DRAFT
KLICKITAT 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 Klickitat Wildlife Area. This plan will be updated annually to maintain its value as a flexible working document. It identifies needs and guides activities on the area based on the agency mission and statewide goals and objectives applied to local conditions.

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 and wildlife-related recreational and commercial opportunities.

1.2 Agency Goals and Objectives

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

<u>Goal I: Healthy and diverse fish and wildlife populations and habitats</u>

- 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.

<u>Goal II: Sustainable fish and wildlife-related opportunities</u>

- 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.

<u>Goal III: Operational Excellence and Professional Service</u>

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

1.3 Klickitat Wildlife Area Goals

Management goals for the Klickitat Wildlife Area are to preserve and enhance habitat and species diversity for both fish and wildlife resources, maintain healthy populations of game and non-game species, protect and restore native plant communities, and provide diverse opportunities for the public to encounter, utilize, and appreciate wildlife and wild areas. Specific management goals and objectives for the Klickitat Wildlife Area can be found in Chapter 3. Public participation, in the form of a Citizens Advisory Group (CAG), will be encouraged as a means to identify social, cultural, and economic issues important to the people of south central Washington and influential in the management of this Wildlife Area.

1.4 Planning Process

Statewide goals and objectives listed above shape management priorities on wildlife areas. Specific wildlife area information including why the area was purchased, habitat conditions, species present, and public issues and concerns are evaluated to identify wildlife area activities or tasks.

A Citizens Advisory Group (CAG) has been established to bring public input, ideas and concerns to wildlife area management. CAG participation in planning will add credibility and support for land management practices and help build constituencies for wildlife areas. The CAG is made up of

representatives' form each interest groups/entities. CAG members are spokespersons for their interest groups.

Klickitat Wildlife Area Citizens Advisory Group

Neil Keyser	Cattleman Association / Grazing Lessee
Jim Stephenson	Wildlife Biologist for Yakama Tribe
Buzz Ramsey	Local landowner on Klickitat River / Fisherman
Sarah Woo	Conservationist
Marty Hudson	Klickitat Co. Weed Board Coordinator
Leonard Swift	Agricultural lessee

Plans will also incorporate cross-program input and expertise provided by district biologists and enforcement personnel (district teams). Pertinent information from existing species plans, habitat recommendations, watershed plans, eco-regional assessments, etc will be used to identify local issues and needs.

This plan is part of a statewide planning process to ensure consistency in wildlife area management and policy implementation. The plan is not a standalone document. Rather, it relates directly to the Statewide Guide for the Management of Wildlife Areas (Guide), which is currently being developed. The Guide will pull together federal, state and local laws, agency goals and objectives, Commission and agency policies, and other statewide management direction into one document that will go out for public review.

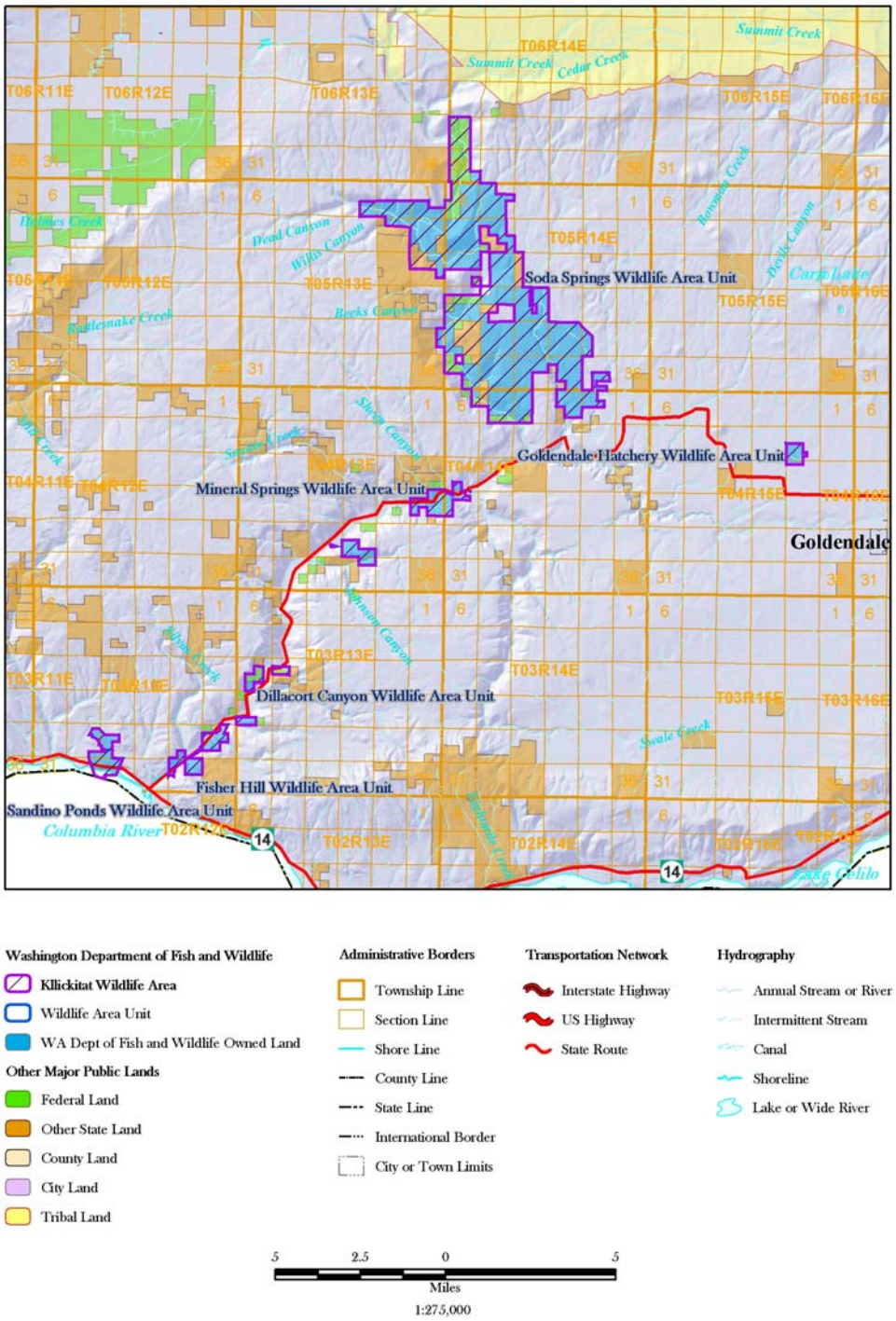
The plan will be reviewed annually with additional input from the CAG and district team to assess accomplishments and desired results. Strategies and activities will be adapted where necessary to set management priorities.

CHAPTER II. AREA DESCRIPTION AND MAPS

2.1 Property Location and Size

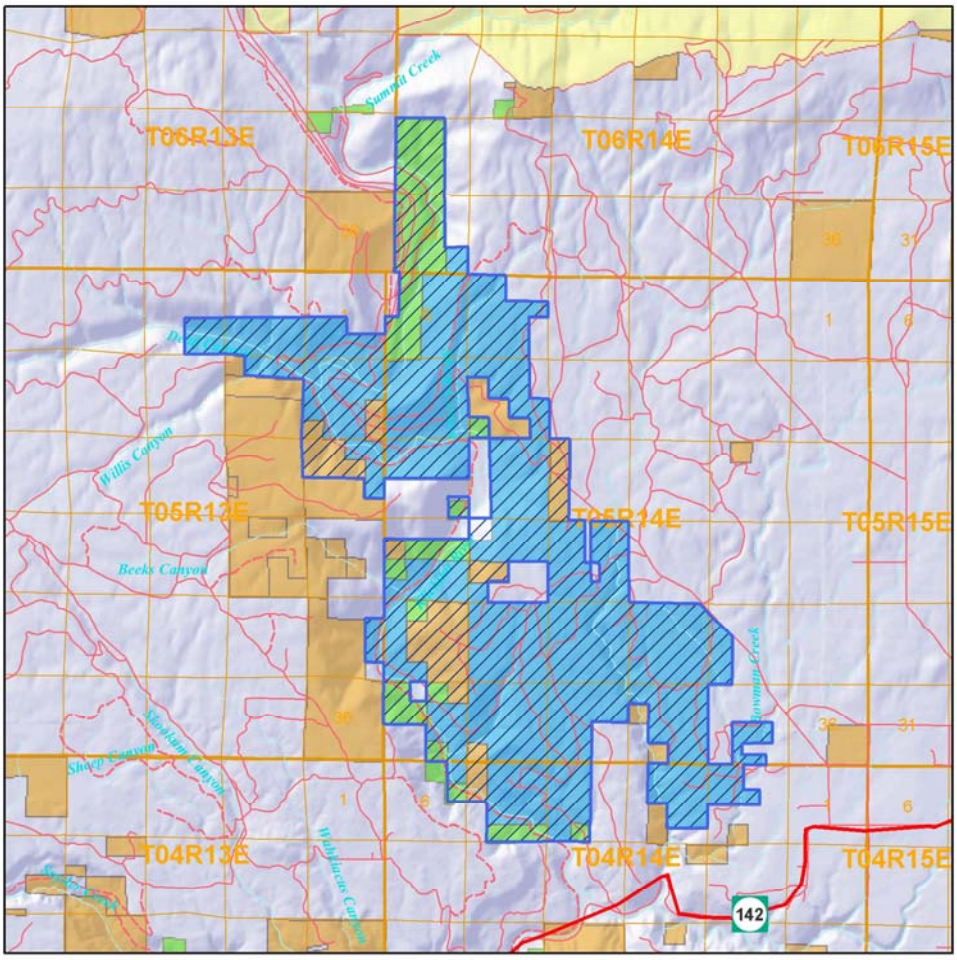
The Klickitat Wildlife Area is located in south central Washington, in the west portion of Klickitat County. It lies on the east slope of the Cascade Mountains, about halfway between the Columbia River Gorge to the south and Mt. Adams to the North (Figure 1). It is comprised of several management units with the majority of the area bordering the middle Klickitat River (T5N, R14E). The Klickitat WA is composed of the Soda Springs Unit and several smaller satellites: Goldendale Hatchery, Klickitat Mineral Springs, Dillacort Canyon, Neth, and Sondino Ponds.

Figure 1. Klickitat Wildlife Area Map



Soda Springs Unit
The Soda Springs Unit, approximately 13,000 acres in size, represents the major portion of WDFW ownership. It consists of numerous small mostly contiguous land holdings.

Figure 2. Soda Springs Unit



Washington Department of Fish and Wildlife
- Soda Springs Wildlife Area Unit
- Conservation Easement
- WA Dept of Fish and Wildlife Owned Land

Major Public Land Ownership
- Federal Land
- Other State Land
- County Land
- City Land
- Tribal Land

Administrative Boundaries
- Township Line
- Section Line
- Shore Line
- County Line
- State Line
- International Border
- City or Town Limits

Transportation Network
- Interstate Highway
- US Highway
- State Route
- Secondary Road
- Trail

Hydrography
- Annual Stream or River
- Intermittent Stream
- Canal
- Shoreline
- Lake or Wide River

1:125,000

1 inch equals 2 miles

Mineral Springs, Dillacort Canyon and Neth Units (Map not available for Neth Unit)

These units are located within the Klickitat River Canyon downstream from the Soda Springs Unit. They are small, 578 acres, 200 acres and 10 acres respectively.

Figure 3. Mineral Springs Unit

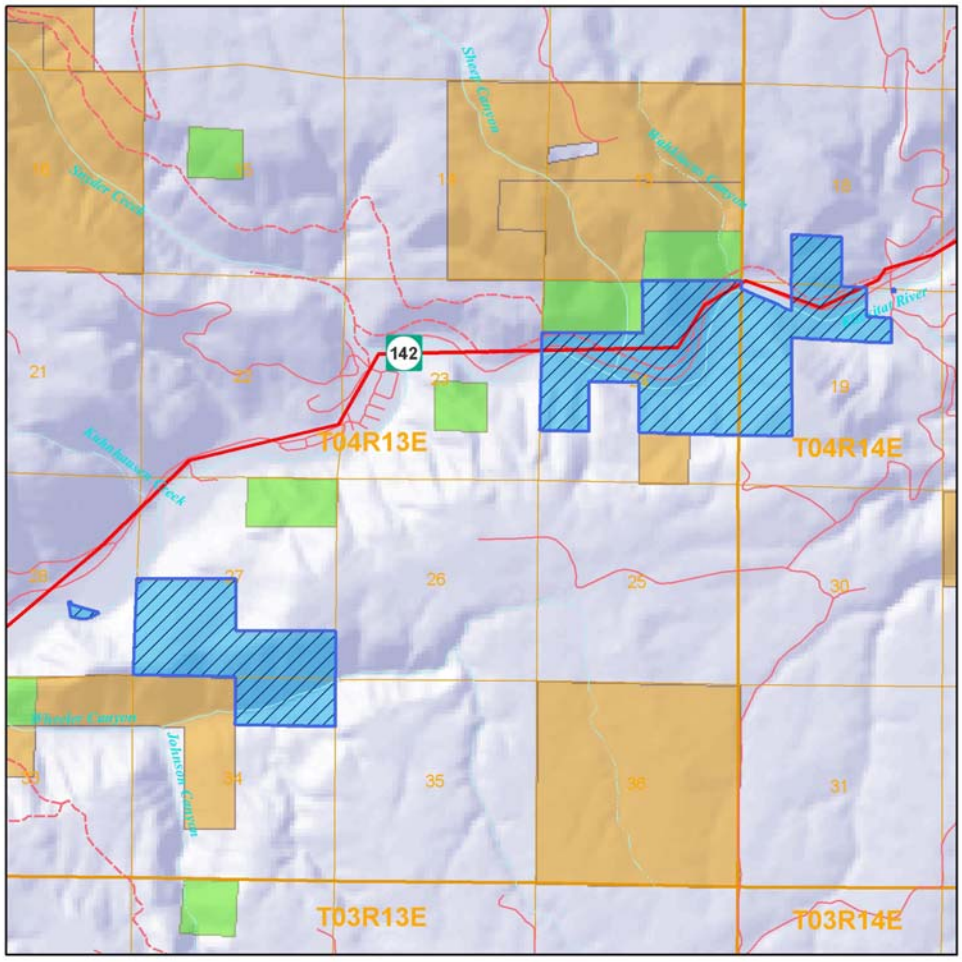
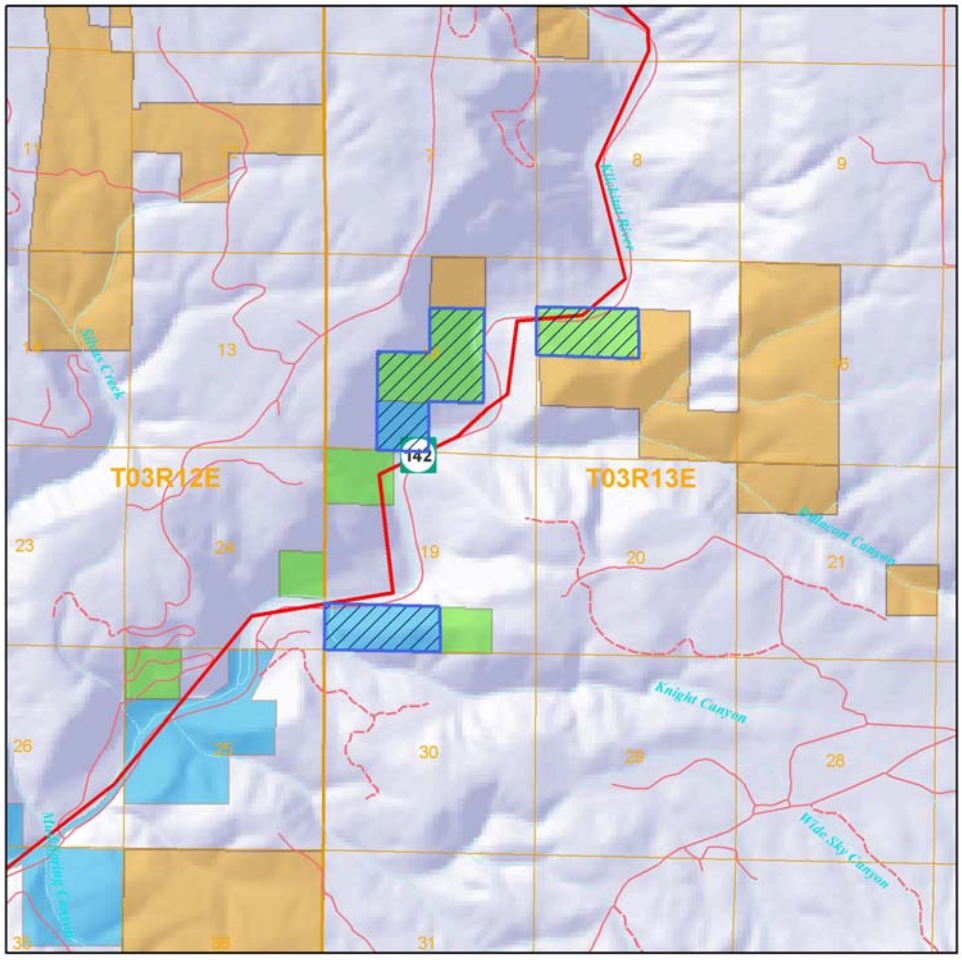
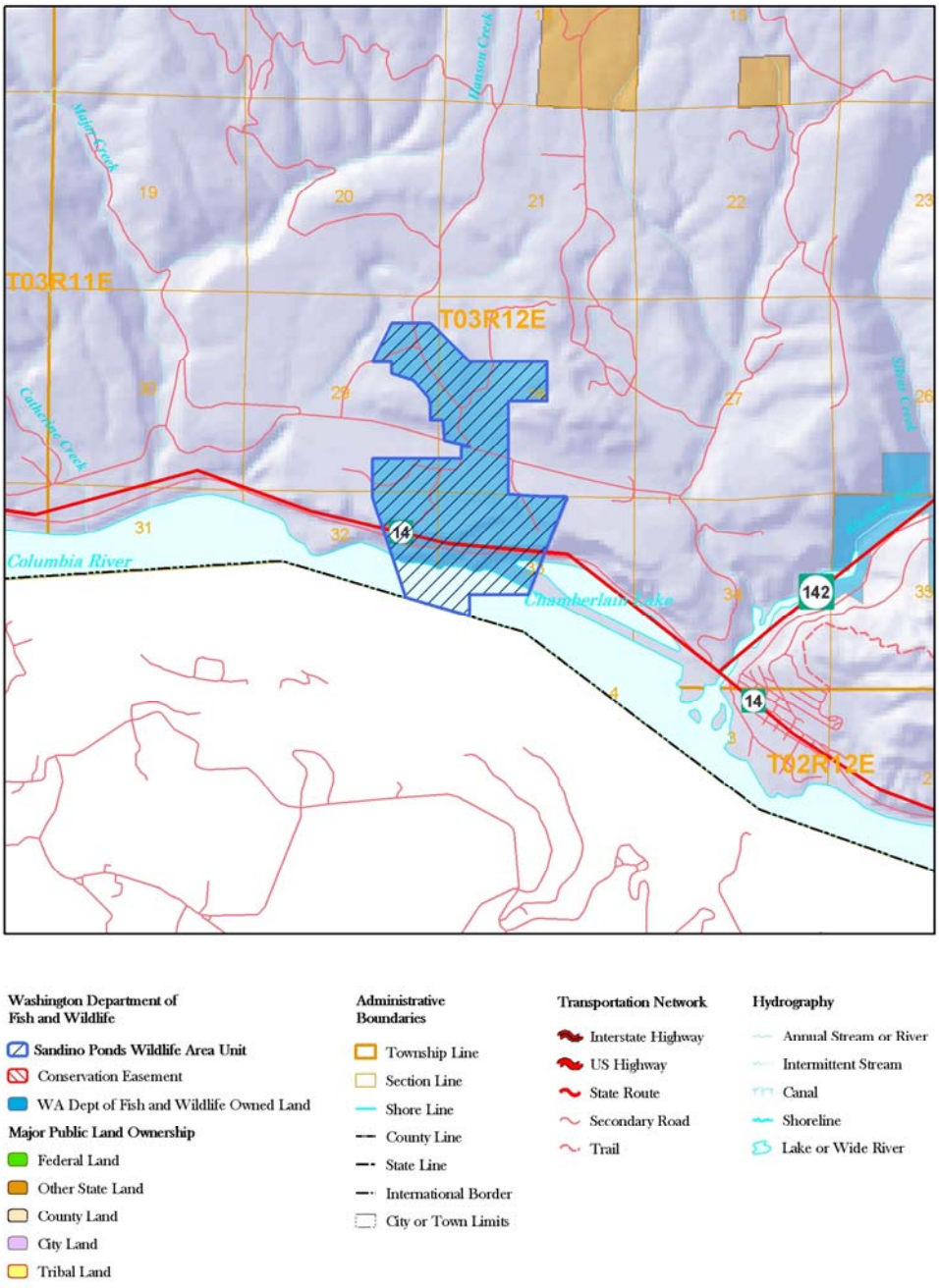


Figure 4. Dillacort Canyon Unit.



Sondino Unit
This unit is 160 acres located near the town of Lyle north of the Columbia River. It is in Section 29, T3N, R12E. WDFW bought the acreage to manage the property for the sole benefit of wildlife conservation, and especially to protect the Western pond turtle. WDFW also acquired title to an access road that is located in the SE¼ of the SW¼ of Section 28, T3N, R12E. This road provides WDFW access to the Sondino Unit from County Road 1230.

Figure 5. Sondino Unit



2.2 Purchase History and Purpose

During the 1940s, Washington Department of Wildlife (WDW) identified this area as an important winter range for black-tailed deer. The first land purchase in 1948 was made to acquire and preserve access to the Klickitat River because of its summer-run steelhead fishery. Along with black-tailed deer wintering range and steelhead fishery the wildlife area also provides important habitat for the Western gray squirrel and Vaux swifts.

Subsequently, land purchases and leases continued through the 1950s, 1960s, and 1970s until the size of the WA reached about 12,000 acres. The 1990s have seen a renewal of land purchase efforts, increasing the area to just over 14,000 acres.

Funds for the various purchases were generated from traditional budget revenues such as the sale of hunting and fishing licenses, and state dollars from the sale of Outdoor Recreation bonds. Additionally, some of the state funds were matched by federal funds from the Federal Wildlife Restoration Grant Fund. The Interagency Committee for Outdoor Recreation administered the state funds and matching funds (Table 1).

Soda Springs Unit

The Soda Springs Unit, represents the major portion of WDFW ownership and has, since its inception, been managed as deer winter range. Consisting of numerous small land holdings purchased over the years since 1948, the unit is a major wintering area for the Klickitat River Basin deer herd during the months from November through March.

Prior to WDFW ownership, these small parcels of land, ranging from ten to 2,200 acres in size, were used to raise cattle, sheep, horses, and even swine. Most parcels had some timber on them, and often the owner harvested the timber prior to selling the land. Some had agricultural fields of alfalfa or wheat.

WDFW's management has been designed to preserve and enhance forage and cover habitat types for deer. This has been accomplished primarily through farming, regulated cattle grazing, timber harvest and thinning, grass and shrub planting, and water developments.

Farming has been accomplished through sharecrop agreements with area farmers. Alfalfa, winter wheat, barley, oats, and rye have been grown. A portion of the crop has been left in the field for wildlife use, or the sharecropper has paid cash and/or provides services for the WDFW share. Various food plots have been maintained by WA personnel, producing perennial grasses or wheat which is always left in the field to enhance wildlife.

Cattle grazing has occurred on and off over the years, often depending upon the availability and condition of livestock fences in the area. After fencing was provided to control grazing, agreements have been maintained to allow cattle grazing on 4,000 acres during April, May, and June. The goal of these agreements is to utilize surplus grasses that often compete with shrubs and forbs which are important in the diet of deer.

Timber harvest and thinning projects have been used to open up the tree canopy, increasing the vigor and abundance of Ceanothus, a native shrub important as a food source for wintering deer.

Ceanothus seed requires heat to germinate, so controlled burns have been used after timber harvest to re-establish stands of this shrub.

On two occasions, WDFW purchased land while allowing the owner to reserve timber rights for a year or so. Under these circumstances, the WA Manager had an opportunity to design a grass/forb/shrub planting after the timber harvest. Normally, grasses and forbs were aerially seeded over the entire area, and shrubs were broadcast seeded by hand along the roads and landings. Limited stands of bitterbrush along roads and landings, and scattered patches of tall wheatgrass were successfully established.

Even though water is not a limiting factor on deer winter range because it is available in the form of rain or snow during the winter, it is limiting during the dry summer months. Past water developments have included the construction of small ponds capable of holding enough water to last through the dry periods. Eight ponds have been constructed by WDFW, in addition to seven ponds which were present when the land was purchased. Eight guzzlers (i.e., structures designed to collect and store rainfall and snowmelt run-off) have been installed throughout the unit to provide water for upland game and nongame wildlife. Newer research has shown that except in extreme situations, most native wildlife does not need or benefit from these types of developments.

Mineral Springs and Dillacort Canyon Units
These two units are located within the Klickitat River Canyon downstream from the Soda Springs Unit. They are small, 578 acres and 200 acres respectively, but provide habitat similar to that of the Soda Springs Unit, and therefore should be included in this management plan.

Mineral Springs Unit
The Mineral Springs Unit was purchased in 1973 from Klickitat Mineral Springs, Inc. This unit lies entirely within the Klickitat River Canyon. Elevation rises from 500 feet at the river to 1,500 feet at the canyon rims. The area is mostly timbered with Oregon white oak, ponderosa pine, and some Douglas fir. Grasslands occur on south slopes. The river snakes from east to west for two miles, creating slopes of all aspects. Running through the unit and parallel to the river are a railroad track, a state highway, and a private logging haul road. Wildlife using the area include deer, grouse, turkeys, and many songbirds associated with the riparian habitat. The Klickitat River is a popular steelhead and salmon fishery.

As the name suggests, there are numerous mineral springs from which water was tapped, bottled, and sold by the previous owners. The corporation also used these springs, along with a number of wells, to extract carbon dioxide from the water by a spray process and condense it into dry ice. In fact, local citizens often refer to the area as the "gas-ice plant".

Other than some limited cattle grazing, this was the major use of the area. The land has some timber, but has not been harvested for many years, probably to protect the mineral springs and wells. A fire in August 1992 burned approximately 300 acres, including 200 acres of timber.

At the time of WDFW acquisition, the bottling and dry ice plants were still on-site, although not functional. They were located on both sides of the river where the public access site is now and were connected by a bridge, which washed out during a flood in 1974. For the most part, the buildings were in a state of disrepair, so WDFW sold all buildings for salvage. After the sale, it

was discovered that the chimney of one of the buildings was being used as a roost by Vaux's swifts. An arrangement was made with the salvage contractor to leave this building intact, and all other buildings were salvaged. .

Management of the unit consists of the development of an Access Area, providing overnight camping, and boat access. Public use is primarily for fishing and hunting. The Vaux's swift roost site, along with the bird community associated with the river, attracts some non-consumptive users to the area.

Dillacort Canyon Unit

The Dillacort Canyon Unit is located eight river miles downstream from the Mineral Springs unit. Consisting of two parcels, the 200 acre unit is situated entirely within the Klickitat River canyon walls. Habitat types are similar to those on the Mineral Springs unit. This unit is owned by the Bureau of Land Management (BLM), and is managed through a Memorandum of Understanding signed in 1964, involving a total of 2,233 acres. Most of the acreage is within the Soda Springs unit. WDFW manages wildlife and fish resources, while BLM maintains other resources.

Current public use of the unit includes fishing access to the Klickitat River and limited hunting. There is no developed access area or campground. Access is from State Highway 142, though most of the unit is located on the opposite side of the river and highway, which limits use.

Goldendale Hatchery Unit

Management of the Hatchery Unit was assumed in the late 1970s. The unit includes the Goldendale Trout Hatchery, and an additional 240 acres of agricultural and rangeland areas, which was identified by the Department as surplus to fit its needs in 2002. The hatchery facility itself has its own manager, while responsibility for land management lies with the Klickitat WA Manager.

The unit was historically a farm located along Spring Creek. All buildings have been removed. Public use includes upland bird and waterfowl hunting, and trout fishing. WDW utilizes this unit as a pheasant release site.

Current management consists of leasing all agricultural fields on a sharecrop agreement. WDFW's compensation for alfalfa fields goes back into management practices on the area. Wheat produced on the unit is used for supplementary winter feed for upland game birds.

Sondino Unit

In the mid -1980's, wildlife biologists determined that the most important remaining population of western pond turtles in the state was located on this parcel. Shortly thereafter, the landowners agreed to participate in the Washington Register of Natural Areas Program. Under this program, they allowed WDFW to conduct studies of the western pond turtle and cooperated to protect important wetland habitats. These efforts were very successful. In 1986, the WDFW estimated the western pond turtle population on the parcel at 83 turtles. To date, recovery efforts have succeeded in increasing the population to approximately 300 turtles. This Unit is considered the most important western pond turtle habitat in the state of Washington

The landowners owned a 252-acre parcel at the time the Columbia River Gorge National Scenic Area Act went into effect in 1986. The Gorge Commission designated approximately 113 acres as

Open Space per the land use designation policies in the Management Plan, adopted in 1991. This designation was used to help protect critical habitat for the western pond turtle. The parcel was used traditionally for agriculture. Therefore, the Gorge Commission designated the remainder of the parcel as Small-Scale Agriculture.

In 1992, WDFW purchased 108 acres that had been designated as Open Space and in 1994 purchased an additional five acres of Open Space for a total of 113 acres. WDFW bought the acreage to manage the property for the sole benefit of wildlife conservation. This area became the Sondino Unit of the Klickitat Wildlife Area. WDFW also acquired title to an access road that is located in the SE¼ of the SW¼ of Section 28, T3N, R12E. This road provides WDFW access to the 113 acres from County Road 1230.

Neither Landowner nor WDWF obtained Scenic Area approval to divide the 113 acres from the 252-acre parcel. Thus, in the view of the Gorge Commission, WDFW and the Clarks became joint owners of the 252-acre parcel as per Scenic Area regulations. This has since been resolved.

In 2002, WDFW purchased an additional 15 acres of critical habitat for the western pond turtle adjacent to above described parcel. This property contained two seasonal wetlands and critical nesting habitat for the turtle. It is located immediately east of the above described parcel and is designated Small-Scale Agriculture

2.3 Ownership and Use of Adjacent Lands

The Klickitat Wildlife Area is bordered by many landowners. Large land ownership include private timber companies, Western Pacific Timber (former Boise Cascade Land), and Rainer Timber, and Washington Department of Natural Resources. All of these agencies manage the lands for natural resource protection, and each has objectives for salmonid recovery, range condition, and wildlife management.

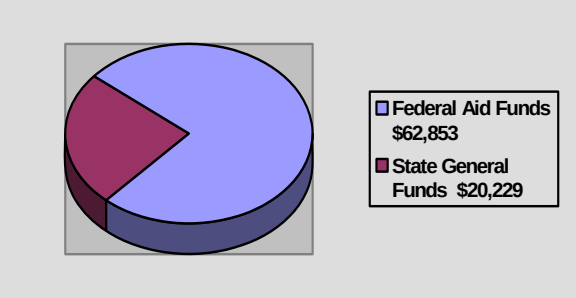
The remaining borders of the Klickitat Wildlife area are adjacent to private landowners who predominantly manage their property as homestead's, livestock rangeland or for agricultural production.

Within Klickitat Wildlife Area approximately 160 acres is in agricultural production, predominantly alfalfa and winter wheat, with approximately another 3840 acres grazed as rangelands during spring and early summer months. Grazing is permitted for 160 AU's a spring / summer with a rotation of cattle grazing only two out of three years.

The nearest town and urban area is Goldendale, WA, population 3,500. Klickitat Wildlife Areas lies in relationship to larger metropolitan areas 86 miles southwest from Yakama and 42 miles northeast form Hood River OR

2.4 Funding

Funding for Klickitat Wildlife Area acquisitions are shown in Table 1. Funding for management of the wildlife area comes from two primary sources: State General funds and Federal Aid in Wildlife Restoration Funds. State General Funds provide a 25% match for Federal Aid dollars. The budget for the 2005-05 fiscal year is $83,082, which supports all operations and maintenance on the area.



Klickitat Wildlife Area Funding Sources

One FTE staff position is supported, a Wildlife Area Manager (Fish and wildlife Biologist 3).

The Department will, as part of the implementation of this plan, submit grant proposals and applications and identify other strategies to address unfunded management needs on the wildlife area.

Table 1. Klickitat Wildlife Area Acquisitions

Land Unit	Acres	Year	Funding Source
Leidl	1773	1948	State 100%
Garner/Amidon	487	1950	State 25%-PR 75%
Lester	40	1950	State 25%-PR 75%
Mulligan	80	1950	State 25%-PR 75%
Bowman	10	1950	State 25%-PR 75%
Miles Estate	160	1950	State 25%-PR 75%
Lang	40	1951	State 25%-PR 75%
Shaffer	80	1953	State 25%-PR 75%
Bratton	2206	1955	State 25%-PR 75%
Morgan	160	1960	State 100%
Mahaffey	40	1962	State 25%-PR 75%
Garner	760	1964	State 100%
McCrae	461	1965	State 100%
Yeackel	369	1967	State 25%-PR 75%
Johnson	860	1971	State 25%-PR 75%
Messenger	160	1972	State 25%-PR 75%
Klickitat Mineral Springs	880	1973	IAC 50%-BOR 50%
Yeackel	649	1974	IAC 100%
Shafer	160	1974	IAC 100%
Barrett	463	1990	WWRP 100%
Layman	840	1991	WWRP 100%
Stone	10	1992	WWRP 100%
Sondino	160	2004	WWRP 100%

State = Funds from sale of game licenses & tags.
PR = Pittman-Robertson funds (Federal Wildlife Restoration Grant Funds).
IAC = Interagency Committee for Outdoor Recreation (funds from Initiative 215 and bond sales).
BOR = Bureau of Outdoor Recreation (Federal Land & Water Conservation Funds).
WWRP = Washington Wildlife and Recreation Program (State General Funds).

2.5 Climate

The Cascades form a barrier to the storms moving from the Pacific Ocean easterly, causing the storms to deposit most of their moisture before reaching this area. The "uplift" caused this area to slope towards the south, resulting in maximum radiant heat from the sun during the winters. Light moisture and radiant heat often keep these areas free of snow, attracting large numbers of black tail deer during the winter months. The Columbia River Gorge allows some of the warmer marine air to enter the region from the Pacific Ocean, helping to keep winter temperatures milder than areas farther eastward. This results in much of the winter precipitation falling as rain instead of snow, which helps to attract the wintering deer.

Mountains to the west, north and prevailing westerly winds influence the region's climate. The area receives a mean annual precipitation of 17.41 inches. The majority of the precipitation falls between October and May. Temperatures average from 35.9 being the coldest to 61.0^0 F being the average high, and the growing season is between 115 and 155 days.

2.6 Soils and Geology

In 1978 the Soil Conservation Service surveyed most of the soils on the Klickitat Wildlife Area. Generally, the soils are shallow and rocky. Approximately 50 percent of the Area falls under the Leidl-Wahoo soil complex, located within the breaks of the Klickitat River, Dry Canyon, Dead Canyon and Sheep canyon. This type is shallow, rocky, and ranging in slope from 30 to 75 percent. The bench area of KWA is composed mostly of Gunn and Kiakus-Munset–Wahoo complex, with the Gunn soils the best. Typically, the Gunn soils are up to 60 inches deep with slopes from 2 to 15 percent. Kiakus-Munset-Wahoo complex are soils from 20 to 40 inches deep on slopes of 0 to 30 percent. These two soil types, Gunn and Kiakus-Munsit-Wahoo complex make up approximately 30 percent of the wildlife area.

Area History

On the geologic time scale, this area of Washington is among the youngest areas in the state. From three to sixteen million years ago, geologic events occurred which formed this region. The great basalt floods, pouring out repeatedly over a four million-year period from areas in central and eastern Oregon, moved the ancestral Columbia River valley northward. The Cascades began to fold up into an arch, producing a drier climate east of the Cascades. About one million years ago the volcanoes of Mt. Adams and Mt. Hood were formed. During the Ice Age, ice sheets from Canada advanced and retreated causing changes in climate and increasing precipitation which accelerated erosion of the Gorge, enabling the river to maintain its course while the Cascades were rising. The Ice Age produced glaciers on Mt. Adams, feeding the Klickitat River with ground-up rock which created the Klickitat Canyon. During the melting of the ice sheets in Canada and northern Washington, huge ice dams would form, creating lakes as large as 3,000 square miles. When these dams gave way, catastrophic floods flowed down the Columbia River, widening the narrow "V" shaped canyon of the Gorge.

These geologic formations, the Cascades, Columbia River Gorge, and the Klickitat River, are ultimately the reason for the Klickitat WA's importance to wildlife. The Klickitat River formed a deep twisting canyon on its way south to the Columbia River. This twisting characteristic has created juxtaposing areas of forage (on south slopes) and thermal cover (on north slopes), ideal winter habitat for deer.

2.7 Hydrology and Watersheds

The major source of water is the Klickitat River. Fed by the glaciers of Mt. Adams, it runs relatively steady throughout the year. It is the only stream on the wildlife area that is a type 1 water as set forth by the "Washington Forest Practices Rules and Regulations" It is also a shoreline of statewide significance.

Other drainages within KWA are:

Sheep Canyon – normally dries up by June and is classified type 3 for the first ¼ mile, then type 4 for the remainder of the wildlife area

Soda Springs Canyon – dries up by June. Type 4 for the first ¼ mile and type 5 thereafter.

Dry Canyon (Canyon Creek) – except for springs along its creek bed, it too dries up by June. It is classified type 3 from the southern boundary of the Wildlife area to the Glenwood Highway and type 4 upstream from that point.

Bowman Creek – Is type three throughout its length in the wildlife area.

Other tributaries to the Klickitat River and to the above drainages are either type 4 or 5, mostly 5.

There are 19 wildlife ponds located throughout the area. They are filled by run-off and normally hold water through the summer months. Numerous springs are located through out the Wildlife area. The flows of these springs vary from being wet spots to up to 10 gallons per minute.

2.8 Fire History

Oregon White Oak, Ponderosa Pine, Douglas fir and buck brush are tolerant of low intensity fires but with the history of fire suppression and the accumulation of fuels this has altered the nature of burns. The tree species in areas grow in dense stands, and compete with each other making some species susceptible to disease and insect invasion, which leads to death and an increase in fuel. Small fires have been suppressed through out the area no major sections have been burnt. Areas which have received fires have responded with vigorous growth from ceanothus which requires heat to germinate, controlled burns have been used in earlier years to encourage this shrubs growth for wildlife forage.

WDNR routinely have engine and fire crew's staging around and in KWA through out fire season. A large portion of the area also lies within several fire districts in Klickitat County, which provide protection for the area.

2.9 Vegetation Characterization

General vegetation types found on the WA include the forested riparian zone along the Klickitat River, south-facing hillsides of open grasslands, north-facing hillsides forested with conifers, and the flatter plateau covered by mixed forests of oak and pine interspersed with small grassland openings.

The vegetation of KWA is very diverse being that it's in the transition zone of the Coniferous forest and the shrub steppe. Over story vegetation consist generally of Ponderosa Pine and Oregon white oak, with occasional pockets of Douglas fir. Within the riparian habitat zones over story consists of cottonwood, alder, aspen, and willow.

The shrub layer consist primarily of ceanothus, bitterbrush, Oregon white oak sucker sprouts, hazel, hawthorn, mock orange and Oregon grape.

Some of the abundant forbs include lupine, balsamroot, bighead clover, camas, yarrow and lomatiums.

Grasses common to the area include bluebunch wheat grass, Idaho fescu, bottlebrush squirrel tail, various bluegrasses, sedges, pinegrass, cheatgrass, needlegrass, and hairgrass.

2.10 Important Habitats

Wetlands are among the most productive ecosystems in the world. As a result , wetlands support numerous species from all of the major groups of organisms from microbes to mammals The support wetlands provide for these organism includes food, shelter, and refuge.

Riparian habitat performs many functions that are essential to fish survival and productivity, and it is critical in supporting suitable in stream conditions necessary for the recovery of imperiled native salmon stocks. Vegetation in riparian areas shade streams maintaining cool temperatures, stabilize stream banks controlling erosion and sedimentation, creates cover for fish and provides an important link in the food chain.

Meadows habitat provide unique assemblage of plant and wildlife species these areas provide a wide range of species diversity when not altered by man or over grazed by livestock.
Oak Woodland Oregon white oak woodlands are used by an abundance of mammals, birds, reptiles and amphibians. Many invertebrates, including various moths, butterflies, gall wasps, and spiders are found exclusively in association with this oak species. Oak/conifer associations provide contiguous aerial pathways, roosting, nesting, and feeding areas for birds and mammals

Talus/rock – areas of exposed rock or fields of broken rock that provides living spaces for plant and wildlife. These landscape features provide key habitat requisites that are often missing for various species, i.e. bighorn sheep.

Cliff- appears as high cliffs, rocky outthrusts, ledges and rim rock these areas provide habit for nesting birds and mammals. Birds that use cliffs for nesting may be more susceptible to loss of nesting habitat than many other species because they rely completely on cliffs as nest sites.

2.11 Fish and Wildlife

Fish and wildlife diversity is of primary importance to the goals and strategies guiding WDFW's management efforts. The Klickitat Wildlife Area contains many Oak Woodland-dependent listed species of wildlife and federally endangered anadromous and native fish populations along the Klickitat River.

The Klickitat River contains Federally listed Steelhead, spring Chinook, and bull trout that are all considered important culturally, ecologically and economically to the area, These three species are present (or were historically present) year round throughout the watershed in one life stage or another. It is assumed that other aquatic life will benefit from managing toward suitable conditions for these species, due to their wide ranging habitat requirements

The most common limiting factors for both summer steelhead and spring Chinook are habitat diversity, sediment load, and quantity of key habitats for various life stages.

Wildlife use on the area is diverse. Species common to the area include black-tailed deer, Rocky Mountain elk, ruffed and blue grouse, Merriam's turkey, California quail, western gray squirrel, California ground squirrel, western bluebird, Vaux's swift, American kestrel, numerous cavity nesting birds associated with oak woodlands, fence and alligator lizards, various bats and an occasional rattlesnake.

Priority Species

WDFW Priority species that occur, or have the potential to use the wildlife area include: Black tail deer, Western gray squirrel, Western pond turtle, Vaux Swift, Mardon skipper, acorn woodpecker, and Lewis wood pecker. Fish Species include Summer Steelhead, Spring Chinook and Bull trout.

CHAPTER III. MANAGEMENT OBJECTIVE, ISSUES & STRATEGIES

Statewide goals and objectives listed in chapter one shape management priorities on wildlife areas. Specific wildlife area information including why the area was purchased, habitat conditions, species present, and public issues and concerns are evaluated to identify wildlife area activities or tasks. *Public issues from past planning efforts and the Citizens Advisory Group are noted in italics.*

Objectives and associated tasks specific to the Klickitat Wildlife Area are listed where appropriate under applicable agency objectives. Unfunded needs are underlined.

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

1. Maintain big game populations

The Klickitat Wildlife Area was purchased to provide access to the Klickitat River and provide winter habitat for big game, upland birds and salmon. The Game Management Plan calls for an increase in numbers and antler quality in the black tail deer herd populations. *Public concerns include deer damage to private lands and possible hunting seasons shortened to increase quality of deer, also implement 3pt. Minimum regulation.*

A. Strategy: Maintain 200 acres of agriculture in alfalfa and wheat to provide forage in the winter and spring for the deer in the Soda Springs unit. Timeframe yearly.

B. Strategy: Permit light spring/early summer grazing on acres in the Sheep Canyon, and North Breaks areas of the Soda Springs Unit to remove dead grass material and stimulate new growth for winter grasses and forbs for deer forage. Timeframe 3 out of four years

C. Strategy: Conduct timber thinning and controlled burns to improve habitat quality for deer. Timeframe when WDFW forester available.

D. Strategy: Abandoned orphaned roads and limit access to areas to limit disturbance of wildlife by vehicles. Timeframe depends on funding purposed 06-07.

2. Improve and maintain fish populations

Portions of the Klickitat Wildlife Area were purchased to provide access and suitable habitat for fish Steelhead, spring Chinook, and bull trout are all considered important culturally, ecologically and economically to the area. These three species are present (or were historically present) year round throughout the watershed in one life stage or another. It is assumed that other aquatic life will benefit from managing toward suitable conditions for these species, due to their wide range of habitat requisites. The most common limiting factors for both summer steelhead and spring Chinook are habitat diversity, sediment load, and quantity of key habitats for various life stages.

A. Strategy: Maintain riparian habitat and prevent non-permitted intrusion from livestock and vehicles. Timeframe constant monitoring and improvement as needed

B. Strategy: Maintain fence along riparian habitat to protect areas and keep permitted cows out. Timeframe check and repair in spring before cattle are released.

C. Strategy: Plant native riparian plants along spring creek during late winter and early spring seasons at the Goldendale hatchery unit to help shade out canary reed grass along with spring time herbicide spraying regiment.

3. Manage for upland birds

The Klickitat Wildlife Area was purchased to provide habitat for big game, upland birds and salmon. Upland birds provide recreational opportunities.

A. Strategy: Maintain springs and evaluate guzzlers to provide water for upland birds and other species. Timeframe check several times yearly.

B. Strategy: Develop new water sources (springs) in areas of habitat limited from lack of water. (Sheep canyon, and Zelinski areas) Timeframe depends on when funding is available.

C. Strategy: Maintain seasonally planted wildlife openings approximately 20 acres throughout KWA. Timeframe yearly.

4. Manage for species diversity

Develop and maintain quality habitat for a diversity of species.

A. Strategy: Determine species use and density by conducting appropriate surveys to evaluate and assess the full range of species currently using the wildlife area. Timeframe: Yearly.

B. Strategy: Assess timber-thinning project to reduce potential insect and fire danger and create forest conditions more suitable to a diversity of species. Timeframe depends on when WDFW can make prescribed area and agree on cut plan.

C. Strategy: implement control burns to relieve fuel build up, stimulate forbs, grass and shrub growth and initiate new succession stages. Timeframe will be after timber thinning practice.

5. Protect and restore riparian habitat

The agency has prioritized riparian habitat management and protection. Riparian areas provide habitat for a large diversity of fish and wildlife species, for high densities of animals, for important breeding areas and movement corridors.

A. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 2.

6. Protect and manage priority species

A. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 2, to address priority fish species. Timeframe yearly.

B. Strategy: Protect roosting structure at the Ice House unit for Vaux swift. Timeframe monitor structure throughout the year.

C. Strategy: Protect snags within Oak woodlands for various nesting birds and mammals. Timeframe yearly.

D. Strategy: Monitor timber thinning and control burn areas for use by Western gray squirrels. Timeframe will start after timber thinning.

E. Strategy: install and maintain fences and signs to limit access by humans and cattle intrusion at the Sondino Ponds unit. Timeframe yearly.

Agency Objective: Ensure WDFW Activities, Programs, Facilities and Lands are Consistent With Local, State and Federal Regulations that Protect and Recover Fish, Wildlife and Their Habitats

1. Manage weeds consistent with state and county rules and to protect and recover fish and wildlife and their habitats

Weed control is required by state law to protect public economic and natural resources. Invasive weeds are one of the greatest threats to fish and wildlife habitat quality. Cooperative weed efforts are encouraged to improve efficacy and to minimize impacts on adjacent landowners as part of the agencies good-neighbor priority.

A. Strategy: Prioritize areas for treatment by mechanical, hand or chemicals treatment noxious weed areas that have been identified and new areas found on KWA. Timeframe yearly.

B. Strategy: Coordinate weed efforts with federal, state and local entities to improve efficacy and minimize costs. Timeframe yearly.

C. Strategy: Control 2 acres of Knap weed and Himalayan blackberry in the Sondino pond unit. Timeframe control as needed.

D. Strategy: Control 2 acres of knapweed, Canadian thistle and Himalayan blackberry in the Soda Springs unit. Timeframe control as needed.

2. Manage species and habitats in compliance with the Endangered Species Act and Washington State fish passage, road management and forest practice rules

Federal law requires the protection and management of threatened and endangered species. State law requires fish passage and screening issues and forest road sedimentation issues to be addressed on state public lands. Forest thinning operations on agency lands must follow state forest practice law.

A. Strategy: Protect buffers adjacent to wetlands and riparian habitat. Timeframe as needed yearly.

B. Strategy: Roads have been inventoried and a RMAPS plan implemented. Orphaned and abandoned roads will be put to rest as funds become available.

3. Provide fire control on agency lands

Fire suppression agreements must exist for all agency lands to protect the people of Washington and to protect natural and economic resources of the agency and adjacent landowners.

A. Strategy: Contract with local, state or federal entities to provide fire suppression support on the Klickitat Wildlife Area. Contact list are updated and checked yearly.

B. Strategy: Provide fire training for wildlife area manager per policy. Maintain current up to date list of fire responsible individuals. Fire training and list are updated yearly.

4. Protect cultural resources consistent with state and federal law

Federal and state law requires an assessment of cultural resources on agency lands prior to activities that may impact those resources.

A. Strategy: Assess cultural resource value (historic and archaeological) of all structures before renovation or removal. Timeframe as needed before construction or removal of structures.

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

1. Provide public access compatible with fish, wildlife and habitat protection.

Access for hunting, fishing, wildlife viewing and other activities is an agency priority. However, access and recreation must be controlled to protect fish and wildlife resources and to comply with federal and state regulations. *Public input clearly emphasizes the importance of providing recreational access with protections for the resource.*

A. Strategy: Provide open roads where no resource issues exist. Timeframe monitor constantly.

B. Strategy: Close road access where road conditions are not safe or where conditions have a significant negative impact on condition of road or fish and wildlife. Timeframe monitor constantly.

C. Strategy: Sign all roads with limited access. Timeframe monitor constantly.

D. Strategy: Provide limited camping where no resource issues exist. Timeframe monitor constantly.

2. Provide commercial opportunities compatible with fish, wildlife and habitat protection.

Commercial opportunities to improve the economic well being of Washington are suitable activities where they can be controlled to protect fish and wildlife resources and to comply with federal and state regulations.

A. Strategy: Assess habitat to determine the value of grazing to improve habitat for big game. Identify any suitable opportunities. Timeframe monitor yearly and during cattle grazing.

B. Strategy: Utilize sharecrop agreements when appropriate. Timeframe yearly

C. Strategy: Evaluate commercial requests as needed.

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

1. Maintain facilities to achieve safe, efficient and effective management of the wildlife area.

A. Strategy: Maintain office to provide a safe and effective workplace. Provide utilities, phone, computers, etc. Timeframe as needed

B. Strategy: Maintain all fences to prevent trespass by livestock thereby protecting habitat. Begin with boundary fence on Sondino ponds and Canyon Creek. Timeframe as needed

C. Strategy: Remove old boundary fence within the boarders of existing WDFW lands. Timeframe yearly until complete.

D. Strategy: Maintain roads to prevent resource damage and provide access. Anderson and sheep canyon roads need to be graded and rocked. Timeframe as needed when funds are available.

E. Strategy: Maintain camping and parking areas to prevent resource damage and provide access. Sign all campgrounds and parking lots. Timeframe as needed.

F. Strategy: Identify and explain other capital needs for buildings. Timeframe yearly.

2. Maintain other structures and physical improvements

A. Strategy: Maintain all signs, gates, culverts, water structures, wells, to perform operation and maintenance of area. Timeframe: Ongoing.

B. Strategy: Replace/install new boundary and unit signs. Timeframe: Ongoing.

3. Maintain equipment

A. Strategy: Service all equipment including trucks, tractor and implements, weed sprayers, trailers, etc. Timeframe: Ongoing. Request replacement equipment when needed.

B. Strategy: Rent equipment when it is more efficient to do so or when needed.

4. Pursue funding opportunities

A. Strategy: Apply for grants and other funding opportunities consistent with planned priorities to supplement funding for projects when needed. Timeframe: Ongoing.

B. Strategy: Enroll lands in CRP and other federal programs to generate revenue and accomplish desired habitat conditions. Timeframe when there are openings for Klickitat County.

5. Assess forest conditions with regard to catastrophic fire, insect and disease risks

The history of fire suppression in many cases has resulted in forest tree densities far greater than historic levels. Dense forest stands may create fire safety issues and risk to the spread of detrimental forest insects and disease.

A. Strategy: Assess timber-thinning project to reduce potential insect and fire danger and create forest conditions more suitable to a diversity of species. Timeframe: Will be scheduled with WDFW Forester.

6. Perform administrative responsibilities

A. Strategy: Develop and monitor budgets. Timeframe: Ongoing.

B. Strategy: Supervise employees. Timeframe: Ongoing.

C. Strategy: Attend meetings and training. Timeframe: Ongoing.

7. Perform annual monitoring, evaluation and updates to the Klickitat Wildlife Area Plan

The wildlife area plan is a working document that will evolve as habitat and species conditions change, as new regulations are enacted, and as public issues and concerns change. Plan updates will address these changes.

A. Strategy: Convene CAG and district team to assess accomplishments, results and new issues. Need to expand membership and participation of CAG. Timeframe: Yearly.

B. Strategy: Update plan. Timeframe: Annual.

8. Protect and apply water rights for best use

A. Strategy: Identify and record all water rights and uses of water. **Completed 2005.**

B. Strategy: Move all unneeded water rights permanently or temporarily into the State Trust Water Rights Program. Timeframe: Ongoing.

CHAPTER IV. PERFORMANCE MEASURES, EVALUATIONS AND UPDATES TO THE KLICKITAT WILDLIFE AREA PLAN

Performance measures for the Klickitat 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.

Performance measures for the Klickitat Wildlife Area in 2006 include:

1) Maintain 200 acres of agriculture in alfalfa and wheat.
2) Permit light spring/early summer grazing on 2600 acres.
3) Conduct forest thinning and controlled burns.
4) Reduce disturbance to wildlife in sensitive areas and times
5) Pursue funding for habitat enhancement.
6) Conduct habitat evaluations to determine the suitability of the KWA for augmentation of the California bighorn sheep.
7) Protect riparian habitat
8) Develop and maintain water sources used by upland birds.
9) Determine presence, status and trend for priority species on the KWA.
10) Protect roosting structure at the Ice House unit for Vaux swift.
11) Limit access by humans and cattle at the Sondino Ponds unit.
12) Prioritize areas for weed control treatment
13) Control 2 acres of knapweed and Himalayan blackberry in the Sondino pond unit.
14) Control 2 acres of knapweed, Canada thistle and Himalayan blackberry in the Soda Springs unit
15) Comply with WDFW fire control policy to provide adequate fire protection on the KWA
16) Provide wildlife related recreation at current level
17) Monitor grazing by use of control and exclosure plots to determine if management objectives are being realized
18) Maintain safe work environment

APPENDIX 1. PUBLIC ISSUES

Citizens Advisory Group (CAG) and District Team (DT) Issues and Concerns

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

- Proposed ramp and toilet facility work at Stinson Flats Access area.
- Replacement of the toilet facility and the extension of the boat ramp at Stinson Flats Access Area.
- Limiting camping to specified areas on KWA. This project was received well and everyone agrees that this would improve the quality of hunting and outdoor experiences.
- Install gates where needed to better facilitate appropriate road use**.**
- Regulate camping (maximum number of days)

Issue B. Wildlife Area Management

- Remove old boundary fence within the boarders of existing WDFW lands..
- Conduct habitat evaluations to determine the suitability of the Wildlife Area for augmentation of the California bighorn sheep population (currently estimated at fewer than 10 individuals).

Issue C. Habitat

- RMAP (Road maintenance abandonment plan) issues and orphaned roads to be abandoned.
- Proposed timber harvest and prescribed burn regimen. Discussed the timber harvest plan to thin (not just timber of commercial value) bug infested, dense and overgrown areas and prescribe burning to benefit wildlife and improve the health of the forest
- Conduct forest thinning and controlled burns to promote the growth of shrubs, forbs, oaks and grasses to improve habitat quality for deer.
- Work proposed on the Icehouse to protect the Vaux swift roost and Gilliam homestead to reclaim old house site
- Goldendale Hatchery / Pheasant Release Site land sell The group thinks that the funding for this project would be better spent on habitat improvements, instead of purchasing new land for a release site. Concerns were also raised for the lack of public involvement on the sale of this land and the reasons for the sale.
- Pursue funding avenues in support of expanded habitat improvement opportunities

Issue D. Roads

- Reduce disturbance to wildlife by abandoning roads and further restricting motorized access to appropriate portions of the Wildlife Area via gates and seasonal closures.

Issue G. Monitor, Survey and Inventory

- Assess habitat to determine the value of grazing to improve habitat for big game. Identify any suitable changes to current grazing strategy.
- Monitor grazing by use of vegetation measurements in controls and exclosures

Issue H. Other

- Additional Feedback WDFW needs to keep the public informed about issues and decisions that would affect user groups. They also felt that the public has no input on issues or decisions about things that they have helped to fund and are told only after the issue has been resolved or the decision has already been made.
- Discussed the purchase history and purpose of KWA.
- Grazing and farming practices benefits to wildlife was discussed.
- WDFW goals for KWA were discussed.

APPENDIX 2. KLICKITAT WILDLIFE AREA WEED MANAGEMENT PLAN

Weed Control Goals On WDFW Lands

The goal of weed control on Department lands is to maintain and improve the 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 a 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 Klickitat WMA

Weeds of concern on the Klickitat include Dalmatian toadflax (*Linaria dalmatica ssp. dalmatica*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*centaurea biebersteinii)* , yellow starthistle (*Centaurea solstitialis)* and Himalayan blackberry (*Rubus procerus*) . This list is based on species that have been documented on the wildlife area (Table 2).

Table 2. Klickitat 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 Unit(s)	2005 Treated Acres
Dalmatian Toadflax	B	B	Soda Springs	1
Spotted Knapweed	B	B	Soda Springs, Sondino Ponds	2.5
Diffuse Knapweed	B	R & S	Soda Springs, Sondino Ponds	2.5
Yellow Starthistle	B	B-non	Soda Springs, Sondino Ponds	1
General Weeds			Soda Springs, Sondino Ponds, Mineral Springs	3
Himalayan blackberry			Soda Springs, Sondino Ponds	4

B-Designate are state-listed and mandatory for control to prevent seed production/spread.
New Invader is not an official state classification, but indicates the county reserves the right to implement control.
R&S (Reduction and Suppression) Weeds are of wide distribution. Control along transportation corridors is recommended.

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

DALMATION TOADFLAX CONTROL PLAN

Scientific name: *Linaria dalmatica ssp. dalmatica* **Common name:** Dalmatian toadflax
Updated: 2005

DESCRIPTION: Dalmatian toadflax is an erect, short-lived, perennial herb, 0.8 to 1.5 m tall. Dalmatian toadflax is a perennial species that spreads by horizontal or creeping rootstocks and by seed. A mature plant can produce up to 500,000 seeds, which are primarily dispersed by wind. The seeds may live up to ten years in the soil. Most seedlings emerge in the spring when soil temperature reaches 8° C at 2.5 cm. Germination in the fall is probably limited by soil water content, as well as possibly seed dormancy with the average life span of a plant being three years.

Mature Dalmatian toadflax plants are strongly competitive. Studies indicate that plots without Dalmatian toadflax may produce two and a half times as much grass as plots with toadflax. Mature plants are especially competitive with shallow-rooted perennials and winter annuals. Because of its competitive ability, Dalmatian toadflax is a concern in pasture and rangelands, as well as in natural areas, where it may out-compete more desirable, native species. Dalmatian toadflax occurs in a variety of habitats, including: roadsides, pastures, rangelands, and waste areas. It has spread most extensively west of the 100th meridian, occurring primarily on coarse-textured soils, ranging from sandy loams to coarse gravels.

Cars, deer, and birds can spread this weed. Individual plants and small groups of plants are found throughout much of the Klickitat Valley.

Dalmatian toadflax is a state-listed class B-Designate in the management areas.

MANAGEMENT INFORMATION:
Intensive clean cultivation can effectively control Dalmatian toadflax. A successful approach includes at least a two-year effort, with eight to ten cultivations in the first year and four to five cultivations in the second year. Cultivation should begin in early June and be repeated so that there are never more than seven to ten days with green growth visible. Since Dalmatian toadflax seedlings do not compete well for soil moisture against established winter annuals and perennials, control efforts should include attempting to establish and manage desirable species that will compete with toadflax .
Herbicide can be an effective tool for control and applicators should refer to the PNW Weed Management Handbook, or other reputable resources, for product recommendations and timing.

Calophasia lunula, a defoliating moth, is well-established in Washington and reportedly provides good control and *Mecinus janthinus,* a recently introduced stem boring weevil, shows promise. *Brachypterolus pulicarius,* although usually associated with yellow toadflax, can survive and may reduce seed production of Dalmatian toadflax.

CURRENT DISTRIBUTION ON THE SITE
Soda SpringsUnit

ACRES AFFECTED BY WEED: ~100 **WEED DENSITY**: Low (Widely Scattered)

GOALS

- Monitor for increases in distribution.
- Continue to control plants when located incidental to other work. Control expanding populations

OBJECTIVES

Survey and map existing populations
More accurately calculate the acres affected by Dalmation toadflax
Release biological controls
Treat all plants that can be reached by ATV before they produce seed
Survey nearby units for pioneering infestations

ACTIONS PLANNED

Monitoring will continue on an annual basis on nearby units.

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
imalayan blackberry is sparsely scattered throughout spring and creek areas on the wildlife area. It is also present in forested areas to an unknown extent.

ACRES AFFECTED BY WEED: 10+

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.

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

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. Involucres 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 on the Sondino pond and Soda Springs unit.

ACRES AFFECTED BY WEED: approximately 5 acres

WEED DENSITY: Moderate

GOALS

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

OBJECTIVES

- Continue to actively search for new infestations
- 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 2005 the diffuse knapweed infestation site on the Sondino ponds unit were mowed to prevent seed maturity and 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

Diffuse knapweed is not a new weed to the wildlife area and is spread through out the area were agriculture and soil disturbance has occurred. Areas of disturbance with native grasses and forbs communities reestablishing are competing and even out competing the knapweed. Encouragement of native grasses and plants will continue were infestations occur.

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 in the Soda Springs and Sondino Ponds Units.

ACRES AFFECTED BY WEED: 5

WEED DENSITY: Moderate

GOALS
Contain, control, suppress and/or eradicate the present infestation
Prevent further spread of this weed.

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

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

CONTROL SUMMARY AND TREND
Spotted knapweed is not a new weed to the wildlife area and is spread through out the area were agriculture and soil disturbance has occurred. Areas of disturbance with native grasses and forbs communities reestablishing are competing and even out competing the knapweed. Encouragement of native grasses and plants will continue were infestations occur.

GENERAL WEEDS CONTROL PLAN

Scientific name: *Many* **Common name:** General Weeds
Updated: 2005

DESCRIPTION: General weeds describe mixed vegetation that interferes with maintenance, agricultural, or restoration activities, where keying plants to individual species is not appropriate. Examples of general weeds may include vegetation occurring along roadsides, parking areas, trails, and structures and include species like cheatgrass, sandbur, kochia, tumbleweed, puncturevine, knotweed etc. General weeds may also occur in agricultural fields, or comprise the dominant vegetation at a site identified for habitat restoration and includes species like cheatgrass, tarweed, cockle bur, reed canarygrass, bindweed, thistle, etc.

MANAGEMENT INFORMATION:
Herbicide can be an effective tool for control and applicators should refer to the PNW Weed Management Handbook, or other reputable resources, for product recommendations and timing depending on the weed and desired management objectives.

Mechanical weed control may include mowing, burning, to the plowing and disking entire fields.

CURRENT DISTRIBUTION ON THE SITE
All public accesses and roadsides on the wildlife area contain general weeds to varying degrees. Several fields in the Soda Springs unit are comprised of general weeds.

ACRES AFFECTED BY WEED: ~150 **WEED DENSITY**: High

GOALS
Maintain public access
Restore fields to native grasses
Reduce fire danger

OBJECTIVES
Treat high public use areas with residual herbicide to prevent seed production.
Summer fallow fields in second phase of restoration.

ACTIONS PLANNED
In the spring of 2006, problematic portions of roadsides, parking lots, access sites, and trailheads will be treated with a residual herbicide to eliminate the production and spread of weed seeds and improve appearance and public access for the entire season. Agricultural fields at the Klickitat will be sprayed or cultivated to prevent weed infestations.

CONTROL SUMMARY AND TREND
Roadside and access management have required a consistent, yearly maintenance effort. However, using new residual herbicide has reduced the effort needed to accomplish the same amount of work.

APPENDIX 3. FIRE CONTROL PLAN

Responsible Fire-Suppression Entities: The Klickitat Wildlife Area (and its Satellite Units) fall within the jurisdiction of DNR Forest Fire Protection, Parts of the wildlife Area also fall in the boundaries of Klickitat county Rural fire district 4, 7, 12 and 14. Fires that occur on the Klickitat Wildlife Area fall within the responsibility of the DNR Forest Fire Protection. Depending upon where the fire occurs, DNR will be contacted first, followed by an immediate call to other jurisdictions adjacent and within the fire area. In some cases, where there are multiple landowners or fire responders, fire suppression activities may involve two or more fire fighting entities.

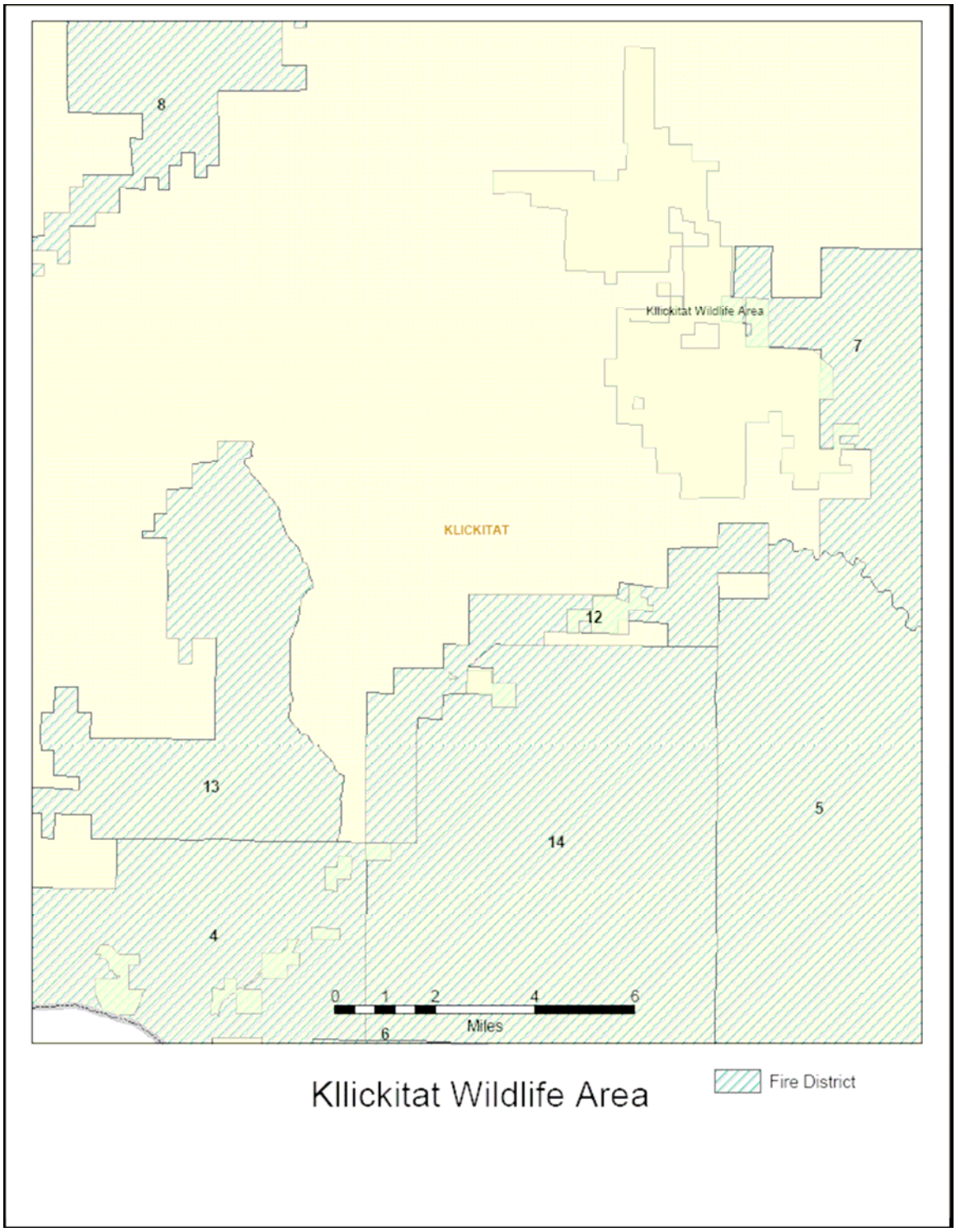
WDFW pays an annual fee to DNR to maintain an existing fire protection services contract. Suppression of fires on Klickitat Wildlife Area falls within the State Fire Protection Boundary and suppression is performed by DNR. WDFW pays an assessment fee for each acre within the fire protection boundary for these services. .

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 Klickitat Wildlife Area contains fire sensitive habitat that is critical to providing winter forage for the migrating black tail deer. Deciduous and conifer trees and shrubs provide critical habitat, nesting and escape cover for western gray squirrals. WDFW requests that the Incident Commander or other fire fighting personnel on site notify WDFW personnel in the order listed below. A WDFW Advisor will provide information to the Incident Commander regarding habitat concerns.

Aerial Support: The WDFW recommends that fire-fighting entities suppress fires on the wildlife area as rapidly as possible. WDFW requests the Incident Commander to seek aerial support if needed to extinguish a fire on its land promptly. If, in the professional judgment of the Incident Commander, a fire on lands adjacent to the Scotch Creek Wildlife Area causes an immediate threat to the area, WDFW requests that he/she seeks aerial support as possible.

Reporting: Report any fire on or adjacent to all units of the Klickitat Wildlife Area by contacting the local fire district and the DNR Dispatch Office (See contacts below). It is absolutely critical that any fire on the area is attacked as aggressively as possible during the initial attack. The importance of aerial support cannot be overstated.



Fire Coverage for DNR and Klickitat County Fire Districts.

Fire Districts – DIAL 911

NAME	TELEPHONE	CELL
Klickitat County Fire District # 4 (Lyle)	(509) 365-2500	
Klickitat County Fire District # 7 (Goldendale)	(509) 773-4246	
Klickitat County Fire District # 12 (Klickitat)	(509) 369-2720	
Klickitat County Fire District # 14 (High Prairie)	(509) 365-2912	

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

NAME	TELEPHONE
DNR Dispatch (Forest Fires)	800-562-6010
DNR Goldendale Office	509-773-5588

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
Martin Ellenburg, Klickitat Wildlife Area Manager	509-773-4459	509-250-2938	
Regional Office, Vancouver	(360) 696-6211		
Dan Bolton, Wildlife Agent, Klickitat	(509) 637-0837		
Regional Program Manager	(360) 906-6722		

APPENDIX 4. WATER RIGHTS

Klickitat Wildlife Area

File #	Cert #	Stat	Doc	Priority Dt	Purpose	Qi	UOM	Qa	IR Acres	WRIA	County	TRS	Src's	1st Source
S4-046472CL		A	Claim Short Form		DG, ST		CFS		20.00	29	Klickitat	03 0N 12 08 28	1	Spring
S4-06752PWRIS		IA		11/7/45	IR	.5000	CFS			30	Klickitat	05 0N 14 0e 07	1	Klickitat River