

May 2016

Klickitat Wildlife Area Management Plan



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Klickitat Wildlife Area

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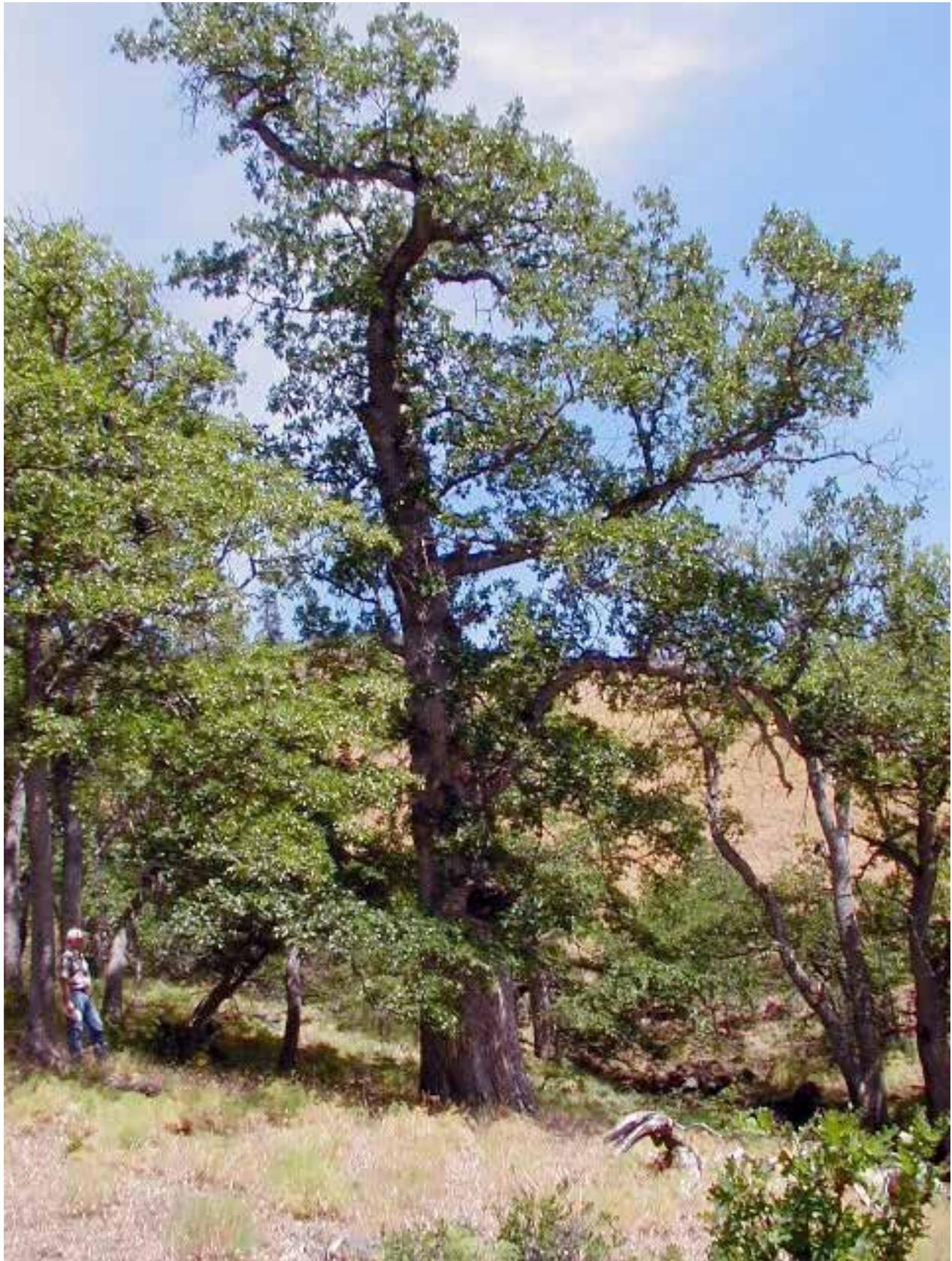
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Oregon white oak on Soda Springs Unit
Photo by Sue Van Leuven

Wildlife Area Management Planning Overview

Introduction

Washington's wildlife areas contain important habitat managed for the perpetuation of fish and wildlife as well as public enjoyment. Wildlife area management plans, which are developed with input from the public and other stakeholders, provide guidance related to activities on these lands, including habitat restoration, research, land management and recreation. The plans are updated every two years, and periodically go through a major revision to integrate new agency initiatives, priorities and adapt to changing conditions. The Washington Department of Fish and Wildlife (WDFW) is currently writing new plans for several of the state's 33 wildlife areas, including the Klickitat Wildlife Area (KWLA).

Wildlife Area Management Planning Framework

Each new plan is guided by the Wildlife Area Management Planning Framework (Framework), which summarizes the agency's mission, laws, policies and approaches to management of fish and wildlife, as well as public use and recreation. The framework summarizes priorities and guidance developed in each of the agency's three programs – Fish, Wildlife and Habitat. Readers are encouraged to review the framework in advance, or as a companion document to this wildlife area plan (insert link).

The KWLA is located in south central Washington, about 15 miles west of Goldendale, and within close proximity to the Columbia River Gorge National Scenic Area, a major tourist destination and recreational area. The wildlife area consists of seven separate units and covers nearly 16,000 acres. Four of the wildlife area's seven units border the Klickitat River, which provides a variety of recreation activities including fishing and rafting along the river itself. The Klickitat Trail provides hiking, wildlife viewing and mountain biking and follows the river on an abandoned railroad grade from near Goldendale to the Columbia River just west of The Dalles, Oregon. One unit straddles Swale Creek, a major tributary of the Klickitat River, and one unit lies along Spring Creek adjacent to the Goldendale Trout Hatchery. One unit is situated on basalt benches along the north shore of the Columbia River. See maps beginning on page 11.

The 2016 Klickitat Wildlife Area Management Plan (Plan) describes current conditions, priorities, and strategies for management, and includes provisions to meet anticipated changing needs. As stated in the framework, the plan is intended for two audiences: 1) the public and other stakeholders; and 2) wildlife area staff. This plan covers all seven units of the Klickitat Wildlife Area, listed by name as follows: Soda Springs, Mineral Springs, Dillacort Canyon, Fisher Hill, Swale Creek, Goldendale Hatchery, and Sondino Ponds. The previous plan was completed in 2006 and can be found online at http://wdfw.wa.gov/lands/wildlife_areas/management_plans/klickitat/.

The Klickitat Wildlife Area features eastside conifer forests, riparian shrub and woodlands, open grasslands, cliffs and talus slopes, steppe, emergent marsh, and some of Washington's best examples of Oregon white oak habitat. The area is home to a wide variety of wildlife, including game species such as black-tailed deer, elk, black bear and cougar, as well as rare species such as the golden eagle, western pond turtle and western gray squirrel. The Klickitat River retains natural spawning beds for salmon and steelhead, and is regionally renowned for excellent fishing. The original purpose for the wildlife area was to conserve important winter range for deer, critical stream habitat for steelhead, and provide access for hunting and fishing.

Purpose

The Klickitat Wildlife Area Management Plan guides all management activities that occur on the wildlife area units and establishes management priorities for the next 10 years. The Plan ensures lands are managed consistent with the Washington Department of Fish and Wildlife's mission, strategic plan and the area's original funding sources.

The plan is developed with public input, and when completed, will provide information on what can be found at the wildlife area and how fish, wildlife and their habitats are protected and conserved. It will be used by staff to implement and evaluate management activities consistent with the agency's mission.

Public Outreach and Stakeholder Involvement Process

The agency is committed to a transparent and inclusive public outreach process for all wildlife area management plans. Under the umbrella of the statewide goals listed on page 9, a customized outreach strategy is developed for each area, tailored to the stakeholders and local and out of the area visitors. For the Klickitat planning process, the public process includes three elements: 1) public and Wildlife Area Advisory Committee (WAAC) meetings; 2) development and distribution of fact sheets, meeting announcements and news releases; and, 3) solicitation of public comments through the WDFW website, phone and email. A complete summary of the public outreach activities is included in Appendix I

Vision

The vision for the Klickitat Wildlife Area is to recover sustainable populations of western gray squirrels through improved forest health; recover sustainable populations of western pond turtles, maintain and enhance habitat for game and upland bird populations; restore Oregon white oak woodlands and grasslands; restore salmon habitat, and provide a variety of public recreational opportunities.

Statewide Planning Goals

This Plan sets management priorities for Klickitat Wildlife Area for the next 10 years, consistent with the Statewide Planning Goals listed on page 9 and summarized in the Planning Framework. A complete list of Klickitat Wildlife Area goals, objectives, and performance measures are listed in Appendix A.



Mountain ladies' slippers surrounded by lupine, Soda Springs Unit
Photo by Sue Van Leuven

Statewide Planning Goals

-
- WLA Goal 1** **Restore and protect the integrity of priority ecological systems and sites.** This goal originates from the WDFW Strategic Plan, Goal #1. “Conserve and protect native fish and wildlife”. Ecological integrity monitoring on priority sites will be developed as part implementation for each individual wildlife area plan discussed on page 51. The Klickitat Wildlife Area developed forest restoration actions that improve the forest health while maintaining and/or improving western gray squirrel and Oregon white oak habitat (see Forest Management Plan in the appendix).
-
- WLA Goal 2** **Sustain individual species through habitat and population management actions, where consistent with site purpose and funding.** This goal relates to WDFW Strategic Plan, Goal #1. Each individual wildlife area plan will provide a summary of species associated with the wildlife area and will focus on target species for habitat management actions.
-
- WLA Goal 3** **Provide fishing, hunting and wildlife related recreational opportunities where consistent with Goals 1 and 2.** This goal is consistent with the WDFW Strategic Plan, Goal #2. Each plan will provide a summary of recreation activities associated with the wildlife area, aiming toward balancing recreational activities with species and habitat protection.
-
- WLA Goal 4** **Engage stakeholders in consistent, timely and transparent communication regarding WLA management activities.** This goal relates to Strategic Plan Goal #3, “Promote a healthy economy, protect community character, maintain an overall high quality of life, and deliver high-quality customer service”. As described under the public outreach section of this document, the public are a key component in the development of the management plan through the wildlife area advisory committee efforts and public meetings. After the plan is adopted the management plan updates will be reviewed by the wildlife area advisory committee on a biannual basis.
-
- WLA Goal 5** **Maintain productive and positive working relationships with local community neighbors, lessees partners and permittees.** As part of day to day business, wildlife area staff strive to maintain positive working relationships with grazing and agricultural lessees and the local community.
-
- WLA Goal 6** **Hire, train, equip, and license, as necessary, WLA staff, to meet the operation and management needs of WLAs.** This goal is consistent with Goal 4 of the Strategic Plan, “build an effective and efficient organization by supporting the workforce, improving business processes, and investing in technology”. Specific activities on wildlife areas include staff training and hiring qualified staff.
-
- WLA Goal 7** **Maintain safe, highly functional, and cost-effect administration and operational facilities and equipment.** This goal is consistent with WDFW Strategic Plan Goal 4. Maintenance of facilities and equipment is a key activity on wildlife areas. Annual reporting is required by WDFW and agencies that provide operations and maintenance funding (e.g. U.S. Fish and Wildlife Service, Pittman Robertson).
-

Success Stories

Fish and Wildlife Habitat Conservation and Recreation

The Klickitat Wildlife Area contains habitats of regional significance for resident and migratory black-tailed deer, and for salmon and steelhead. Wildlife biologists and hunters have long recognized the importance of the Klickitat River Canyon in sustaining healthy game populations, prompting the agency to develop a plan for conserving habitat in this area through strategic land acquisitions and management agreements. This program was also intended to preserve public access for hunting and fishing. WDFW's predecessor agency, the Department of Game, made the first purchase of private land for the Klickitat Wildlife Area in 1948, creating one of the state's oldest wildlife areas. WDFW has since secured 14,000 acres for the protection of fish and wildlife habitat and recreation. The development and maintenance of water access sites along the Klickitat River, as well as easements along the streambank, assures public access to the river. This represents a long-term commitment by WDFW to achieve its original goals for the wildlife area, which is a popular hunting and fishing destination, attracting visitors from across the nation.

Western Gray Squirrel

The Klickitat Wildlife Area provides critical habitat for the western gray squirrel, a focal species for management actions on the wildlife area. Management actions aimed at protecting this sensitive species are consistent with our mission and strategic plan. Forest restoration activities will be achieved in a manner consistent with protection of the western gray squirrel. WDFW began researching the ecology and biology of western gray squirrel on the Klickitat Wildlife Area in the late 1990s. Population surveys at that time had shown that western gray squirrel were absent from large areas of their former range, causing concern for the future of the species and prompting the WDFW to list the species as threatened in Washington state. Based on this research, guidelines for protecting critical habitat were developed for public and private

landowners. For example, forest management on private lands adjacent to the wildlife area has shown increases in western gray squirrel nesting based on implementation of the guidelines, and WDFW is currently developing similar projects on the wildlife area (WLA) to replicate those results.

Western Pond Turtle

The Klickitat Wildlife area provides some of the last remaining habitat for the western pond turtle in the state of Washington and is listed as a state endangered species. Recovery actions focused on the wildlife area include: wetland restoration, control of non-native vegetation and control of bullfrogs (predators). By the 1980s, the western pond turtle, a formerly common species in Washington, had become rare in the state. However, in the 1990s, volunteers affiliated with the Woodland Park Zoo verified the presence of western pond turtles within the Columbia River Gorge. With the help of volunteers and biologists, WDFW located a Gorge-area landowner who was willing to sell property to WDFW for the protection of western pond turtle habitat. This acquisition established the Sondino Ponds Unit, which WDFW has increased in size through additional land purchases. The unit now harbors the largest naturally-occurring population of western pond turtles in Washington.

WDFW biologists and volunteers successfully implemented a "head start" program that improves the survival rate of hatchling turtles. Hatchlings are collected in the wild and reared at zoos. When the turtles are released back into the wild at the age of 10 months, they are the size of 3-year-old wild turtles. The program has allowed significant numbers of young turtles to be reintroduced into protected sites to bolster the population of this species. Great strides have been made in saving western pond turtles from extirpation in Washington, thanks to recovery efforts at the Sondino Ponds Unit. The WDFW estimated there were 251 turtles on the Klickitat Wildlife Area in 2014, and this population has met the recovery goals of having a population of more than 200 turtles, which occupy habitat that is secure from development or major disturbance.

Wildlife Area Management Plan Elements

This section will provide a description of each of the seven units of the Klickitat Wildlife Area including property location and size, resource management, recreation and public use, land ownership and management.

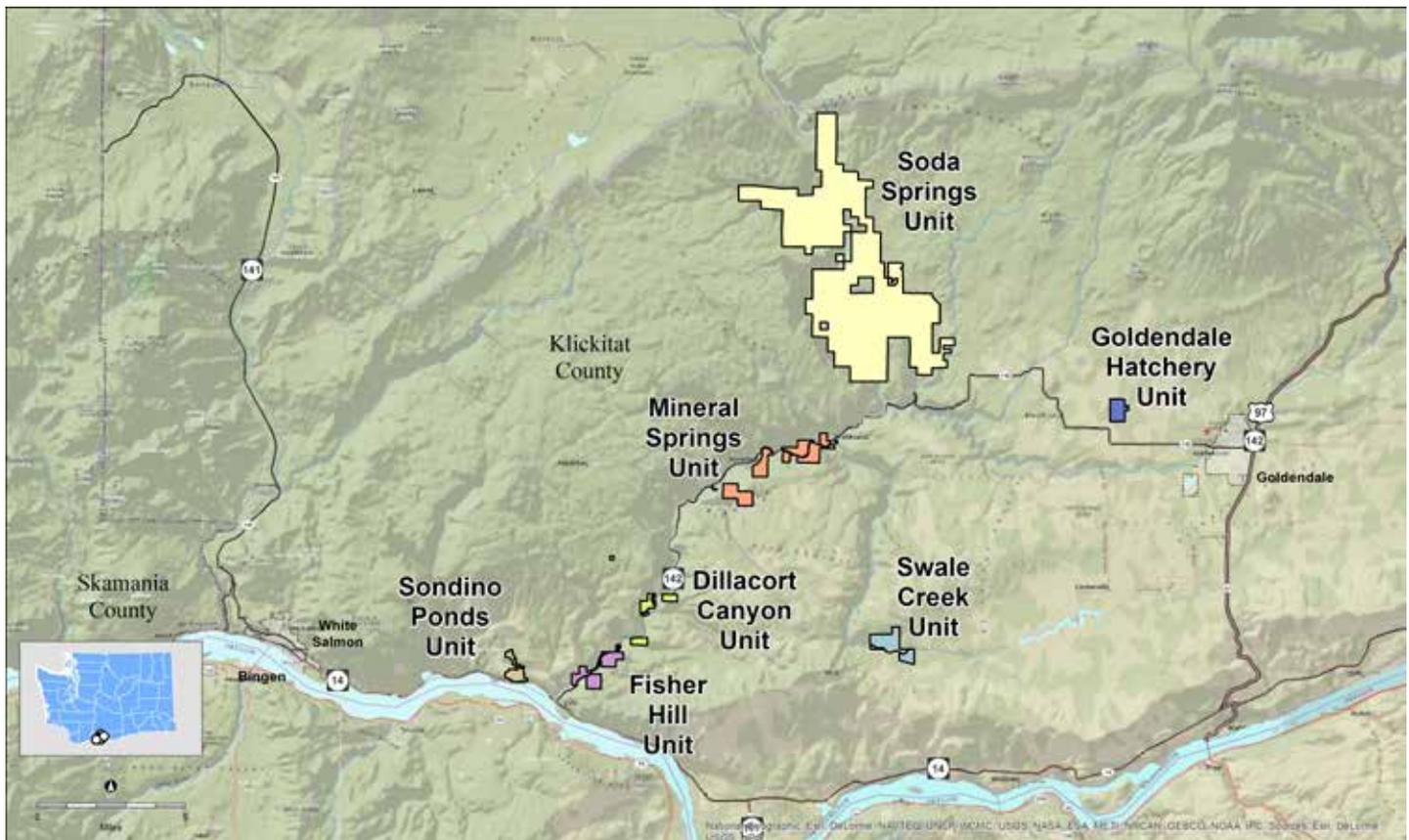
Property location and size

The Klickitat Wildlife Area is located in south central Washington, in the western portion of Klickitat County. It lies on the east slope of the Cascade Mountains, halfway between the Columbia River Gorge to the south and Mount Adams to the north. The elevation for the wildlife area ranges from 80 to 2,220 feet. Map 1 illustrates the Klickitat Wildlife Area on the landscape and includes seven units: Soda Springs, Mineral Springs, Dillacort Canyon, Fisher Hill, Goldendale Hatchery, Swale Creek and Sondino Ponds. Descriptions of each wildlife area unit follow, along with individual maps of each unit.

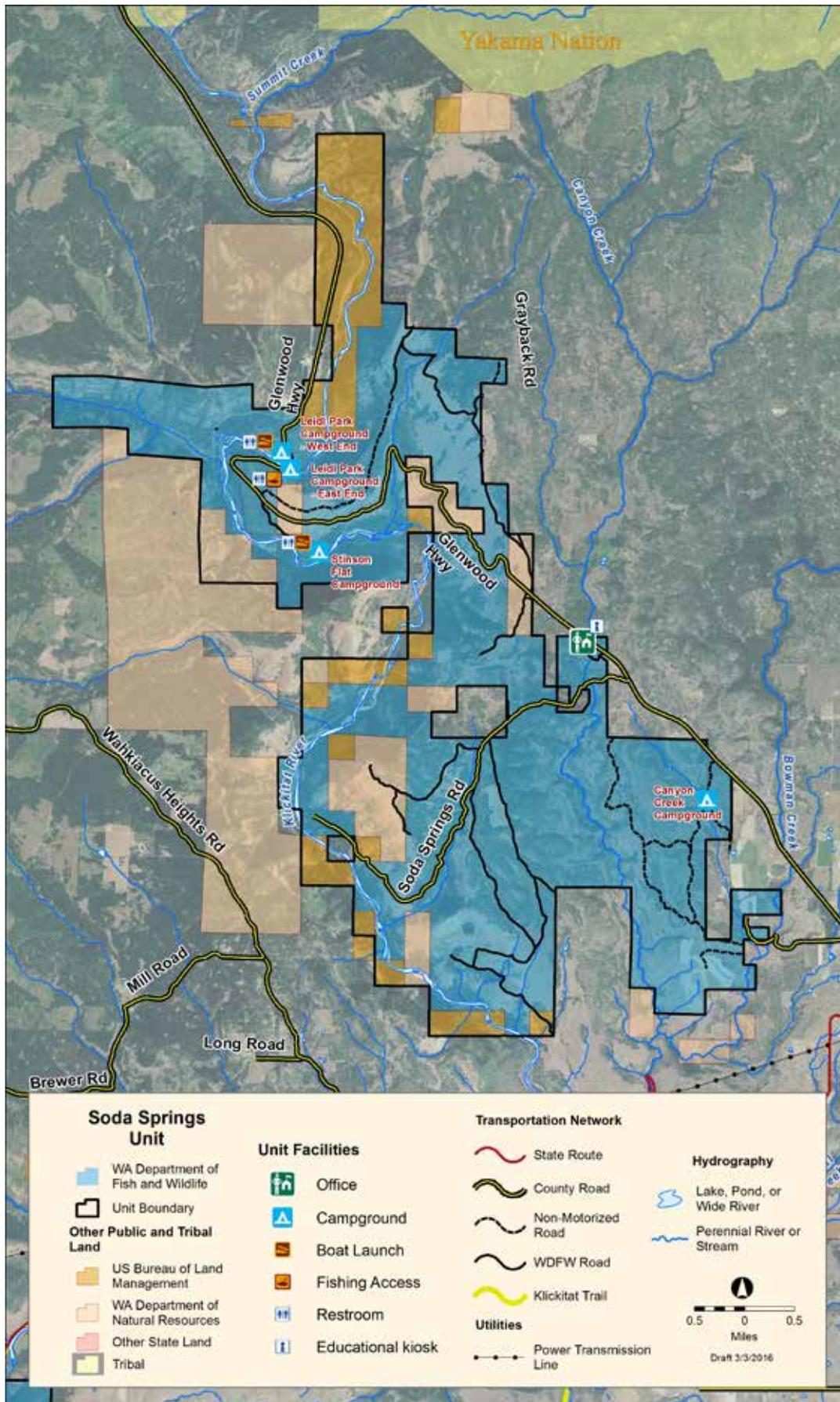
Soda Springs Unit consists of 13,000 acres in mostly contiguous parcels. About 2,100 acres are managed jointly between WDFW and the Bureau of Land Management (BLM). Habitats are varied and consist of conifer forest, mixed pine-oak forest, Oregon white oak woodland, riparian forest, open grasslands, aspen groves, talus slopes, cliffs and bluffs. This unit is managed to preserve and enhance habitat for game species, primarily black-tailed deer and wild turkey. Western gray squirrel also can be found on this unit. Popular activities include hunting, camping, hiking, wildlife watching and sport fishing. The unit is also part of the Audubon Sun and Sage Loop (Great Washington Birding Trail).

Mineral Springs Unit is located in the Klickitat River Canyon. Habitat on the 1,108-acre unit consists of riparian forest, conifer forest, mixed pine-oak forest, Oregon white oak woodlands and grasslands. Wildlife species include

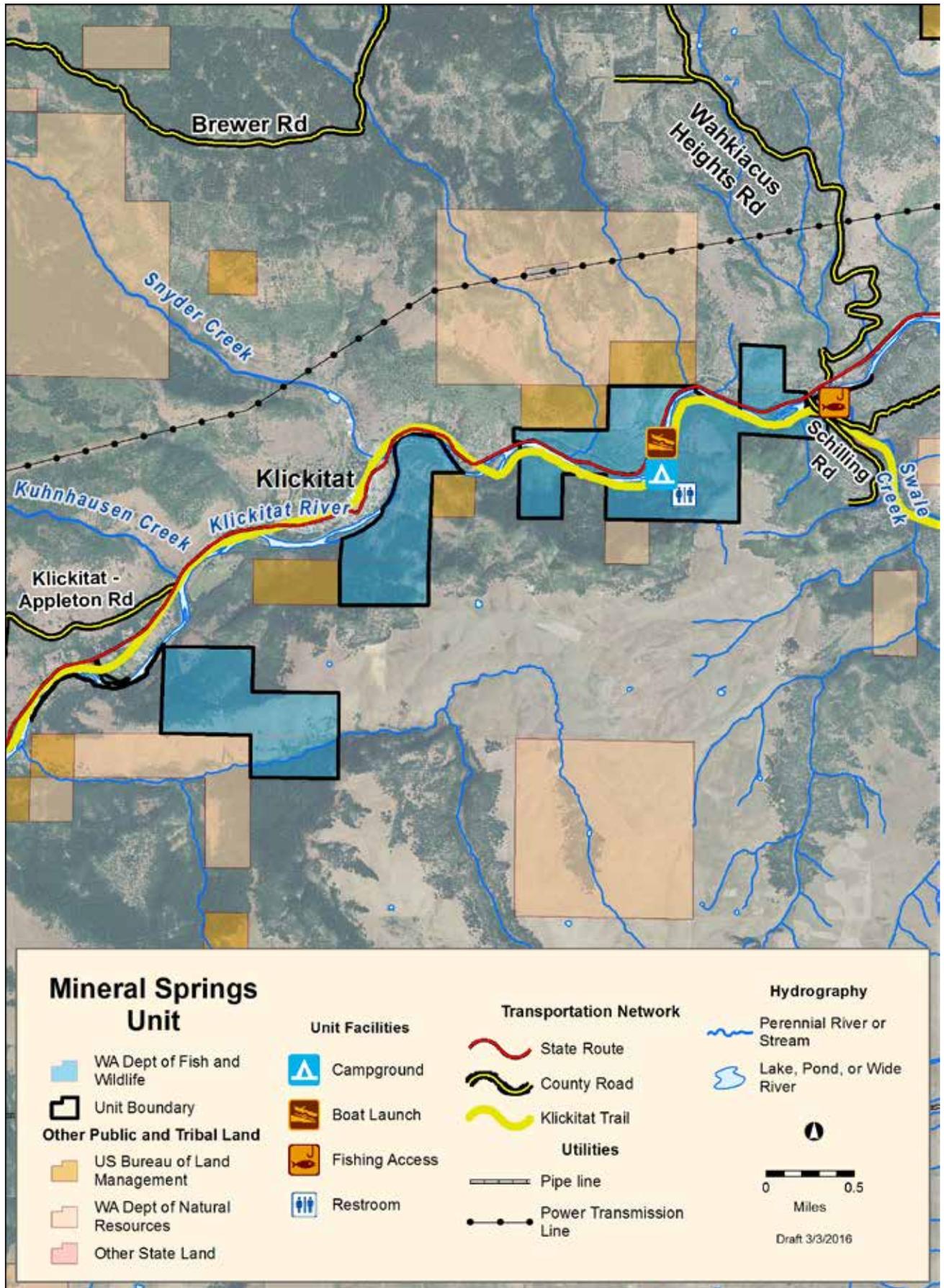
Map 1. Klickitat Wildlife Area



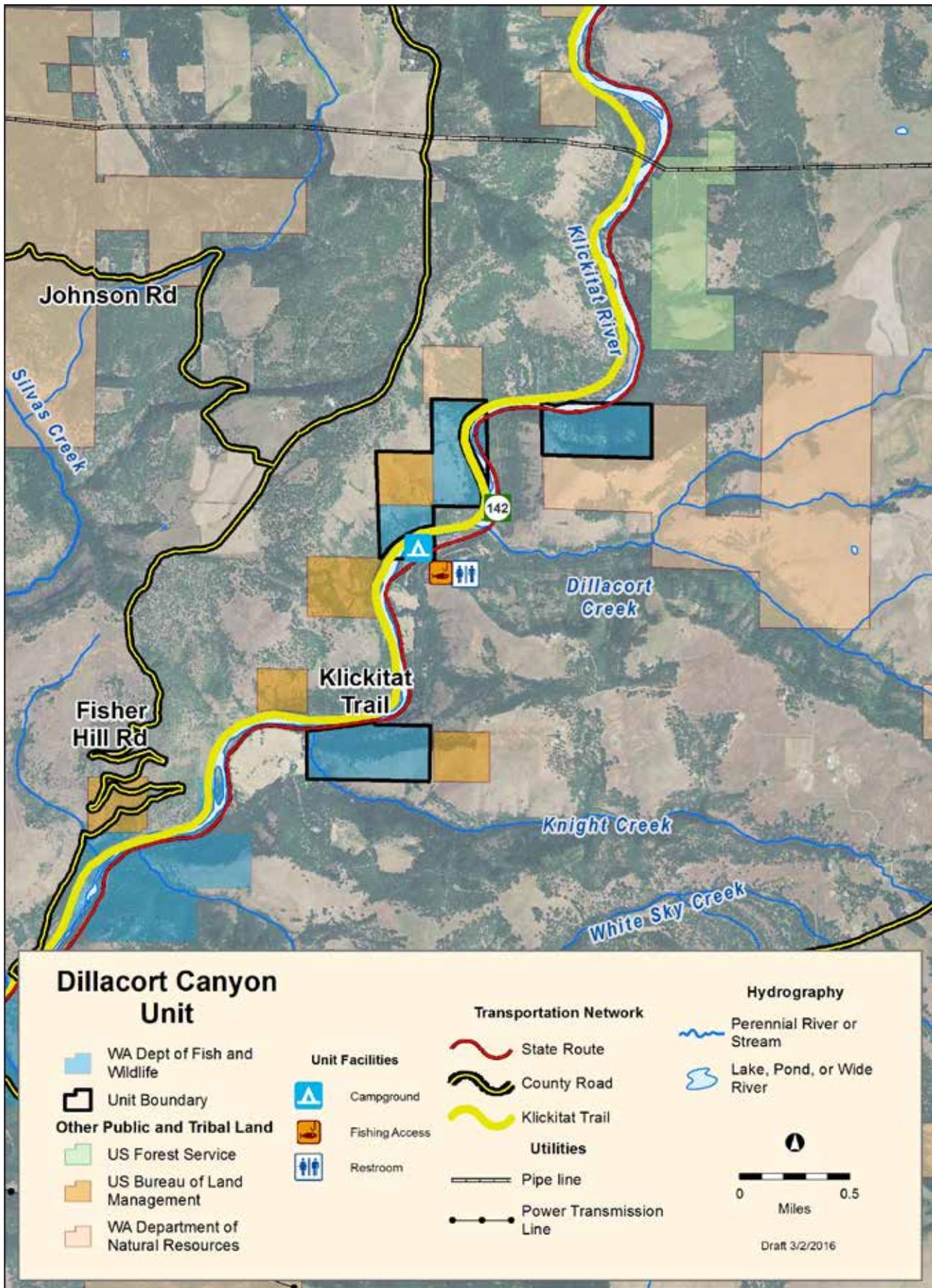
Map 2. Soda Springs Unit



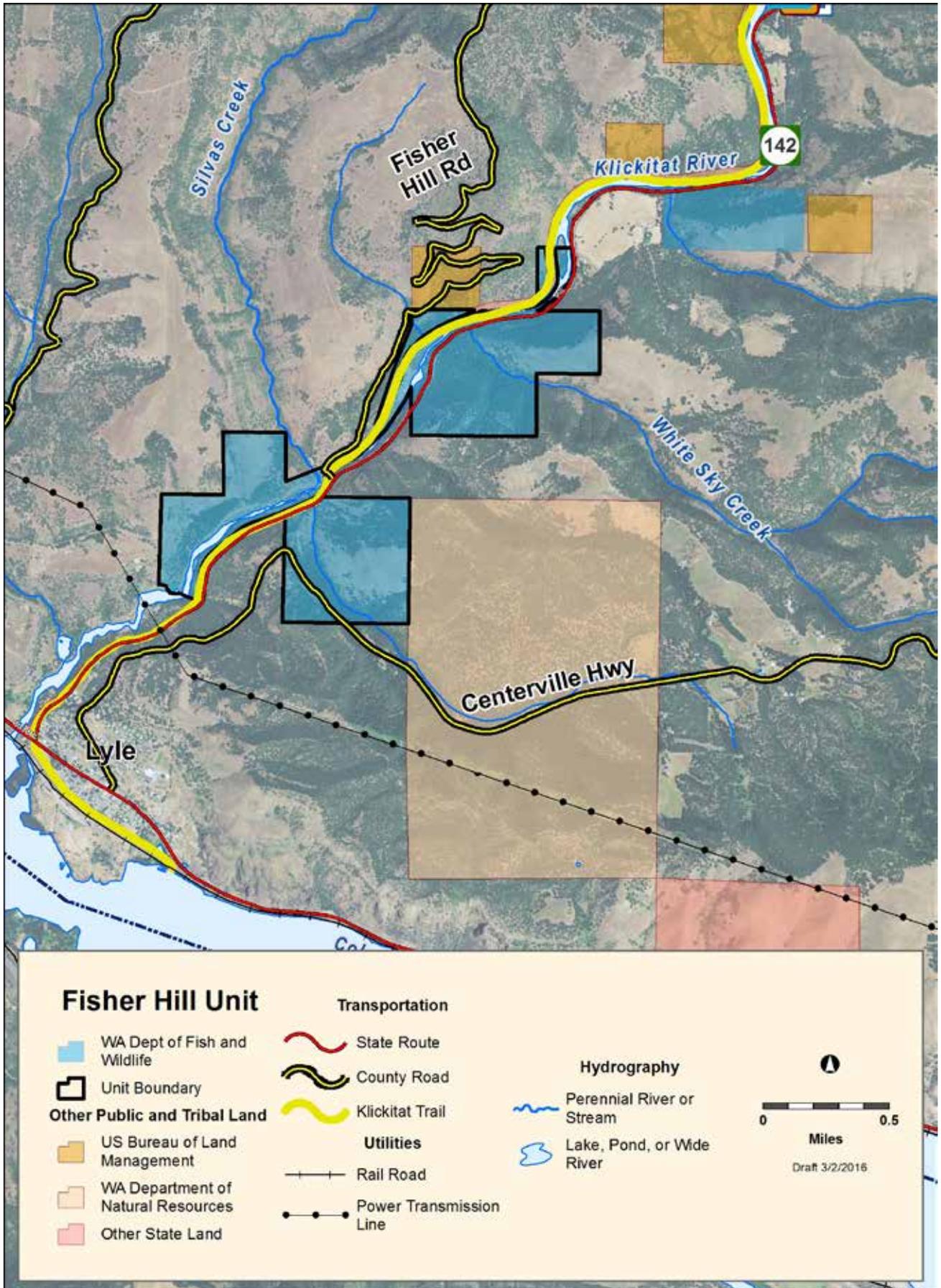
Map 3. Mineral Springs Unit



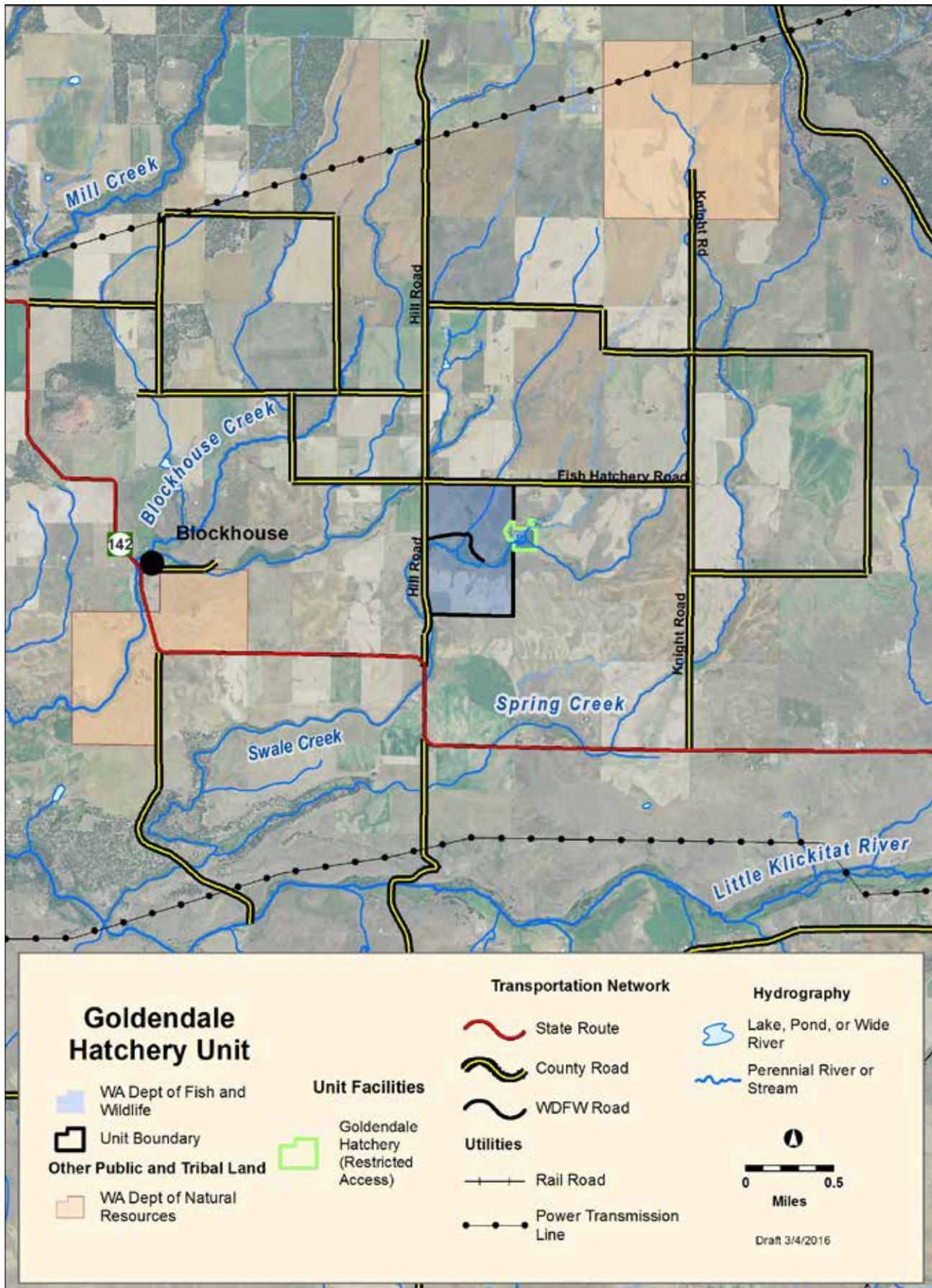
Map 4. Dillacort Canyon Unit



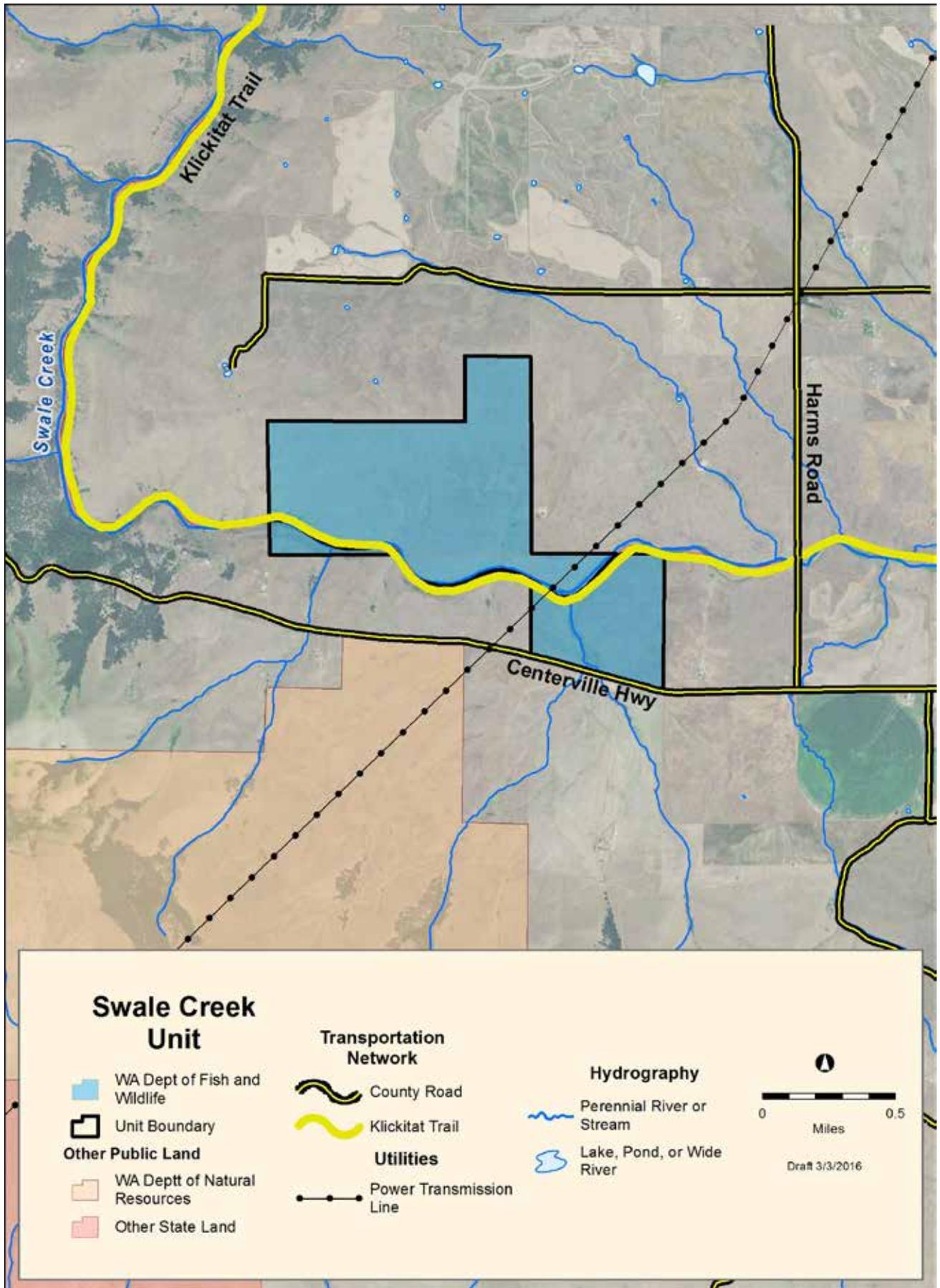
Map 5. Fisher Hill Unit



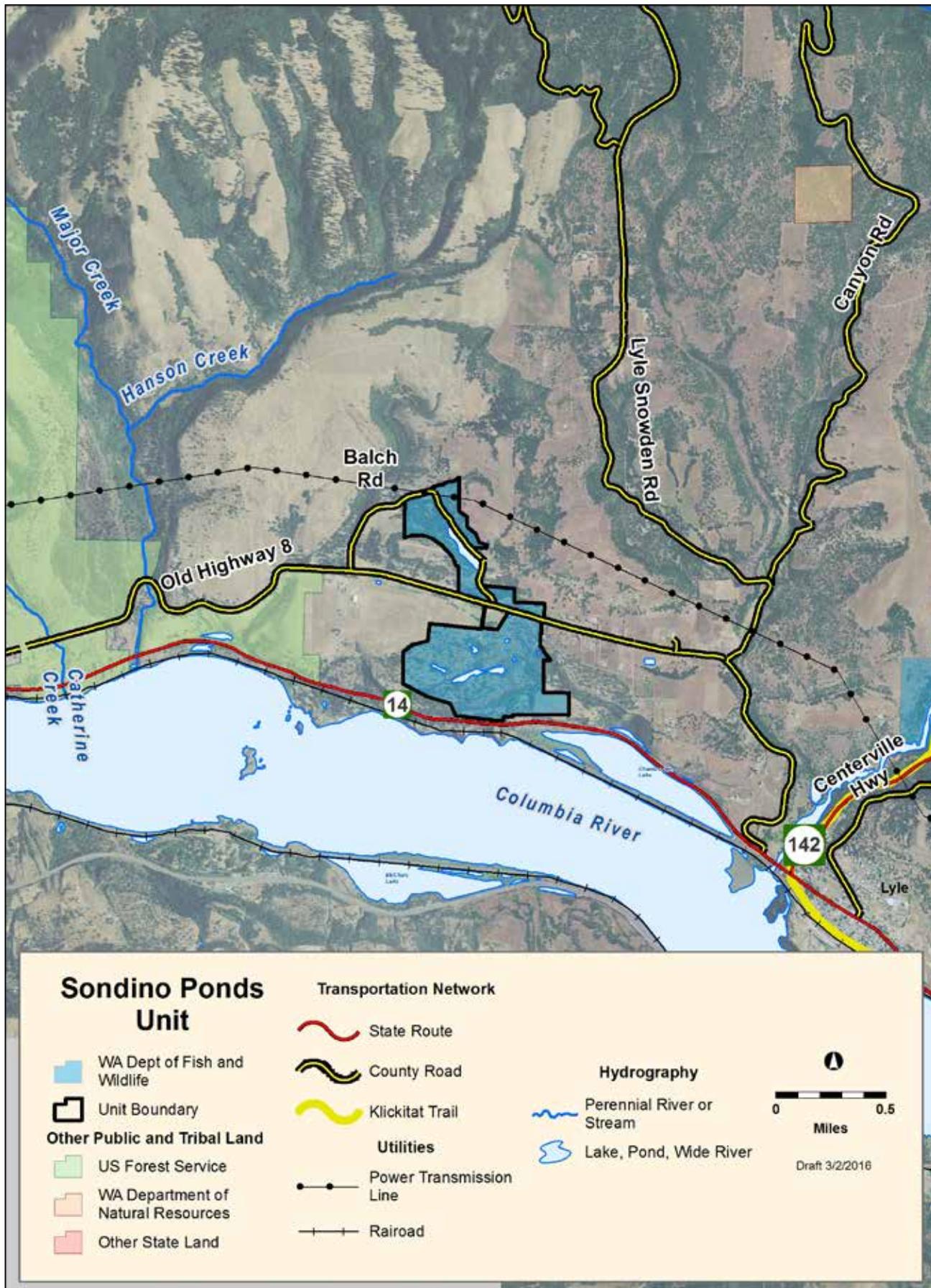
Map 6. Goldendale Hatchery Unit



Map 7. Swale Creek Unit



Map 8. Sondino Pond Unit



deer, grouse, turkey and songbirds associated with the riparian habitat. The chimney of an old water-bottling plant on the property serves as a roosting site for Vaux's swifts (a state candidate species). Popular recreation activities include fishing and hunting, and overnight camping.

Dillacort Canyon Unit consists of 340 acres within the Klickitat River Canyon. WDFW and BLM jointly manage portions of the property. Habitat types include pine-oak forest, Oregon white oak woodlands, cliffs, bluffs, talus slopes, grasslands and riparian areas. Western gray squirrel and black-tailed deer are present on the property. A water access site along the Klickitat River is popular for camping and fishing.

Fisher Hill Unit consists of several parcels of land that total roughly 480 acres. This unit is located on the Klickitat River, downstream from the Dillacort Canyon unit. This segment of the river flows through a narrow channel that was fished by members of the Yakama Indian Nation and remains an important fishing site today. Habitat types at Fisher Hill include cliffs, pine-oak forest, Oregon white oak woodlands, and open grasslands similar to Dillacort Canyon. Wildlife species include wild turkey, western gray squirrel, Lewis' woodpecker, bald eagle and black-tailed deer.

Goldendale Hatchery Unit is located along Spring Creek adjacent to WDFW's Goldendale Fish Hatchery. The 240-acre unit historically was a farm and its agricultural fields are now being cultivated under a sharecrop agreement. Habitat consists of wheat fields, steppe, scattered pine trees, wetland shrubs, and escaped ornamental and forage plants. A portion of the wheat produced is left in the field as supplementary feed for upland game birds. Recreation uses include waterfowl and pheasant hunting, the latter supported with birds that are reared and released at the wildlife area. Trout fishing is popular on Spring Creek.

Swale Creek Unit consists of 516 acres straddling Swale Creek, west of Centerville. The habitat is mostly steppe with riparian areas along two creeks, offering upland game bird hunting opportunities. Hiking and wildlife viewing also are popular activities on this unit.

Sondino Pond Unit is considered the most important western pond turtle habitat in Washington. WDFW bought the 219-acre area near Lyle to protect this species. The parcel historically was used for agriculture and contains seasonal and year-round wetlands. Access to the unit is restricted in order to protect the turtle population and restore the native habitat.



Boat ramp at Leidl Park Access, Soda Springs Unit
Photo by Lauri Vigue

Geology and Soils

Three million to 16 million years ago, major geological events shaped southcentral Washington. In central and eastern Oregon, the great basalt floods occurred repeatedly over a four million year period and moved the ancestral Columbia River valley northward. The Cascades mountain range began to fold up into an arch, producing a rain shadow east of the Cascades. As the mountains rose, the Columbia River carved out a deep gorge. The volcanoes of Mt. Adams and Mt. Hood formed about a million years ago. During the Ice Age, ice sheets from Canada advanced and retreated causing changes in climate and increasing precipitation. These changes accelerated erosion of the Gorge, enabling the river to maintain its course while the Cascades were rising. During the melting of the ice sheets in Canada and northern Washington, huge ice dams formed, creating lakes as large as 3,000 square miles. When these dams failed, catastrophic floods flowed (Missoula Floods) down the Columbia River and across eastern and central Washington widening the narrow “V” shaped canyon of the Columbia River Gorge. During a period of 2,500 years as many as 100 floods scoured the Gorge.

The extensive erosion-resistant basalts, which dominate the basin, have formed deep (700 to 1,500 feet) canyons with steep walls. This geomorphology creates a pattern where most of the Klickitat mainstem (main course of the river) is a canyon with steep walls and a narrow valley floor. There are several waterfalls in these reaches, which are among the main factors limiting anadromous fish distribution in the watershed. The stream reaches in the plateau are lower gradient and are able to develop meander patterns. These areas tend to have more agriculture, urban and recreational land use (WDOE 2005).

Generally, the soils within the wildlife area are shallow and rocky. Approximately 50 percent of the wildlife area contains soil known as Leidl-Wahoo complex, which is found within the breaks of the Klickitat River, Dry Canyon (Canyon Creek), Dead Canyon and Sheep Canyon drainages. This shallow, rocky soil ranges in slope from 30 to 75 percent. The bench area of wildlife area is

composed mostly of Gunn and Kiakus-Munset-Wahoo complex. 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 zero to 30 percent. These two soil types, Gunn and Kiakus- Munset-Wahoo complex, cover approximately 30 percent of the wildlife area.

Hydrology and watersheds

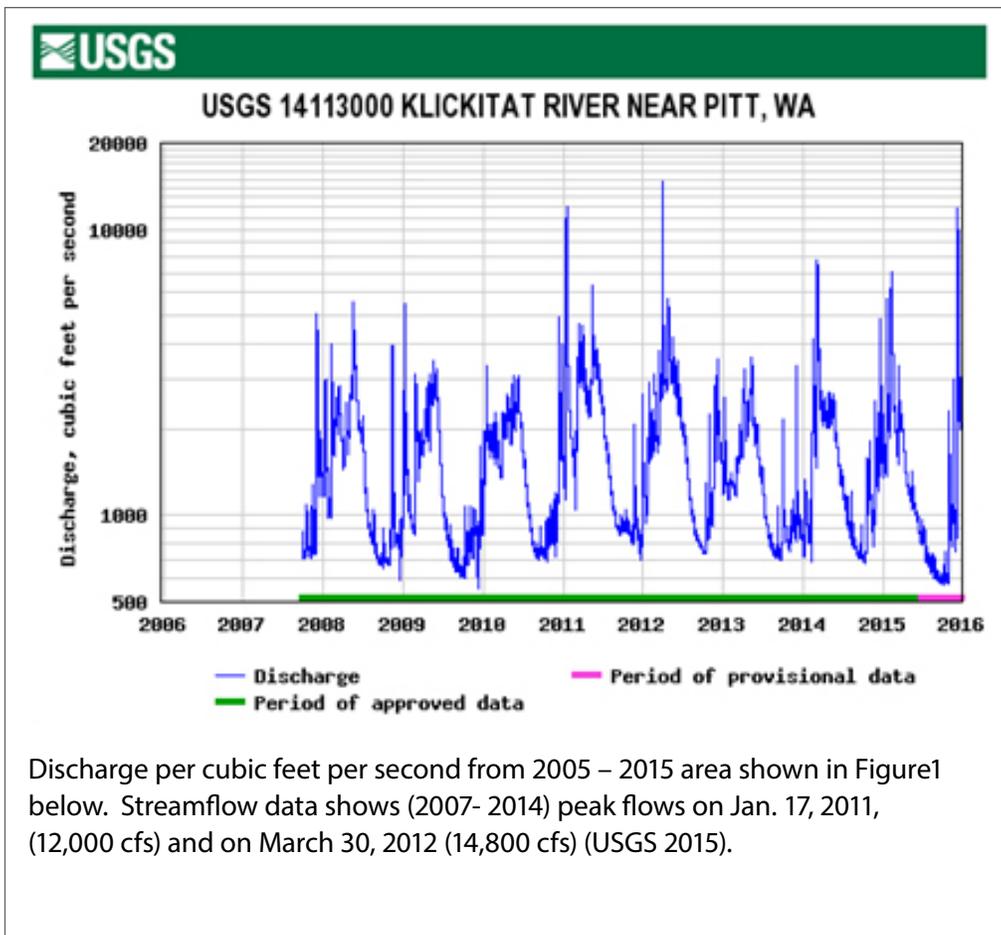
The Klickitat River sub-basin covers an area of 1,350 square miles in southcentral Washington State. It begins in the Cascade Mountains below Cispus Pass (elevation 5,000 feet). Cispus Pass is located in Goat Rocks Wilderness, between Cispus and Klickitat basins, and flows 95 miles to join the Columbia River at Lyle, Washington, (river mile 180.4), 34 miles upstream from Bonneville Dam (elevation 74 feet). The headwaters of the Klickitat River drain from Mt Adams on the eastern flanks of the Cascade Mountains. It is also a shoreline of statewide significance. A description of WDOE’s definition of shorelines of statewide significance can be found at this link: http://www.ecy.wa.gov/programs/sea/sma/st_guide/jurisdiction/SSWS.html.

The primary tributary to the lower Klickitat River is the Little Klickitat River, which drains the Simcoe Mountains located to the east of the mainstem Klickitat River. The Middle Klickitat sub-basin consists primarily of low rolling hills and steep canyon areas. Such canyons can be found in the lower reaches of the Little Klickitat River, the lower Klickitat River sub-basin, the lower portion of Swale Creek, near the mouths of the tributaries to the Klickitat and Little Klickitat Rivers, and in the smaller tributaries along the Columbia River. The Klickitat River flow is primarily fed by rain and snowmelt in winter and early spring and by glacial meltwater in late spring and summer. Stream flow data from the U.S. Geological Survey (Figure 1) shows the seasonal variation of stream flows for the Klickitat River. The West Fork Klickitat provides most of the summer flow in the Klickitat River (J Byrne pers comm).

Numerous springs are present on the wildlife area. There are 29 man-made ponds and one natural pond located on the Soda Springs Unit. Most are filled by runoff, however a few are fed by springs. The flows of these freshwater springs vary from being wet spots to nearly 10 gallons per minute. The mineral springs in the Klickitat River Canyon are naturally carbonated. Some of the mineral springs flow more or less constantly, while others are

intermittent and unpredictable. The Sondino Ponds Unit contains a complex of natural and man-made ponds; most are ephemeral, lasting a short time, but three are perennial most years.

Figure 1. Klickitat River Streamflow Data 2015 (USGS)





Hyacinth cluster lily on Soda Springs
Photo by Sue Van Lueven

Resource Management

As summarized in the framework, resource management activities at the state's 33 wildlife areas are prioritized by the requirements of state and federal laws (including the Endangered Species Act) and funding requirements (from property acquisition and/or funds used for ongoing operations and maintenance). Other sources of resource information include statewide plans for species and/or habitats, and other scientific approaches by internal and external parties (e.g. Ecological Integrity Assessments National Heritage Program). Other drivers of management actions on the landscape include collaborative work done with other conservation organizations including tribal governments, land trusts and other land management organizations, academic research programs, and even the specific interests of volunteers if they fit within mission and budgetary sideboards.

All of these are considered in the wildlife area management planning process, and are addressed in each plan consistently. The range and detail of these laws, studies and plans are described in more detail within the framework.

Species Management

Species are managed from two primary perspectives – 1) conservation and protection to manage sustainable populations; and 2) to provide recreational and commercial opportunities, consistent with the agency mission of preserving, protecting and perpetuating fish, wildlife and ecosystems. Either one or both of these factors were a key reason most wildlife area lands were purchased. The funding requirements reflect these goals, which are the fundamental drivers of all management activities on wildlife area lands. The framework defines the different ways species are classified – including listed, threatened and endangered species, and the broader category of Species of Greatest Conservation Need (SGCN). It also

includes goals from the WDFW's Game Management Plan which includes protecting, sustaining and managing hunted wildlife; providing stable, regulated recreational hunting to all citizens, protecting and enhancing wildlife habitat and minimizing adverse impacts to residents, other wildlife and the environment.

The Klickitat Wildlife Area supports a wide variety of game and nongame species, including black-tailed deer, wild turkey, black bear, bobcat, gray partridge, western gray squirrel, western pond turtle, white-headed woodpecker, bald eagle, golden eagle, and Lewis' woodpecker. It has 18 documented species of amphibians and reptiles including 14 reptiles (10 snakes) and 4 amphibians (Anderson pers comm.). See Appendix F for a complete list of species that occur on the WLA.

State- and federally-listed, threatened and/or endangered species, as well as priority habitat and species, known as PHS, and SGCN species found on KWLA are identified in Table 1. Bull trout, steelhead and northern spotted owl are federally threatened. Another four species including the bald eagle, western pond turtle, western gray squirrel, and western toad are federal species of concern; four are state listed species, and there are an additional 3 state candidate species (Lewis' woodpecker, northern goshawk, Vaux's swift).

All seven units combined provide habitat for 11 Species of Greatest Conservation Need (SGCN), defined in the framework as species not yet listed but of conservation concern and may need additional research attention; and 22 Priority Habitat and Species (PHS), PHS is defined as habitats and species determined by WDFW to be priorities for conservation and management (Table 1). Additionally the Priority Habitat and Species list of Klickitat County is available in Appendix F.

Table 1 . State and Federal Conservation Status, WDFW Priority Habitats and Species (PHS) and Species of Greatest Conservation Need (SGCN) Criteria and Priority Areas that may occur on the wildlife areas.

Common Name	Scientific Name	Federal/State Status/SGCN	PHS Criteria	PHS Priority Area	Wildlife Area Unit
Bald eagle	<i>Haliaeetus leucocephalus</i>	FSC/SS/SGCN	1	Breeding area, communal roost, regular concentrations	Fisher Hill
Black-tailed deer	<i>Odocoileus hemionus columbianus</i>	--	3	Regular concentration/ Migration corridors	All
Bull trout	<i>Salvelinus confluentus</i>	FT/SC	1, 2, 3	Any occurrence	
California mountain kingsnake	<i>Lampropeltis zonata</i>	SC/SGCN	1	Occurrence	Fisher Hill , Sondino Ponds
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	--	1, 2, 3	Occurrence, migration	
Coastal resident cutthroat	<i>Oncorhynchus clarki clarki</i>	--	3	Occurrence	
Coho	<i>Oncorhynchus kisutch</i>	--	1, 2, 3	Occurrence	
Common sharp-tailed snake	<i>Contia tenuis</i>	SC/SGCN	1	Occurrence	Soda Springs, Sondino Ponds
Desert nightsnake	<i>Hypsiglena chlorophaea</i>	SGCN			Sondino Ponds
Lewis' woodpecker	<i>Melanerpes lewis</i>	SC	1	Breeding areas	Soda Springs
Marten	<i>Martes americana</i>	SGCN	3	Occurrence	Soda Springs
Merriam's wild turkey	<i>Meleagris gallopavo merriami</i>		3	Regular occurrence	Soda Springs
Mule deer	<i>Odocoileus hemionus hemionus</i>	--	3	Regular occurrence, breeding areas, migration corridors,	All
Mountain quail	<i>Oreortyx pictus</i>	--	3	Occurrence	Fisher Hill Soda Springs
Northern goshawk	<i>Accipiter gentilis</i>	SC	1	Breeding areas	Soda Springs
Northern spotted owl	<i>Strix occidentalis caurina</i>	FT/SE/SGCN	1		Soda Springs
Rainbow trout	<i>Oncorhynchus mykiss</i>	--	1, 3	Occurrence, migration	Goldendale Hatchery
Ring-necked snake	<i>Diadophis punctatus</i>	SGCN			Mineral Springs, Soda Springs, Sondino Ponds
Steelhead	<i>Oncorhynchus Mykiss</i>	FT/SC	1, 3		
Vaux's swift	<i>Chaetura vauxi</i>	SC	1	Communal roost	Mineral Springs
Western (Pacific) pond turtle	<i>Actinemys marmorata</i>	FSC/SE/SGCN	1	Any occurrence	Sondino Ponds
Western gray squirrel	<i>Sciurus griseus</i>	FSC/ST/SGCN	1	Any occurrence	Soda Springs, Dillacort Canyon, Mineral Springs, Sondino Ponds, Fisher Hill
Western toad	<i>Anaxyrus boreas</i>	FSC/SC/SGCN	1	Any occurrence	Soda Springs, Sondino Ponds
White-headed woodpecker	<i>Picoides albolarvatus</i>	SC/SGCN	1	Any occurrence	Soda Springs
Wood duck	<i>Aix sponsa</i>	--	3	Breeding areas	Sondino Ponds

Abbreviations: State endangered (SE), State threatened (ST), State Sensitive (SS), State Candidate for listing (SC), Federal endangered (FE), Federal candidate (FC), Federal species of concern (FSC); Species of Greatest Conservation Need (SGCN).

Game Species

There are 14 game species on the wildlife area and they include: black-tailed deer, elk, black bear, pheasant, cougar, bobcat, coyote, gray partridge, ruffed grouse, sooty grouse and mallard; chuckar, turkey and California quail are introduced species. Ruffed grouse and chukar occur on the Soda Springs unit and gray partridge occur on the Swale Creek Unit.

Game Management

Game species that require specific management actions in this plan include deer, elk, bear, cougar and pheasant. A summary of each species and the factors contributing to the emphasis on management actions is discussed below. The other game species present are managed incidentally as management actions are focused on priority species on the wildlife area. Hunting season regulations and habitat management for priority species on the wildlife area provide adequately for other game species. The WDFW Game Management Plan, available online at <http://wdfw.wa.gov/publications/01676/>, provides more detailed information regarding WDFW's statewide strategy for the management of these species.

Deer

Black-tailed deer are year-round residents on the wildlife area, and the population expands significantly during the winter when migratory deer are also present. In fact, WDFW initially established the wildlife area primarily to provide habitat for wintering black-tailed deer. Most black-tailed deer are migratory and use similar travel corridors from year to year from their higher elevation summer range to their winter range. Some travel long distances in order to spend the winter in the Klickitat Wildlife Area. They have a strong association with oak habitat and cultivated fields in the winter and typically use older forest stands on the wildlife area for summer habitat. Deer tend to avoid open roads.

In game management units (GMU) 578 (West Klickitat) and 388 (Grayback), black-tailed deer are managed with the common goal of providing recreational hunting opportunities and maintaining the health of the local herd. On the Klickitat Wildlife Area, the primary goal is to provide year-round habitat to support a healthy deer population. This is accomplished by maintaining forest

cover and foraging habitat on south-facing slopes, and growing crops attractive to deer on agricultural fields.

Although deer on the Klickitat Wildlife Area are considered black-tailed deer, many animals share traits of mule deer, which are very closely related. These two types of deer comingle where their preferred habitats overlap. For management purposes (hunting), the Klickitat River is considered the boundary between western and eastern Washington. All deer east of the Klickitat River in GMU 388 are managed as eastside mule deer even though they may have more black-tailed deer characteristics.

Elk

Elk are managed under two GMUs for the Klickitat Wildlife Area and they include GMU 578 (West Klickitat) and GMU 388 (Grayback). Elk in these GMUs are considered part of the larger Mount St. Helens elk herd. GMU 578 includes all lands in the Klickitat Wildlife Area west of the Klickitat River. GMU 578 is managed to keep elk numbers at a stable level and to monitor the population to address local damage issues associated with the White Salmon drainage and Glenwood Valley. Damage issues with elk in GMU 578 are primarily associated with dairy farms, orchards and some pasture land in the White Salmon River drainage. WDFW has a program in place to minimize elk damage to crops and pasture lands through management agreements with landowners. This cooperative program is designed to assist landowners by implementing fencing, hazing and through specific damage hunts to reduce pressure from elk. More information can be found at this link: <http://wdfw.wa.gov/publications/00771/>.

GMU 388 includes all lands east of the Klickitat River and this unit is managed primarily for elk suppression as this portion of the Klickitat Wildlife Area is prioritized for resident and migratory deer. In order to restrict expansion of the Mt St Helens elk herd, the GMU has a liberal hunting season. This strategy has been implemented to reduce forage competition from elk with resident and migratory deer.

Bear and Cougar

Bear and cougar are both found on the Klickitat Wildlife Area and managed as game species with the goal of

long-term population stability. Currently, there are no concerns for bear or cougar predation on existing big game populations associated with the wildlife area.

Black Bear: Black bears use the forests and open meadows in the wildlife area for habitat. WDFW manages black bear habitats to ensure a healthy and productive bear population. Black bear hunting occurs on the Klickitat Wildlife Area. Black bears on the wildlife area are managed as part of the East Cascades Hunt Zone, which is open from Aug. 1 – Nov. 15. The majority of bear harvest takes place in conjunction with the more popular fall general deer seasons. There have been few conflicts between bears and humans (while camping or hiking) in the wildlife area.

Cougar: The WDFW similarly manages cougar habitat to ensure a healthy and productive cougar population. WDFW manages cougar hunting to ensure that no more than 12 to 16 percent of the cougar population within each management unit is harvested annually. Although some hunters specifically target cougar during the appropriate seasons, most cougar harvest on the wildlife area is in conjunction with the general fall deer seasons.

The wildlife area is part of two cougar hunt areas (GMUs 578, 388) with seasons open from Sept. 1 to Dec. 31. These areas are managed on a statewide quota system and the season closes as of Dec. 31 if the quota is met. If the quota has not been filled by Dec. 31, then a late hunting season is in effect until April 30 unless the harvest quota is reached anytime during this period.

Pheasant

The primary management focus for pheasant on the wildlife area is to provide hunting opportunities by enhancing habitat and conducting bird releases. Pheasant releases are conducted annually to maintain upland bird hunting. Approximately 240 acres of farm and grassland habitat are managed for pheasant habitat on the Goldendale Hatchery Unit; and approximately 105 acres of fields are in wheat production under an agricultural lease. Since farming practices involve holding fields fallow in alternate years, about half of the acreage produces a wheat crop each year. Under the terms of the lease, 15 percent of the wheat is left standing in the fields for food and cover for pheasants.



Elk cow with calves
Photo by Doug Kuehn

Diversity Species

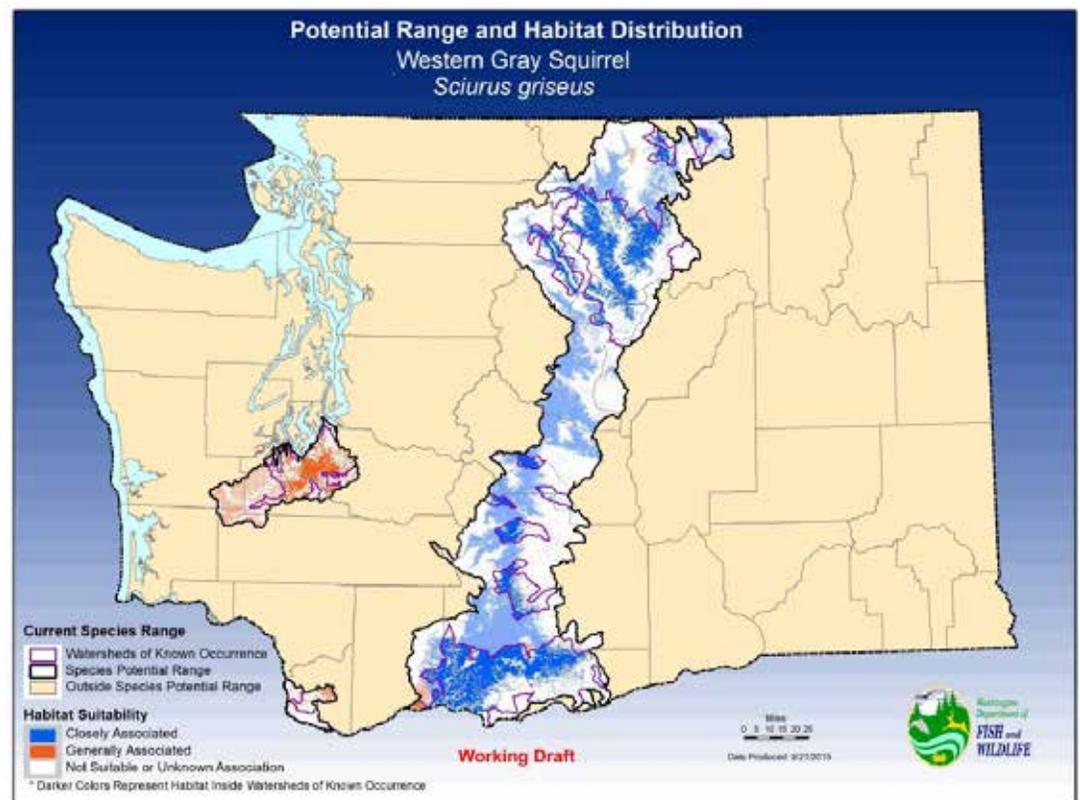
The Klickitat Wildlife Area supports a unique variety of “diversity” species – species that are not hunted – associated with the habitats found there. Diversity species include SGCN, PHS and federally and state listed species. Included in this group are two priority state listed threatened and endangered species (western pond turtle and western gray squirrel), which are actively managed on the Klickitat Wildlife Area. The following section summarizes recovery actions for these focal species on the wildlife area.

Western Gray Squirrel (State threatened)

Western gray squirrel populations have declined substantially in Washington since the late 1800s and are now limited in distribution to three separate areas: the Klickitat region, North Cascades and southern Puget Trough. The population for the Klickitat region is estimated to be 705 animals. Periodic trapping in good quality habitat on the wildlife area suggests that squirrel

abundance has remained relatively stable since 2000 (Vander Haegen, pers. comm). The greatest threats to western gray squirrel are habitat loss, disease and highway mortality. Western gray squirrel in the Klickitat region favor conifer-dominated forests over mixed Oregon white oak-conifer and pure oak, and usually occur in areas with a conifer overstory and an open understory (Linders 2000, Linders et al. 2010). In general, habitat connectivity (travel corridors) is essential for western gray squirrel and allows movement between patches, predator avoidance, access to mates, and juvenile dispersal (Linders et al 2010). Riparian areas may serve as important travel corridors for squirrels; especially in areas where dry uplands support limited tree cover (Wiles 2015). Ongoing habitat enhancement of oak communities has also likely benefitted this population. Regular burns of lower intensity can help restore forests to more natural conditions, thus providing many benefits for western gray squirrel (Wiles 2015).

Map 9. Potential Range and Habitat Distribution of the Western Gray Squirrel*



*Source. State Wildlife Action Plan (These maps are referred to as “potential” habitat distribution maps because they depict range as areas with documented occurrences, as well as areas with suspected or possible occupancy based on the availability of suitable habitat and the proximity of that suitable habitat to occupied areas.)

Western Pond Turtle (State endangered)

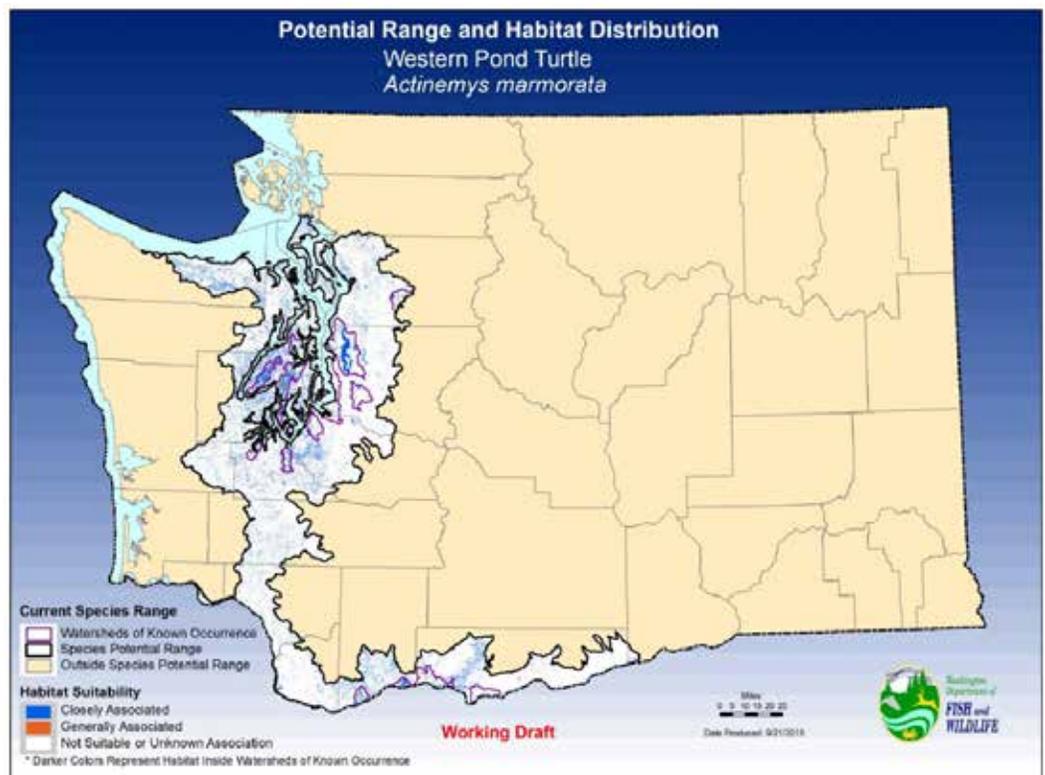
In the 1990s, only two populations of western pond turtle remained in the Columbia River Gorge, with estimates of less than 200 individuals in Washington. In 1992, WDFW began acquiring land in Klickitat County that hosted the largest turtle population remaining in the state; now managed as part of the Sondino Ponds Unit of the Klickitat Wildlife Area. WDFW, with conservation partners from Woodland Park Zoo and Oregon Zoo, established a “head-start” program for turtles in 1991. Hatchlings are collected in the fall and reared at the zoos until they are 10 months old. At that time, they are the size of 3-year old wild turtles. They are then released to augment population or establish new populations (WDFW 2012). From 1991-2012, WDFW released a total of 540 turtles, which had gone through the head start program. WDFW estimated there were 251 turtles on the Klickitat Wildlife Area in 2014.

This population has met the recovery goals of having a population of more than 200 turtles, composed of no more than 70 percent adults, which occupy habitat that is

secure from development or major disturbance. Natural recruitment (how a population naturally reproduces itself) by juveniles occurs at the site but cannot yet sustain the population without population augmentation. Efforts are underway to eliminate North American bullfrogs from the site in hopes that removal of this non-native species will result in higher survival of the wild hatchlings. This site is also the main source of hatchling turtles taken for the head-start program to supplement the Skamania County population and establish two new Columbia Gorge populations.

Many issues remain for the recovery of this species. For instance, habitat must be managed to control invasive weeds in the nesting areas and predators, such as non-native American bullfrogs, must be controlled to increase natural recruitment of western pond turtle hatchlings. Disease has emerged as a major concern in recent years due to the discovery that a substantial number of turtles have diseased shells (ulcerative shell disease). The cause of the disease is under investigation but is not yet known (WDFW 2015)

Map 10. Potential Range and Habitat Distribution Western Pond Turtle*



*Source. State Wildlife Action Plan (These maps are referred to as “potential” habitat distribution maps because they depict range as areas with documented occurrences, as well as areas with suspected or possible occupancy based on the availability of suitable habitat and the proximity of that suitable habitat to occupied areas.)

Fish

The Klickitat River subbasin supports steelhead (*O. mykiss*) as well as two species of Pacific salmon – Chinook (*Oncorhynchus tshawytscha*) and coho (*O. kisutch*). The following stocks are found in the Klickitat subbasin: spring Chinook; summer Chinook; early-run fall Chinook (tule); late-run fall Chinook (upriver bright); steelhead (summer and winter); and coho (primarily late-run). Summer and winter steelhead and spring Chinook are known to have existed historically in the watershed. Steelhead are part of the mid-Columbia River steelhead Distinct Population Segment (DPS), which has been listed as threatened under the Endangered Species Act (ESA) (See table 2, Map 11).

Pacific lamprey (*Lampetra tridentata*) is another anadromous, or sea-going, species of interest in the Klickitat sub-basin. Although historic abundance and distribution are relatively unknown, efforts are underway to collect information on the present distribution and status.

One of the major limitations on anadromous fish production is the presence of a number of natural

migration barriers in the watershed. The Klickitat River flows through a deep, steep-walled canyon with nearly impassible falls and cascades. The most significant natural fish passage barriers include: Lyle Falls, Castile Falls and Little Klickitat River Falls, West Fork Klickitat River Falls, and tributary falls (Outlet Creek, Bowman Creek, Canyon Creek and Blockhouse Creek) (WDOE 2005). However, biologists believe that bull trout could occupy the upper Klickitat basin if fish passage was improved at Castile Falls (James Byrne pers. comm.).

Resident fish in the Klickitat include rainbow (*O. mykiss*), westslope cutthroat (*O. clarki lewisi*), brook (*Salvelinus fontinalis*), whitefish (*Prosopium williamsoni*) and bull trout (*S. confluentus*). Naturally reproducing populations of rainbow trout are widespread within the sub-basin. Westslope cutthroat trout were historically present, however, current distribution and abundance is severely limited. Brook trout were introduced into the Klickitat sub-basin in the late 1970s and early 1980s, and may have been detrimental to both cutthroat and bull trout populations.

Table 2. Klickitat River Watershed Salmon, Steelhead, and Bull Trout Stock Profiles (WDF and WDW 1992; WDFW 1998, J. Byrne 2015, Salmon Conservation Reporting Engine)

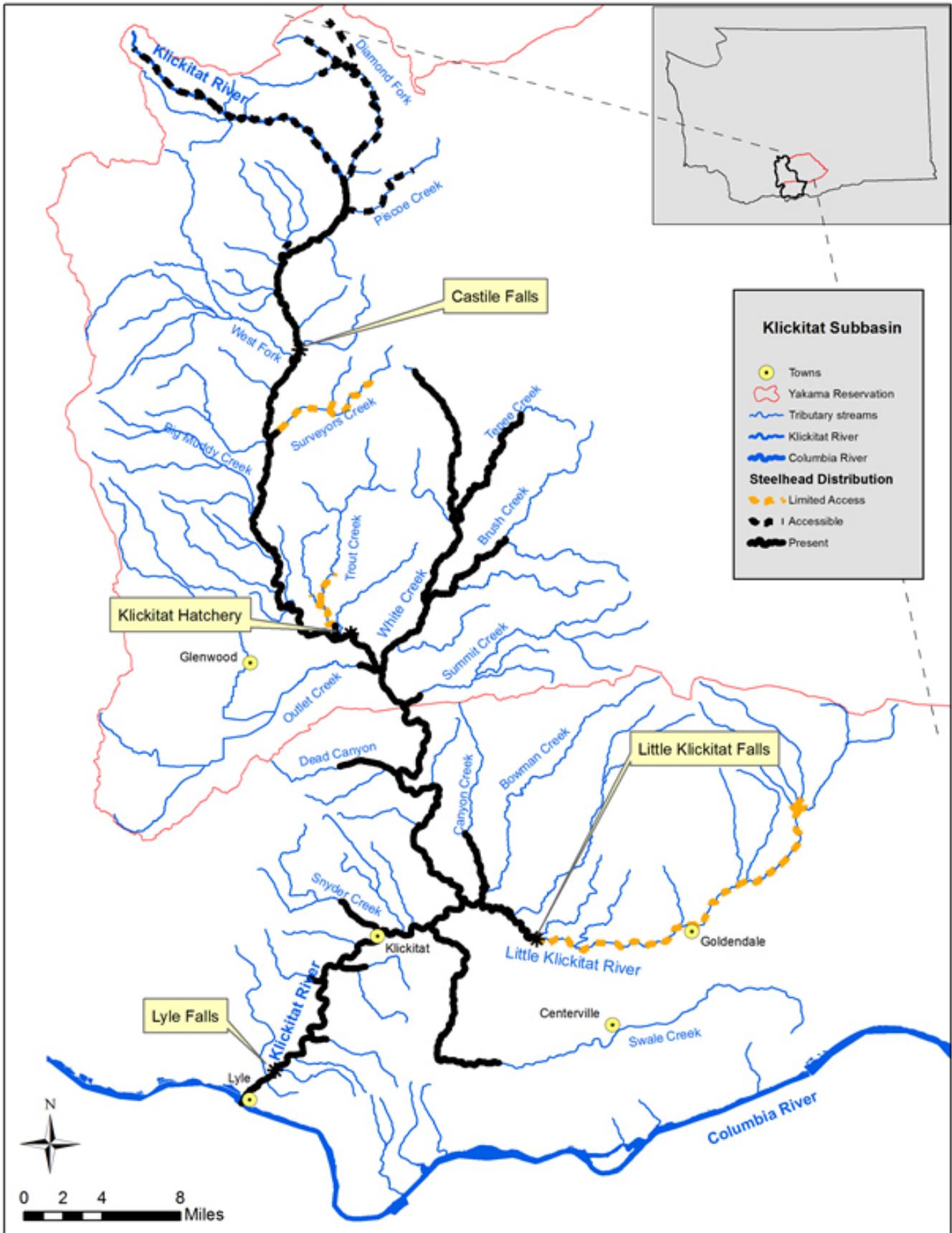
Stock	Major Subbasin(s)	Endangered Species Act (ESA) Status ²	Population Origin & Current Management ⁴
Spring Chinook	Lower and Middle Klickitat, portions of Upper Klickitat, Little Klickitat, Swale Creek ²	Not Warranted	Native. Hatchery & wild production.
Fall Chinook (tule)	Lower and Middle Klickitat	Not Warranted	Not native. Wild production.
Fall Upriver Bright (URB) Chinook	Lower and Middle Klickitat	Not Warranted	Not native. Wild production.
Summer Chinook	Lower and Middle Klickitat	Not Warranted	Native. Wild roduction
Coho ¹	Lower and Middle Klickitat Portions of Upper Klickitat, Little Klickitat ²	Not Warranted	Not native. Hatchery & wild production.
Winter steelhead	Lower and Middle Klickitat, Upper Klickitat, Little Klickitat, Swale Creek ²	Threatened	Native. Wild production only.
Summer steelhead	Lower and Middle Klickitat, Upper Klickitat, Little Klickitat, Swale Creek ²	Threatened	Native. Hatchery & wild production.
Bull trout	West Fork Klickitat ³	Threatened	Native. Wild production only.

¹ Note coho were introduced to the watershed starting in the 1940s and early 1950s and are not a native.

² ESA status as of April, 2004

³ J. Byrne 2002

⁴ The Salmon Conservation reporting Engine (SCoRE), <http://wdfw.wa.gov/score>.



Map 11. Steelhead distribution Klickitat River (Yakama Nation Fisheries 2016).

Fish Management

Fish management surrounding the Klickitat Wildlife Area consists of protecting wild production, ESA recovery, and hatchery production for harvest by sport and tribal fishers in the Klickitat River.

The Klickitat River and its tributaries are home to many different types of fish, salmon, steelhead, whitefish, and bull trout to name a few. Fish production can come from natural (wild) and/or hatchery production. The different stocks of fish can be native (in the river originally) or introduced.

Many native stocks in the Columbia River, such as the Klickitat River steelhead are listed under the Endangered Species Act (ESA) because their numbers had become so low at the time of listing that they needed further federal protection. State, federal, tribal, county entities are working hard to restore these fish species in the Klickitat River through habitat restoration and protection. Please see http://www.rco.wa.gov/salmon_recovery/lead_entities.shtml.

Hatchery production of salmon and steelhead is done in the Klickitat to provide augmentation for harvest and augmentation to wild production.

As noted on the table above Chinook salmon, spring, summer, and fall; coho, steelhead, and bull trout are found in the Klickitat River. Only spring and summer Chinook, steelhead, and bull trout are believed to be native. Fall Chinook and coho were introduced through in-river hatchery programs and strays from other rivers. The fish ladder constructed at Lyle Falls allowed these and other fish to ascend into the upper river.

Chinook and coho are not listed under the Endangered Species Act (ESA) in the Klickitat watershed. Natural spring Chinook production is augmented by the annual planting of hatchery spring Chinook smolts to return as adults for tribal and sport fisheries. These fish are from the Klickitat Salmon Hatchery. Only adipose clipped hatchery

spring Chinook are allowed to be harvested in the sport fishery. Fall brights are also planted into the river from the hatchery as smolts, and the returning adults provide very popular sport and tribal fisheries.

Coho smolts are planted annually into the Klickitat River. These are raised at the Washougal and Klickitat Hatcheries to provide adult fish for harvest.

Steelhead are native to the river. In addition, hatchery summer steelhead smolts are planted annually into the Klickitat from Skamania Hatchery on the Washougal. Only adipose clipped hatchery steelhead are allowed for harvest in the sport fishery.

Bull trout, found in some West Fork Klickitat headwater tributaries, are listed as threatened under the ESA. The potential for hybridization and competitive interactions between brook and bull trout are of concern to fisheries managers in this area (Yakama Nation Fisheries 2016). The river is closed to the sport fishing or retention of bull trout. Bull trout appear to be very rare except some locations in the upper basin on Yakama Nation Reservation. Occasionally bull trout are observed in the mainstem Klickitat. They may be native or Bonneville Pool origin.

Whitefish also provide a popular sport fishery. They are non-seagoing, and no hatchery production is used, these are wild.

Thousands of catchable rainbow trout (8-12 inches long), are planted annually into Spring Creek on WDFW lands out of Goldendale Hatchery. These fish provide an accessible and popular sport fishery beginning Memorial Day Weekend.

WDFW provides recreational fishing and camping areas and boat ramp access along the river, through different units of the Klickitat Wildlife Area.



Klickitat River overlook
Photo by Justin Haug

Habitat Management

WDFW directs its own research, develops its own approaches, and adopts other agencies' products, to reflect the most current conservation science. This includes the Ecological Integrity Assessment (EIA) and Ecological Integrity Monitoring (EIM) programs, which – combined with the Citizen Science program – will help meet the statewide goal of maintaining and enhancing ecological integrity on all WDFW lands. Similar to species classifications that group according to level of threat and potential inability to support sustained population, habitat types are grouped by type, including those that are priorities for preservation and conservation. The agency prioritizes habitat based on the classification system developed by NatureServe and the Department of Natural Resources (DNR) Natural Heritage Program's Ecological Integrity monitoring, the Priority Habitats and Species Program; and output from the Washington Habitat Wildlife Connectivity Working Group (WHCWG).

The section also provides a description of habitat management activities that occur on the Klickitat Wildlife Area; topics include forest management, weed management and restoration. This section also provides an overview of fire management and fire history on the wildlife area.

Ecological Systems and Ecological Integrity

As stated in the framework, each wildlife area plan will highlight the priority ecological systems, and where applicable, priority sites, that will be managed for ecological integrity. Once a baseline is established, this will be the primary means by which the agency will confirm how well it is able to maintain and/or enhance ecological integrity.

As stated in the framework, ecological systems that should be priorities include those that are classified as “priority” as well as those classified as “of concern.” All priority and systems of concern found on the KWLA are listed below, with a brief description of the system. Unfortunately, the ecological systems maps for the KWLA are quite large and contain a level of detail that is hard to capture in this document. The complete classification system including descriptions of all ecological systems can be found online at http://www1.dnr.wa.gov/nhp/refdesk/communities/ecol_systems.html.

WDFW's strategic objectives include protecting and restoring ecological integrity of critical habitats. Ecological integrity is defined as the ability of a system to support and maintain a community of organisms that has species composition, diversity and functional organization comparable to those of natural habitats. Klickitat Wildlife Area has a total of 11 National Ecological Systems of Concern on the landscape. The following text on each of these systems is taken from the Washington Natural Heritage Program website http://www1.dnr.wa.gov/nhp/refdesk/communities/ecol_systems.html.

1. Columbia Basin Foothill and Canyon Dry Grassland

Foothill herbaceous vegetation found on steep open slopes, in the canyons and valleys of the Columbia Basin along the mainstem of the Columbia River.

2. Columbia Basin Foothill Riparian Woodland and Shrubland

Low-elevation riparian system found along the mainstem of the Columbia River and associated major tributaries on the periphery of the mountains surrounding the Columbia River Basin at and below lower tree line. Found in low-elevation canyons and draws, on floodplains, or in steep-sided canyons, or narrow V-shaped valleys with rocky substrates.

3. Columbia Plateau Steppe and Grassland

Extensive grasslands, not grass-dominated patches within sagebrush shrub-steppe ecological system, dominated by perennial bunch grasses and forbs sometimes with a sparse shrub layer.

Often forms a landscape mosaic with the Columbia Plateau Shrubland ecological system. Very little exposed bare ground due to mosses and lichens carpeting the area between plants, comprising a biological soil crust that is very important characteristic in this ecological system.

4. East Cascades Oak-Ponderosa Pine Forest and Woodland

This narrowly restricted ecological system appears at or near lower treeline in foothills of the Eastern Cascades. These woodlands occur at the lower treeline/ecotone between *Artemisia* spp. (sagebrush) or *Purshia tridentata* steppe or shrubland and *Pinus ponderosa* (ponderosa

pine) and/or *Pseudotsuga menziesii* (Douglas fir) forests or woodlands.

5. Inter-Mountain Basins Alkaline Closed Depression & Inter-Mountain Basins Playa

Sparsely to densely vegetated herbaceous, seasonally to semi-permanently flooded sites found on saline soils in basins with internal basins. Playas are typically more barren and sparsely vegetated than some other closed depressions, usually retaining water into the growing season and drying completely only in drought years. Seasonal drying exposes mudflats which are colonized by annual wetland vegetation.

6. Inter-Mountain Basins Big Sagebrush Steppe

This system is grassland with shrubs. Shrubs are dominated by *Artemisia* spp., and/or *Purshia tridentata* in an open to moderately dense shrub layer and with at least 25% total perennial herbaceous cover. The natural fire regime of this ecological system maintains a patchy distribution of shrubs, so the general aspect is that of grassland. *P. tridentata* is present almost always in association with tree cover, not out in the open. There is no *A. tridentata* on the KWLA.

7. North Pacific Lowland Riparian Forest and Shrubland

Forests and tall shrublands that are linear in character, occurring on low-elevation, alluvial floodplains. Confined by valleys and inlets or lower terraces of rivers and streams. Present near the mouth of the Klickitat River.

8. Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland

Riparian woodland and shrubland consists of deciduous, coniferous, and mixed conifer-deciduous forests that occur on streambanks and river floodplains of the lower montane and foothill zones.

9. Northern Rocky Mountain Ponderosa Pine Woodland and Savanna

These woodlands and savannas are, or at least historically were, fire-maintained and occurring at the lower treeline/ecotone between grasslands or shrublands at lower elevations and more mesic coniferous forests at higher elevations. This is the predominant ponderosa pine system of eastern Washington.

10. Rocky Mountain Aspen Forest and Woodland

Aspen forests and woodlands are a minor type found on the east side of the North Cascades. Although aspen can be associated with streams, ponds, or wetlands, this system consists of upland aspen stands found from low to moderate elevation.

11. Temperate Pacific Freshwater Emergent Marsh

Wetlands or the portion of wetlands dominated by emergent species where standing water is seasonally or more typically semi-permanently present.



Sheep Canyon Road oaks

Photo by Lauri Vigue

Stressors

This section describes aquatic and terrestrial habitat stressors that may affect the functions provided by habitats in and surrounding the wildlife area in Klickitat County. WDFW uses livestock grazing as a tool for managing habitat, some level of grazing can occur without stressing the ecosystem. Active forest management can help improve the ecosystem if done sustainably. As described under the previous section and summarized for this purpose, the focused habitats on the Klickitat Wildlife Area are Oregon white oak, ponderosa pine woodlands/savannah, grasslands (steppe), riparian, aspen woodlands, and emergent marsh. These habitats support wildlife foraging, breeding/nesting, and migration. Factors that stress the ecological systems listed within the wildlife area include:

- Fragmentation of habitat, including the reduction in total acres of habitat or the isolation of one section of habitat from other patches of the same habitat.
- Land use (grazing, development) in adjacent uplands.
- Hydrology changes (beaver removal, irrigation, roads, climate change)
- Vegetation changes (invasive species, forestry, recreation, grazing)
- Grazing (invasive species, nutrient loading, reduces woody cover increases sod-forming grass cover)
- Altered fire regime (climate change, invasive species)
- Soil surface disturbance (recreation, management activities)
- Non-selective herbicide use on plant and stand diversity
- Climate change

Habitat Connectivity

Fish and wildlife survival depends in part on the ability to move through the environment to find food and reproduce. The degree to which land protection and condition supports these necessary movements is called habitat connectivity. WDFW is a member of the Washington Wildlife Habitat Connectivity Working Group (WHCWG), a science-based collaboration of land and resource management agencies, non-governmental organizations, universities and Washington Treaty Tribes.

Key wildlife habitat connectivity linkage networks at the statewide level were identified by the WHCWG (2010). The linkage networks, comprised of suitable habitats and the linkages connecting them were derived from two modeling approaches: focal species and landscape integrity. Linkage is defined as an area important for maintaining movement opportunities for organisms or ecological processes (e.g. for animals to move to find food, shelter or access to mates). The focal species approach identified important habitat areas and the best linkages between the habitat areas for wildlife focal species to move through (WHCWG 2010). Focal species were selected to represent diverse vegetation types, varied life histories, and need large areas to meet their needs (e.g. black bear, elk). They also include smaller species whose habitats have become fragmented, and less mobile species such as western toads. The best linkages provided the least resistance to movement between habitat areas for that animal in that area. This means that some of the linkages may not be comprised of ideal habitat, but provide opportunities for movement through a human-modified landscape.

The landscape integrity approach identified core habitat areas that were relatively free from human modification and the least human-modified linkages between them

(WHCWG 2010). Landscape integrity identifies areas of relatively low human disturbance and connections between these areas. Three of the focal species from the statewide analysis are found on the Klickitat Wildlife Area. The Klickitat Wildlife Area contains core habitat and provides connectivity for mule deer, western gray squirrel and western toad. <<Link>>

Habitat management priorities (Appendix A) for the Klickitat Wildlife Area outlined in this plan include actions that will improve the core habitat and linkages for mule deer, western gray squirrel and western toad. Mule deer are a more wide ranging species capable of significant movement events covering many miles. Western gray squirrel movements are more modest with movements of several miles possible. The western toad exhibits the least extensive movements. Development of structures, road construction and development along moist habitats, wildlife unfriendly fencing and increased traffic in sensitive locations would be actions that would reduce landscape permeability and overall connectivity.

For more background information on the WHCWG analyses and data, follow this link: <http://waconnected.org/>.

Fire Management

Any fires that start near or within the Klickitat Wildlife Area are initially fought by the Washington Department of Natural Resources (WDNR). Larger fires prompt state mobilization, with federal fire-fighting entities, and additional fire districts. See Appendix H for Klickitat Wildlife Area fire district boundaries map and fire response information. Wildlife area staff also renew their state “red card” certifications each year, so that they may assist with various tasks during fires that affect the Klickitat Wildlife Area. The “red card” process, administered by DNR, may enable some wildlife area staff to assist with suppression when fires impact wildlife areas.

Fire History

Lightning is a common cause of wildfires in Klickitat County, with most fires occurring between May and September. The historic fire return interval for the Klickitat Wildlife Area was 15-25 years (on average). These fires were of relatively low intensity and were a benefit to maintenance of shrub-steppe and forested habitats. For the last several decades, fire suppression efforts have been fairly effective in keeping fires relatively small. There is little evidence of the wildlife area being burned extensively. The two most notable fires in the area in recent times include the Skookum Fire and the Old Highway 8 Complex Fire.

The Skookum Fire started on Aug. 4, 1992, and spread rapidly along the north bank of the Klickitat River between the community of Klickitat and the confluence of the Little Klickitat and Klickitat Rivers, with part of the burn extending up Swale Canyon. Strong winds fanned the blaze to 51,000 acres. Due to the threat of the fire jumping the river and spreading east, 75 homes in the vicinity of the Glenwood Highway were evacuated, including those along the Soda Springs Road. The fire burned 270 acres of the Mineral Springs Unit.

The Old Highway 8 Complex Fire started on Aug. 26, 2010, northwest of Lyle when a tree fell on a power line. Winds in the Columbia River Gorge caused the fire to spread very rapidly. The response of fire suppression forces to this fire was fast and intense. However, the burn eventually covered 2,019 acres. The fire burned over steppe, oak woodlands, mixed oak-pine forest, and timbered canyons including Silva Creek. Approximately 105 acres of the Fisher Hill Unit were impacted.

Forest Management

Historically, wildfire was a prominent disturbance factor in maintaining forests on the wildlife area. Frequent, low intensity fires helped to maintain a high proportion of open, late seral forest stands with large diameter trees. In the last century, aggressive wildlife suppression tactics and “high grade” timber harvests have resulted in densely overstocked stands with an abundance of fuels. As a result, the Klickitat Wildlife Area is more susceptible to large scale insect outbreaks, pathogens and intense wildfire (stand replacement fires).

Active forest management is a critical component for the next 10-year planning cycle. There are nearly 11,000 wooded acres on the wildlife area, most of which are located on the Soda Springs Unit. Due to concerns over providing quality habitat for western gray squirrel, the agency has an interest in preserving snags and other features associated with less intensively managed forests, which serve as habitat for the western gray squirrel. Wildfire suppression and past logging practices over the last 100 years has resulted in large proportions of the conifer forest and mixed conifer/oak woodlands to be overstocked (too many trees) and suppressed. These stands are generally in poor condition due to competition for scarce light and water. These densely stocked stands with limbs from top to bottom of the tree, sometimes referred to as ladder fuels, can contribute to conditions that facilitate a ground fire to developing into a crown fire. This in turn makes the stand more prone to intense wildfires that quickly burn out of control. Consequently, the threat to the wildlife area from wildfire, insect outbreaks and other pathogens has dramatically increased.

Over the next 10 years, forested portions of the wildlife area will be inventoried, categorized, and prioritized for treatments (thinning and/or prescribed burns) that are designed to improve forest health and resiliency to wildfire. Forest management units and inventory plots will be established on those areas where active forest management is feasible and appropriate. A management strategy, using a variety of forest management techniques, will be used to begin the process of restoring stands to their historic range of variability. Maintenance and enhancement of priority habitat species on the wildlife area (western gray squirrel and Oregon white oak) will be an integral part of the management strategy. All forest

management activities will be guided by strategies found in the WDFW Forest Management Plan (<http://wdfw.wa.gov/publications/01616/>) with details specific to this wildlife area outlined in the Klickitat Wildlife Area Forest Management Plan (see Appendix B).

Approximately 100 acres of shaded fuel breaks have been developed along roads and high fire risk urban interface property lines in the Soda Springs Unit. The objective of this project is to protect wildlife habitat and reduce the threat of wildfire spreading to adjacent private ownerships.

Oregon White Oak

The Klickitat Wildlife Area supports some of Washington State’s best examples of Oregon white oak habitat. Oak habitats of the east-slope Cascades ecoregion occur primarily in central and south-central Washington. Oregon white oak (*Quercus garryanna*) is the only native oak in the state. Woodlands that have an oak component (including scattered oaks in an otherwise open setting) are a priority habitat for conservation. Oregon white oak habitat supports a variety of wildlife species on the wildlife area including western gray squirrel, black-tailed deer, Merriam’s turkey, Nashville warbler, Lazuli bunting and the Lewis’ woodpecker. Management of Klickitat Wildlife Area’s forest lands take into consideration the unique characteristics and importance of the Oregon white oak habitat. The management focus includes the protection and restoration of oak savannah habitat including pure oak, oak/conifer mix and oak snags. Priorities will include protecting and enhancing oak stands to provide food and shelter for a variety of resident and migratory bird species, invertebrates, reptiles and mammals dependent on this unique habitat type.

Rare Plants

Several rare plant species are known to occur on the Klickitat Wildlife Area, see Appendix D for Klickitat Wildlife Area rare plant inventory. To maintain populations of rare plants, any new project or program proposals will be reviewed to determine whether the footprint might affect known rare plant populations, and conditions will be placed on the proposal to ensure that these populations are protected from negative impacts.

Weed Management

Managing weeds is a significant part of the Klickitat Wildlife Area manager's workload to establish and maintain diverse native plant communities that will support fish and wildlife populations. Invasive plants and noxious weeds can infest high quality native plant communities and convert them to low quality monocultures with little wildlife value. The weed management plan (Appendix E) identifies species, timing and management practices to control weeds. The goal of weed control in this plan is to maintain or improve the habitat for fish and wildlife, meet legal obligations, and protect adjacent private lands.

Restoration

The majority of restoration work on the Klickitat Wildlife Area will be forest restoration (see Forest Plan section and Appendix B). In addition to forest restoration, restoration activities are planned in the Sondino Ponds Unit to improve habitat for the western pond turtle (see appendix A., Goal #2). Riparian restoration activities will be assessed along the Klickitat River in order to improve habitat for steelhead and other salmon species (see Appendix A., Goal #7).

Cultural Resources

State and federal law requires the protection of cultural, geological, and other non-renewable resources. Such resources may not be removed unless determined to be beneficial to wildlife, habitat, or for scientific or educational purposes. WDFW coordinates with appropriate agencies and tribes for the protection of

Klickitat River Floodplain Restoration (Haul Road) project

The Columbia Land Trust is the lead in the Klickitat River Floodplain Restoration (Haul Road) project. Work is being conducted between the confluence of the Little Klickitat River and Dead Canyon Creek on the mainstem Klickitat River, adjacent to the Soda Springs Unit. The primary goal for this project is to restore connectivity of riverine, floodplain, and hillslope processes on 12 miles of the Klickitat River. In 2007, the Columbia Land Trust purchased the road and began the restoration work, which is funded by the Salmon Recovery Funding Board. Specific activities include removal of the railroad bridge and associated road, construction of floodplain channel, re-vegetation and placement of large woody debris. This large scale project restores migratory and rearing corridors for mid-Columbia River steelhead and Chinook. This multi-phased project is estimated to be complete in 2017. For more information, see the following link: <https://www.columbialandtrust.org/news/project/klickitat-white-salmon-rivers/>.

such resources whether it is the public or WDFW staff who are initiating an activity that will affect cultural, archaeological or historic resources. This includes the removal of various rock formations, Native American artifacts, plants, seeds, and other items. The Yakama Nation collects traditional tribal foods on the wildlife area.

Current Climate

The Cascade Mountains form a barrier to the storms moving east from the Pacific Ocean, causing the storms to deposit most of their moisture before reaching the wildlife area. Much of this range slopes 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. The area receives a mean annual precipitation of 17.41 inches. The majority of the precipitation falls between October and May. Temperatures range from an average low of 35.9 degrees F in winter to an average high of 61.0 degrees F during summer. The growing season is between 115 and 155 days long.

Climate change

Anticipated Changes due to Climate Change

This section describes the likely climate change impacts for the Klickitat Wildlife Area. The following table describes key impacts to forest habitats, potential management actions and information gaps.

The most direct impacts of climate change to this area will be in the form of warmer winter temperatures (3 to 6 degrees within 15 years) and drier summers (Climate Impacts Group 2013). Altered fire regimes caused by climate change are expected to increase the incidence of forest fires in the state in the future (Little et al. 2010).

Major fires have the capability of damaging large areas of western gray squirrel habitat and killing squirrels in the Klickitat region. Additionally, warmer temperatures associated with climate change could increase the exposure of squirrels to disease (Steel et al. 2011). Despite these concerns, one recent modeling exercise suggests that western gray squirrels could significantly expand their range in eastern Washington as climate change alters forests over the next century (Johnson et al. 2012). Sensitivity of the western gray squirrel in Washington is partially driven by their association with Oregon white oak habitats. Climate suitability for Oregon white oak is likely to improve in Washington, Oregon and British Columbia, Canada, since Oregon white oak is suited to a warmer climate. Climate suitability in specific areas that currently support Oregon white oak, however, is projected to decline (Bodtker et al. 2009).

Overall, there is a lack of information regarding the sensitivity of western pond turtle to climate change. Sensitivity of this species may be affected by warming temperatures that influence offspring gender ratios, increasing the number of females even with small increases in temperature (<3°F). However, it is possible that warming could benefit this species by providing more warm days for developing embryos. Their dependence on aquatic habitats increases sensitivity of this species, as these habitats are likely to be affected by increasing temperatures and altered hydrology. Invasive weeds that overgrow nesting areas further increase sensitivity of this species (WDFW 2015). Table 4 describes the vulnerability of key species associated with the wildlife area (western gray squirrel, western pond turtle and steelhead) to climate change.

Table 3. Key impacts of climate change, potential management actions and information gaps for forest habitats (Source: Glick and Moore NWF 2009).

Forest Habits		
Key Impacts	Potential Management Actions	Information Gaps
<ul style="list-style-type: none"> • More frequent storm events • Increased forest fires • Expansion of invasive species • Loss of high elevation habitats • Carrying capacity, disease, and pine beetles 	<ul style="list-style-type: none"> • Engage the private sector • Increase interagency collaboration • conduct vulnerability assessments and monitor species • Acquire land for habitat conservation • Change land management 	<ul style="list-style-type: none"> • Vegetation community responses • Phenology and species inter-relationships

Climate change will exacerbate existing stressors listed on page 35. Current management activities on the wildlife area will help address future climate risks, for example

land acquisition and weed management. Table 5 provides an overview of potential climate impacts, effects on habitat and management actions for the plan.

Table 4. Vulnerability* Assessment Information for Key Species on the KWLA (WDFW 2015)

Species	Overall Vulnerability	Overall Confidence	Sensitivity Rank	Exposure Rank	Summary of Exposure
Western gray squirrel	Low to moderate	Moderate	Low to moderate	Moderate	<ul style="list-style-type: none"> - Increased temperatures. - Changes in precipitation. - Altered fire regimes. - Increased disease outbreaks.
Western pond turtle	Low to moderate	Low	Low to moderate	Moderate	<ul style="list-style-type: none"> - Increased temperatures. - Changes in precipitation. - Altered hydrology. - Increased invasive weeds.
Mid-Columbia River steelhead	Moderate to high	High	Moderate to high	Moderate	<ul style="list-style-type: none"> - Altered timing/magnitude of spring runoff. - Increased water temperatures. - Lower summer flows.

* Vulnerability to climate change is determined by an evaluation of sensitivity and exposure for each species or habitat, assessed confidence for each sensitivity and exposure evaluation, and scored overall vulnerability and confidence for a species or habitat.



Lupine/arrowleaf balsam root, Goldendale Hatchery Unit
Photo by Sue Van Leuven



Mt. Adams and Oregon oak, Soda Springs Unit

Photo by Sue Van Leuven

Table 5. Potential Climate Impacts, Effect on Habitat and Management Actions for the Plan

Potential Climate Impacts	Effect on habitat	Management Action	Status
Lower stream flows	Drought conditions; changes to the timing and temperature of streams; streams drying up.	Reintroduce beavers. Develop restoration projects along Klickitat River to provide shade for salmonids. Adaptation in grazing management; creative water placements.	Consider reintroductions at Dead Canyon and mainstem Apply for grants to restore habitat along the Klickitat River. Grazing permits are renewed on shorter intervals.
Decreased precipitation	Increased grassland and noxious weeds	Incorporate changes into current restoration objectives.	Implement weed management plan.
Increased risk of fire	Reduction in native wildlife, including western gray squirrel populations.	Forest thinning/fuel break maintenance. Increase interagency collaboration for landscape-level forest management planning.	Implement forest management plan. Develop partnerships for managing western gray squirrel habitat; engage the private sector in coordinated forest management.
Changes in native plant distribution	Distribution of some plants will change, including an increase in invasive species.	Native plant management and monitoring. Weed management. Acquire lands for habitat conservation.	Implement rare plant management plan and weed management plan.
Loss of wetlands at Sondino Ponds Unit	Reduced population of western pond turtle	Secure water right for improved water supply	Explore possibilities for securing reliable water supplies to selected pond by 2018.
Expansion of grassland	Reduced oak woodlands and conifers	Manage for grasslands in the future	Ecological integrity monitoring will inform adaptive management process.

Research and other studies

Consistent with WDFW's mission to preserve, protect and perpetuate fish, wildlife, and habitat, WDFW supports independent studies to achieve wildlife area objectives. Research topics include ecology and biology of the western gray squirrel and western pond turtle; ecology and management of black-tailed deer, habitat use by

Merriam's turkey, ash-throated flycatcher and neotropical migrants (Appendix C). Research will provide a source of best available science that will inform ecological integrity objectives and species management, including adaptive management for the wildlife areas.



Western gray squirrel
Photo by WDFW staff

Recreation and Public Use

Note: Readers should review the Recreation and Public Use Section in the Framework, pages 34–35 for more information about how the agency manages recreation and public use across the state. A brief introduction is provided here.

Consistent with the agency's mission and mandate, and with the statewide WLA planning goals on page 9, WDFW provides opportunities to fish, hunt and enjoy other wildlife-related recreation on almost all of the state's 33 wildlife areas. Other recreation uses are also supported, if compatible with hunting, fishing and wildlife-related recreation, and with the priority species and habitats found on the property. Many of the state's wildlife areas are located in remote areas, and offer a "primitive" recreation experience, with limited development of trails, camping areas, and other infrastructure for more intensive or organized uses.

On the Klickitat Wildlife Area, recreation use and issues related to its management are influenced in part by the area's proximity to major recreation resources such as the Columbia River Gorge, Klickitat River and Klickitat Trail. These resources attract significant numbers of visitors, and offer a range of active and passive recreation opportunities including camping, hiking, swimming, mountain biking, horseback riding, stargazing/astronomy, etc. Staff are responsible for managing recreation and public use in a way that protects the natural resources, including the sustainability of game animals for hunting. For a complete list of activities for each unit on the wildlife area see Table 6.

On the Klickitat, and other WDFW wildlife areas, increasing population and diversity of recreation interests are creating more demand, which leads to conflicts between priority and non-priority users (e.g. hunters and hikers). Increasing demand and conflicts between users impacts natural resources. WDFW is developing a Recreation Management Strategy to address these issues, which will likely lead to new laws, rules and/or policies to balance recreation use and wildlife/habitat protection. The strategy is expected to be completed in 2017.

Public use of the various units of the wildlife area is influenced by the character of the landscape, public access, wildlife and fish species present and seasonal considerations. WDFW may place limitations on some

activities in order to protect resources, infrastructure, or safety of personnel and the public. Maintenance of healthy populations of fish and wildlife, along with critical habitat to support populations, is a high priority for WDFW, and the agency seeks to promote public enjoyment of these resources while managing and perpetuating the resources for future generations.

The Soda Springs Unit is the largest and most diverse unit of the Klickitat Wildlife Area. It offers the greatest range of recreational opportunities, as indicated on table 6. The Soda Springs Unit is part of the larger Great Washington State Birding Trail system (Sun and Sage Loop) (http://wa.audubon.org/sites/g/files/amh546/f/sun_sage_booklet_8_7_2012.pdf). The Mineral Springs, Dillacort Canyon, and Fisher Hill units are within the confines of the Klickitat River Canyon and provide many fishing opportunities. The Goldendale Hatchery Unit is managed mainly to provide pheasant hunting and fishing, but waterfowl hunting also occurs on the unit during the winter. Spring Creek on the Goldendale Hatchery Unit is stocked annually with rainbow trout, providing a sport fishery. The fishery is open from the Saturday before Memorial Day through Oct. 31. The Swale Creek Unit primarily offers upland bird hunting. The Sondino Unit is not open to the public except by special arrangement for educational or research purposes, or for habitat monitoring or enhancement projects.

Maintenance of quality rangeland is a high priority on the wildlife area. WDFW has taken steps to limit damage to this resource, including limiting off-road driving to purposes such as implementing project work or land management. Additionally, dispersed camping outside of the established campgrounds is limited to within 50 feet of the road. This helps to ensure that impacts of recreation are balanced with the objective of maintaining healthy plant communities that support wildlife species.

Seasonally high temperatures and drought are normal in eastern Washington, creating conditions ripe for wildfires both on the wildlife area and on neighboring lands. Therefore, open campfires are only allowed at Leidl Park, Stinson Flat, Mineral Springs, and the Turkey Hole campgrounds while burn bans are not in place. Seasonal burn bans are implemented every year, usually from sometime in June through mid-October. Where open fires

are not permitted, visitors may use enclosed stoves with screened stovepipes as a heat source. Propane grills and stoves may be used during seasonal burn bans. Charcoal barbecues are regulated as open fires, and are therefore subject to the same rules.

Other rules concerning recreation are covered in Washington Administrative Code 232-13 (<http://apps.leg.wa.gov/WAC/default.aspx?cite=232-13>). These address length of stay while camping, fireworks, loose pets, livestock trespass, shooting near campgrounds, commercial use of state lands, use of lands by private groups or noncommercial organizations, sanitation, erecting permanent structures on state lands, interfering with lawful uses of the property by others, dumping of refuse, and other activities that affect visitors as well as potentially compromising WDFW's management of the property consistent with protection of agency lands.

The popular Klickitat Trail is a 31-mile non-motorized use trail that extends from the mouth of the Klickitat River at Lyle to Warwick, near Centerville. The lower half of the trail follows the Klickitat River up to the confluence of Swale Creek. The trail then turns and follows Swale Creek for about 13 miles up Swale Canyon. This segment of the route is more remote, with fewer points of access. The trail passes through the Fisher Hill, Dillacort Canyon, Mineral Springs, and Swale Creek units of the WLA. The best public access to the Swale Creek Unit is via the Klickitat Trail, by parking along Harms Road and hiking west on the trail. The management of the trail is coordinated through a partnership between, Washington State Parks, the U.S. Forest Service, and the Klickitat Trail Conservancy. Those interested in using the trail should heed signs placed at the trailheads in order to ensure a good experience while respecting adjacent private property.



Rafting on the Klickitat River
Photo by WDFW staff

Table 6. Summary of Recreation Use on Each Unit of the Klickitat Wildlife Area.

Wildlife Area Unit	Primary Hunting Focus	Secondary Hunting Focus	Primary Fishing Focus	Other Recreation	Restrictions	Education/ Interpretation	Parking and other facilities
Soda Springs	Black-tailed deer, turkey	Ruffed and sooty grouse, black bear, bobcat, cougar, gray partridge, quail, chukar, elk, coyote	Steelhead, salmon	Camping, hiking, wildlife watching, birdwatching, wildflower viewing, stargazing, Live Action-Role Playing (LARPing), target shooting, horseback riding, geocaching	No hunting within the safety zone surrounding the wildlife area headquarters. No open campfires permitted in primitive campsites. Observe seasonal ban on campfires at Stinson Flat and Leidl Park campgrounds.	Reader boards are placed at the WLA Headquarters, at Stinson Flat and Leidl Park campgrounds, and small boards are located on Grayback Road and Anderson Road. Great Washington State Birding Trail – Sun and Sage Loop.	Boat access, camping at Stinson Flat and Leidl Park
Mineral Springs	Black-tailed deer, turkey		Steelhead, salmon	Hiking, camping, birdwatching, wildflower viewing, swimming	No open campfires permitted in primitive campsites. Observe seasonal ban on campfires at Mineral Springs campground.	A reader board is located at the Mineral Springs Campground.	Boat access, camping at Mineral Springs
Dillacort Canyon	Black-tailed deer, turkey		Steelhead, salmon	Hiking, camping	No open campfires permitted in primitive campsites. Observe seasonal ban on campfires at Turkey Hole Campground.	A reader board is located at the Turkey Hole Campground.	Water access site, camping at Turkey Hole Campground
Fisher Hill	Black-tailed deer, turkey		Steelhead, salmon	Hiking	No open campfires permitted in primitive campsites.		
Goldendale Hatchery	Pheasant	Waterfowl, black-tailed deer	Rainbow trout		Day use only		
Swale Creek	Gray partridge	Black-tailed deer		Hiking, wildlife viewing	Day use only		
Sondino Ponds					Access restricted due to ongoing pond turtle conservation work		

Road Management

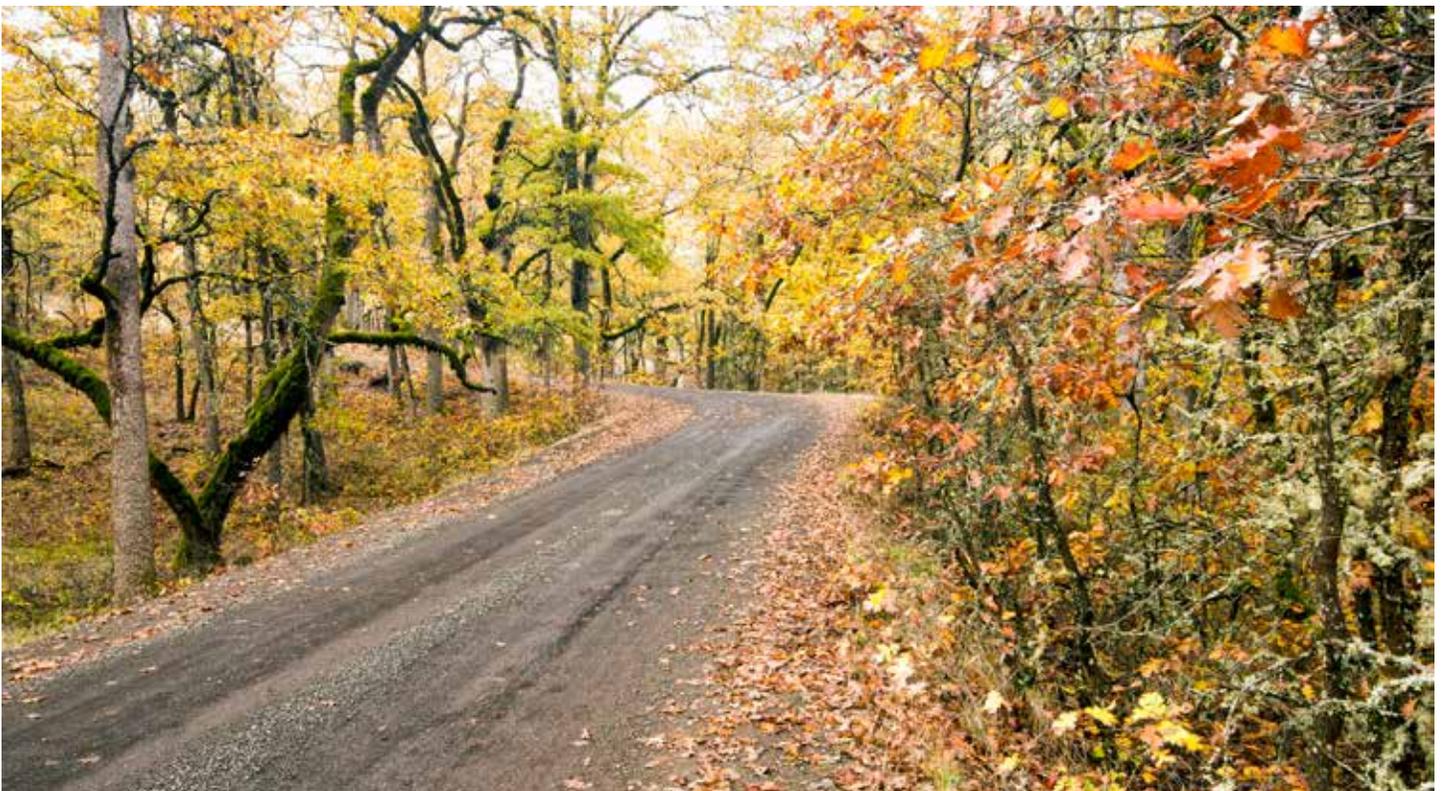
A network of state, county, and WDFW roads provides access to the Klickitat Wildlife Area. State Route 142 passes through the Fisher Hill Unit, the Dillacort Canyon Unit, and the Mineral Springs Unit. Several county roads including the Lyle-Centerville Highway, the Goldendale-Glenwood Highway, Old Highway 8, Balch Road, Fisher Hill Road, Fish Hatchery Road, Hill Road, Soda Springs Road, and Zelinski Road provide year round access. Soda Springs Road becomes a primitive road at a point approximately 3.5 miles west of its intersection with the Glenwood Highway.

Roads that serve as important access routes for the public as well as for management activities are top priority for maintenance and improvement, performed on an “as-needed” basis. Several roads are posted with “No Unauthorized Vehicles Beyond This Point” signs and are only open to WDFW or other government official vehicle use. WDFW roads are open to nonmotorized public use year-round except the Sondino Ponds Unit. Only a few agency-managed roads on the Soda Springs Unit have been sufficiently improved to support use during

all seasons. These are segments of Anderson Road, Old Headquarters Road, North Breaks Road, Grayback Road, Sheep Canyon Road, and the roads to Stinson Flat and Leidl Park campgrounds.

Seasonal road closures are implemented annually on the Soda Springs Unit to limit disturbance to the wintering deer population, to protect road surfaces from damage while soils are soft, and to protect meadows near the roads from damage due to off-road driving. Road gates are closed from Nov. 1 to Apr. 15 on the southern segments of Anderson and Old Headquarters roads, and most of the South Breaks Road. A road gate on the Sheep Canyon Road is closed from Nov. 1 until soils dry out in spring, usually in early May.

WDFW utilizes its road maintenance funds to maintain the infrastructure at optimal costs. Strategic vehicle access restrictions also create areas where people can recreate without disturbance from motor vehicles. WDFW seeks to offer opportunities for outdoor recreation to people of all abilities.



Klickitat Road

Photo by Justin Haug

Land Ownership and Management

Acquisition History, Funding and Purpose

Conserving key habitats is crucial to protecting Washington's natural heritage and hunting and fishing traditions. With this in mind, WDFW identified the area as a priority area for land acquisition during the 1940s and made the first purchase of deer habitat in 1948. Purchases of land along the Klickitat River followed in 1950 to preserve fish habitat and public access to the river for sport fishing. The wildlife area has grown in size with subsequent land purchases as well as lease agreements and management agreements with other government landowners. The purpose for acquiring the land has also broadened, with certain parcels purchased specifically for recreation and others for conservation of habitat for listed species.

Virtually all the funding that WDFW receives is provided with the expectation that the lands will be managed to conserve and enhance fish and wildlife habitat, and support fish and wildlife-oriented recreation. Other uses of the property must be consistent with these values.

Acquisitions

Many additions to the wildlife area have been made since the original purchase of the property in the 1940s. Land acquisition proposals are evaluated as opportunities arise based on their importance for securing critical fish and wildlife habitat, recreational values and their proximity to existing public ownership. WDFW considers a variety of factors in prioritizing specific parcels for acquisition in order to use funds wisely and ensure that lands are appropriate to meeting agency objectives. Real estate transactions are always done with willing landowners. Acquisition funding for the Klickitat Wildlife Area includes the following state and federal sources: State Bonds, Recreation Conservation Office, Wildlife Fund, Pittman Robertson and Land and Water Conservation Fund.

Easements

WDFW holds easements for public recreational access and for management of its properties. Recreational easements provide daytime pedestrian access to fishing

spots along the Klickitat River and Spring Creek. These easements are 25-feet wide along the streambank and visitors are expected to be mindful of the landowners' needs regarding gates and fences and otherwise respectful of private property. Fishing easements exist along Spring Creek downstream of the Goldendale Trout Hatchery, and in several locations along the Klickitat River. Easements for WDFW management access exist on private lands adjacent to the Soda Springs, Mineral Springs, and Sondino Units. These are not available for public use.

Leases

WDFW leases nine parcels (1,167 acres) from Washington Department of Natural Resources (WDNR) for wildlife habitat. This lease agreement has been in place since 1964 and states that the objective is to "provide for the management of big game, upland game birds and hunting and fishing recreation." This permits the property to be managed consistently with wildlife area goals and objectives and also provides revenue to WDNR.

Water Rights

The Klickitat Wildlife Area holds four known water rights. One is for domestic and other facilities' use at the Klickitat Wildlife Area headquarters. The other claims on file with Washington Department of Ecology mention use by livestock. These water rights date back to a time when the property was owned or managed for other purposes. The second water right (S4-099321CL) is a developed spring that formerly served a homestead on the Soda Springs Unit. The residence is gone, and the house that originally covered the spring has been removed. This perennial water source is available for wildlife use all year. Livestock no longer use pastures on that part of the wildlife area. The third water right (S4-046472CL) is for capture of surface water, to be directed by pipe to domestic and livestock use. Presently, the domestic share of the water goes to a private landowner, while the livestock share is used to fill a pond that is occupied by western pond turtles. No livestock use pastures on the WDFW property. The fourth (S4-120103CL) is a claim that was filed by a previous landowner for livestock watering. WDFW has acquired the property, and now reserves the water source for support of fish and wildlife.

Managing Lands on Behalf of Other Entities

The Klickitat Wildlife Area includes land owned by other government entities such as Bureau of Land Management (BLM) and Washington Department of Natural Resources (WDNR). WDFW leases land from WDNR for conservation of wildlife habitat and public hunting. WDFW manages 2,033 acres owned by BLM under a memorandum of understanding – approved in 1964 primarily to conserve habitat but also to ensure public access along the river for fishing. These parcels are

situated along the Klickitat River on the Soda Springs and Dillacort Canyon units. The Klickitat Wildlife Area has also increased in size due to administrative actions such as a transfer of land on the Goldendale Hatchery Unit from WDFW's fish program to the wildlife program, and a land exchange between WDFW and WDNR that resulted in two parcels being added to the Soda Springs Unit. WDFW also holds recreational easements, which are discussed on page 47.

Other Entities operating on WDFW Lands

Grazing

WDFW uses livestock grazing as a tool for managing habitat, and to participate in landscape-level land uses that favor maintenance of open space. Big game species such as deer and elk are often present on grazed lands, both public and private, demonstrating that carefully managed grazing can be compatible with maintenance of game populations. The agency's range ecologist provides technical expertise in evaluating the condition of the range, and monitors range trends on grazing permit areas. There are three grazing permits currently active on the Klickitat Wildlife Area and they are located on the Soda Springs, Dillacort Canyon and Fisher Hill units.

Soda Springs Unit - This permit encompasses approximately 1,574 acres of grasslands, oak woodlands, and pine-oak forest at middle elevations above the Klickitat River. Cattle are permitted to graze during spring from early May until mid-June during two out of every three years, with one year of rest (no grazing) during each three-year cycle. This permit has been in place since 1982.

Dillacort Canyon and Fisher Hill Units - Cattle are grazed on approximately 328 acres of grassland, oak woodlands, and pine-oak forest distributed over three separate parcels east of the Klickitat River from mid-April to late June. The permit has been in place since 1968.

Fisher Hill Unit - This permit is for cattle grazing on 90 acres on the slopes west of the Klickitat River, near its confluence with the Columbia. Habitats are similar to those on the permits described previously.

Agriculture

Farming can be an effective way to enhance forage and cover for wildlife. It can provide other benefits as well, such as weed control, soil erosion control, and the enticement of animals away from crops on private lands. There are two agricultural leases on the Klickitat Wildlife Area and they are located on Soda Springs Unit and Goldendale Hatchery Unit.

Soda Springs Unit - This agricultural lease includes 10 fields that are either in wheat production or hay production. The crops grown for hay are alfalfa and haybet barley. The aggregated field area is approximately 181 acres. The primary purpose of the lease is to grow forage that is attractive to deer during the winter and early spring months when native forage is dormant, growing slowly, or difficult to access.

Goldendale Hatchery Unit - Approximately 105 acres of fields are in wheat production under this agricultural lease. According to the terms of the lease, 15 percent of the wheat is left standing in the fields for food and cover for pheasants. Since farming practices involve holding fields fallow in alternate years, each year about half of the acreage produces a wheat crop.

Local Land Use

Klickitat Wildlife Area falls under the jurisdiction of Klickitat County, and land use must be consistent with the county’s Natural Resource Ordinance, Critical Areas Ordinance and Shoreline Management Plan. Klickitat County updated the Natural Resource Ordinance in September of 2013, Critical Areas Ordinance in August of 2013, and Shorelines Master Plan in August of 2007

(see table 7. The lower 10 miles of the Klickitat River is designated as a recreational river under the Wild and Scenic Rivers Act. Much of the Columbia River Tributaries are within the Columbia Gorge National Scenic Area. Klickitat Wildlife Area units are consistent with the current and expected land use designations of these plans.

Table 7: Klickitat Wildlife Area Units and Regulatory Designations

Wildlife Area Units	Comprehensive Plan Land Use Designation and Zoning*	Shoreline Management Plan Designation	Comments
Soda Springs	Open space, general rural	Klickitat River designated as natural and conservancy	
Mineral Springs	Open space, rural residential 2	Klickitat River designated as conservancy	
Dillacort Canyon	Open space	Klickitat River designated as conservancy	
Fisher Hill	Open space	Klickitat River designated as conservancy	Lower portions of this unit are within the Columbia Gorge National Scenic Area - open space
Sondino Ponds	General rural		Property located within the Columbia Gorge National Scenic Area - open space
Goldendale Hatchery Unit	Extensive agriculture		
Swale Creek	Open space	Swale Creek designated as conservancy	

* Land use definitions maybe found at the Klickitat County at this site: <http://www.klickitatcounty.org/planning/>

Administration and Staffing

The Klickitat Wildlife Area is within WDFW's Region 5, which has headquarters in Vancouver. All Washington wildlife areas and access sites are operated under WDFW's Lands Division. However, supervision at the region level is provided by the region wildlife program manager. The Klickitat Wildlife Area has two full-time staff members, including the wildlife area manager and a natural resource technician.

Facilities and Maintenance

The headquarters of the Klickitat Wildlife Area is located on the Soda Springs Unit. Most of the facilities are located at headquarters. Buildings within the wildlife area include the office, garage, shop shed, grain storage building, and barn. Additionally, there is a storage shed on the Sondino Ponds Unit.

Fences are important assets on the wildlife area, serving to define the property boundaries and control livestock movement. The Klickitat Wildlife Area has an estimated 15.3 miles of fences requiring inspection and maintenance. Fences are built to meet the needs of wildlife.

Roads and associated culverts, cattle guards and gates are also important features that need regular inspection

and maintenance. There are approximately 12 miles of WDFW roads on the Klickitat Wildlife Area. Routine maintenance activities include clearing blockages in culverts; checking for road surface erosion; performing weed control on the roadways; reducing fire fuels along the roads; collecting litter; arranging for road grading; painting gates; and clearing fallen trees.

There are 12 upland bird water structures, also known as guzzlers, on the Klickitat Wildlife Area. Some are surrounded by fencing to protect them from damage by stray livestock. The water structures and fences are cleaned and inspected annually, with minor repairs attended to as promptly as possible. Major repairs or rebuilding are sometimes required due to weather damage or decay.

At the Sondino Ponds Unit, three gauges are placed in the deepest parts of key ponds and are used for monitoring water levels in the ponds over time. These require routine maintenance so the water levels may be read by an observer from shore.

The Klickitat Wildlife Area has approximately 90 signs that provide information and direct public use of the property. Signs require inspection and maintenance to ensure that they are readable.



Mountain bluebird
Photo by Doug Kuehn

Management Direction and Approach

WLA goals and objectives, performance measures

This plan sets management priorities for the Klickitat Wildlife Area for the next 10 years. Goals and objectives were developed by regional and headquarters staff, with input from the wildlife area advisory committee and are consistent with the WDFW mission and strategic plan.

Objectives express actions that will be taken to achieve a goal. The measurements that will be used to report progress toward objectives are identified as performance measures. The goals of the Klickitat Wildlife Area are located in Appendix A.

Monitoring and Adaptive Management

Wildlife area objectives are to be measured annually based on the associated performance measures and through staff annual evaluations. On a biennial basis, the Klickitat Wildlife Area manager will review, report and revise, as appropriate, objectives and performance measures for the next two year cycle. Staff will engage and develop recommendations for the two-year update with the wildlife area advisory committee and regional district

team. Such reporting will allow the manager, their staff, and the regional office, to modify tasks and timelines as necessary to meet the associated objective. Further, over the term of the Plan (10 years), performance illustrates the adequacy or inadequacy of funding and capacity to successfully manage the wildlife area, potentially influencing goals and objectives in the next planning term.



Oak groves and upland meadows, Soda Springs Unit
Photo by Paul Slichter

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Common garter snake, Soda Springs Unit
Photo by Lauri Vigue

Appendix

- A. Klickitat Wildlife Area Goals, Objectives and Performance Measures
- B. Forest Management Plan
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Appendix A. Klickitat Wildlife Area Goals, Objectives and Performance Measures

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
1. Maintain or improve the ecological integrity of priority sites.	A. Establish an ecological integrity baseline for 1) native oak woodlands, 2) wetland/riparian habitat and 3) grasslands.	All	1. Baseline established (y/n); 2. EI goals established (y/n)	Ecological Integrity Monitoring Team	<ul style="list-style-type: none"> - Work with WLA manager to design monitoring plan to achieve objective A over 10-year planning term. - Conduct data collection to determine baseline within 10-year planning term. - Provide EI baseline report to WLA manager prior to start of subsequent 10-year planning term. - Work with WLA manager to establish EI goals.
	B. Develop and maintain partnerships with conservation organizations to strategize priority land acquisitions for consideration.	All	1. # of meetings; 2. # partner acquisitions established and maintained	WL District Bio	<ul style="list-style-type: none"> - Conduct annual meeting with local NGO's (ie. Columbia Land Trust and Mt Adams Resource Stewards) to discuss their priorities for work in the Klickitat River drainage.
	C. Develop a plan for protecting critical habitats for rare plants including protection measures for the KWLA by 2018.	All	Completed (y/n)	WLA Manager	<ul style="list-style-type: none"> - For each plant species, create a population distribution map using survey data. - For each species, note habitat type. - For each species, compile a list of known or potential threats. - Create a matrix or another method of cross referencing location and habitat type with threats for each species, with a section for remarks on how to avoid negative impacts.
	D. Implement Weed Management Plan	All	1. # acres inspected; 2. # acres treated. Produce annual weed control report, documenting work completed	WLA Manager	<ul style="list-style-type: none"> - Inspect wildlife area lands for weed infestations as time permits focusing efforts on high priority areas: Sondino Ponds and access sites (Mineral Springs, Soda Springs and Dillacort Canyon). - Note new infestations for active control efforts and track population trends and ongoing needs at known infestation sites. - Maintain records of weed control efforts. - Submit annual weed control report, documenting work completed.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
1. Maintain or improve the ecological integrity of priority sites.	E. Annually inspect 80% of boundary fencing and gates; repair and replace as needed and as funding allows.	All	1. # of miles of fencing inspected and repaired; 2. # of gates inspected and repaired.	WLA Manager	- Inspect at least 80% of fence lines annually. - Repair, or make arrangements with permittees to repair damaged fence. - Rebuild badly deteriorated fences.
	F. Build and maintain a citizen science network to collect ecological integrity data.	All	1. % of photo points collected by citizen scientists annually; 2. % of vegetation plots collected by citizen science every 5 years.	Ecological Integrity Monitoring Team	- Recruit citizen scientists to meet monitoring need established in 1A.
2. Recover western pond turtle populations in the wildlife area to healthy, self-sustaining levels.	A. Continue disease evaluation determined by Statewide Health Team.	Sondino Ponds	WPT annual report completed (y/n)	WL District Biologist	- Trap live turtles for health assessments. - Collect biological samples for disease evaluation. - Select individual turtles for disease treatment at Oregon Zoo followed by care at Larch Correction Facility.
	B. Conduct population monitoring every 3-5 years.	Sondino Ponds	1. # surveys conducted every 3-5 years; 2. document in annual report (y/n)	WL District Biologist	- Work with Olympia Science Division to implement Mark-Recapture Survey for population assessment.
	C. Conduct and evaluate Head Start program, including reviewing and evaluating population data, annually or as needed.	Sondino Ponds	Document in annual report (y/n)	WL District Biologist	- Determine need to continue Head Start program annually based on disease and population assessments. - Coordinate with Oregon Zoo for participation in Head-Start program.
	D. Explore possibilities for securing reliable water supplies to selected ponds by 2018.	Sondino Ponds	1. Contacts made (y/n); 2. Formal agreement completed (y/n)	WLA Manager	- Identify water rights for potential acquisition. - Approach landowners to discuss water availability. - Pursue formal agreement if possible.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
2. Recover western pond turtle populations in the wildlife area to healthy, self-sustaining levels.	E. Maintain or increase native wetland and upland plant communities on the Sondino Unit.	Sondino Ponds	1. Wetland and riparian # acres inspected/# acres treated; 2. Grassland # acres inspected/# acres treated.	WLA Manager	<ul style="list-style-type: none"> - Monitor known weed infestations, especially reed canarygrass and Himalayn blackberry. - Inspect property for new weed infestations. - Conduct weed control efforts and keep records on work completed.
	F. Protect western pond turtle hatchlings by removing nonnative predators.	Sondino Ponds	Conducted annually (y/n).	WL District Biologist	<ul style="list-style-type: none"> - Evaluate annually need for bullfrog egg mass, adult and juvenile removal. - Determine funding opportunities via WPT Working Group, to conduct bullfrog removal (contract). - Set up project work and arrange for staffing and equipment. - Monitor progress of work. - Collect information on results and include this in annual report.
	G. Restore farmland to native meadow on Sondino Unit by 2017.	Sondino Ponds	1. Plan developed (y/n); 2. Apply for grant from the Columbia River Gorge National Scenic Area. Grant applied (y/n).	Primary: WL District Biologist Secondary: Habitat Biologist	<ul style="list-style-type: none"> - District Biologist : work with WLA Mgr to determine feasibility for restoration project at Bigger Road meadow. - Habitat Division assist with grant proposal. - Consult with plant ecologist to develop restoration plan. - Explore funding possibilities and apply for grant. - Implement plan. - Evaluate and report on progress. - Report on restoration effort progress annually until project is complete.
	H. Limit public access at Sondino Ponds Unit to research activities only.	Sondino Ponds	1. Signs installed (y/n); 2. # of research permits authorized per year.	WLA Manager	<ul style="list-style-type: none"> - Maintain signs advising of restricted access. - Coordinate with enforcement regarding who is authorized to enter the property. - Issue letters authorizing individuals to enter the property.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
2. Recover western pond turtle populations.	I. Explore opportunities to expand WPT habitat by 2018.	Sondino Ponds	A prioritized acquisition plan developed (y/n.)	WL District Biologist	<ul style="list-style-type: none"> - Meet with adjacent private landowners to determine acquisition potential adjacent to Sondino Ponds. - Develop set of maps and potential acreage for acquisition. - Tie to the WPT annual report.
3. Improve forest health while maintaining and/or improving western gray squirrel and Oregon white oak habitat.	<p>A. Determine the forest treatment strategy for the Soda Springs Unit as defined in the forest management plan.</p> <p>B. Implement PHS western gray squirrel management recommendations in forest treatments. Follow recommended stand characteristics (primary/secondary habitat). Complete at least two WGS surveys prior to treatment.</p>	Soda Springs All	<p>1. # acres for Phase 1;</p> <p>2. # acres for potential forest improvement projects</p> <p># of surveys per project</p>	<p>Primary: Forester</p> <p>Secondary: WLA Manager and WL District Biologist</p> <p>Primary: Forester Secondary: WLA Manager and WL District Biologist</p>	<ul style="list-style-type: none"> - Forester and WLA manager will continue the inventory process to determine how many acres are suitable for active management. - Forester and staff will identify high priority management areas to develop preliminary silvicultural prescriptions. - Forester and WLA manager will develop a 10 year action plan for treatment of high priority areas suitable for active management. - Forester, WLA manager and WL District Biologist will develop appropriate thinning prescriptions for those active management units in suitable western gray squirrel habitat. - Forester, WLA manager and WL district biologist will conduct squirrel surveys in the spring prior to all thinning projects. - Forester, WLA manager and WL district biologist will conduct pre-thinning squirrel surveys in early fall prior to commencement of thinning operations. - WLA manager and WL district biologist will conduct additional follow up as necessary to determine squirrel response/usage patterns post-harvest.
4. Maintain and enhance the Oregon white oak woodlands.	A. Address oak habitat protection when implementing KWLA Forest Management and grazing plans. (Manage for oak savannah, pure oak, oak/conifer and oak snags.)	All	White oak stem density by height class	<p>Primary: Range Ecologist</p> <p>Secondary: Forester</p>	<ul style="list-style-type: none"> - Monitor oak height classes to ensure that oak recruitment is occurring over appropriate time scales. - Monitor associated understory and coniferous vegetation to detect potential correlations. - Standardize these procedures across grazing permits.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
<p>5. Recover western gray squirrel populations in and around the wildlife area to healthy, self-sustaining levels.</p>	<p>A. Develop WGS habitat maintenance partnerships with local landowners. Engage in potential landscape management strategy process (SDS Timber Co).</p> <p>B. Participate in 3 year population status review monitoring program.</p>	<p>Soda Springs, Fisher Hill, Dillacort Canyon, Sondino Ponds, Mineral Springs</p>	<p># of partnerships developed per year.</p>	<p>Habitat Bios</p>	<ul style="list-style-type: none"> - Continue to work with SDS Timber Co and identify other properties with likely WGS populations and conduct surveys. - Work with willing landowners to implement habitat management plans to maintain and improve habitat for viable WGS populations. - In partnership with large industrial timber companies, develop landscape scale management plans for the protection of WGS populations.
<p>6. Achieve species diversity at levels consistent with healthy ecosystems</p>	<p>A. Conduct survey for SGCN listed species (e.g. California mountain kingsnake, Lewis' woodpecker, western toad, white-headed woodpecker).</p> <p>B. Conduct an assessment of adding the Rowland Lake Access site to the wildlife area by 2018.</p>	<p>All</p>	<p>Species surveys completed every 2 years (y/n).</p>	<p>WL District Biologist</p>	<ul style="list-style-type: none"> - Coordinate district priorities with Olympia Diversity Staff annually.
		<p>Sondino Ponds</p>	<p>1. Assessment conducted (y/n); 2. Recommendations made to Real Estate Division (y/n); 3. If Rowland Lake Access site it acquired, Real Estate will update the Land Information System database.</p>	<p>WLA Manager</p>	<ul style="list-style-type: none"> - List of benefits and drawbacks to be developed by region staff, in consultation with Real Estate Division. - Region staff weigh benefits and drawbacks, and if change is beneficial, make recommendation to Real Estate Division to formally add Rowland Lake property to Sondino Ponds Unit. - Real Estate Division update Land Information System, if warranted.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
7. Maintain and restore riparian and instream habitat for steelhead and salmon along Klickitat River.	A. Identify segments of the Klickitat River in need of restoration by 2021.	Soda Springs, Mineral Springs, Dillacort Canyon, Fisher Hill	1. Evaluate fish habitat quality along the river by 2019. Conducted (y/n); 2. Develop a strategy for restoration by 2021. Strategy developed (y/n) 3. Report on progress annually.	Primary: Habitat Secondary: Fish Bios	<ul style="list-style-type: none"> - Evaluate fish habitat quality along the river. - Identify segments of the river where restoration is desirable (using map and on-site analysis). - Identify and prioritize sites. - Explore alternatives for implementing corrective action at priority sites. - Develop timely response to impacts of stream-adjacent projects. - Develop plans for habitat restoration or enhancement based on funding opportunities and other resources. - Implement plans.
8. Maintain and enhance deer and upland bird habitat.	A. Maintain water developments (e.g. guzzlers and ponds) to benefit all wildlife and enhance existing habitat. B. Maintain pheasant habitat for hunting on the Goldendale Hatchery Unit.	Soda Springs Goldendale Hatchery Sondino Ponds	1. Inspect and maintain guzzlers annually; 2. Inspect ponds for water retention at least once every 3 years; 3. Repair structures as soon as possible after damage or significant decay is discovered # acres maintained per year.	WLA manager WLA manager	<ul style="list-style-type: none"> - Inspect and clean debris from guzzlers annually. - Repair damage to water retention structures as soon as possible. <ul style="list-style-type: none"> - Meet with lease holder at least once annually to discuss any new issues relative to farming plan. - Inspect cultivated fields to ensure expected results are met. - Keep lease in active status by re-issuing a new lease when the old one expires.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
<p>8. Maintain and enhance deer and upland bird habitat.</p>	<p>C. Enhance pheasant hunting opportunities on selected sites, including the Klickitat Wildlife Area, by augmenting the pheasant population consistent with statewide plan.</p>	<p>Goldendale Hatchery</p>	<p>Coordinate 4 pheasant releases per year (y/n).</p>	<p>WL District Biologist</p>	<ul style="list-style-type: none"> - Coordinate pheasant release schedule with KWLA Mgr, District and Olympia staff. - Coordinate with pheasant vendor, WDFW staff, and volunteers to implement releases on pheasant hunting sites. - Monitor quality of birds.
	<p>D. Maintain deer forage plots annually.</p>	<p>Soda Springs</p>	<p># of forage plots annually</p>	<p>WLA manager</p>	<ul style="list-style-type: none"> - Plow and disk plots as appropriate for planned forage crops. - Sow seed for forage crops. - Control excessive weeds, add fertilizer, or add more seed to enhance perennial plantings as needed.
	<p>E. Implement carnivore management as per state guidelines (e.g. cougar population objectives and harvest strategy).</p>	<p>All</p>	<p>Develop cougar harvest recommendations based on state guidelines (y/n).</p>	<p>WL District Bio</p>	<ul style="list-style-type: none"> - Provide cougar harvest recommendations to Olympia Game Division Staff via hunting season recommendations. - Review harvest reports to evaluate whether management objectives are being met.
	<p>F. Develop a monitoring process for documenting wild horse presence on the WLA and adjacent ownerships by</p>	<p>---</p>	<p>Monitoring plan developed (y/n).</p>	<p>WL District Bio</p>	<ul style="list-style-type: none"> - Work with KWLA Mgr to develop spreadsheet of reported sightings and locations.
	<p>G. Monitor health of deer population by following population trends, disease issues, and population demographics.</p>	<p>Soda Springs</p>	<p>3 seasonal surveys per year (y/n).</p>	<p>WL District Bio</p>	<ul style="list-style-type: none"> - Coordinate and implement spring deer survey to assess winter survival of young deer. - Conduct post season buck surveys in December. (aerial). - Coordinate winter survey to estimate proportion of surviving bucks in population following fall hunts.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
<p>8. Maintain and enhance deer and upland bird habitat.</p>	<p>H. Develop and maintain at least 50 acres of fuel breaks to assist in control of wildfires every 2 years.</p>	<p>Soda Springs</p>	<p>1. 50 acres maintained (y/n); 2. # of acres of new fuel breaks developed every 2 years.</p>	<p>WLA Manager</p>	<ul style="list-style-type: none"> - Monitor existing fuel breaks for maintenance needs. - Prioritize areas needing maintenance. - Implement maintenance work. - Evaluate strategic routes for new fuel break development. - Implement development of new fuel breaks as resources permit.
	<p>I. Implement seasonal road closures annually to limit disturbance of wintering wildlife by vehicle traffic.</p>	<p>Soda Springs</p>	<p>Road closures implemented annually (y/n).</p>	<p>WLA manager</p>	<ul style="list-style-type: none"> - Every year, close 4 road gates on November 1 each year. Open 3 of the gates April 15 the following spring. Open 1 gate in late spring, with timing to be determined by soil conditions. - Inspect closure areas as needed to ensure that objective is being met.
	<p>J. Consider establishment of mountain quail in Klickitat County through re-introduction efforts by December 31, 2016.</p>	<p>All</p>	<p># reintroduction sites identified</p>	<p>WLA District Biologist</p>	<ul style="list-style-type: none"> - Coordinate feasibility of release on the wildlife area with headquarters staff. - Monitor Asotin County success and determine potential for release at Klickitat Wildlife Area.
	<p>K. Minimize elk population increases per GMU 388 hunting objectives.</p>	<p>Soda Springs</p>	<p>Complete hunter harvest reports annually (y/n).</p>	<p>WL District Bio</p>	<ul style="list-style-type: none"> - Monitor annual hunter elk harvest numbers. - Make recommendations annually to hunting season regulations as needed.
<p>L. Maintain or increase elk population as per GMU 578 hunting objectives. Manage to keep elk numbers at a stable level and monitor the population to address local issues in White Salmon drainage and Glenwood Valley.</p>	<p>Soda Springs Mineral Springs Dillacort Canyon Fisher Hill</p>	<p>Complete hunter harvest reports annually (y/n).</p>	<p>WL District Bio</p>	<ul style="list-style-type: none"> - Monitor annual hunter elk harvest numbers. - Make recommendations annually to hunting season regulations as needed. 	

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
9. Manage wolf-livestock conflicts to minimize livestock losses, while not impacting the recovery of a sustainable wolf population.	A. Follow statewide guidelines for wolf management. Once a pack is established around the WLA, evaluate adaptive management as per statewide planning.	All	1. Document sightings (y/n); 2. Conduct follow-ups as needed.	WL District Bio	- Work with Conflict Staff to document viable wolf sightings as per public and WDFW reports. - Set cameras as needed to verify individual and wolf pack presence based on sightings/reports.
10. Maintain productive and positive working relationships with neighbors, partners, and permittees.	A. Maintain current grazing leases. B. Minimize trespass by unpermitted livestock. C. Conduct monitoring with range ecologist annually.	Soda Springs Fisher Hill All Soda Springs Fisher Hill	Up to 3 permits per year (y/n). # trespass cattle occurrences per year. Support reporting for three permits (y/n).	WLA Manager WLA Manager WLA Manager	- Monitor rangeland for trends in overall plant community health as well as short-term impacts. - Monitor water sources for adequacy. - Maintain infrastructure such as roads, gates, fences, signs, etc. as appropriate. - Maintain records of observations and livestock use. - Talk with permittees at least once annually to discuss needs and coordinate work. - Renew permits upon expiration, where appropriate. - Monitor wildlife area lands for unpermitted livestock. - Respond to reports from the public regarding livestock on property. - Contact owners and arrange for prompt removal of animals. - Work with law enforcement to remedy persistent or recurring problems.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
10.	Maintain productive and positive working relationships with neighbors, partners, and permittees.	Soda Springs	Maintain existing permits per year (y/n).	WLA manager	<ul style="list-style-type: none"> - Meet with lease holder at least once annually to discuss any new issues relative to farming plan. - Inspect cultivated fields to ensure expected results are met. - Keep lease in active status by re-issuing a new lease when the old one expires. - Discuss management roles with regional BLM staff. - Document progress in Management Plan Update.
	D. Maintain agriculture leases to benefit wildlife.	Soda Springs	Invite BLM Staff to WAAC meetings (y/n).	WLA manager	
11.	E. Clarify role of WDFW in joint management agreement with Bureau of Land Management pertaining to BLM lands by 2017.	Soda Springs Dillacort Canyon Mineral Springs			
	Support and maintain appropriate recreational opportunities.	Soda Springs Mineral Springs	<ol style="list-style-type: none"> 1. Develop education outreach program (y/n); 2. Place signs advising visitors of where camping is restricted by December 31, 2016 (y/n); 3. Increase enforcement patrols in areas of concern (y/n). 	WLA manager	<ul style="list-style-type: none"> - Develop handouts for public distribution explaining the purpose of the restrictions. - Talk with fishing guides and other visitors about the restrictions and their purpose. - Post signs prominently at points of public entry. - Post signs on the riverbank where camping has been known to occur. - Wildlife Area staff work with enforcement to increase patrols on river.
	B. Maintain fishing opportunities at the Klickitat Wildlife Area.	Goldendale Hatchery	3,000 rainbow stocked per year at Spring Creek (y/n).	Fish Program	<ul style="list-style-type: none"> - Stock 3,000 rainbow trout into Spring Creek annually.
	C. Replace the Stinson Flats boat ramp by 2018.	Soda Springs	<ol style="list-style-type: none"> 1. Engineer design completed (y/n); 2. Apply for funding (y/n); 3. # permits completed 	Primary: WLA Manager Secondary: Fish and Habitat programs.	<ul style="list-style-type: none"> - Coordinate engineer design with Capital Asset Management Program. - Research grant options. - Coordinate permits with Habitat Program. - Schedule work with contractors.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
<p>11. Support and maintain appropriate recreational opportunities.</p>	<p>D. Assess exposure for golden eagles to lead contamination due to recreational shooting by 2017.</p>	<p>Soda Springs</p>	<p>1. Identify and document locations through casual observations, completed (y/n).</p>	<p>Primary: WLA manager Secondary: WL District Biologist</p>	<ul style="list-style-type: none"> - Document where high use target shooting sites are occurring in close proximity to golden eagle sites. - Monitor use of sites. - Provide information to District Biologist for consideration of non-lead ammunition requirement on the wildlife area.
	<p>E. Support Washington State Parks' effort to improve access to the Klickitat Trail near the Swale Creek Unit.</p>	<p>Swale Creek</p>	<p>Provide support to State Parks for application for land acquisition funding, as needed. Completed (y/n)</p>	<p>Primary: WLA manager Secondary: WL District Bio</p>	<ul style="list-style-type: none"> - Communicate with State Parks' project manager to discuss what assistance WDFW can provide.
	<p>F. Support WDFW access site managers in control of weeds at campgrounds (noted in 1D). Implement Weed Management Plan for the following access sites: Leidl Park, Stinson Flat, Mineral Springs, and Turkey Hole.</p>	<p>Mineral Springs, Soda Springs, Dillacort Canyon</p>	<p># acres treated.</p>	<p>WLA Manager</p>	<ul style="list-style-type: none"> - Monitor weed infestations and treat in a timely fashion to reduce weed population. - Inspect sites for new infestations. - Respond to reports from knowledgeable observers, as appropriate.
	<p>G. Evaluate options for acquiring suitable lands to serve hunters with disabilities. Develop strategy for prioritizing potentially suitable properties by 2019.</p>	<p>--</p>	<p>List developed (y/n).</p>	<p>WLA manager</p>	<ul style="list-style-type: none"> - Develop list of desirable property characteristics. - If funding seems feasible, identify properties that might be suitable. - Approach landowners to learn their interest in land sale.
	<p>H. Develop options for low impact shooting range facility on the wildlife area by ___.</p>	<p>--</p>	<p>Apply for land acquisition grants for this specific purpose (y/n).</p>	<p>WLA manager</p>	<ul style="list-style-type: none"> - Develop a list of desirable property characteristics. - Identify properties that might be suitable. - Approach landowners to learn their interest in land sale. - If suitable property is identified and landowner is interested, pursue funding for acquisition.

Goal	Draft Objective	Unit	Performance Measure	Lead	Tasks
<p>12. Offer multiple and varied opportunities for stakeholder participation and engagement.</p>	<p>A. Coordinate and maintain a Wildlife Area Advisory Committee.</p> <p>B. Coordinate communication with community groups about current wildlife area management activities.</p> <p>C. Provide opportunities annually for the public and other stakeholders to volunteer on the Klickitat Wildlife Area.</p>	<p>--</p> <p>--</p> <p>--</p>	<p># of meeting(s) per year.</p> <p># of groups/constituents contacted</p> <p>1. # of volunteers; 2. # of volunteer hours; 3. # of volunteer projects on site.</p>	<p>WLA Manager</p> <p>WLA Manager</p> <p>WLA Manager</p>	<p>- Set up meeting time and place based on group members' availability.</p> <p>- Draft agenda with attention to group interests and time constraints.</p> <p>- Hold meeting and collect group comments and recommendations for consideration relative to future management actions (proposed or ongoing).</p> <p>- Include meeting notes in wildlife area management plan updates and website.</p> <p>- Provide KWLA information to local organizations, through email, telephone calls, community group meeting attendance and presentations, and written notices and newsletters.</p> <p>- Identify need that may be suitable for volunteer assistance</p> <p>- Match volunteer skills to project need and coordinate with volunteers to set up project</p> <p>- Implement project</p> <p>- Record accomplishments, and document volunteer hours if possible</p>
<p>13. Maintain safe, highly functional, and cost-effective administration and operational facilities and equipment.</p>	<p>A. Document sensitive areas on the wildlife area (cultural resources, sensitive habitat, buildings and fire breaks) for fire protection.</p>	<p>All</p>	<p>Locations documented (y/n).</p>	<p>WLA Manager</p>	

Appendix B. Klickitat Wildlife Area Forest Plan

Appendix C. Continued Research and Study

Table 9. Continued Research and Study

Name	Date	Description
Dennis Mackie, M.S. thesis, WSU	1981	Ecology of Merriam's turkeys in south-central Washington with special reference to habitat utilization
David A. Manuwal, UW, Wildlife Science Group	1989	Birds of the Klickitat National Scenic River Area
Jennifer Seavey, M.S., thesis, UW	1997	Nest site selection and nesting success of the ash-throated flycatcher in south-central Washington
David A. Manuwal, UW, Wildlife Science Group	1997	Neotropical bird communities in oak woodlands of south-central Washington
Scott McCorquodale, Yakama Indian Nation	1997	Ecology and management of migratory black-tailed deer in the Klickitat Basin of Washington
Mary Linders, UW Graduate student	1998-1999	Use of space and resource use by western gray squirrels.
Dr. Matthew Vander Haegen, WDFW	2000-2006	Population dynamics of western gray squirrels
Dr. Matthew Vander Haegen, WDFW	2000-2006	Patterns of nest use by western gray squirrels
Hannah M. Lucas, M.S., thesis, WWU	2007	Nest site selection for the western pond turtle in Washington.

Appendix D. Klickitat Wildlife Area Rare Plants

Table 10. Klickitat Wildlife Area Rare Plants Inventory

Taxon Name	Common Name	Washington State Listing Status	Units
<i>Lomatium suksdorfii</i>	Suksdorf's Desert Parsley	Sensitive	Soda Springs
<i>Calochortus longebarbatus</i> <i>var. longebarbatus</i>	Long-bearded Segó Lily	Sensitive	Soda Springs
<i>Spiranthes porrifolia</i>	Western Ladies' Tresses	Sensitive	Soda Springs, Sondino Ponds
<i>Trichostema oblongum</i>	Oblong Blue-curls		Soda Springs
<i>Leptosiphon bolanderi</i>	Bolander's Babystars	Sensitive	Soda Springs
<i>Penstamon barrettiae</i>	Barrett's Penstamon	Threatened	Soda Springs, Sondino Ponds
<i>Heuchera grossulariifolia</i> <i>var. tenuifolia</i>	Gooseberry-leaved Alumroot	Sensitive	Soda Springs
<i>Ranunculus tritermatus</i>	Obsure Buttercup	Endangered	Mineral Springs, Swale Creek, Soda Springs
<i>Eryngium petiolatum</i>	Oregon Coyote Thistle	Threatened	Sondino Ponds
<i>Hackelia diffusa</i> <i>var. diffusa</i>	Diffuse Stickweed	Threatened	Soda Springs
<i>Githopsis specularioides</i>	Blue Cups	Sensitive	Soda Springs
<i>Myosurus clavicaulis</i>	Mousetail	Sensitive	Swale Creek
<i>Isoetes nuttallii</i>	Nuttall's Quillwort	Sensitive	Sondino Ponds
<i>Collinsia sparsiflora</i>	Few-flowered Blue-eyed Mary	Sensitive	Sondino Ponds

Appendix E. Klickitat Wildlife Area Weed Control Plan

Weed Control Goals at Klickitat Wildlife Area

The goal of weed control on WDFW lands at Klickitat Wildlife Area (KWLA), which includes the Soda Springs Unit, Mineral Springs Unit, Dillacort Canyon Unit, Fisher Hill Unit, Goldendale Hatchery Unit, Swale Creek Unit, and the Sondino Unit, is to maintain or improve the habitat for fish and wildlife, meet legal obligations, and protect adjacent private lands.

To these ends, WDFW uses integrated pest (i.e. weed) management (IPM), which is defined in RCW 17.15.010 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.”

At the KWLA, WDFW’s weed management objectives are:

- 1) **Wetlands and riparian areas** - Check sensitive wetlands and other wetlands prone to weed infestation annually for maintenance needs. Sensitive wetlands hosting state-listed western pond turtles and rare native plants are present on the Sondino Unit, and are subject to infestation by reed canarygrass and Himalayan blackberries. A creek heavily infested with reed canarygrass bisects the Goldendale Hatchery Unit. Scattered ponds on the Soda Springs Unit also sometimes develop patches of reed canarygrass. The Mineral Springs Unit and Soda Springs Unit have Himalayan blackberries, reed canarygrass, and everlasting peas within the riparian area along the Klickitat River. In an average year, about four acres of wetlands are treated, with reed canarygrass as the primary target. Reed canarygrass threatens to outcompete native plants in these eastern Washington perennial and vernal ponds, as well make access to fishing sites difficult. Other wetland weeds are treated approximately every other year, or when the infestation reaches an extent deemed to pose a significant threat to nearby areas.
- 2) **Access sites** - Check Leidl Park, Stinson Flat, Mineral Springs, and Turkey Hole sites annually for maintenance needs. Weeds such as diffuse knapweed, spotted knapweed, and sulfur cinquefoil at access sites pose a risk of spreading to new areas if not treated. It is estimated that up to five acres require annual maintenance.
- 3) **Oak woodlands and open grassland** - Check high risk areas and known trouble spots annually for maintenance needs. Areas that are adjacent to roads or are subject to heavy recreational use are considered high risk for infestation. Areas utilized heavily during grazing periods are also at an elevated risk for weed colonization. Upland areas on almost all of the units have known weed species that must be monitored. These species include yellow starthistle, everlasting peas, Dalmatian toadflax, oxeye daisy, Himalayan blackberry, Canada thistle, sulphur cinquefoil, cheat grass, medusahead, spotted knapweed, and diffuse knapweed. It is estimated that 10 to 15 acres requires some active management. Work volume varies annually due to factors including timing and volume of precipitation, impacts of trespass grazing or other disturbance, fires, unusual winter or summer temperatures for a long period, etc.

Weed Species of Concern on the KWLA:

Weed species of concern on the KWLA include but are not limited to: Dalmatian toadflax (*Linaria dalmatica* ssp. *Dalmatica*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*C. biebersteinii*), yellow starthistle (*C. solstitialis*), everlasting pea (*Lathyrus latifolius*), reed canarygrass (*Phalaris arundinacea*), oxeye daisy (*Leucanthemum vulgare*), Medusahead (*Taeniatherum caput-medusae*), cheatgrass (*Bromus tectorum*), Himalayan blackberry (*Rubus armeniacus*), Canada thistle (*Cirsium vulgare*), sulfur cinquefoil (*Potentilla recta*), woolly mullein (*Verbascum thapsus*), St. Johnswort (*Hypericum perforatum*), chickory (*Cichorium intybus*), fragrant water lily (*Nymphaea odorata*) and other, general weeds.

Weeds occurring on the KWLA and associated units are listed in Table 11. The table also describes the weed’s classification, an estimate of the acreage affected by the weed, how many acres were treated, the relative density of infestation, the general trend the weed infestation has been exhibiting, the control objective and/or strategy for the weed and finally, which wildlife area units have the weed present.

Table 11. KWLA Weed Table Including the Weed Class and Unit Location on the Wildlife Area.

Weed Species	2014 County Weed Class	2013 Estimated Affected Acres	2013 Treated Acres	Qualitative Density	Annual Trend	Control Objective/Strategy	Wildlife Area Unit Weed Distribution (2005-2014)
Everlasting pea	n/a	3	0	Medium	Decreasing	Suppress population to greatest degree possible	Sondino Pond, Mineral Springs, Soda Springs
Blackberry	C	5	0	Low	Variable	Suppress population to greatest degree possible	Sondino Pond, Mineral Springs, Dillacort Canyon, Soda Springs
Reed canarygrass	C	10	2.7	High	Unknown	Suppress population to greatest degree possible	Sondino Pond, Mineral Springs, Soda Springs, Hatchery
Canada thistle	C-County Designate	2	0	Low	Variable	Suppress population to greatest degree possible	Soda Springs, Hatchery
Oxeye daisy	C	0.1	0.1	Low	Increasing	Eradicate	Soda Springs
Dalmatian toadflax	B	.5	0	Low	Unknown	Suppress population to greatest degree possible	Mineral Springs, Soda Springs
Medusahead	n/a	10	0.25	High	Unknown	Eradicate when found invading new sites	Soda Springs, Hatchery
Spotted knapweed	B	4	0	Medium	Unknown	Suppress population to greatest degree possible	Sondino Pond, Soda Springs
Diffuse knapweed	B	4	0	Medium	Unknown	Suppress population to greatest degree possible	Sondino Pond, Soda Springs
Yellow starthistle	B	0.2	0	Low	Stable	Eradicate	Sondino Pond
Cheatgrass	n/a	200	0.5	High	Unknown		Soda Springs, Mineral Springs, Dillacort Canyon, Fisher Hill, Hatchery, Sondino Pond
Sulfur cinquefoil	B	5	0	High	Unknown	Eradicate	Soda Springs
General weeds	n/a	1	1	Low	Decreasing	Control opportunistically	Hatchery, Dillacort Canyon, Swale Creek, Fisher Hill, Sondino Pond, Soda Springs, Mineral Springs
Fragrant water lily	C	0.2	0	High	Stable	Prevent invasion to new sites	Sondino Ponds
Chickory	n/a	10	0	Low	Unknown	Control opportunistically	Soda Springs, Hatchery, Sondino

B- Designate – legally mandated for control. In regions where a Class B & C species are abundant, control is decided at the local level, with containment as the primary goal.

Detailed descriptions and natural history information for each of the above state-listed weed species listed above can be found at the Washington State Noxious Weed Control Board web site <http://www.nwcb.wa.gov/search.asp>. Information on other species contained in the list can

be found at the University of California’s IPM Online web site: http://www.ipm.ucdavis.edu/PMG/weeds_intro.html.

Weed management information for individual weed species can be found at the PNW Weed Management Handbook link at: <http://pnwhandbooks.org/weed/control-problem-weeds>.

Appendix F. Documented Species on WLA/PHS Species of Concern List

Documented Species on WLA

Birds of the Klickitat Wildlife Area*

Pied-billed Grebe	Merriam's Turkey (Wild Turkey)	Cliff Swallow	Nashville Warbler
Great Blue Heron	Band-tailed Pigeon	Northern Rough-winged Swallow	Yellow-rumped Warbler
Canada Goose	Eurasian collared dove	Tree Swallow	Black-throated Gray Warbler
Mallard	Rock Pigeon	Violet-green Swallow	Hermit Warbler
Gadwall	Mourning Dove	Barn Swallow	Orange-crowned Warbler
Green-winged Teal	Barred Owl	Gray Jay	Townsend's Warbler
American Wigeon	Great Horned Owl	Steller's Jay	Yellow Warbler
Northern Pintail	Western Screech-Owl	Western Scrub Jay	MacGillivray's Warbler
Northern Shoveler	Flammulated Owl	Clark's Nutcracker	Wilson's Warbler
Cinnamon Teal	Northern Pygmy-Owl	Black-billed Magpie	Common Yellowthroat
Wood Duck	Northern Saw-whet Owl	American Crow	Yellow-breasted Chat
Ring-necked Duck	Common Poorwill	Common Raven	Black-headed Grosbeak
Common Goldeneye	Common Nighthawk	Black-capped Chickadee	Lazuli Bunting
Bufflehead	Vaux's Swift	Mountain Chickadee	Spotted Towhee
Common Merganser	Anna's Hummingbird	Chestnut-backed Chickadee	House Sparrow
Hooded Merganser	Black-chinned Hummingbird	Bushtit	Song Sparrow
Sora	Calliope Hummingbird	Brown Creeper	Lark Sparrow
American Coot	Rufous Hummingbird	Pygmy Nuthatch	Chipping Sparrow
Killdeer	Belted Kingfisher	White-breasted Nuthatch	Dark-eyed Junco
Spotted Sandpiper	Northern Flicker	Red-breasted Nuthatch	Fox Sparrow
Common Snipe	Lewis' Woodpecker	House Wren	Golden-crowned Sparrow
California Gull	Red-breasted Sapsucker	Bewick's Wren	Lincoln Sparrow
Turkey Vulture	Red-naped Sapsucker	Canyon Wren	Savannah Sparrow
Golden Eagle	Williamson's Sapsucker	Marsh Wren	Swamp Sparrow
Bald Eagle	Acorn Woodpecker	Pacific Wren	Vesper Sparrow
Northern Harrier	Black-backed Woodpecker	Rock Wren	White-crowned Sparrow
Red-shouldered Hawk	Downy Woodpecker	Golden-crowned Kinglet	Western Meadowlark
Sharp-shinned Hawk	Hairy Woodpecker	Ruby-crowned Kinglet	Pine Grosbeak
Cooper's Hawk	Pileated Woodpecker	Western Bluebird	Red-winged Blackbird
Northern Goshawk	White-headed Woodpecker	Mountain Bluebird	Brewer's Blackbird
Red-tailed Hawk	Eastern Kingbird	Townsend's Solitaire	Brown-headed Cowbird
Rough-legged Hawk	Western Kingbird	Swainson's Thrush	Bullock's Oriole
Osprey	Ash-throated Flycatcher	Hermit Thrush	Western Tanager
American Kestrel	Hammond's Flycatcher	Varied Thrush	Pine Siskin
Merlin	Least Flycatcher	American Robin	American Goldfinch
Peregrine Falcon	Olive-sided Flycatcher	Northern Shrike	Lesser Goldfinch
Prairie Falcon	Pacific Slope Flycatcher	American Dipper	Red Crossbill
Virginia Rail	Willow Flycatcher	Cedar Waxwing	Rosy Finch
Ruffed Grouse	Western Wood-Pewee	European Starling	Purple Finch
Sooty Grouse	Gray Flycatcher	American Pipit	Cassin's Finch
California Quail	Dusky Flycatcher	Solitary Vireo	House Finch
Mountain Quail (Historic)	Say's Phoebe	Red-eyed Vireo	Evening Grosbeak
Chukar	Horned Lark	Warbling Vireo	

* Bird list revisions were completed by Stuart Johnson (February 2016)

Mammals of the Klickitat Wildlife Area

Opossum	Eastern Cottontail	California Ground Squirrel (<i>Graydigger</i>)
Masked Shrew	Rocky Mountain Elk	Yellow Pine Chipmunk
Vagrant Shrew	Mule Deer	Western Gray,Squirrel
Dusky Shrew	Black-tailed Deer	Chickaree (Douglas Squirrel)
Northern Water Shrew	Black Bear	Northern Flying Squirrel
Pacific Mole	Raccoon	Northern Pocket Gopher
Bats:	Short-tail Weasel	Beaver
California Myotis	Long-tail Weasel	Deer Mouse
Little Brown Myotis	Mink	Bushy-tail Wood Rat
Long-eared Myotis	River Otter	Boreal Redback Vole
Long-legged Myotis	Badger	Long-tail Vole
Small-footed Myotis	Spotted Skunk	Richardson Vole
Yuma Myotis	Striped Skunk	Oregon Vole
Big Brown Bat	Coyote	Muskrat
Hoary Bat	Mountain Lion (Cougar)	House Mouse
Silver-haired Bat	Bobcat	Porcupine
Western Big-eared Bat	Yellowbelly Marmot	

Reptiles and Amphibians of the Klickitat Wildlife Area

Western Pond Turtle	Ring-necked Snake	Pacific Treefrog
Southern Alligator Lizard	Desert Nightsnake	Western Toad
Western Fence Lizard	California Mountain Kingsnake	Rough-Skinned Newt
Western Skink	Gopher Snake	Long-toed salamander
Rubber Boa	Western Terrestrial Garter Snake	American Bullfrog
Racer	Common Garter Snake	
Common Sharp-tailed Snake	Western Rattlesnake	

Priority Habitats And Species In Klickitat County Amphibian And Reptile List Sondino Pond Unit

This list represents the Priority Habitat and Species (PHS) identified for Klickitat County. This list of species and habitats was developed using the distribution maps found in the PHS list. Species distribution maps depict counties where each priority species is known to occur as well as other counties where habitat primarily associated with the species exists. Two assumptions were made when

developing distribution maps for each species: 1) There is a high likelihood a species is present in a county, even if it has not been directly observed, if the habitat with which it is primarily associated exists. 2) Over time, species can naturally change their distribution and move to new counties where usable habitat exists.

Table 12. Priority Habitats and Species in Klickitat County

Habitats	Aspen Stands
	Biodiversity Areas & Corridors
	Inland Dunes
	Old-Growth/Mature Forest
	Oregon White Oak Woodlands
	Eastside Steppe
	Shrub-Steppe
	Riparian
	Freshwater Wetlands & Fresh Deepwater
	Instream
	Caves
	Cliffs
	Snags and Logs
	Talus
Fishes	Pacific Lamprey
	River Lamprey
	White Sturgeon
	Leopard Dace
	Mountain Sucker
	Bull Trout/ Dolly Varden
	Chinook Salmon
	Chum Salmon
	Coastal Res./ Searun Cutthroat
	Coho
	Pink Salmon
	Rainbow Trout/ Steelhead/ Inland Redband Trout
Sockeye Salmon	

Table 12. Priority Habitats and Species in Klickitat County

Amphibians	Larch Mountain Salamander
	Oregon Spotted Frog
	Western Toad
Reptiles	Western Pond Turtle (also known as Pacific Pond Turtle)
	California Mountain Kingsnake
	Common Sharp-tailed Snake
	Striped Whipsnake
	Sagebrush Lizard
Birds	Western grebe
	E WA breeding concentrations of: Grebes, Cormorants
	E WA breeding: Terns
	Black-crowned Night-heron
	Great Blue Heron
	Cavity-nesting ducks: Wood Duck, Barrow's Goldeneye, Common Goldeneye, Bufflehead, Hooded Merganser
	Harlequin Duck
	Waterfowl Concentrations
	Bald Eagle
	Ferruginous Hawk
	Golden Eagle
	Northern Goshawk
	Peregrine Falcon
	Prairie Falcon
	Chukar
	Mountain Quail
	Ring-necked Pheasant
	Greater Sage-grouse
	Sooty Grouse
	Wild Turkey
Sandhill Crane	
E WA breeding occurrences of: Phalaropes, Stilts and Avocets	

Table 12. Priority Habitats and Species in Klickitat County

Birds <i>(cont.)</i>	Band-tailed Pigeon
	Burrowing Owl
	Flammulated Owl
	Spotted Owl
	Vaux's Swift
	Black-backed Woodpecker
	Lewis' Woodpecker
	Pileated Woodpecker
	White-headed Woodpecker
	Loggerhead Shrike
	Sage Sparrow
	Sage Thrasher
Mammals	Preble's Shrew
	Roosting Concentrations of: Big-brown Bat, Myotis bats, Pallid Bat
	Townsend's Big-eared Bat
	Black-tailed Jackrabbit
	White-tailed Jackrabbit
	Western Gray Squirrel
	Townsend's Ground Squirrel
	Cascade Red Fox
	Fisher
	Marten
	Wolverine
	Columbian Black-tailed Deer
Elk	
Rocky Mountain Mule Deer	
Invertebrates	Columbia Oregonian (Mollusk)
	Dalles Sideband (Mollusk)
	Juniper Hairstreak (Butterfly)
	Mardon Skipper (Butterfly)

Appendix G. Cultural Resource Summary

Appendix H. Fire Response Information

Fire District - DIAL 911

NAME	TELEPHONE
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

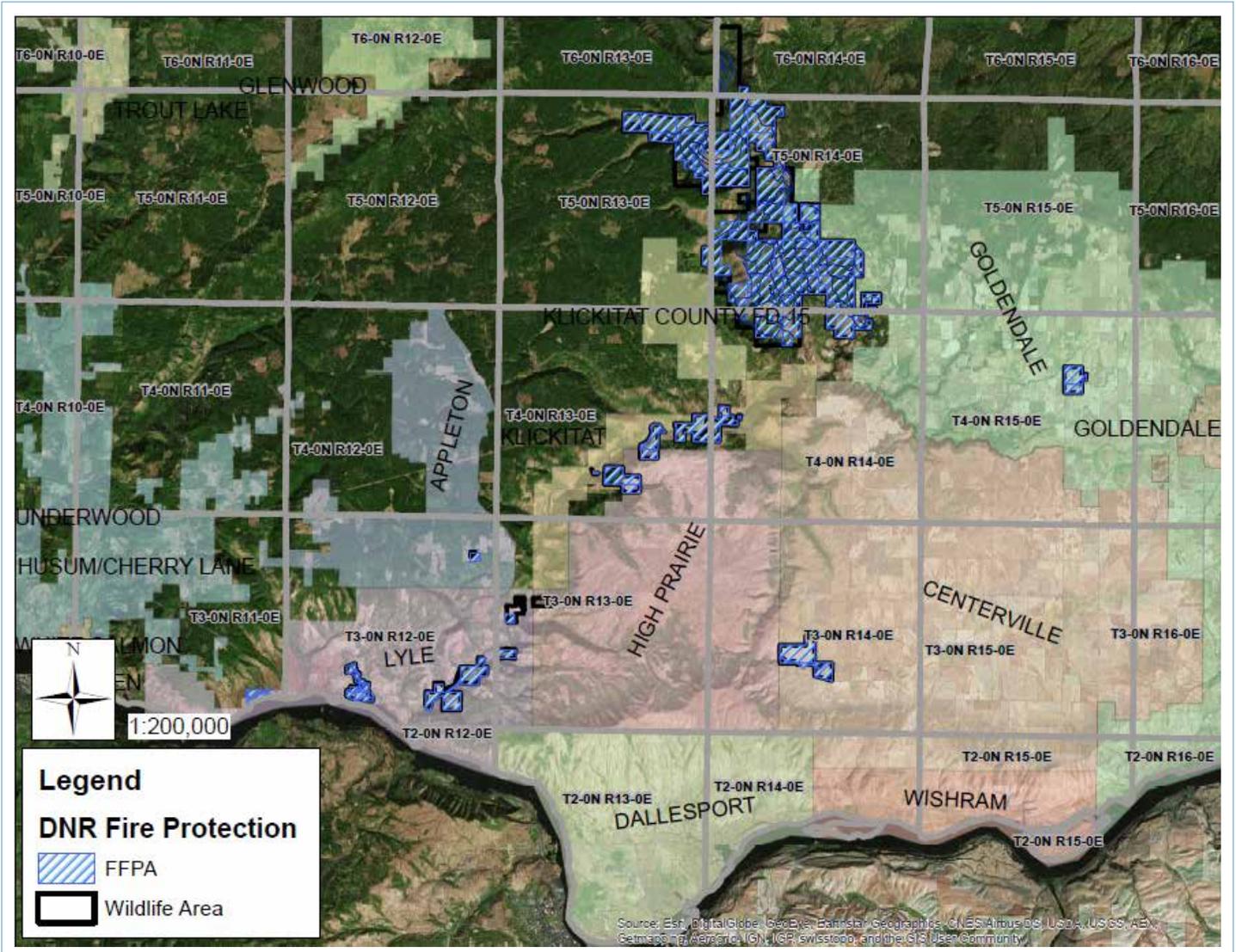
NAME	TELEPHONE
DNR Dispatch (Forest Fires)	800-562-6010
DNR Goldendale Workcenter	(509) 773-5588

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

NAME	TELEPHONE	WORK CELL
Susan Van Leuven, Klickitat Wildlife Area Manager	(509) 773-4459	(509) 480-9817
Region Office, Vancouver	(360) 696-6211	
Sandra Jonker, Regional Wildlife Program Manager	(360) 906-6722	(360) 931-3248

Map 12. Fire District Boundaries for Klickitat Wildlife Area (2016)

FFPA – Forest Fire Protection Assessment



Appendix I. Public Process Summary (Waac/Dt Review/Sepa)