vicinity of Silver Lake and the town of Toutle. (Gardner, Hall Road, Canal Road, Carnine)
9) Complete plan and annually update.

APPENDIX 1: PUBLIC ISSUES

Citizens Advisory Group (CAG) and District Team (DT) Issues and Concerns
Mt. St. Helens Wildlife Area
May 8, 2006

The purpose of meeting with the CAG and DT was to obtain input to help guide management actions on the wildlife area. A draft of the introduction and history of the wildlife area and copies of the Agency's goals and objectives were distributed for review and discussion. Below is a list of issues and concerns identified by the CAG and DT. This input will assist in developing strategies to implement management goals and objectives. Underlined statements below indicate that the input was received from the DT. Issues that are not underlined originated from the CAG.

ISSUE A. ACCESS/RECREATION

- Regulate public access in big game wintering areas.
- Reduce elk harassment.
- Work with adjoining landowners to explore development of trails.
- Prohibit dogs on the wildlife area.
- Provide wildlife viewing opportunities.
- Don't sell the former ball field site west of Toutle.
- Work with the local community to develop/improve recreation opportunity on the satellite units near Toutle (Gardner, Hall Rd., Canal Rd., and Carnine).

ISSUE B. WILDLIFE AREA MANAGEMENT

- Control Weeds particularly scotch broom within the wildlife area.
- Control the elk population. Some CAG members feel that the Elk numbers in the watershed is too high suggesting that it should be reduced.
- Pursue transfer of the DOT Sediment Retention Area lands.
- Increase funding

ISSUE C. HABITAT

- Increase forage production for elk.
- Conduct soil tests to determine the best treatments to increase forage production for elk.
- Protect riparian areas and fish habitat.
- Use structures (rock or large wood) to control erosion.
- Use more species in tree and shrub plantings (more diversity).

ISSUE F. PUBLIC INFORMATION, EDUCATION AND INVOLVEMENT

- Increase public awareness of the area with maps, kiosks, signs, more information on the web, etc.
- Educate the public regarding public access and other regulations.
- Consider having volunteers on site as a sort of "campground host."

Response to Meeting Notes:

Comments received from the Wildlife Area Advisory Group in response to the Draft Mt. St. Helens Wildlife Area Plan. **June 2005**.

On June 13, 2005 the Mt. St. Helens Wildlife Area Advisory Group was sent the following message:

> On 6/13/05 3:23 PM, "Brian Calkins" <CALKIBC@DFW.WA.GOV> wrote:
>
> > TO: Mt St Helens Wildlife Area Advisory Group Members,
> >
> > Attached to this message is the draft plan for the Mt. St. Helens State
> > Wildlife Area and its satellite units. At this time I would like to collect
> > any comments that you have via a reply to me through e-mail. I would like to
> > receive your comments by Friday June 17 if at all possible. If you cannot
> > open the attachment contact me as soon a possible and I will try to get a copy
> > to you in another format.
> >
> > Chapter 3 is the part of the plan that you will probably be the most
> > interested in as it represents primarily what came out of our first meeting.
> > I did add some items that I felt were needed to address topics that we really
> > did not get into in great depth. Please keep in mind that this is our first
> > attempt to develop a formal plan for this wildlife area and it will
> > undoubtedly evolve over time as it is amended during annual reviews that you
> > will be invited to participate in.
> >
> > Should substantial issues arise from your review I will schedule a meeting as
> > soon as possible to discuss them further. Otherwise I will plan to hold our
> > next meeting later this summer where we will be able to focus on more specific
> > topics rather than everything all at once.
> >
> > Thank you for your participation,
> >
> > Brian Calkins
> > Wildlife Area Manager

The following responses were received as a result of the message:

Cal Buker, Local community and schools:

This looks like what we talked about. Cal Buker

Mitch Wainwright, Zone Wildlife Biologist, Mount St. Helens NVM, Mount Adams RD:

Note that the comments were in the text of the document as follow:

F. Strategy: Continue to pursue completion of the transfer of Approximately 4,000 acres WDOT lands to the west of the wildlife area which has high potential for improvement of elk winter range.
This transfer would require little funding. In the meantime, does WDFW have an agreement with DOT to manage forage on the 4000 acres of DOT land?

If not, maybe an agreement between the two agencies could be fairly easily prepared for the WDFW to manage habitat on this land.

Response: ***Working though a management agreement may be a viable alternative and will be explored as we reinitiate contact with DOT on the transfer.***

A. Strategy: Prevent additional erosion loss of forage producing acreage by establishing herbaceous and woody vegetation along approximately four miles of the mudflow "bank". Apply treatments to 1to 2 miles each year until well established. Include palatable shrubs in the planting to further improve forage conditions on the site.
It should be clear that not all of these shrubs should be palatable. Alder is more likely to persist at the site since the elk don't eat it much and it is a nitrogen-fixer.

Response: ***Alder has been and will continue to be part of the planting mix.***

F. Strategy: Himalayan and evergreen blackberry occur as scattered occurrences throughout the wildlife area. These plants provide suitable elk forage and are not considered a problem at this time. However, if it becomes apparent that these plants are expanding significantly control measures should be considered. *You should establish some criteria that would describe significant expansion. Otherwise the expansion may not be monitored. The FS would be concerned about these moving up onto the Monument.*

Response: ***The plan and weed plan appendix has been modified to reflect this comment. Control of this plant will occur as it is encountered in the course of other work. Control will be expanded if it becomes apparent that it is increasing in occurrence.***

Lou Reebs, Local Watershed Advocate:

Here are my suggestions:
Section 2.0 heading mentions a map. I suggest a simple map including the location of the various streams in the valley floor, extending to include the SRS area and the WDF&W and DOT ownerships.

Response: ***Unfortunately WDFW's mapping personnel were not able to include a map of the DOT Lands at this time.***

Section 3.1.4.6 and 3.1.4.7. Refer to my e-mail 6/10/05 and Craig Olds comments about stabilizing measures for the flows through the N1 sediment retention area, fish passage, etc. and revise the aforementioned sections appropriately.

Response: ***Removal of the spillway may still have some merit to improve overall floodplain function. Strategy 3.1.3.2 and 3.1.3.3 were written into the plan specifically to allow for the types of actions that you have suggested. Our objective in 2006***

will be to obtain additional technical advice to determine what measures should be attempted.

I believe the DOT property transfer should be given more emphasis. The fish passage and sediment stabilization issues between the SRS and N1 areas would benefit from more attention. Perhaps this subject deserves additional emphasis in Chapter 4 ?

Response: ***We agree that this is an important issue and is the reason why it has been included in the performance measures.***

Elmer Noffziger, Toutle Valley Community Coalition:
Brian---Good Morning---:-):-):-)---your report is a wealth of information---here are some thoughts--

1.5 (last paragraph) I strongly suggest that we initially meet at least quarterly to jump start this process---it seems that annually will not allow strong, meaningful continuity

Response: ***The plan is to meet at least twice annually and more frequently as needed.***

2.5 ((Funding) $42,225.00 seems terribly weak---how can we substantially augment this

Response: ***Completion of the plan may help as a document to support funding requests. Grants from outside sources are also available and have been obtained in the past.***

Table 1 (Satellite Units) What part of Hall Rd unit is approved for surplus sale---

Response: ***The portion that was once used as a ball field. Strategy 3.2.3.6 is intended to address the community concern.***

Table 1 (Satellite Units) Gardner Unit is contiguous to Cowlitz Co. Harry Gardner Park and it is designated in the County's Comprehensive Plan to link them together---is there an agreement in the achieves

Response: ***The Property was acquired for fishing access. We are not currently aware of an agreement but the uses may be compatible. This is one of the properties that we want to work more specifically with the community on during the coming year.***

Table 1 (Satellite Units) Why do you not have the Silver Lake Dam unit on the list

Response: ***At this time this property is not considered part of the wildlife area complex. It was purchased by the state but is managed by the flood control district.***

The Toutle Valley Community (TVC) has great interest in these 3 sites for adopt-a-site, watchable wildlife trails, disabled access, wayside use, neighborhood and visitor access. Re 3.2.3.6

Response: ***3.2.3.6 applies as well. Our intention is to explore these ideas with the community during the coming year.***

3.1.3 (Implement measures to control erosion------)

At the Gardner Unit the N. Toutle & S. Toutle are converging toward each other by eroding the land between---it seems it would be very important to implement erosion control asap---how?---this unit is important to the TVC and recreation, adopt-a-site & watchable wildlife opportunities---hopefully we will not allow the sand to shift out from under our feet

Response: ***This issue has not been addressed in the current plan. As with the other issues above this is something that we can work with the community on.***

3.2.3.7 The TVC has identified projects that will benefit WDFW and the Toutle Valley/SilverLake Community and the "rest of the World". How can we work with WDFW

Response: ***The strategy referenced is intended to do that.***

3.2.3.8 The Toutle Valley/SilverLake Community is working towards identifying key stakeholders (with long term participation, commitment)---we currently have some in our scope---we are not just concerned---we are willing to "roll up our sleeves and go to work"---as we have demonstrated with our restoration work of Harry Gardner Park

Response: ***Involvement of volunteer organizations is welcomed in improving our lands.***

What is the possibility of purchasing property to provide better public access to SilverLake---as you know there is 16 (waterfront) acres next to the Kerr Rd public boat ramp that would be ideal. The Silver Lake Dam unit would be a great opportunity for watchable wildlife/walking trails and public fishing access to SilverLake. Because Hall Rd is in the process of being up-graded with sidewalks/bike trails (by 2007???) this unit could offer the same opportunities on both sides of SR 504----let's go to work---

Response: ***Purchase of additional lands in this area could occur, however we would have to compete for grant funding to do so.***

Brian---I really appreciate being part of this Advisory Group---looking forward to hearing from you---:-) :-) :-) Elmer Nofziger

Jim Anderson, Back County Horsemen:

3.1.1 Increase Forage Production for Elk
Since reliable funding for only fifty acre parcels can be put together at one time how do the elk be kept off that fifty acres while it is developing. Fencing? Can more funding/grants be identified to possibly help this strategy? Seems expensive compared to controlling the number

of elk in the area to match available feed. Simple animal husbandry dictates that if you don't have enough feed you reduce the size of your herd until you have more feed.

3.1.2 Manage Elk Population
Same reasoning as above. Increase hunting and relocation. Maybe more handicap permits. More hunting pressure will at times disperse the herd easing the affect on forage.

Response: ***These two comments are related. Grants have been obtained in the past to increase maintenance and enhancement and will be applied for in the future. As the plan states the manager will be working with the District Wildlife Biologist to determine if additional hunting is appropriate.***

3.1.3 Erosion Control
I think this is one of the most important of the issues. It affects forage and the fish. A lot of work can be done with volunteers but eventually some major projects will need to happen to halt it.

Response: ***We do plan to explore further measures in 2006.***

3.1.4 Habitat management for fish recovery.
Controlling erosion will have the biggest impact on fish recovery. There are a lot of other strategies but no reliable funding source.

Response: ***We agree. Grant funding is available for fish habitat recovery.***

3.2.1 Monitor & control weeds
All good strategies. Funding again will be an obstacle. Weeds point out poor soil conditions mostly from over grazing. Again pointing out the need for control of the elk population.

Response: ***Any soil disturbance can increase the likelihood of weed spread. The poor soils here certainly are a factor with certain weeds particularly scotch broom.***

3.3.1 Provide Public Access
Recreation is the main use of the area. Education of the public as to the sensitivity of the area and how to preserve it. Trails are very important to a large number of area users. Gives the best up close experience without undo damage. The strategies out lined are very good.

Response: ***Development of trails will be explored but as noted in the text may require participation by other landowners.***

My thoughts. Since the mountain erupted the development of this area has been around tourism. Nothing wrong with that. Elk have been a big part of that. They are a real crowd pleaser and bring lots of people to the area. Although large numbers of elk in a small area; create lots of problems.

Too many elk will let a disease spread quickly resulting in a large die off. Over grazing leads to starving elk, leads to soil erosion, leads to sediment in the streams, leads to destruction of fish

habitat. These problems can be corrected by expensive projects. Will the tourism pay for these? I doubt it. Tourism seems to be the reason an artificially high number of elk are wanted in the area. I think the elk numbers should be balanced with what the land can handle and not to what tourism dictates.

Response: ***Wildlife viewing is an important aspect here. Maintaining quality-hunting areas is another factor. The issues that you point out will be considered in our discussions with the Game Management Staff concerning hunting.***

Response to Meeting Notes Continued

ISSUES RELATING TO THE WILDLIFE AREAS PRIORITIZED BY THE DISTRICT 10 DISTRICT TEAM

Summary of District Team and Other Internal Comments on the Initial Goals, Strategies and Tasks for the Shillapoo Wildlife Area, **May 2005**:

The draft goals and strategies as modified after input from the Mt. St. Helens Wildlife Area Advisory Group were submitted to the District Team representatives from each division for their comments. At the region five staff meeting held on April 18, 2005, it was decided that district review of documents and similar issues would be conducted through an ad hoc process where the documents and information were to be e-mailed to the district representatives from each program. This was done on April 25, 2005 with comments requested by May 2nd. Subsequent to this, the Regional Wildlife Program Manager also submitted the message to the staff of each Division in the Olympia office.

We only received comment from one District Team member on these goals and objectives. The comments received are presented below listed by the individual who provided the input. The collective response of the Wildlife Area Manager and the Regional Wildlife Program Manager follows each individual's input in italic.

Pat Miller, District Wildlife Biologist—Wildlife Program

3.1.1.4 Strategy: Maintain and Improve forage production on an estimated 700 acres that remain of the original mudflow area. Through aerial application of fertilizer as funding allows. (REWORD)

Response: ***The phrase was rewritten to make it read better.***

3.1.2 Manage Elk Population
…..Hunting occurred on the wildlife area in 2004 for the first time since 1980 when ten (20?) antlerless elk permits were issued to persons with disabilities. ….

Response: ***Ten is correct***

3.2.1 Monitor for and control weeds within the wildlife area.

This may be as important or more important than fish recovery issues. Maybe listed in with forage production > Format required by Agency ?.

Response: ***Placement in the plan is not necessarily an indication of the order of priority. Scotch Broom is a highly visible problem on the wildlife area and a key issue with the public. The district wildlife biologist has recommended that this be the top priority for management of the wildlife area, and we acknowledge its priority.***

Table 1.

Fisher Island	257	Cowlitz County Sec. 20,21,22 T.8N, R.3W	1944 ?????	Natural floodplain habitat	Protect existing forested floodplain Columbian white-tailed deer

Response: ***The correct date is 1996***

Response to Meeting Notes Continued

Mt. St. Helens Wildlife Area Advisory Group Meeting. **February 9, 2005**

Group Members Present: Jim Baldo, Dan Howell, Mitch Wainwright, Lou Reebs, Mark Smith, Dick Ford, Cal Buker, Elmer Nofziger, Jim Anderson, Judy Smith, Dawn Smith.

ITEM 1: Group members were asked to introduce themselves and explain their interest in the wildlife area.

ITEM 2: Calkins gave an overview of WDFW's purpose for wanting to have advisory groups for each wildlife area and the planning process that has started. The advisory group purpose was read directly from the planning manual and then clarified. The word "credibility" in the statement was discussed. Calkins pointed out that these groups only lend credibility to decisions if the agency listens to the groups and tries to address their concerns.

Completing a plan for the Mt. St. Helens Wildlife area was identified as the first primary emphasis for the group. The wildlife area's satellite units were also discussed and that they would also be included as part of the plan.

ITEM 3: The drafts of the first two chapters of the WDFW plan version were briefly reviewed. The agency objectives and how they would be used in the plan was explained.

Chapter 2 was covered very briefly. Calkins explained that the entire meeting could be spent reviewing the historical information. Instead, the group was asked to review this information later and to contact Calkins if they found anything important to be missing or inaccurate.

ITEM 4: A list of goals that had been assembled from previous planning documents for the Mt. St. Helens Wildlife Area was presented to the group (Attachment). These goals came from the initial plan written shortly after the wildlife area was acquired and a white paper written following the elk winterkill in 1999. Each item was discussed individually to determine if it was still appropriate. Because some of the items were closely related the group decided that the goals could be consolidated somewhat and prioritized.

Consolidated and prioritized goals generated by the group:

1) Increase forage production for elk.
2) Control weeds.
3) Provide public access, education, trails, etc and reduce elk harassment.
4) Provide wildlife viewing opportunities.
5) Control elk population.
6) Implement measures to control erosion and resulting loss of elk forage areas.

It is important to note that one group member pointed out later in the meeting that fish really hadn't been discussed. We recognize that this will be an important component of future

management on the site and should be added as a goal that would include managing riparian habitat, which will be discussed at the next meeting.

The items that generated the most discussion were those related to forage and erosion protection. The group all seemed to agree that producing more and higher quality forage should be a top priority. The need for soil testing was emphasized and identifying appropriate treatments based on the results. Tilling, liming and replanting existing forage areas was recommended to increase production with supplemental feeding to take place while the forage regenerated. Some in the group were concerned that WDFW's recent efforts to plant trees and shrubs to control erosion of elk forage habitat may be a waste of money. Placement of large wood and/or rock gabions was discussed as an alternative that may be more effective.

The group came up with several ideas that potentially merit including in the plan. One was a recommendation to not allow any dogs on the wildlife area at all as opposed to the current rule that requires that they be on leash. Building trails was discussed as a mechanism to concentrate public use and potentially lessen harassment of elk. Some of the trail routes discussed were actually located on either Weyerhaeuser or DNR land and would require their cooperation. Providing better signing to educate the public on wildlife area rules and appropriate conduct was identified as a need. This idea included a better place for posting information about the site at the location on Weyerhaeuser property where most people leave their cars to travel to the wildlife area. Having volunteers serve as sort of a "campground host" was another idea that may help address educating the public. Adding more diversity to tree and shrub plantings was a concern because current efforts have predominately used willow and alder.

Some members of the group made recommendations on other organizations they felt should be invited to attend the advisory group meetings. These included the Cowlitz Tribe, US Army Corps of Engineers, US Geological Survey, Cowlitz Audubon and Washington Department of Natural Resources. (*DNR was invited but so far has chosen not to participate.*)

ITEM 5: The satellite units of the wildlife area were discussed. The group was surprised to learn that they are spread across five counties. The group understood that these areas could not be addressed in as great of detail at this time but some indicated an interest in those in the immediate vicinity of Silver Lake and the town of Toutle. Locally there is an ongoing effort to restore Harry Gardner Park, which is adjacent to one of the satellite units. Potential ideas here would include trails from the park through the WDFW site with viewing and interpretive opportunities. The "ball field" portion of the Hall Road Unit also generated some interest. Calkins pointed out that this site is on WDFW's surplus property list. *Some in the group are opposed to the agency selling the property* and would rather see it developed as a "wayside stop" along the highway with interpretive elements focused on the wetlands in the rest of the unit. One member also noted that there is a possibility of a land donation to WDFW of an island in Silver Lake.

ITEM 6: The group was advised that there currently is a plan in place for the Point Elliot Treaty Tribes to trap elk on the wildlife area and relocate them to the North Cascades in March and April. This is part of an ongoing effort as part of WDFW's North Cascades Elk Herd Plan. The group was asked for their input on the prospect of closing the wildlife area to public access

during this effort. Most were concerned that closing the whole area would not be appropriate and would impact many user groups and that it coincided with the time period when people are starting to look for shed antlers on the site. The group's recommendation was to instead close that portion of the area immediately around the trap site. Part of the basis was that closing the entire wildlife area might cause some displaced users to try to retaliate by vandalizing the trap or otherwise attempting to thwart the effort.

WDFW's proposed draft WAC concerning public use on agency managed lands was distributed to the members and they were invited to review it and provide any comments to Calkins.

ITEM 7: The group was asked for any items that they would like to discuss at future meetings. One item "feeding elk" was mentioned. This was an item that came up during the course of the meeting but it was not fully discussed. Management of anadromous fish and riparian habitat as noted above will also be added as a future topic.

Attachment to February 9, 2005 Meeting Notes:
DRAFT goals for the Mt. St. Helens State Wildlife Area for discussion:

- Produce the best quality, highest quantity forage for elk, with the emphasis on availability in winter through spring.
- Control motorized vehicle traffic, except for administrative purposes, to reduce disturbance to elk.
- Manage cover to improve the use of the area during the summer and fall by elk and other wildlife species.
- Provide viewing and interpretation opportunities.
- Control scotch broom and other noxious weeds.
- Control erosion to prevent further forage loss,
- Increase the total acreage producing forage,
- Increase the overall area producing forage to disperse elk use.
- Reduce human harassment of elk.
- Increase forage production and overall diversity in forest stands on the wildlife area.
- Over-seed existing forage areas to increase productivity.

APPENDIX 2: WEED CONTROL PLAN

WEED CONTROL GOALS ON WDFW LANDS

The goal of weed control on Department lands is to maintain and improve habitat for wildlife, meet legal obligations, provide good stewardship and protect adjacent private lands.

Weed control activities and restoration projects that protect and enhance fish and wildlife populations and their habitats on Department lands are a high priority. When managing for specific wildlife species on our lands the weed densities that trigger control are sometimes different than on lands managed for other purposes (e.g. agricultural, etc.). For example, if a weed is present at low densities and does not diminish the overall habitat value, nor pose an immediate threat to adjacent lands, control may not be warranted. WDFW focuses land management activities on the desired plant species and communities, rather than on simply eliminating weeds.

Control for certain, listed species is mandated by state law (RCW 17.10 and 17.26) and enforced by the County Noxious Weed Board. WDFW will strive to meet its legal obligation to control for noxious weeds listed according to state law (Class A, B-Designate, and county listed weeds).

Importantly, WDFW will continue to be a good neighbor and partner regarding weed control issues on adjacent lands. Weeds do not respect property boundaries. The agency believes the best way to gain long-term control is to work cooperatively on a regional scale. As funding and mutual management objectives allow, WDFW will find solutions to collective weed control problems.

Weed Management Approach

State law (RCW 17.15) requires that WDFW use integrated pest management (IPM), defined as a coordinated decision-making and action process that uses the most appropriate pest control methods and strategy in an environmentally and economically sound manner to meet agency programmatic pest management objectives, to accomplish weed control. The elements of IPM include:

Prevention- Prevention programs are implemented to keep the management area free of species that are not yet established but which are known to be pests elsewhere in the area.

Monitoring- Monitoring is necessary to implement prevention and to document the weed species, the distribution and the relative density on the management area.

Prioritizing- Prioritizing weed control is based on many factors such as monitoring data, the invasiveness of the species, management objectives for the infested area, the value of invaded habitat, the feasibility of control, the legal status of the weed, past control efforts, and available budget.

Treatment- Treatment of weeds using biological, cultural, mechanical, and chemical control serves to eradicate pioneering infestations, reduce established weed populations below densities

that impact management objectives for the site, or otherwise diminish their impacts. The method used for control considers human health, ecological impact, feasibility, and cost-effectiveness.

Adaptive Management- Adaptive management evaluates the effects and efficacy of weed treatments and makes adjustments to improve the desired outcome for the management area.

The premise behind a weed management plan is that a structured, logical approach to weed management, based on the best available information, is cheaper and more effective than an ad-hoc approach where one only deals with weed problems as they arise.

WEED SPECIES OF CONCERN ON THE MT. ST. HELENS WILDLIFE AREA

Weeds of concern on the Mt. St. Helens include Scotch broom (*Cytisus scoparius*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (centaurea maculosa), Canada thistle (Cirsium arvense), and Himalayan blackberry (Rubus procerus). This list is based on species that have been documented on the wildlife area (Table 1).

Table 1. Mt. St. Helens Wildlife Area weeds including the state and county weed class listing and acres treated.

Weed Species	2005 State Weed Class	2005 County Weed Class	Wildlife Area Unit(s)	2005 Treated Acres
Scotch broom	B	B	Mt. St. Helens	205
Diffuse knapweed	B-Designate	B-Designate	Mt. St. Helens	0.25
Spotted Knapweed	B-Designate	B-Designate	Mt. St. Helens	0.25
Canada thistle	C	C	Mt. St. Helens	See note below
Himalayan Blackberry	Not listed	Not listed	Mt. St. Helens	See note below

B-Designate are state-listed and mandatory for control to prevent seed production/spread.
Note: Control of Canada thistle and Himalayan blackberry occurred concurrent with other work. The weeds are not widely distributed thus the acreage cannot be estimated.

Management for individual weed species can be found in the following "Weed Species Control Plan" (WSCP) sections.

SCOTCH BROOM WEED SPECIES CONTROL PLAN

Latin Name: *Cytisus scoparius* **Common Name:** Scotch or Scot's Broom

DESCRIPTION

Scotch broom is native to Europe and was likely introduced as an ornamental. It spreads by seed and inhabits well-drained sites over a wide range of precipitation regimes. Several commercial varieties of Scotch broom are not considered noxious. Scotch broom is a woody perennial species up to 10 feet tall. Leaves are mostly trifoliate with ½ inch long, alfalfa-like leaflets. Stems are strongly angled and dark green, with branches that spread only slightly from the main stem. Flowers are bright yellow, pealike, 1 inch in length, and borne in the leaf axils during June. Brown seedpods are smooth, except for hair along the margins, flattened, and contain several beanlike seeds, which are thrown some distance as the pods snap open at maturity. Like many other legumes, Scotch broom forms root nodules with soil bacteria to fix nitrogen. Scotch broom is widespread along both coasts and has been introduced in northern Idaho primarily. It grows best in open prairies, meadows, scrublands, and roadsides.

MANAGEMENT INFORMATION

Hand pulling using weed wrenches can be effective if the infestation is small enough. Soil disturbance as a result of hand pulling increase the chance of reinfestations. Mowing of Scotch broom is most effective during the late summer months when the plants are most stressed. When mowed, Scotch broom plants with smaller stem diameters are more likely to resprout than plants with larger diameters. There are several biological controls available for Scotch broom. *Leucoptera spartifoliella*, a twig-mining moth reduces the vigor of the Scotch broom but will not usually kill them. *Apion fuscirostre* is a seed feeding weevil that eats the seeds and are then released when the seedpod pops open. *Agonopterix nervosa* is a shoot tip leaf-tying moth, but has little effect in controlling Scotch broom. Herbicides such as triclopyr ester (Garlon 4), triclopyr amine (Garlon 3A), triclopyr and 2,4-D low volatile ester (Crossbow), and glyphosate (Roundup) all can be used to control Scotch broom. Late summer burning has been shown to be somewhat effective against Scotch broom.

CURRENT DISTRIBUTION ON THE SITE

Scotch broom is scattered throughout the wildlife area and there are three large stands of approximately 20 acres each. The plant is very limited in distribution in the forest stands.

ACRES AFFECTED BY WEED: 2000 **WEED DENSITY**: Low to High

GOALS

Control scattered plants
Control expanding populations
Prevent new occurrences

OBJECTIVES

Monitor changes in plant density due to control efforts or weed spread
Continue herbicide applications by ground
Apply herbicide treatments by air to large stands when funding is available

Continue pulling and cutting in sensitive areas

ACTIONS PLANNED

Application of herbicide will be the primary method of control for Scotch broom. In areas where the infestation is sparse or small this will be done primarily from the ground using backpack and ATV mounted spray equipment. When funding is available (generally through grants) the applications may be done by helicopter. This has been effective in reducing plant density in the past. In more sensitive areas, or in areas with low-density infestations, it will be pulled using Weed Wrenches, ATV's or Tractors. Larger plants that cannot be pulled or sprayed will be cut. A minimum of 40 acres will be controlled in 2006. In recent years WDFW's weed control crew has been available to help with scotch broom control here. If they are available in 2006 the control acreage would be expanded.

CONTROL SUMMARY AND TREND

1996- 20 acres sprayed by air
1997- 2 acres sprayed by ground, 10 acres cut (dense stand)
1998- 5 acres pulled or cut (dense stand)
1999- 150 acres pulled or cut (scattered plants), 8 acres sprayed by ground
2000- 40 acres sprayed by air,
2001- 40 acres sprayed by air, 2 acres cut, 1 acre sprayed by ground
2002- 3.5 acres sprayed by ground
2003-20 acres sprayed by ground, (effort was reduced this year due to elk trapping effort)
2004-110 acres sprayed by ground, 40 acres sprayed by air
2005-200 acres sprayed, 5 acres pulled or cut.

Scotch broom is on a decreasing trend on the portion of the wildlife area North of the Toutle River. However it has been increasing in the eroded gravel bar areas on the south side of the river, which are prime conditions for the spread of scotch broom. Control has not yet been attempted on the South side of the river due to inaccessibility of the area and a higher priority being placed on controlling the weed in the existing forage areas.

In recent years the approach has been to approach most of the control effort in an East to West direction. Control efforts have begun each year at the eastern property boundary progressing to the west. In the past three years a marked reduction has been achieved in about one half of the primary elk forage producing area using the approach. During this time an emphasis has also been placed on an area of about 40 acres at the western end of the original mudflow where the plant has also been largely eliminated. .

DIFFUSE KNAPWEED WEED SPECIES CONTROL PLAN

Scientific name: *Centaurea diffusa* **Common name:** Diffuse Knapweed

DESCRIPTION

Diffuse knapweed (*Centaurea diffusa*) is a native of Eurasia, introduced into the U. S. in the early 1900s. It spreads by seed, aided by the tumbling of windblown mature plants, and it grows under a wide range of conditions and is widespread in the Northwest and many other states. The plant can grow as a short-lived perennial, a biennial, or occasionally an annual. It reproduces and spreads from seed. The plant develops a single shoot (stem), 1 to 2 feet tall that is branched toward the top. Grazed plants may produce multiple stems. Rosette and lower shoot leaves are finely divided. Leaves become smaller toward the top of the shoot and have smooth margins. Many solitary flowering heads occur on shoot tips. They are about 1/8 inch in diameter and 1/2 to 2/3 inch long. Flowers usually are white but may be purplish. Involucre bracts are divided like teeth on a comb and tipped with a slender spine that makes them sharp to the touch. Sometimes the bracts are dark-tipped or spotted like spotted knapweed. The long terminal spine differentiates diffuse from spotted knapweed. Diffuse knapweed seeds germinate in spring or fall or anytime during the growing season following a disturbance, if adequate soil moisture is present. Seedlings develop into rosettes and diffuse knapweed remains as a rosette until it grows to a critical size, then it bolts, flowers, and sets seed. It may take from one to several years for diffuse knapweed to reach the critical size necessary to reproduce by seed. Diffuse knapweed is native to degraded non-cropland and seashores from southern Europe to north-central Ukraine. It generally is found on dry, light, porous soils in Europe. Diffuse knapweed appears to occupy similar areas in the United States. Diffuse knapweed will not tolerate flooding or shade and thrives in the semiarid west (generally in 9- to 16-inch precipitation zones). Environmental disturbance (e.g., overgrazed pastures or rangeland, roadsides, rights-of-way, gravel piles, etc.) promotes its invasion.

MANAGEMENT INFORMATION

Diffuse knapweed can be readily controlled with herbicides. However, the weeds will reinvade unless cultural techniques are used. Tordon 22K (picloram), Transline (clopyralid), Curtail (clopyralid + 2,4-D), or Banvel/Vanquish/Clarity (dicamba) all effectively control diffuse knapweed. Pulling the entire plant including roots can control small infestations of diffuse knapweed. If desirable grass competition is evident in diffuse knapweed stands, judicious herbicide application that does not injure grasses may allow them to compete effectively with the weeds. Irrigation (where possible) may help stimulate grass competition in these cases. However, infested rangeland or pastures often are degraded, allowing knapweed invasion, and herbicides alone will not restore the land to a productive state. Seeding suitable perennial grasses is necessary to prevent weed reinvasion. Several biological control agents, including a root boring beetle and moth, 2 seed head gall flies, and a seed head weevil are available but have not proven effective. Root-feeding insects may have a more detrimental effect on knapweed populations than seed-feeding ones. Larvae of the diffuse knapweed root beetle (*Sphenoptera jugoslavica*) feed in the roots of diffuse knapweed. Larvae of the yellow-winged knapweed moth (*Agapeta zoegana*) and the knapweed root weevil (*Cyphocleonus achates*) feed in the roots.

CURRENT DISTRIBUTION ON THE SITE
Found at one location at the Bear Creek Bridge.

ACRES AFFECTED BY WEED: ~0.25 acres **WEED DENSITY:** Low

GOALS

- Contain, control, suppress and/or eradicate the present infestation
- Monitor for and prevent new occurrences

OBJECTIVES

- Continue to actively search for new infestations. Train volunteers and other employees to recognize the plant.
- Revisit the infestation site twice per year for a minimum of 10 years until site is declared weed free, i.e., it has been at least 10 years since diffuse knapweed seed was produced at the site and or live Diffuse knapweed plants have been observed at the site.
- Spray or pull as plants become evident each spring.
- Establish regulations and procedures for assuring equipment is washed clean of soil and plant material before entering the wildlife area.

ACTIONS PLANNED
In 2006 the diffuse knapweed infestation site will be visited at least twice during the growing season with appropriate action being taken based on findings, e.g., spraying or pulling.

CONTROL SUMMARY AND TREND
2002- A single diffuse knapweed plant was found. Seed dispersal had already occurred.
2003- Site was monitored but no plants were found. Plants in this year may have only been present in the rosette stage making them difficult to spot in the existing vegetation.
2004- Numerous plants found near the original occurrence. An intensive search indicated that the infestation was limited to an area of about one-quarter acre. Plants were sprayed by hand but control was not effective. Plants were subsequently cut and bagged to prevent seed dispersal.
2005- Monitoring indicated that plants were present in about the same area as 2004. Density appeared to be lower as well. Site was sprayed by hand twice. No additional plants were found in subsequent monitoring.

Diffuse knapweed is a new weed to the wildlife area and fortunately was discovered early. In 2005 there was no increase detected and because control efforts in this year appeared to have been more effective the weed may be declining.

SPOTTED KNAPWEED WEED SPECIES CONTROL PLAN

Scientific name: *Centaurea malculosa* Common name: Spotted knapweed
Updated: 2006

DESCRIPTION

Spotted knapweed (*Centaurea malculosa*) is a short-lived, perennial herb, 1-3 feet tall. It reproduces from seed and forms a new shoot each year from a taproot. Like diffuse knapweed, it is a native to central Europe. It can be distinguished from its close relative diffuse knapweed by the lack of a terminal spine at the tip of its bracts. Flowers are pinkish-purple or rarely cream colored. Spotted knapweed seeds germinate in spring or fall. The seedlings develop into and remain as rosettes for at least one growing season while root growth occurs. It usually bolts in May of its second growing season and flowers August through September. It is a prolific seed producer, and can produce up to 140,000 seeds/m2. Seeds may remain viable in the soil for over 8 years. Seeds are spread by wind, with most seeds being shed immediately after reaching maturity.

Spotted knapweed is a highly competitive weed that invades disturbed areas and degrades desirable plant communities. It is found in light, porous soils, fertile, well-drained and often calcareous soils in warm areas. It occupies dry meadows, pastureland, stony hills roadsides and sandy or gravelly floodplains of streams and rivers. Spotted knapweed tolerates dry conditions, similar to diffuse knapweed, but survives in higher moisture areas as well, preferring areas that receive 12 to 30 inches of annual precipitation. Like diffuse knapweed, spotted knapweed has been reported to contain cnicin, an allelopathic chemical. Cnicin inhibits root growth of other plants, and destroys their ability to compete for limited soil moisture and nutrients.

Spotted knapweed is a state-listed class B weed.

MANAGEMENT INFORMATION

Spotted knapweed can be managed similarly to diffuse knapweed. It is readily controlled with herbicides such as Tordon, Transline, Banvel or Clarity. As with diffuse knapweed, seeding competitive, desirable plant species after control of spotted knapweed is required to prevent reinvasion.

Hand pulling and mowing can reduce spotted knapweed densities but is labor intensive and not suited to large infestations. Seed production must be prevented for many years to prevent reestablishment. Similarly to diffuse knapweed, several insects have been found to be effective as biological control agents for spotted knapweed. These include seedhead flies (*Urophora, spp*.) a root-feeding beetle (*Cyphocleonus achates*), and several seedhead weevils (*Bangasternus* and *Latrines spp.*) The larvae of the yellow-winged knapweed moth (*Agapeta zoegana*) feeds in the roots of both knapweed species.

CURRENT DISTRIBTUTION ON THE SITE

Found at one site adjacent to a stream ford constructed in 2003.

ACRES AFFECTED BY WEED: 0.25 **WEED DENSITY:** Low.

GOALS
Control spotted knapweed on the site with the goal of eradication.
Prevent further spread of this weed.

OBJECTIVES
Reduce spotted knapweed densities by chemical and mechanical methods.
Establish competitive desirable plants on the site.

ACTIONS PLANNED
Continue chemical applications and/or pulling on the infestation.

CONTROL SUMMARY AND TREND
2003- Spotted knapweed seeds were probably imported on WDFW construction equipment when the ford was installed.
2004- Flowering plants first noted. Plants that could be found were cut or pulled and removed from the site.
2005- Infestation was sprayed by treating individual plants. Control appeared to very good.

Spotted knapweed is a new invader to the site. Because the 2005 control effort appeared to be effective it is believed that the weed may be decreasing. Future monitoring and control will be critical to assuring that the weed does not spread further.

CANADA THISTLE WEED SPECIES CONTROL PLAN

Latin name: *Cirsium arvense* **Common name**: Canada Thistle
Updated: 2006

DESCRIPTION

Canada thistle (*Cirsium arvense*) is an aggressive, creeping perennial weed that infests crops, pastures, rangeland, roadsides and noncrop areas. Infestations start on disturbed ground, including ditch banks, overgrazed pastures, tilled fields or abandoned sites. Canada thistle grows in a variety of soils and can tolerate up to 2 percent salt content. It is most competitive in deep, well-aerated, cool soils. It usually occurs in 17- to 35-inch annual precipitation zones or where soil moisture is adequate. It is less common in light, dry soils. Canada thistle develops from seed or vegetative buds in its root system. Horizontal roots may extend 15 feet or more and vertical roots may grow 6 to 15 feet deep. Canada thistle begins to flower in late spring to early summer in response to 14- to 16-hour days. Plants are male or female and grow in circular patches that often are one clone and sex. Female flowers produce a sweet odor and insects readily pollinate different sexed patches up to 200 feet apart. Canada thistle may produce 1,000 to 1,500 seeds per flowering shoot. Generally, vegetative reproduction from its root system contributes to local spread and seed to long distance dispersal. Seed can remain viable in the soil for up to 20 years.

MANAGEMENT INFORMATION

Grasses and alfalfa can compete effectively with Canada thistle. Herbicides such as Tordon 22K (picloram), Curtail (clopyralid plus 2,4-D), Transline (clopyralid), Banvel/Vanquish/Clarity (dicamba), 2,4-D and Telar (chlorsulfuron) are effective against Canada thistle. These herbicides are most effective when combined with cultural and/or mechanical control. Mowing can be an effective tool if combined with herbicide treatments. Mowing alone is not effective unless conducted at one-month intervals over several growing seasons. *Ceutorhyncus litura*, *Rhinocyllus conicus* and *Urophora cardui* are biocontrol insects used for Canada thistle. Ceutorhyncus alone will not effectively control Canada thistle. It must be combined with other methods to be successful.

CURRENT DISTRIBUTION ON THE SITE

Canada thistle is located very sparsely throughout the wildlife area—Primarily within the remaining original mudflow area.

ACRES AFFECTED BY WEED: unknown **WEED DENSITY:** Low

GOALS

- Monitor plants when found for bio controls at effective levels. Control stands where bio controls are not evident to prevent seed production.
- Prevent new occurrences

OBJECTIVES

- Monitor effectiveness of existing biological controls, which appear to have been effective in controlling seed production in the wildlife area and surrounding lands.

- Implement control measures at sites where biological controls do not appear to be present.

ACTIONS PLANNED

In 2006, monitor plants as they begin to bud. If present, insects should be easily observable around the top of the plant. If not present use mechanical and/or chemical methods to prevent seed production and dispersal.

CONTROL SUMMARY AND TREND

Canada thistle has not been a major concern to date on this site. Biological controls have limited the spread of the plant. However, when tree harvest occurs on lands surrounding the wildlife area in the future it could create conditions where the weed could suddenly increase rapidly in the watershed. Weather or other factors could also possibly reduce the bio-control populations. Because there is potential for increases, monitoring will be critical to maintaining this weed at a level where it does not have an impact on habitat goals in the wildlife area.

HIMALAYAN BLACKBERRY WEED SPECIES CONTROL PLAN

Scientific Name: *Rubus discolor/armeniacus* **Common Name**: Himalayan blackberry
Updated: 2006

DESCRIPTION

Himalayan blackberry (*Rubus discolor/armeniacus*) is a robust, sprawling perennial, more or less evergreen, shrub. Leaves are large, round to oblong and toothed, and usually in groups of five. Stout, thick, arching stems (canes) have large, stiff thorns. Shrubs first appear as individual canes, then groups of canes, gradually increasing to become great mounds or banks, with individual canes reaching up to nine feet. The main cane grows up to 15 feet tall; trailing canes spread up to 20-40 feet, frequently taking root at the tips. Small white to pink flowers appear in spring and then roundish, black edible fruits form in mid-summer to early August. Individual canes live only two to three years, yet reach a density of 525 canes per square yard. Roots penetrate down about 3 feet, and can be 30 feet long. Himalayan blackberry also grows vegetatively by root and stem fragments. Seeds remain viable for several years.

Native to Western Europe, this weed was probably first introduced to North America in 1885 as a cultivated crop. By 1945 it had naturalized along the West Coast. Himalayan blackberry tolerates a wide range of soils and moisture conditions, but not true wetland soils. It prefers full sun and well-drained soils. It is found in vacant lands, pastures, open forests, tree farms, roadsides, creek gullies, riparian areas, fence lines and right-of-way corridors.

Once it becomes well established, Himalayan blackberry out competes any low growing native vegetation and can prevent shade intolerant trees from growing, leading to permanent thickets with little other vegetation present. These dense, impenetrable thickets limit the movement of large animals. When this species takes over entire stream channels and banks, it can increase the possibility of flooding and erosion.

MANAGEMENT INFORMATION

Control is best done in two phases: 1) remove above ground vegetation, and 2) kill/remove root crowns and major side roots (not necessarily in that order).

Biological: The USDA has not supported the introduction of herbivorous insects to control Himalayan blackberry due to the risk these insects may pose to commercially important Rubus species. Research on this subject continues.

Chemical: Herbicides such as triclopyr (Garlon 3a and 4), glyphosate (Roundup, Rodeo) or 2,4-D with triclopyr (Crossbow) deliver effective control when applied to mature, uncut canes in late summer/fall or to cut/resprouted stems in fall. All standing, dry, hard canes need to be removed for effective restoration.

Manual: Removing root crowns and major side roots by hand digging (claw mattock, pulaski/mattock) is a slow but sure way to destroy blackberry (especially small patches). You must be thorough and follow up because large root fragments left in soil may produce a new plant. Starting with lesser weed infestations and working towards the worst stands is effective at

maximizing self-recovery of native vegetation. Or immediately seed with native grasses to reduce invasion by other weeds and allow follow-up treatment of surviving Himalayan blackberry with broadleaf killing herbicides (if desired). Remove canes and fragments to prevent resprouting. Although fire alone doesn't control this weed, burning large infested areas will remove standing mature plants after a pre-spray of herbicide(s) to kill and desiccate aboveground portions. Planting fast-growing shrubs or trees or shade tolerant species may reduce or prevent Himalayan blackberry re-establishment, since the species is usually intolerant of shade. Grazing sheep and goats where mature plants have been removed has also controlled regrowth, but both are non-selective eaters.

Mechanical: Mowing and cutting can be very effective in controlling Himalayan blackberry. Several cuttings are required before the underground parts exhaust their reserve food supply. If only a single cutting can be made, do it when plants begin to flower. Debris may be fed through a mechanical chipper and used as mulch. Need to follow-up the next year, as Himalayan blackberry may resprout from root crowns in greater density (and overtop any planted vegetation).

CURRENT DISTRIBUTION ON THE SITE
Himalayan blackberry is sparsely scattered throughout open non-forested portions of the wildlife area. It is also present in forested areas to an unknown extent.

ACRES AFFECTED BY WEED: unknown **WEED DENSITY:** Low

GOALS
- Monitor for increases in distribution.
- Continue to control plants when located incidental to other work.
- Prevent new occurrences

OBJECTIVES
- Spray plants when encountered during other weed control work.
- Cut or pull plants when encountered.

ACTIONS PLANNED
In 2006, conduct control concurrent with other work. Determine the extent of infestations in forested areas.

CONTROL SUMMARY AND TREND
Himalayan blackberry has not been a major concern to date on this site. Grazing by elk has probably helped to limit the plants spread. It is unknown at this time whether the plant is increasing or static.

APPENDIX 3: FIRE CONTROL PLAN

Responsible Fire-Suppression Entities: The Mt. St. Helens Wildlife Area is entirely within the State Fire Protection Boundary under the jurisdiction of the Department of Natural Resource's (DNR).
Suppression on WDFW forestlands within the State Fire Protection Boundary is performed by DNR. WDFW pays an assessment fee for each acre within the fire protection boundary for these services.

The satellite units of the wildlife area are spread across five counties. Jurisdiction for fire response has not yet been determined for these areas. Some of the sites will undoubtedly be within local fire protection districts (LFD's) while others will also be within DNR's fire protection boundary. Wildlife area staff will work to determine jurisdictional information for these sites and work with the LFD's to establish fire protection contracts. WDFW will then pay the district(s) an annual fee based on the assessed value of the wildlife area land within their district.

Department Fire Management Policy: It is the Departments policy that wildlife area staffs are not firefighters and should not fight fires. Wildlife Area staff are trained in fire fighting and fire behavior, however, staff will only provide logistical support and information regarding critical habitat values to the Incident Commander of the responding fire entity.

Wildlife Habitat Concerns: The Mt. St. Helens Wildlife Area is critical to providing winter range forage habitat for elk in the Toutle River watershed. Large-scale fire in the forage stands could have a serious negative impact on forage available to the herd during the winter months. Fire could also create conditions that may facilitate the expansion of some weeds on the site.

Sensitive habitats are also present including wetlands and riparian vegetation. Some fire fighting techniques and equipment can damage these areas if care is not taken. Due to this concern, WDFW requests that the Incident Commander or other fire fighting personnel on site notify WDFW personnel immediately in the order listed below. A WDFW Advisor will provide information to the Incident Commander regarding habitat concerns.

Aerial Support: Depending on location some fires on the wildlife area may be easily extinguished with ground equipment. However, because much of the wildlife area is very difficult to access from the ground and it is surrounded by commercial forestland, Aerial support may necessary and appropriate to fight fire in some areas. WDFW requests the Incident Commander to seek aerial support if in their best professional judgment it is necessary to keep fire from spreading to commercial forest land or it is apparent that the fire cannot be controlled effectively with ground equipment due to access or other factors.

Reporting: Report any fire on or adjacent to all units of the Mt. St. Helens Wildlife Area by contacting the local fire district and the DNR (See contacts below). It is absolutely critical that any fire on the area is attacked as soon as possible.

FIRE DISTRICTS – DIAL 911

DNR- contact in order listed and request Operations or Staff Coordinator

NAME	TELEPHONE
DNR Forest Fire Reports	1-800-562-6010
DNR Castle Rock field office	(360) 577-2025

The following table provides telephone numbers in priority order of Department staff to be contacted in the event of a fire.

Department of Fish and Wildlife - contact in order listed

NAME	TELEPHONE	PRIVATE TELEPHONE	CELL
Brian Calkins, Wildlife Area Manager	(360) 906-6725		(360) 931-2592
Daren Hauswald, Assistant Manager	(360) 906-6756		(360) 931-3684
Mike Foster, Fish & Wildlife Officer -or- Ted Holden, Fish and Wildlife Sergeant	(360) 260-6333 (WSP dispatch)		
WDFW Regional office	(360) 696-6211		
Regional Wildlife Program Manager	(360) 906-6722		

APPENDIX 4: WATER RIGHTS

No water rights or permits are known to be associated with the Mt St. Helens Wildlife Area or any of its satellite units

APPENDIX 5: WILDLIFE SPECIES LISTS

(Source: US Forest Service, Gifford Pinchot National Forest)

Potential Bird Species for Toutle River Watershed

American Bittern	European Starling	Purple Finch
American Coot	Evening Grosbeak	Red Crossbill
American Crow	Fox Sparrow	Red-breasted Merganser
American Dipper	Gadwall	Red-breasted Nuthatch
American Goldfinch	Golden Eagle	Red-breasted Sapsucker
American Kestrel	Golden-crowned Kinglet	Red-Eyed Vireo
American Pipit (Water Pipit)	Golden-crowned Sparrow	Red-tailed Hawk
American Robin	Gray Jay	Red-winged Blackbird
American Wigeon	Great Blue Heron	Ring-necked Duck
Bald Eagle	Great Horned Owl	Ring-necked Pheasant
Band-tailed Pigeon	Greater Yellowlegs	Rock Wren
Barn Owl	Green-winged Teal	Rosy Finch
Barn Swallow	Hairy Woodpecker	Rough-legged Hawk
Barred Owl	Hammond's Flycatcher	Ruby-crowned Kinglet
Barred Owl	Harlequin Duck	Ruffed Grouse
Barrow's Goldeneye	Hermit Thrush	Rufous Hummingbird
Belted Kingfisher	Hermit Warbler	Savannah Sparrow
Bewick's Wren	Hooded Merganser	Say's Pheobe
Black Tern	Horned Lark	Sharp-shinned Hawk
Black-backed Woodpecker	House Finch	Short-eared Owl
Black-billed Magpie	House Sparrow	Snow Goose
Black-capped Chickadee	Hutton's Vireo	Solitary Sandpiper
Black-headed Grosbeak	Killdeer	Song Sparrow
Black-throated Gray Warbler	Lazuli Bunting	Spotted (Rufous-sided) Towhee
Blue Grouse	Lesser Scaup	Spotted Sandpiper
Blue-winged Teal	Lincoln's Sparrow	Steller's Jay
Bohemian Waxwing	Long-eared Owl	Swainson's Thrush
Brewer's Blackbird	MacGillivray's Warbler	Three-toed Woodpecker
Brown Creeper	Mallard	Townsend's Solitaire
Brown-headed Cowbird	Marsh Wren	Townsend's Warbler
Bufflehead	Merlin	Tree Swallow
Bushtit	Mountain Bluebird	Turkey Vulture
California Quail	Mountain Chickadee	Varied Thrush
Calliope Hummingbird	Mountain Quail	Vaux's Swift
Canada Goose	Mourning Dove	Vesper Sparrow
Cassin's Finch	Nashville Warbler	Violet-green Swallow
Cassin's Vireo	Northern Pygmy-Owl	Virginia Rail
Cedar Waxwing	Northern Flicker	Warbling Vireo
Chestnut-backed Chickadee	Northern Goshawk	Western Bluebird
Chipping Sparrow	Northern Harrier	Western Meadowlark
Cinnamon Teal	Northern Pintail	Western Screech-Owl
Clark's Nutcracker	Northern Saw-whet Owl	Western Tanager
Cliff Swallow	Northern Shoveler	Western Wood-Pewee
Common Goldeneye	Northern Spotted Owl	White-breasted Nuthatch
Common Loon	Olive-sided Flycatcher	White-crowned Sparrow
Common Merganser	Orange-crowned Warbler	White-winged Crossbill
Common Nighthawk	Osprey	Wild Turkey
Common Raven	Pacific-Slope Flycatcher	Wilson's Warbler
Common Snipe	Peregrine Falcon	Winter Wren
Common Yellowthroat	Pied-billed Grebe	Wood Duck
Cooper's Hawk	Pileated Woodpecker	Yellow Warbler
Dark-Eyed Junco	Pine Grosbeak	Yellow-breasted Chat
Downy Woodpecker	Pine Siskin	Yellow-rumped Warbler
Dusky Flycatcher		

Potential Mammal Species for Toutle River Watershed

Big Brown Bat	Little Brown Myotis	Red Fox
Black-tailed & Mule Deer	Long-eared Myotis	River Otter
Bobcat	Long-legged Myotis	Short-tailed Weasel (Ermine)
Bushy-tailed Woodrat	Long-tailed Vole	Shrew-Mole
California Ground Squirrel	Long-tailed Weasel	Silver-Haired Bat
California Myotis	Lynx	Snowshoe Hare
Cascade Golden-mantled Ground Squirrel	Marten	Southern (Boreal) Red-backed Vole
Coast Mole	Masked Shrew	Striped Skunk
Coyote	Mink	Townsend Chipmunk
Creeping (Oregon) Vole	Mountain Beaver	Townsend Mole
Deer Mouse	Mountain Goat	Townsend Vole
Douglas Squirrel	Mountain Lion	Trowbridge Shrew
Dusky Shrew	Muskrat	Virginia Oppossum
Eastern Cottontail	North American Beaver	Wandering (Vagrant) Shrew
Elk	North American Black Bear	Water Vole
Fisher	North American Porcupine	Western Pocket Gophers
Forest (Long-tailed) Deer Mouse	Northern Flying Squirrel	Western Small-footed Bat
Fringed Myotis	Northern Pocket Gopher	Western Spotted Skunk
Gray Wolf	Northern Water Shrew	Wolverine
Heather Vole	Norway Rat	Yellow Pine Chipmunk
Hoary Bat	Pacific Jumping Mouse	Yellow-Bellied Marmot
Hoary Marmot	Pacific Water Shrew	Yuma Myotis
House Mouse	Raccoon	

Potential Reptile and Amphibian Species for Toutle River Watershed

Bullfrog	Northwestern Garter Snake	Spotted Frog
Cascade Torrent Salamander	Northwestern Salamander	Tailed Frog
Cascades Frog	Pacific Giant Salamander	Van Dyke's Salamander
Common Garter Snake	Pacific Tree Frog	Western Fence Lizard
Cope's Giant Salamander	Racer	Western Pond Turtle
Ensatina	Red-legged Frog	Western Red Back Salamander
Gopher Snake	Ringneck Snake	Western Skink
Long-toed Salamander	Roughskin Newt	Western Terrestrial Garter Snake
Northern Alligator Lizard	Rubber Boa	Western Toad

APPENDIX 6: 1990 MANAGEMENT PLAN

MT ST HELENS WILDLIFE AREA MANAGEMENT PLAN

BROAD GOAL
To protect and improve lands and water habitats to assure optimal number, diversity and distribution wildlife for the welfare of the people of Washington state.

To provide the highest quality wintering Elk habitat in the North Toutle river drainage, while allowing for public viewing and limited recreation.

INVENTORY RESOURCES

1. HISTORY The eruption of the Mt St Helens on May 18, 1980 destroyed the existing winter range habitat on the North for of the Toutle river. In its place was the aftermath of a mudflow and avalanche from the mountain's north flank. This material covered the riparian bottom land that supported a major portion of the elk herd in the Washington Department of Wildlife's (WDW) Toutle Game Management Unit 556 (GMU).

Concern over the potential for continued erosion of the debris slide prompted the Soil Conservation Service (SCS) to aerially seed and fertilize the area with grasses and clovers. This mix contained many species that were used by the elk and in early 1981 elk were observed in the winter of 1981-82 have grown to nearly 500 in the winter of 1989-90.

The initial seeding for erosion control was beginning to deteriorate by 1987. WDW joined with the Rocky Mountain Elk Foundation (RMEF) and the Weyerhaeuser Corporation (WEYCO) in 1988 to reseed a portion of the area and fertilize the entire area. WEYCO researchers conducted studies of the plant species and fertilization rates and this data will be used in the planning process for this area.

Limited funding almost prevented acquisition of the area for a winter range for elk. REMF worked with WEYCO and WDW to arrange for a trade of surplus property and a donation to secure the area for elk. A total of 2,533 acres are now designated the Mt St Helens Wildlife Area. The Wildlife Area now falls into the GMU 522 (LOO-WIT) boundary, and is now closed to hunting, fishing, and trapping.

2. OWNERSHIP MAP A map outlining the property boundaries and a list of the legal descriptions is attached.

3. SOILS MAP A series of maps outlining the soils surveys for the area attached.

4. VEGETATION As described under item 1. above the entire area was aerially fertilized and seeded to grasses (Festuca Rubra, Lolium sp., Phleum Pretense, Dactylis Glomerata) and clovers (Trifolium sp.) (Klock 1981) in 1980. Fertilization for

the 1980 treatment was at an unknown rate. In 1981 the entire area was fertilized a second time with 100 lbs. Per acre of 20-20-20.

The 1988 effort included the following species; Orchard grass, Annual Rye, Perennial Rye, Subterranean Clover, White Clover, and Birdsfoot Trefoil. A total of 22-lbs./acre was applied. Fertilizer applied in 1988 was urea at 70-lbs./ acre with test plots receiving phosphorus at 60-lbs./ acre (Dobkowski 1989).

5. WATER The major sources of water in the area are the North Fork Toutle River, Bear Creek and Hoffstadt Creek. Water is also present in several ponds and seeps through out the area. Water is not a limiting factor for wildlife.

6 WILDLIFE A comprehensive survey for wildlife species and number has not been conducted.

7. PEOPLE (RECREATIONAL USE) Present public access is not limited, although hunting, fishing and trapping are not allowed. Problems exist with unregulated off-road vehicle use in the area, and part of this plan will deal with this issue.

Entry will be restricted to reduce the negative impacts of motorized vehicles on the wildlife population in the area.

The issue of hunting in the GMU 522 area was the subject of several public meetings and the information of a task force in 1984. This group was concerned with the potential for an unsportsman like hunt that would harm the elk population and the image of hunters. Among the final recommendations for this group was the prohibition of hunting in GMU 522 until sufficient hiding cover had been established to provide a sporting hunt. Management strategies that control tree and brush species to favor elk forage may limit the recover of hiding cover and preclude the conditions of the task force from being met. Additional public input may be needed to deal with the hunting issue in this area.

8. CAPITOL FEATURES There are no existing capitol features on the project, and the proposed features will be dealt with in the sections dealing with elk viewing and vegetation management.

9. SPECIAL FEATURES The seeded debris slide is a unique geological feature and the public viewing areas will probably contain interpretive information on this issue.

MANAGEMENT PROPOSALS

1. ACCESS MANAGEMENT

GOAL

Eliminate motorized vehicle traffic, except for administrative purposes, to reduce disturbance to elk.

STEPS TO ACHIEVE A GOAL

A. Mike Foster will identify roads and location for tank traps. Information will be provided to Pat Miller and Ray Croswell, by October 12, 1990.

B. Ray Croswell will identify the landowners at the location listed in A. above, by October 15, 1990.

C. WDW will initiate Cooperative agreements with the landowners identified in B. above. Initial contacts to be made prior to December 31, 1990. Ray Croswell is the lead person on this task.

D. Sara LaBorde will put together an informational program to inform the public as the need and benefits of the access control program. The program will include the design of some signs, news releases and any other items needed to for warn the public of the upcoming road closures. These materials are needed by the end of November for installation this winter.

E. Mitch Messenger will work up designs and cost figures for the gates by October 12, 1990. Money is available thru the ORV fund to assist in purchasing materials and or contracting the construction of the gates. This money needs to be committed by June 30, 1991.

F. Gates will be acquired, or the materials purchased by June 30, 1991. Person responsible for this activity has not been identified.

G. Gates and tank traps will be installed. The time line on this is somewhat flexible, as the DOT road construction will force the gates to be open until the road is completed. Wherever gates can be installed prior to road construction completion, it is highly encouraged. Volunteer labor is expected to be used, a coordinator for this task has not been identified.

2. HABITAT MANAGEMENT

GOAL

The highest priority will be the production of the best quality, highest quantity forage for elk, with the emphasis on availability in winter through spring.

Secondarily, manage cover to improve the use of the area during the summer and fall by elk and other wildlife species.

STEPS TO ACHIEVE GOAL

This section is broken down into short-term actions and long term actions. The long term activities will require the presence of a W.A. Manager to complete.

LONG TERM

A. A review of the literature to determine the most practical efficient means of vegetation manipulation on the area. Some possible sources for this literature are; Department of Natural Resources (DNR) report on tree planting and legume seeding trails by Kenelm Russell, WEYCO report on the reseeding and fertilization in 1988 by Alex Dobkowski, SCS records, Corps of Engineer (COE) reports on the erosion control efforts, etc.

B. Type mapping of the existing vegetation to determine the existing plant communities and their extent. This will also dictate the creation of habitat management units.

C. The use of photo points to monitor changes in the vegetative community should be considered.
D. Soil fertility analysis will be required to determine the appropriate fertilization application and suitability of planting mixes.
E. Management of the existing plant communities needs to be conducted. It is apparent that red alder will take over the area if left unchecked. Control of noxious weeds and plants will be required to maintain the best forage for elk. Cover in the stream corridors and wetland areas will be encouraged.
F. Planting prescriptions and fertilization application rated will be developed. Equipment needed to implement the planting and fertilization program will be developed.
G. Implement vegetation manipulation plan.

SHORT TERM ACTIONS

A. Reseed bare areas with grasses and legumes. Mitch will identify the planting prescription and provide to Pat by deadline to be established by Will Nelson. Some seed is available via the REMF program in 1988. A coordinator for volunteer help will be needed for this task.
B. Fertilize the area with a Nitrogen and phosphorous mix. Mitch will explore the availability of palletized N and P mixes for aerial application. Data will be forwarded to Pat by the deadline established in A. above.
C. Proposals will be written to accomplish these short term tasks and forwarded to REMF, WEYCO and others yet to be identified. Person responsible for this task is yet to be named. These proposals will be submitted for review at the June 1991 REMF meeting. Application of the seed and fertilizer will be accomplished in the fall to avoid drought mortality, which may occur from spring applications.

3. PUBLIC VIEWING GOAL

Provide viewing and interpretation from the new State Route 504-Geotech Ridge site.

STEPS TO ACHIEVE GOAL

A. Sara LaBorde and Ray Croswell will work with the inter agency committee to provide elk viewing as part of the interpretive facilities at Geotech Ridge.
B. A capitol Budget request has been drafted to fund the viewing area (see attached copy).
C. O and M monies need to be provided to maintain the site.

FUNDING NEEDS TO ACCOMPLISH PLAN

Need	Sources
Wildlife Area Manager	Budget Request
Wildlife Area O&M	Budget Request
Information signs/road management	ORV funds Capitol Budget Request
Acquire/build gates	ORV
Install tank traps	WEYCO
Install gates	REMF

Gate Maintenance	Budget Request
Short term reseeding & fertilization	REMF/WEYCO
SR 504 Interpretive Site	Capitol Budget Request

APPENDIX 7: ELK WINTER MONITORING PROTOCOL

Mt. St. Helens Wildlife Area Elk Winter Monitoring Protocol

Introduction:
The Mt. St. Helens Wildlife Area is located in the North Fork Toutle River valley in Cowlitz County, Washington. The relatively flat valley is a result of the mudflow resulting from the eruption of Mt. St. Helens in 1980. The site was seeded as a measure to control erosion in the early 1980's however significant portions of the mudflow have been eroded since. The Wildlife Area is at or below approximately 1000 feet in elevation and remains snow-free during most winters. The Wildlife Area is used as year-round habitat by a small resident elk herd, and additional elk migrate from higher elevations to the valley floor during the winter months. The numbers of migratory elk using the Wildlife Area as winter range varies according to winter severity.

In 1999, sampling and analysis was conducted that indicated the site could provide forage for approximately 400 elk during the winter months. Since that time efforts have resulted in increased forage production in some locations, but these increases may have been offset by forage productivity losses due to erosion and other factors at other locations. The 1999 sampling illustrated that the amount of forage produced in the area was dependent on the amount of maintenance that occurs in any given year (fertilizing, etc.). The forage availability estimate should be revisited and consideration should be given toward developing a simple model that would provide for adjustments in predicted forage availability in any given year based on treatments made to forage stands in the prior growing season and losses due to erosion or other factors.

Forage availability/quality and harsh weather conditions are not the only factors that may affect the survival of elk during the winter months. Energy expended by elk fleeing from disturbance exacerbates the winter energy deficit these animals commonly incur. For this reason the Wildlife Area will be closed to public access from December 1 through April 30 annually. WDFW will minimize management activities on the site during this time period to only those that are essential and time-sensitive.

Purpose:
Winter elk mortality that occurs on the Wildlife Area and in surrounding areas has been a cause of concern for wildlife managers and the general public. To quantify elk use and the magnitude of winter elk mortality, structured monitoring began and has occurred since 1999. By surveying the same area in the same manner each year the monitoring has been used to serve as an index of elk use and relative winter losses between years. This standardized index functions solely as a trend indicator and is not intended to estimate total number of elk wintering on the Wildlife Area nor total winter mortality in the valley. The counts are not intended to trigger a local emergency winter-feeding program. The Department's winter-feeding policy (M6002) directs that winter-feeding should occur only in limited situations but recognizes that extreme winter conditions may necessitate supplemental feeding.
Survey Methods and Timing:

Estimated Use: The Wildlife Area manager, District Wildlife Biologist or other WDFW personnel will visually count elk using the site on a monthly basis from December through March. Observations will be made with a spotting scope from the Weyerhaeuser visitor center overlooking the Wildlife Area. All elk observed on the valley floor will be classified as to age class and sex to the degree possible. These surveys will be conducted as close to the first week of each month as possible. Some deviation due to weather or other factors may be necessary, as severe weather may affect the ability to observe animals and the number present. These counts will include a scan for mortalities. These will be noted and reported along with the other survey information.

Mortality Survey: One survey will be conducted each year to provide an index of the magnitude of winter mortality. This survey will occur during mid to late April and will be coordinated by the District Wildlife Biologist and Wildlife Area Manager. Because this is an index, the same area will continue to be surveyed each year to maintain comparable information. The survey area consists of eight previously established survey subunits. A minimum of six WDFW employees and twenty volunteers, or other personnel, is needed to complete a thorough survey.

Survey teams will spread out and systematically walk parallel transects in their assigned survey subunits searching for mortalities. When a dead elk is found both femurs will be cut with a bone saw to serve as a method to mark that the animal has been counted and to allow for observation of bone marrow, which is a method to qualitatively evaluate body condition. Other information collected will include age class based on tooth eruption and wear, sex, and GPS location (datum: WGS 84 dd. mm.mmm).

If elk are located during the surveys that have died very recently, a necropsy may be performed if determined necessary by department staff and tissue samples obtained by a trained wildlife biologist or wildlife veterinarian. This does not preclude WDFW staff from conducting necropsies at other times.

Reporting:
Monthly live elk counts will be reported to the Regional Wildlife Program Manager to be included in weekly/monthly reports. These reports will also include numbers of observed mortalities and a general assessment of winter severity and other relevant conditions.

Both the Wildlife Area Manager and District Wildlife Biologist will maintain a database of the annual surveys. The annual summaries of live elk counts will also be included in the annual Big Game Status and Trend Report and Wildlife Area Management Plan updates.

Attachments: Sample survey data form
Survey area map showing subunits

MOUNT SAINT HELEN'S WILDLIFE AREA MORTALITY SURVEY

NAME / PHONE _____

DATE _____

SURVEY SECTION _____

Animal Number	Sex	Age	Carcass Condition	Marrow Collected	Marrow Condition	WGS 84 (dd mm.mmm) Latitude	Longitude
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Sex = **M**ale, **F**emale.
Age = **C**alf, **Y**earling, **A**dult, **U**nknown.
Carcass Condition (has connective tissue) = **F**resh, **I**ntact, **D**ecomposing, **S**cattered.
Marrow Collected = **Y**es, **N**o.
Marrow Condition = **W**hite Firm, **P**ink Firm (can be red firm), **R**ed Gelatinous, **N**one.

1:12,000
37A-2
38A-3
12° N · MCLV-97
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2
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7
8
8B
7B

APPENDIX 8: FEEDING OF WILDLIFE DURING THE WINTER POLICY

POLICY - 5302

Cancels: **WDFW M6002**
See Also:

POL - 5302 FEEDING WILDLIFE DURING THE WINTER

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.

Definitions:

Artificial feeding: The distribution of harvested feed for wildlife through either supplemental feeding or emergency feeding.

Emergency feeding: The occasional feeding of wildlife, which the Department implements due to extreme winter conditions or a disaster such as fire or drought.

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

1. WDFW May Provide Supplemental or Emergency Feeding for Wildlife for the Following Purposes

A. To prevent and/or reduce deer or elk damage to private property (agricultural or horticultural crops)
B. To support a Department management plan
C. To respond to an emergency as determined by the Director or the Director's designee
D. To allow for the regeneration of winter habitat that has been severely damaged or destroyed by disaster, such as fire or drought
E. For Department approved wildlife research or wildlife capture
F. In areas or times where hunting seasons have closed

2. The Director or Director's Designee Declares an Emergency

Implementation of emergency feeding operations will begin after an emergency has been declared in a specific location of the state. The Director's Emergency Feeding Advisory Team will include the Assistant Directors of the Enforcement Program, Wildlife Program, and affected Regional Director(s).

3. WDFW Will Use the Following Factors to Determine Whether an Emergency Exists in a Specific Location of the State

A. Weather conditions and forecast:

Includes conditions such as abnormally cold temperatures, extreme wind chill, snow depth, icing, or crusting over a prolonged period of time. Evaluation may also include the forecasted weather to reflect early arrival and projected duration of severe winter weather.

B. Concentration and distribution of wildlife:

Includes assessment of wildlife patterns such as animals concentrated in unusually high numbers in a specific area or located in areas where they are generally not found.

C. Access to natural forage:

Assessment of availability of natural forage, including factors that may limit access (such as snow depth, icing, or crusting)

D. Disaster:

Includes description of disaster (such as fire or drought) and its impact on wildlife, such as winter range that has been severely damaged or destroyed. Feeding may be an option to provide adequate time for recovery of wildlife habitat and subsequently reduce wildlife mortality.

E. Physical condition of wildlife:

Evaluation to determine the physiological condition of animals, including experienced judgment by Department personnel based on knowledge of local wildlife. Evaluation may include bone marrow and kidney fat analysis to evaluate body fat reserves necessary for winter survival.

4. WDFW May Discourage Private Feeding of Wildlife

The Department discourages private feeding of wildlife where animals may become a problem or a nuisance, cause damage to property, or present a health risk.

WDFW will provide the public with information on the appropriate way for winter-feeding of wildlife (i.e., deer, elk, upland birds, songbirds).

WDFW may provide feed in those situations where private actions will complement agency staff supplemental or emergency feeding.

5. <u>WDFW Will Accept Donations to Help Pay for Emergency Winter Feeding</u>

APPENDIX 9: WHITE PAPER

WHITE PAPER
Short Term Improvement Projects for the Mt. St. Helens State Wildlife Area

A significant increase in the number of elk dying due to winter mortality both in and around the Mt. St. Helens State Wildlife Area During the winter of 1998-99 has drawn a great deal of public attention and media coverage. While generally thought of as a "negative" this event has brought fourth many potential opportunities for positive steps forward to improve the wildlife area lands. Citizens have come forward with offers of money, materials or volunteer labor wanting to help. The objective of this document is to outline projects where this assistance can be directed in the immediate short term during the spring, summer and fall of 1999.

In implementing these projects we must bear in mind that these animals live in a much larger environment, which continues to change. These animals are just as reliant on conditions off of the state wildlife area as they are to what the site can provide. Increasing forage on the state lands may only serve to offset forage that is lost naturally in other areas.

Following is a list of projects which WDFW feels will benefit Elk and increase the range capacity of the Wildlife Area Lands upon which the herd partially relies on.

SCOTCH BROOM REMOVAL:

WDFW has been engaged in this effort for several years. Both spraying and hand cutting have been employed. Cutting reduces the plants ability to produce seed and makes spraying easier and reduces the amount of chemical needed. We welcome involvement of volunteers in this effort particularly in hand cutting or pulling. Any spraying will be conducted or supervised by licenced applicators. Time frame: May through September.

FERTILIZATION:

Fertilization can be used to increase the production of forage on the existing "meadow" areas. WDFW in partnership with Weyerhauser has an active grant project with the Rocky Mountain Elk Foundation to fertilize much of the area. 100 acres will be fertilized by air in May with more potentially to follow later in the year. Ground applications are also possible and can utilize volunteers. This is an area where donated materials or equipment time would be useful. We will also consider the use of agricultural manure products after this idea is fully explored. Time frame: May, June or September.

STABILIZATION:

A large acreage of forage producing area has been eroded over the last three winters due to shifts in the channel of the North Fork of the Toutle River. Protection of the remaining acreage is a high priority. A seed mixture has been proposed to help stabilize the erosion prone areas and produce forage on the areas, which have been eroded. Planting of willow cuttings will also be employed as a stabilization measure. Willow shoots can also provide forage when herbaceous plants are covered by snow. Volunteers can be involved in every aspect of this project. Time frame: Spring and Fall best.

INCREASE FORAGE PRODUCTION ACREAGE:

Twenty new acres of forage area were planted in fall 1998. WDFW has applied to the Rocky Mt. Elk Foundation for a 200 acre project in 1999. This project relies on private donations of materials and equipment for much of the match. Two new seed mixtures have been developed for plantings on the area. The Elk Foundation funds, if approved, will not be available until summer. Seedings done with other, primarily donated, funds may take place sooner. Willow and other woody native plants can provide additional food resources particularly when herbaceous plants are covered by snow. Opportunities to expand establishment of forage on lands outside the boundaries of the wildlife area will also be explored particularly on Department of Transportation (DOT) lands to the west. Time frame: Spring, Early Summer or Fall.

DISPERSE FORAGE AREAS TO DECREASE DENSITY OF ANIMALS:

Dense populations are more prone to the spread of disease. When new forage areas are established this should be taken into consideration as the existing forage areas are all contiguous.

BEGIN TO ADDRESS HARASSMENT ISSUES:

Energy expended by elk due to human harassment during periods of stress can further deplete their body fat energy reserves. Better educating the area's users may be the most effective means of addressing this concern. Information stations need to be established where most of the public enter the area. General guidelines, which allow the public to use and enjoy the area without causing undue disturbance to the animals, could be posted in these locations. The most serious complaints have related to dogs on the area. WDFW will seek approval for a rule, which allows dogs on the area only if on leash. Volunteers could help in monitoring signs and replacing as necessary.

INCREASE FORAGE PRODUCTION AND DIVERSITY IN FORESTED AREAS:

A portion of the wildlife area's acreage, primarily near the west end, is in young alder forest. The forage production in this area and perhaps species diversity may be increased by thinning the overstory to increase light penetration to the ground. This can be done in at least two ways. Trees can simply be felled to open the canopy or trees can be killed and left standing, which creates snags and potential nesting sites for some species if trees are of adequate diameter. With either technique, natural regeneration of primarily native forage species may be expected. Volunteers could be very helpful if girdling is done to create snags. Time frame: July, August.

OVER SEED EXISTING FORAGE AREAS TO INCREASE PRODUCTIVITY:

One recommendation to increase late winter forage output has been to attempt over seeding of the existing forage areas. The plant recommended for this is small burnet, which grows under cold conditions. A trial should be attempted this year to determine if this is a viable means to improve late winter range output. If successful, this would be an excellent project for involvement of volunteers. Time frame: Spring or early summer.