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OAK CREEK WILDLIFE AREA MANAGEMENT PLAN

Washington Department of Fish and Wildlife

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2006

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CHAPTER I. INTRODUCTION

The Washington Department of Fish and Wildlife (WDFW) is entrusted with the management of wildlife and WDFW-owned and managed lands and the preservation of the natural resources associated with those lands. As a steward of the land, WDFW is dedicated to protecting, restoring, and perpetuating healthy ecosystems throughout the State while fostering an attitude of partnership within the community. WDFW is responsible for the protection and management of all marine, anadromous and freshwater fish; shellfish; and terrestrial wildlife—thousands of animal species statewide. WDFW regulates all legal harvest of commercial fish, sport fish and wildlife, enforces wildlife protection laws, and manages about 840,000 acres of land. WDFW developed Washington's Comprehensive Wildlife Conservation Strategy (CWCS) as a guiding document to protect species from extinction, incorporating biodiversity and species-specific protection measures.

Many of the wildlife highlighted in this document occur on the Oak Creek Wildlife Area Complex (OCWA). Species section accounts in the OCWA plan comprise basic information available, so these species will not be left behind during management considerations. However, single species management may be highlighted as an emphasis species for management in a particular area while preserving basic habitat needs for species diversity as well. In other cases wildlife biodiversity will be the emphasis for particular habitat types.

The OCWA fits within the Columbia Plateau Eco-region. Ecosystem assessments were used in providing guidance to the CWCS development. The OCWA plan utilizes these documents to guide management and provide direction for activities undertaken on the project. It will be updated annually to maintain its value as a flexible working document that addresses resource issues as they change over time. The planning process incorporates local needs and concerns as indicated by citizen participation, and guides management activities on the Wildlife Area based on WDFW's statewide goals and objectives.

1.1 Agency Mission Statement

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

1.2 Agency Goals and Objectives

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

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

- Objective 2: Protect, restore and enhance fish and wildlife populations and their habitats.
- Objective 3: Ensure WDFW activities, programs, facilities and lands are consistent with local, state and federal regulations that protect and recover fish, wildlife and their habitats.
- Objective 5: Minimize adverse interactions between humans and wildlife.

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

- Objective 6: Provide sustainable fish and wildlife-related recreational and commercial opportunities compatible with maintaining healthy fish and wildlife populations and habitats.

- Objective 7: Improve the economic well-being of Washington by providing diverse, high quality recreational and commercial opportunities.

Goal III: Operational Excellence and Professional Service

- Objective 11: Provide sound operational management of WDFW lands, facilities and access sites.
- Objective 14: Maintain a safe work environment.
- Objective 15: Reconnect with those interested in Washington's fish and wildlife.

1.3 Agency Policies

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

- Commission Policy 6003: Domestic Livestock Grazing on Department Lands
- Policy 6010: Acquiring and disposing of real property
- Policy 5211: Protecting and Restoring Wetlands: WDFW Will Accomplish Long-Term Gain of Properly Functioning Wetlands Where Both Ecologically and Financially Feasible on WDFW-Owned or WDFW-Controlled Properties
- Policy 5001: Fish Protection At Water Diversions/Flow Control Structures And Fish Passage Structures
  Policy 3400 (1990): Cooperative Road Management Areas
  Policy 2155 (1989): Protection of Cultural Resources
- Policy: Recreation management on WDFW Lands
- Policy: Commercial Use of WDFW Lands
- Policy: Forest Management on WDFW Lands
- Policy: Weed Management on WDFW Lands
- Policy: Fire Management on WDFW Lands

1.4 Oak Creek Wildlife Area Goals

Management goals for the Oak Creek Wildlife Area are to preserve habitat and species diversity for both fish and wildlife resources, maintain healthy populations of game and non-game species, protect and restore native plant communities, and provide diverse opportunities for the public to encounter, utilize, and appreciate wildlife and wild areas. Specific management goals and objectives for the Oak Creek WLA can be found in Chapter 3.

1.5 Planning Process

A multifaceted approach has been undertaken to identify strategies proposed for management of the Oak Creek Wildlife Area. This process included identifying agency goals and objectives that apply to the area; a review of the purpose for purchasing the area; a review of existing habitat conditions and species present; the formation of a Wildlife Area Citizens Advisory Group (CAG); and input and review by an internal WDFW District Team (DT) consisting of local agency representatives from each agency program. The District Team also helped to identify other species or habitat plans and documents pertinent to the management of the area.

Public participation, through the formation of the CAG, will be used as an ongoing means to identify social, cultural, and economic issues important to the people of Washington and the management of the Wildlife Area. The group will also provide input to help resolve current and future management issues and conflicts. CAG participation in planning will add credibility and support for land management practices and help build constituencies for

wildlife areas. The CAG is made up of one representative from each major stakeholder group. CAG members are spokespersons for their interest group(s) to convey public interest in land management issues to WDFW on the Wildlife Area that affect them.

Table 1. Colockum/L.T. Murray/Wenas/Oak Creek Wildlife Areas Citizens Advisory Group Representation

Name	**Representing**
Bailey, Ken	Non-Motorized Recreation (hikers, horsebackers, bicyclists, campers, cross-country skiing, kayakers, etc.)
Ballard, Shawn	Archery, Deer and Elk management
Baskin, Tom	Disabled Sportsmen Association, Recreation interests
Beck, Dan	Central Washington University (Biology)
Bloomfield, Betsy	The Nature Conservancy
Davis, Todd	Chelan, Kittitas, Yakima Co. Weed Boards
Eaton, Bob	Livestock interests, Grazing
Essman, Bill	Kittitas Co. Field & Stream Club, and Hunting / Fishing interests
Forbes, Pete	USFS / Naches Ranger District
Fulwiler, Neil	Adjacent landowner, Wildlife damage, Grazing
Hale, Mike	RMEF / NGO's / MDF / FNAWS
Hankins, Wes	NWTF / Bird Hunters / Hunting interests / Dog Training
Hedges, Neal	BLM
Juette, Randy	Commercial Use, Tourism, Access
Kinney, Dan	Audubon Society
McNamee, Ken	Washington Department of Natural Resources (DNR)
Paolella, Ray	Cowiche Canyon Conservancy
Stegeman, Bill	Wenatchee Sportsman's Association
Stevenson, Jim	Yakama Nation
Warnock, Doug	Big Game Management Roundtable
White, Bill	LMAC, Livestock interests
Witke, Don	Wenas Muzzleloader Club
Zeimantz, Paul	Motorized Recreation (4 wheelers, motorcycles, jeeps, snowmobiles, boats, etc.)

Individuals representing these entities will provide input during the planning process and will continue to provide the Wildlife Area Manager information from their constituents.
Plans will incorporate cross-program input and review at the regional and headquarters level by the habitat program, wildlife program, enforcement program, and fish program. Pertinent

information from existing species plans, habitat recommendations (including the Comprehensive Wildlife conservation Strategy), watershed plans, ecoregional assessments, etc will be used to identify local issues and needs and ensure that the specific Wildlife Area Plan is consistent with WDFW statewide and regional priorities.

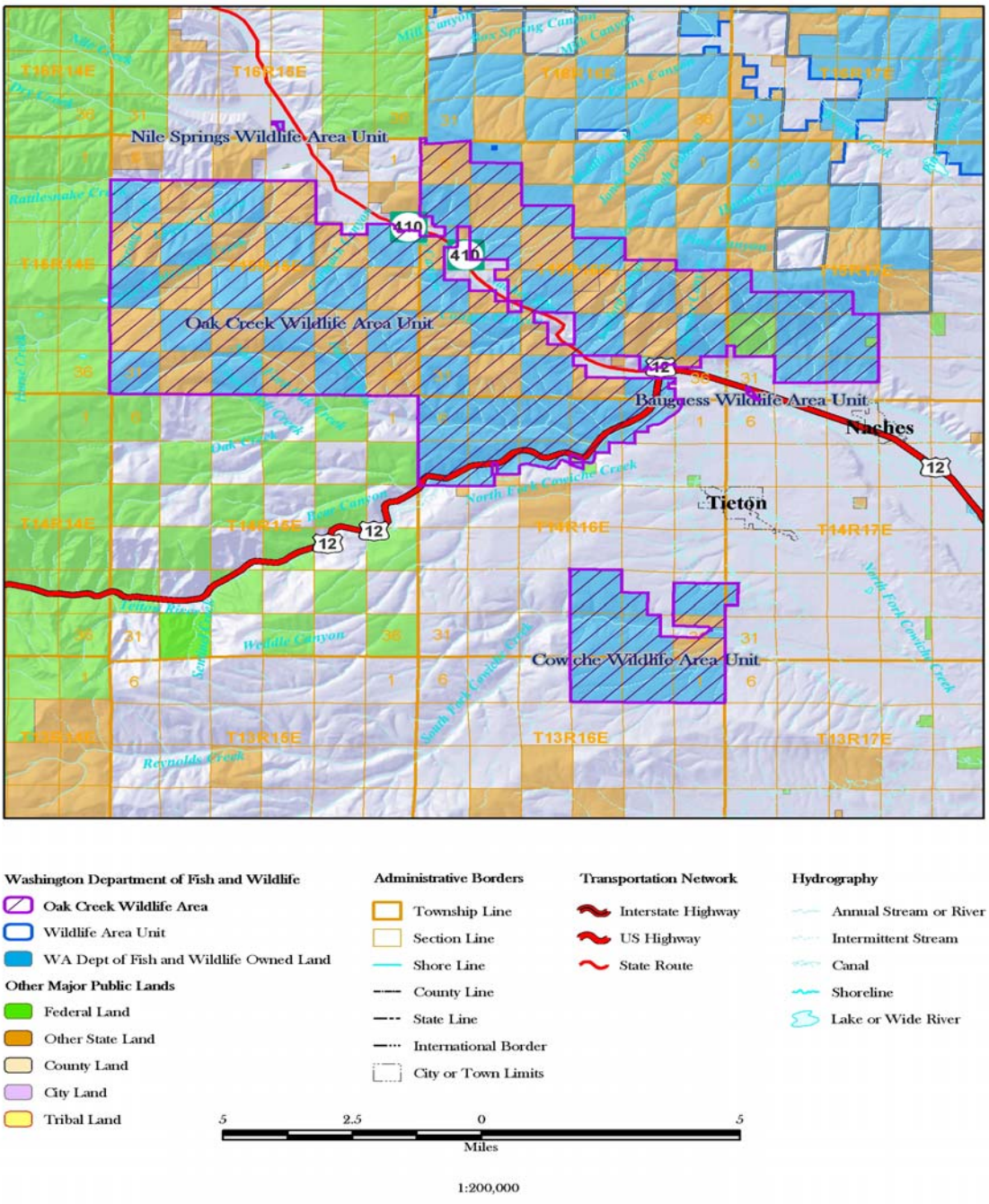
The Oak Creek Wildlife Area plan will be reviewed annually with additional input from the CAG and district team to monitor performance and desired results. Strategies and activities will be adapted where necessary to accomplish management objectives.

CHAPTER II. AREA DESCRIPTION AND MAP

2.1 Property Location and Size

The Oak Creek Wildlife Area lies entirely within Yakima County and is part of the Naches / Tieton sub-basin within the Yakima River watershed, in the south-central part of Washington State (Figure 1). The Oak Creek, Cowiche, Nile Springs, and Bauguess sub-units make up the 47,200 acre Wildlife Area and are located approximately 12 to 15 miles northwest of Yakima, WA (Figures 2 through 5). These lands are within an administrative boundary of checker boarded DNR and WDFW ownership, including scattered private inholdings. The Naches and Tieton Rivers bisect the Oak Creek parcel, and the Cowiche parcel is located on the South Fork of Cowiche Creek. The Nile Springs parcel and Bauguess parcel are small wetland units that lie adjacent to the Naches River. See Figures 2 through 5 for legal descriptions.

Figure 1. Map of the Oak Creek Wildlife Area Complex



***Oak Creek Parcel* (42,200 acres) - T14N, R16E, Sections 2-10 and Section 18; T15N, R15E, Sections 1-36; T15N, R16E, Sections 5-10 and 13-36; T15N, R17E, Sections 19-21, 28-30, and 32-33; T16N, R16E, Section 31**

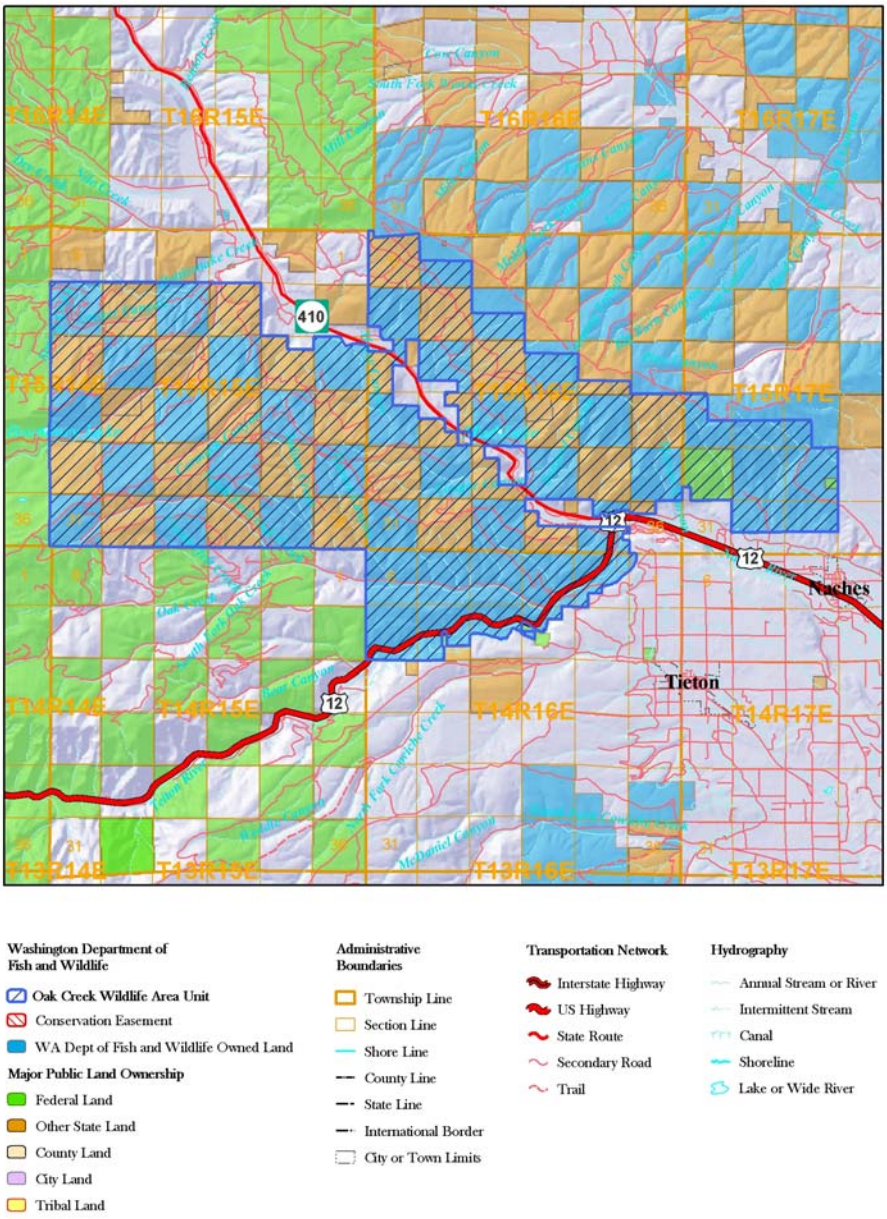


Figure 2. Oak Creek

Cowiche Parcel (4,960 acres) - T14N, R16E, Sections 25-27 and 34-36; T13N, R16E, Sections 1-3.

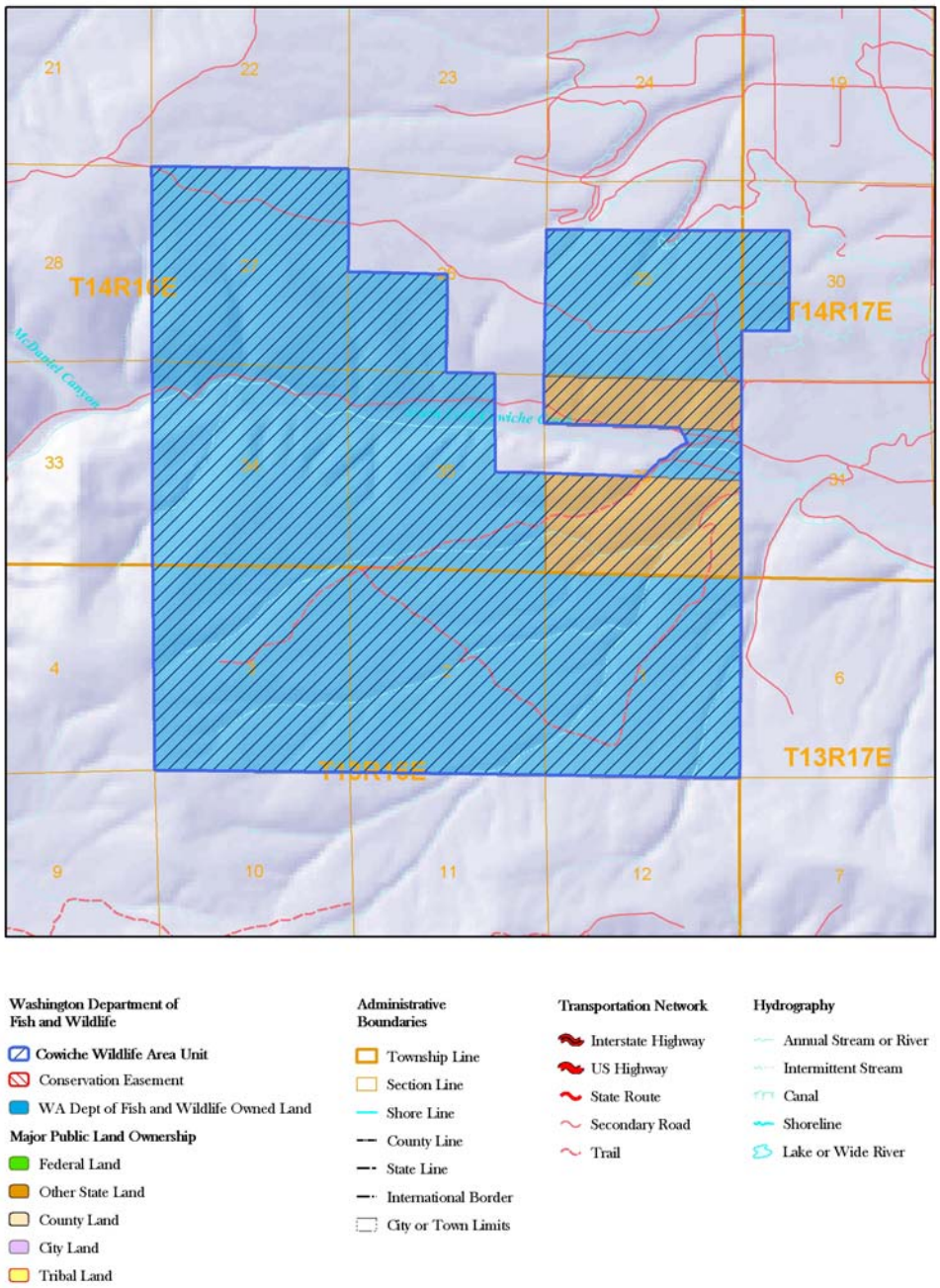


Figure 3. Cowiche Unit

Bauguess Parcel (22 acres) - T15N, R17E, Section 31.

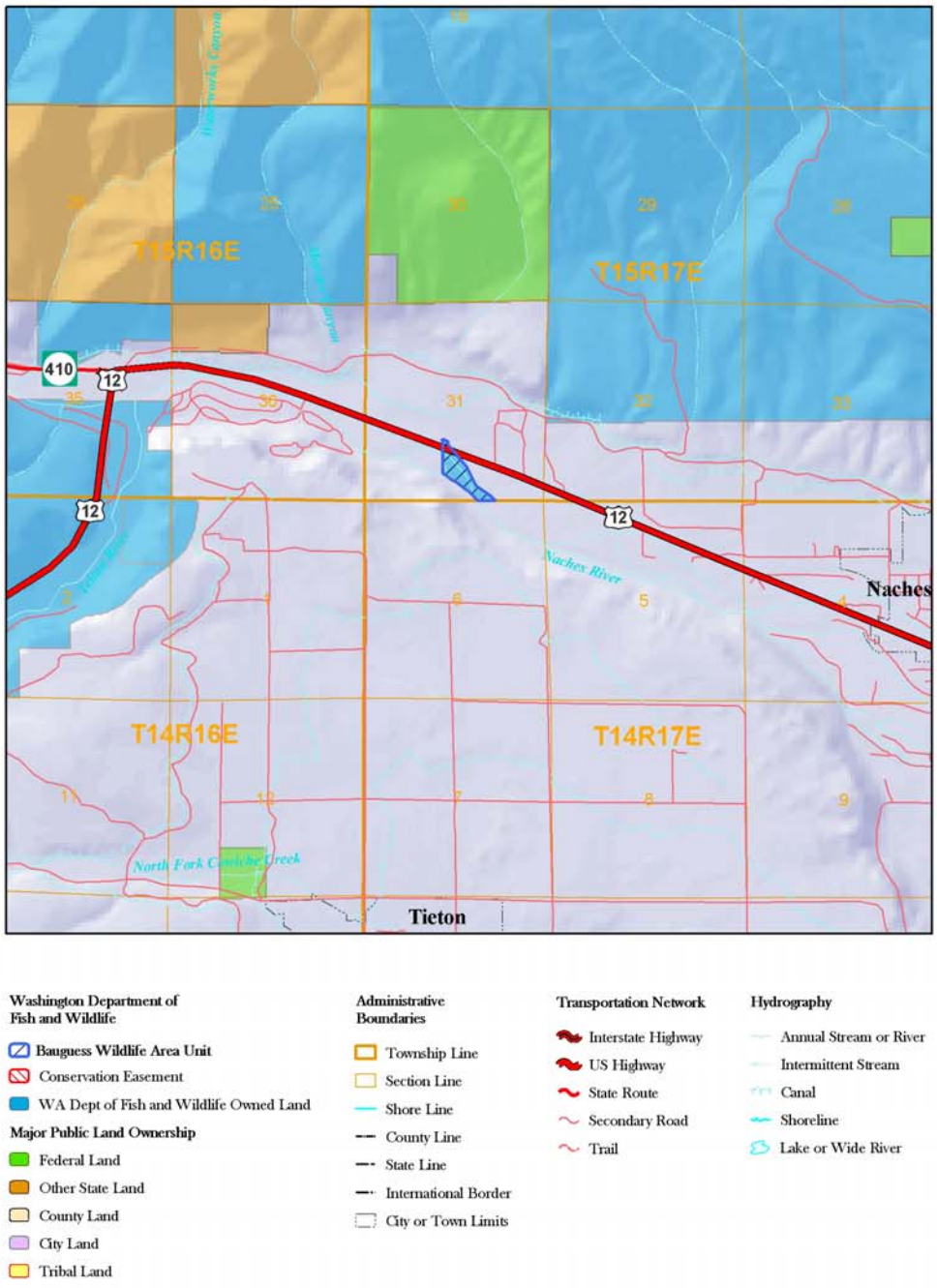


Figure 4. Bauguess Unit

Nile Springs Parcel (9 acres) - T15N, R16E, Section 34

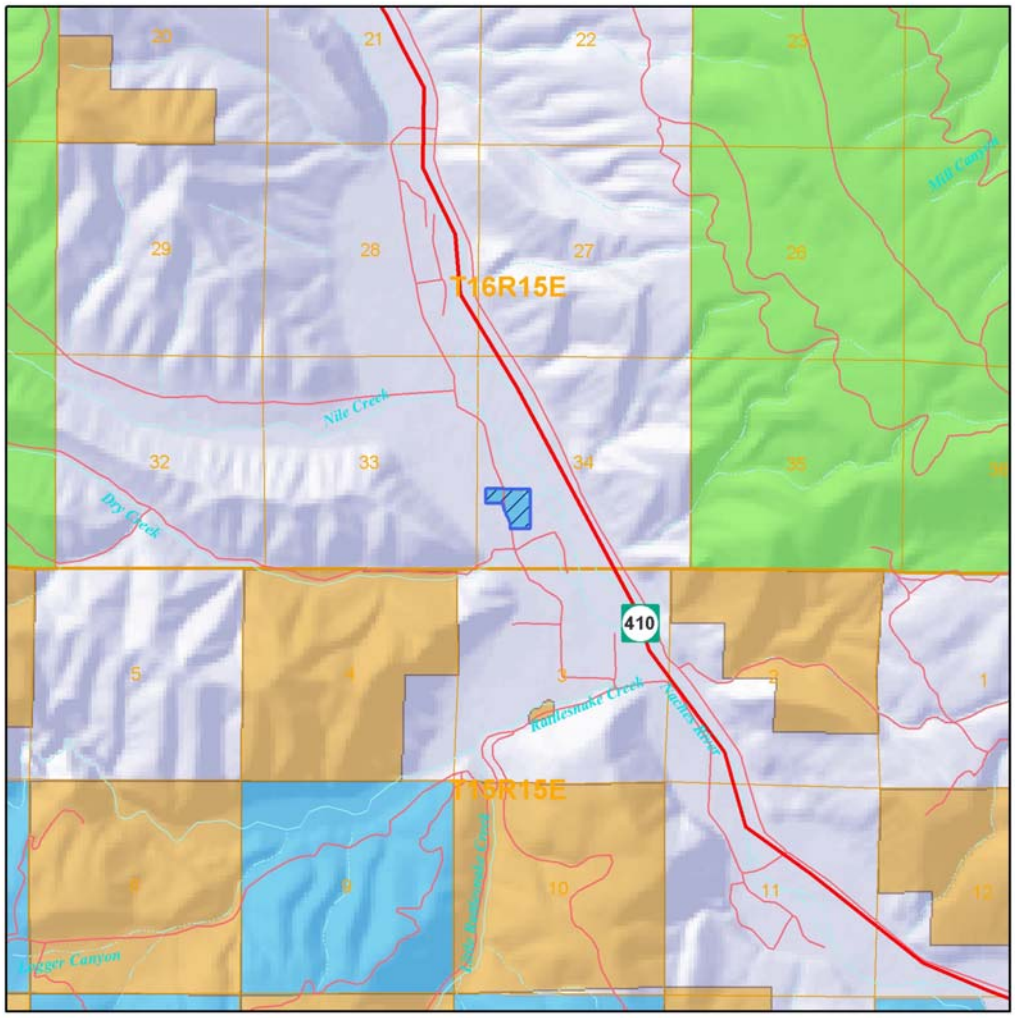


Figure 5. Nile Springs Unit

2.2 Purchase History and Purpose

A group of local citizens and the Yakima County game protector re-introduced Rocky Mountain Elk in 1912-13 by transplanting a herd of 47 animals from Gardiner, Montana to Yakima County. The elk rapidly expanded in the Cascade foothills west of Yakima prior to the Department of Game (now known as Department of Fish and Wildlife) being formed in 1933, and began competing with sheep and cattle grazing allotments. Damage from wintering elk soon began to occur in fruit orchards around Cowiche and Tieton and was noted on the K.E. Sinclair Ranch in 1934. This 2021-acre ranch was subsequently purchased in 1943 by the Department of Game and is now the present headquarters for the Oak Creek Wildlife Area.

Acquisition of the Oak Creek Wildlife Area properties was initiated in 1939 to provide a home for the growing Yakima elk herd to reduce conflict with private landowners, orchard growers, and livestock interests. The first parcel of 240 acres was purchased for $10 in March 1940 from William M. Jones and was located approximately 1.5 miles from U.S. Highway 12 in the Oak Creek drainage. These purchases were facilitated dramatically by the passage of the Pittman-Robinson Act in 1938, Congressional legislation that established an excise tax on hunting arms and ammunition to provide funds for the purchase of lands dedicated and managed for wildlife and habitat conservation.

In 1942 and 1951, the Department of Game purchased and exchanged perpetual timber rights (PTR's) with Cascade Lumber Company (now known as Boise Cascade) for 10,182 acres and 12,353 acres, respectively, in the Bethel Ridge and Cleman Mountain areas. These lands provided the Department additional low elevation deer and elk winter range, in exchange for the timber resources forever. The PTR's are currently owned by Western Pacific Timber, LLC.

In 1949, 10,989 acres of land were withdrawn from public lease and transferred by the Department of Public Lands (now known as Department of Natural Resources) to the Department of Game. These lands spread across Bethel Ridge from the Naches River to the Tieton River. In later years, a like amount of land would be leased from DNR for game management purposes in this same area. Combined with the original acquisitions, over 30,000 acres of land were now set aside to manage as elk winter range under the name of the Oak Creek Game Range.

Under the Department of Game, the previous livestock grazing on these lands was eliminated. A winter feeding program was started at Oak Creek around 1955 to try to control the wandering herds of elk during the winter and to minimize damage to surrounding private lands. The 1950's and 60's saw miles of "buck and rail" and eight foot high woven wire elk fence constructed along the south side of the Tieton River and across the Naches River and Cleman Mountain to the Wenas Valley, to stop the seasonal movement of elk into lower elevation agricultural lands during winter months.

As the elk herd increased, the winter-feeding program became the primary management function at Oak Creek. A large parking and viewing area with an interpretive center was constructed in 1985 at the headquarters site on U.S. Highway 12 to allow easy access and close-up public viewing of the elk herd and feeding operation. Recently, interpretive tours conducted by the AmeriCorps program and supported by public donations, have been

implemented at the headquarters site. These programs provide the Department of Fish and Wildlife with excellent public relations and educational opportunity, with over 100,000 visitors passing through the Wildlife Area each year.

2.3 Ownership and Use of Adjacent Lands

The Oak Creek unit is surrounded on three sides by lands under management of Federal or State agencies, including the USFS Wenatchee National Forest (Naches Ranger District), WDFW (Wenas Wildlife Area), and Washington Department of Natural Resources (WDNR). These agencies manage their lands for natural resource protection, with objectives for salmonid recovery, enhanced range and forest condition and production, and beneficial wildlife management. The Nature Conservancy (TNC), a nonprofit organization, has acquired a large block of ownership on the west boundary of Oak Creek, and will manage these lands for natural system restoration and resource protection, in close coordination with WDFW and USFS. Recently some of these lands have been transferred by TNC to WDFW ownership and incorporated into the Oak Creek Wildlife Area. The remaining borders of the Oak Creek unit are adjacent to private landowners that manage their lands for livestock or agricultural production, or are bisected by rural development that occurs on multiple small parcels along the major river corridors and state highways.

The Cowiche unit is bounded on the north and south sides by private landowners who predominantly manage their properties as livestock range or for agricultural production. This unit supports two feed sites used to manage the Cowiche sub-herd of the Yakima elk herd, but along the west border, intensive rural development has occurred (Cowiche Ranches) that threatens to restrict seasonal elk movement onto WDFW lands. Snow Mountain Ranch lies to the east, and was recently acquired by the Cowiche Canyon Conservancy, a nonprofit organization that plans to manage their land for natural resource protection and low-impact recreational activities. Connectivity between the main Oak Creek unit and the Cowiche unit is a major WDFW objective and additional acquisitions of private lands around the Cowiche unit are planned to promote wildlife management objectives and block up public ownership to benefit public recreation.

The Nile Spring unit is surrounded completely by private landowners in the Nile Valley and has been predominately utilized as fish acclimatization ponds by WDFW and now serves as valuable wetland and nesting habitat for a variety of wildlife species.

The Bauguess unit is bordered on the north by U.S. Highway 12 right-of-way, with the remainder entirely surrounded by private landowners. The unit is bisected by the Naches River and provides important riparian habitat and floodplain functionality. This parcel was acquired by private donation and serves as off-channel wetland and waterfowl nesting habitat along the river, particularly for wood ducks.

The nearest town is Naches, WA, with a population of 758. The closest urban area lays twelve miles east of Naches, in Yakima and Union Gap, WA, with a combined population of approximately 93,000. The entire Yakima County population that resides in the Yakima basin is 208,700 (U.S. Census, 2000). The Yakima River watershed is recognized as a “usual and accustomed” use area within the ceded lands of the Yakama Nation, as stated in the Treaty of 1855. The subbasin provides opportunities for fishing, hunting and traditional gathering by

tribal members, and although much of the land is owned by private or public agencies, the Yakama people still retain an active interest in the functional resources and management of the watershed.

For over 35 years, WDFW has leased approximately 125,000 acres of shrub steppe and partially timbered lands from the Department of Natural Resources. These lands are common school trust lands that are managed by DNR to generate revenue for school construction. The lands are intermixed with Department of Fish and Wildlife (WDFW) ownerships in Eastern Washington primarily on the Oak Creek, Wenas, L.T, Murray, Whiskey Dick, Quilomene and Colockum Wildlife Areas.

For the 2003-05 biennium the Fish and Wildlife Commission reduced funding for those leases by $270,000/biennium as part of a much larger general fund reduction for the department. That action significantly increased the risk to those lands of conversion, sale, exchange or lease for purposes potentially incompatible with fish and wildlife. To address this issue, the Fish and Wildlife Commission and legislature have approved a plan to exchange land between the two agencies. WDFW would trade approx. 45,000 acres of forested lands in Kittitas and Yakima counties to DNR in exchange for 125,000 acres of shrub steppe lands. The exchange would also allow WDFW to take ownership of 12 water access sites that were also leased from DNR.

The exchange of lands will be on value for value basis and the exact ownerships or boundary of the exchange will not be known until appraisal and timber valuations have been completed. The legislature approved funding for WDFW to begin the appraisal and review process in the 2006 legislature and the agencies expect to exchange lands sometime in 2007.

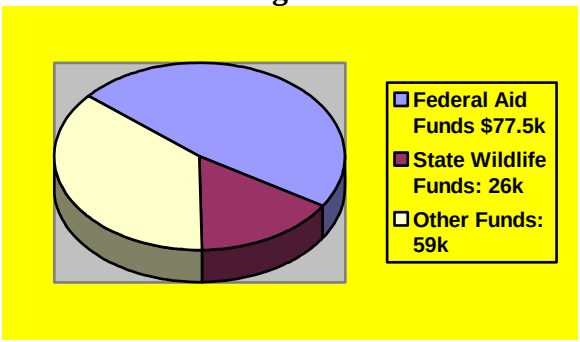
This land exchange is subject to the National Environmental Policy Act since most of WDFW's lands were purchased and have been maintained with federal funds.

The land exchange will allow both agencies to manage their properties more efficiently since it consolidates a large portion of their respective ownerships. It also significantly increases the certainty that 'at risk' shrub steppe lands will be protected in perpetuity for fish and fish and wildlife and related recreation.

2.4 Funding

Funding for management of the Oak Creek Wildlife Area comes from two primary sources, State Wildlife Funds and Federal Aid in Wildlife Restoration Funds. State Wildlife Funds provide a 25% match for Federal Aid dollars, a funding obligation of the Pittman-Robinson (PR) Act. The PR budget for the 2005-2007 biennium is $103,590, which supports all operations and maintenance on the Wildlife Area, including staff salaries. Some additional funding derived from grants and other funding sources is dedicated to specific projects.

Figure 6. Oak Creek Wildlife Area Funding Sources



Two staff positions are supported:

Wildlife Area Manager (Fish and Wildlife Biologist 3)
Assistant Wildlife Area Manager (Maintenance Mechanic 1)

An AmeriCorp field team and a Wildlife Education Corps volunteer group are also funded and supported on the Wildlife Area. The Department will, as part of the implementation of this plan, submit grant proposals and applications that target approved critical acquisitions of habitat and identify other strategies to address unfunded management needs or objectives on the Wildlife Area.

2.6 Climate

The area is located on the east slope of the Cascade Mountains, with prevailing westerly winds influencing the region's climate. Average annual precipitation on the lower reaches of Oak Creek can be as little as 12 inches per year, while the upper reaches of the watershed can receive from 80 to 140 inches, most falling as snow during the winter months. The majority of the precipitation falls between October and April. Summer and winter temperatures average 55 degrees F. and 25 degrees F., respectively, with extremes ranging from -20^0 to 105^0 F. Days of sun average 300 per year (YSBP, 2004).

2.7 Soils and Geology

The parent bedrock material in the region consists of basaltic rock, and includes fractured and folded lava flows. The basaltic rock has broken down into coarse gravels, cobbles, and boulders, with fine silts and clays. The overlying soil is composed of fine-grained loess, deposits of volcanic ash, and silt loams, all of which are highly erosive. The folding of the bedrock caused uplift in the topography and over time stream channels cut through the fragile soils to form steep-sided, narrow canyons. Soils in the canyons can be shallow or deep, and formed from weathered basalt and loess. Steep, rocky slopes, and a rolling series of ridges and canyons characterize the general area drain west to east.

2.8 Hydrology and Watersheds

Perennial streams that flow through the Oak Creek Wildlife Area include the Oak Creek, Rattlesnake and Little Rattlesnake Creeks, and the South Fork of Cowiche Creek. These streams flow into the Naches and Tieton Rivers, large subbasins in the Upper Yakima River watershed. For comparison purposes, the Rattlesnake system has 134 square miles of surface drainage area and the Cowiche system has 120 square miles (YSBP 2000). The major river and perennial streams that flow through the Wildlife Area provide over 90 miles of linear stream waterfront. The Rattlesnake and Little Rattlesnake systems form one of the largest

subbasins within the Naches River watershed, and support quality fish habitat utilized by Endangered Species Act (ESA) listed stocks. Both creeks flow easterly into the Naches River. The Rattlesnake Creek water quality is excellent, with the entire upper basin originating in the William O. Douglas Wilderness Area and a large percentage of the lower basin flowing within the Oak Creek Wildlife Area. Based on spawning ground surveys, local bull trout populations have been identified in Rattlesnake Creek. In addition, bull trout have been found in the Tieton River (below Rimrock Lake), and in the Little Naches River. Consistent redd surveys by the WDFW and the U.S. Forest Service have been conducted in Rattlesnake Creek since 1996 and redd counts in the creek have ranged from 38-57. Lower sections of Little Rattlesnake Creek habitat has been impacted by road-building and sustained timber harvesting activities since the 1940's, and the area is still recovering from damages suffered during a major flood in 1996 that required reconstruction of the main stream adjacent access road.

The average cfs (cubic feet per second) in the Naches River and Tieton River varies widely, due to the infringement of dams and irrigation diversions. The Naches River averages 600-700 cfs and will peak in May and June at around 3000 cfs. The Tieton River averages around 75-100 cfs and will have a significant increase during the month of September during the irrigation "flip-flop", with a high of 2000-2200 cfs. (Pers. Comm - Bill Garrigues/USFS)

2.9 Fire History

Bunchgrasses are tolerant of low intensity fires, but the invasion of noxious weeds such as cheatgrass have altered the nature of wildfire behavior across the landscape. These weedy species grow in dense stands, filling interspaces between bunchgrasses and fuel intense fires that kill native forbs and grasses. Weedy invaders tend to out-compete native bunchgrasses after a fire and spread readily throughout burned areas, thereby converting native communities to entire stands of exotics that are less palatable to wildlife and diminish the diversity of the plant community.

Aggressive wildfire suppression over many decades has resulted in a heavy buildup of understory vegetation and ladder fuels on the forested segments of the Oak Creek Wildlife Area. Historically, natural low-intensity ground fires occurred in a 12 to 15 year frequency that reduced the fuels buildup and lessened the likelihood of a stand replacing wildfire. Strategies are planned to re-introduce or mimic this natural fire regime to reduce dense fuels and lessen disease potential in coniferous landscapes. The USFS in the Wenatchee National Forest west of the Oak Creek Wildlife Area use understory burns to reduce ladder fuels and limit disease potential in forested habitats.

Some recent major fires on the Wildlife Area include 2,400-acres burned in the lower two miles of the Oak Creek canyon near its confluence with the Tieton River in August 2002, the 1,500-acre "Old Naches" fire along the southeast slope of Cleman Mountain in July 2003, and the 4,500-acre Mud Lake/Sanford Pasture fire in August 2004. Two of these fires were caused by arson, an occurrence recently increasing in frequency. Numerous smaller fires have occurred in recent years, and most are related to human activity.

Uncontrolled wildfires in shrub steppe habitat such as the Cowiche unit can significantly alter the landscape by eradicating Sagebrush which shrub steppe obligate species, such as sage grouse, sage thrasher, and sage sparrow, depend upon for both food and cover (Big sagebrush,

Artemisia tridentata, is killed by fire). In addition, where weeds are common, these species may out-compete natives (particularly grasses) after a fire and spread throughout burned areas, diminishing the diversity of the plant community with species that are less palatable to wildlife.

2.9 Vegetation Characterization

Topography and vegetation vary considerably over the various geographic units that make up the Oak Creek Wildlife Area. Many of the open ridges and south slopes support big sagebrush, bitterbrush, and rabbitbrush, whereas the higher elevations and north slopes support Ponderosa pine, Douglas fir, and Grand fir. The most prevalent native perennial grass across most of the area is Bluebunch wheatgrass. A large component of Oregon white oak is found in the riparian zones and adjacent lower canyons of the Tieton River and Oak and Cowiche Creeks.

The vegetation in the Oak Creek drainage is mainly dry coniferous forest habitat of the eastern slopes of the Canadian and Hudsonian life zones. Grasslands interspersed with rock outcrops and shrub-steppe communities dominate hillsides in lower elevations, particularly on Cleman Mountain. The dominant grass communities are composed of Bluebunch wheatgrass and Idaho fescue. Common shrub species are Pacific ninebark, snowberry, rose, serviceberry, and several species of currants. The dominant tree species on south slopes is Ponderosa pine, but north slopes and wetter valleys contain a mix of species such as Douglas fir, Grand fir, and Western larch. Englemann spruce, Lodgepole pine, and Sub-alpine fir can be found at higher elevations.

Riparian corridors offer important vertical structure in the open expanses of grassland and shrub-steppe habitats. These dense stands of trees and/or shrubs provide hiding places, thermal cover, shade, foraging and nesting sites, and perches along water sources. Often these highly productive communities contain a wide diversity of both plant and wildlife species. Common overstory trees in riparian zones primarily consist of black cottonwood, while the understory vegetation is composed of many hydrophytic shrub species such as mock orange, alder, Rocky Mountain maple, Black hawthorn, Red Osher dogwood and willow.

2.10 Important Habitats

Shrub-steppe – the Wildlife Area has an example of excellent native shrub-steppe community on the Cowiche parcel. This cover type is significant for sage dependent species such as sage thrasher and sage sparrow, and may be important in WDFW's future sage grouse restoration efforts.

Talus/rock – areas of exposed rock or fields of broken rock. These landscape features provide key habitat requisites that are often missing for various species, i.e. bighorn sheep. These areas of rock are also provide much of the hibernacula for the western rattlesnake, and a variety of other reptiles and amphibians. (Johnson and O'Neil 2001).

Riparian – this cover type is a primary factor influencing the quality and health of fish habitat. Riparian vegetation that provides streamside shading improves breeding areas; movement corridors, seasonal ranges and thermal cover for priority fish species. Quality riparian areas also create stream channel features such as pools and riffles and maintain stream bank

stability, components listed as lacking for salmonid stocks in the Yakima sub-basin (YSBP 2004).

Basalt Cliffs

Cliff – large expanses of vertical columnar, basalt cliffs are found along the Naches and Tieton River canyons, providing specific nesting habitat for such species as golden eagle, raven, and prairie falcon, as well as over wintering habitat for a variety of snakes, including but not limited to; gopher snakes, western rattlesnakes, and terrestrial garter snakes. These rock columns can vary from 50 feet to 500 feet tall, and are frequented by rock climbers many months of the year.

Caves – a naturally occurring cavity, recess, void, or system of interconnected passages (including associated dendritic tubes, cracks, and fissures). These specific habitats are very important to wildlife such as bats, and provide important breeding and roosting areas. Caves are also important archaeological sites.

Oak Woodlands – the Oak Creek Wildlife Area derives it's name from the Oregon white oak (*Quercus garryana*), found near streams and river canyons in the lower elevation areas of the Wildlife Area. The oaks and their associated flora comprise distinct woodland ecosystems that provide a mix of feeding, resting, and breeding habitat for many wildlife species. Focal species include White-headed woodpecker, Lewis' woodpecker, and the Western gray squirrel, which use the oak snags for nesting and the trees for foraging (YSBP 2004).

Mature Forest – this habitat is found only on very limited areas of the Wildlife Area where the timber is owned by WDFW. A major portion of the Oak Creek Wildlife Area forested sections are in Perpetual Timber Rights (PTR), originally deeded to Cascade Lumber Co. in 1951, and currently owned by Western Pacific Timber. WDFW is limited in its ability to manage for mature forest conditions, such as retention of large diameter trees, snags, and large woody debris; and management towards a mixed age structure, without ownership of the timber and control of harvesting activity.

Snags and Large Woody Debris – large diameter snags are crucial for primary cavity excavators such as woodpeckers, and for secondary cavity nesters such as nuthatches. Retaining existing snags and providing large green-tree recruitment is a priority concern on the Oak Creek Wildlife Area, considering the abundance of corporate timber harvest activity and woodcutting by the public. Snags also provide important perches and roost trees for foraging raptors, particularly within riparian corridors along major rivers. Woody debris adds to forest biomass and nutrient load, providing invertebrate food sources for foraging wildlife.

Aspen Grove, Wetland, and Meadow – aspen groves, wetlands and meadows are habitats altered by the effect or presence of water and are found on the Oak Creek Wildlife Area. Aspen groves provide high fish and wildlife species diversity, and improve thermal cover within riparian habitats (Buttery and Gillem 1983). Freshwater wetlands are transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. Wetlands provide habitat for many species of animals including Great Blue Heron and Wood ducks. These areas are very limited in availability on the eastside of the Cascades, and have a high vulnerability to habitat alteration. (WDFW-PHS 1999).

2.11 Fish and Wildlife

Fish and wildlife diversity is of primary importance to the goals and strategies guiding WDFW's management efforts, as identified in Washington's Comprehensive Wildlife Conservation Strategy (July 2005). This comprehensive guide highlights the importance of protecting species at risk of population decline or extinction. The Oak Creek Wildlife Area contains many shrub-steppe, riparian, and forest dependent species of wildlife and federally endangered anadromous and native fish populations.

The Yakima sub basin planning committee identified three aquatic focal species that best represent the functions and habitat features of a healthy stream system, spring Chinook, summer steelhead, and bull trout. Selection was based on species whose life histories cover the Yakima sub basin. Two of these species, steelhead and bull trout are listed as threatened under the Federal Endangered Species Act (ESA). All three species are considered important culturally, ecologically and economically to the Yakima sub basin and are present (or were historically present) year round throughout the watersheds comprising the Oak Creek Wildlife Area in one life stage or another. It is assumed that other aquatic life will benefit from managing toward suitable conditions for these species, due to their specific range of habitat requisites.

The most common limiting factors for both summer steelhead and spring Chinook are habitat diversity, sediment load, and quantity of key habitats for various life stages. Deficiencies in habitat diversity are attributed to the confined structure within the Yakima sub basin and stream gradients above three percent. (YSBP 2004)

The protection and enhancement of wildlife and wildlife habitat is the number one priority when developing management strategies on the Wildlife Area. Wildlife use is diverse, with species present including Rocky Mountain elk, mule deer, California big horn sheep, sage grouse (incidental), forest grouse, turkey, quail, wood duck, and a myriad of small mammals, neo-tropical/upland birds, raptors, reptiles, and amphibians. Management plans have been developed in one form or

Western Fence Lizard

another for most big game and threatened and endangered species. Brief accounts for primary species are listed later in this section.

One of the most important species of focus to the Oak Creek Wildlife Area is elk (*Cervus elaphus)*. The predominant sub-species found on the area are Rocky Mountain elk (*C.e. nelsoni*). However, there may be a mix of interbred Rocky Mountain and Roosevelt Elk (*C.e.roosevelti)*. These elk are all part of the Yakima Herd, and are managed in relation to objectives identified in the WDFW Yakima Herd Plan (December 2002). A major strategy of this management program is the supplemental winter-feeding program undertaken each winter at the Oak Creek Wildlife Area. Feeding is utilized, along with construction and maintenance of many miles of 8-foot high elk fence, to control the Yakima elk herd and reduce damage to agricultural crops on adjacent private lands. Some supplemental winter-feeding began in the record winter of 1955, and evolved into an annual program in the mid-sixties that continues to present day. During an average winter, between 4,000 and 5,000 elk are fed daily in the foothills of the Cascade Mountains west of Yakima, at multiple feed sites administered by the Oak Creek Wildlife Area. Approximately 26 miles of elk fence on or adjacent to the Wildlife Area is checked and repaired annually, maintaining a barrier to restrict winter migration of elk onto agricultural lands.

Oak Creek Wildlife Area also manages a feeding program for a herd of California Bighorn sheep on Cleman Mountain. The feed site is located about three miles east of the Oak Creek headquarters, where approximately 150 sheep are fed daily during the winter. Some capture and re-location efforts are undertaken on this herd to maintain the herd size around 150 animals.

Rocky Mountain Elk

Elk are the second largest wild ungulate residing in Washington State. Zoo archaeological data from the Columbia Basin suggest elk were present and utilized by early inhabitants (Dixon et al. 1996 and McCorquodale 1985). As late as the 1800's elk may have been extirpated from the central Washington region (McCorquodale 1985). The current Yakima elk herd developed from the re-introduction of Rocky Mountain Elk from Gardiner, Montana into the foothills around Yakima in 1912-13.

The Oak Creek W.A. is used by that portion of the Yakima Elk herd inhabiting portions of the Rimrock and Cowiche Units, much of the Bumping, Nile and Bethel Units and portions of the Naches and Umtanum Units. Elk fences that help keep elk away from agricultural area have restricted most of the historical winter range. Elk feeding operations are conducted behind these fences to keep animals from straying around fences and causing damage to agricultural crops.

The Yakima Elk Herd plan (2002) currently has elk herd objective goals of 9500 elk while the 2003-2009 Game Management Plan has a range of 9,025-9,975 elk. These plans provide detailed guidance in herd management. The Oak Creek Wildlife Area Plan and Yakima Elk Herd Plan will have interactive management to insure both are in alignment. Ensuring habitat protection, habitat enhancement and limiting human disturbance are critical functions the Wildlife Area Manager will have to deal with for both plans to be successful. Specific items needing management actions include: mitigating habitat impacts around winter feed sites,

livestock grazing management, vehicle and recreational access management, fire protection, timber harvest monitoring and forage reseeding, and monitoring herd health issues.

A current study by WDFW of the Yakima Elk herd is nearing completion that will identify distribution and seasonality of use and is directed at identifying what habitats are most important and how elk use the range with regards to habitat and human use. A concurrent study is underway by the USFS dealing with the habitat features of the forest that is a critical component of these efforts.

How elk use forage and cover depend on the season, land use influences, and human disturbance. Elk need forage and water year around but use it differently during spring, summer, fall and winter in relation to weather conditions and particularly human disturbance. Habitat and human disturbance influence where and how often elk will use various areas. All these factors play into the management activities for successful elk management.

Rocky Mountain Mule Deer

Mule deer have been an important member of eastern Washington's landscape, serving as a food and clothing source for Native Americans prior to settlement by Euro-Americans. Today mule deer remain an important component of the landscape, providing food for Native Americans, recreational opportunities for hunters and wildlife watchers, and tremendous economic benefits to local communities and the state of Washington. Mule deer are distributed throughout the Oak Creek Wildlife Area occupying various habitats from alpine areas in the Cascades east to the shrub steppe/grassland habitats along the eastern fringes. These deer are often mistaken as black-tailed deer since many are hybridized from interbreeding between mule and black-tailed deer that commingle near the crest of the Cascade Mountains. Deer that inhabit these habitats on the Wildlife Area appear to have the bulk of mule deer influence in their genes, based on observations of their visual characteristics.

Summer range consists of high alpine communities with bunchgrass communities interspersed within timber stands that provide fawning and hiding cover in the western part of the range. The eastern part of the Oak Creek Wildlife Area provides winter and spring range in the form of bunchgrass and Sandberg's bluegrass communities.

An important habitat factors affecting deer populations are the availability of suitable forage at any given point in the year. Harsh winter conditions often create a scarcity of good-quality forage that frequently leads to malnutrition on many mule deer winter ranges (Wallmo 1981). The Department does not manage a supplemental feeding program during the winter for mule deer, except during extended severe winters, as deer do not form large herds and are not prone to cause agricultural damage.

California Bighorn Sheep

Bighorn sheep were native to Washington and archeological evidence showed they inhabited the uplands throughout the Tieton, Naches, and Yakima River drainages. Bighorns were extirpated around 1930 and efforts to bring them back were initiated in the 1950's and continue to this day.

The Cleman Mt. Bighorn Sheep herd started from a release of 8 sheep in 1967. The herd grew rapidly to over 100 animals and then crashed and stagnated in the later 1980's. Augmentation

was conducted between 1989-96 with the release of another 27 animals that increased production and herd growth. The current population is over 150 sheep (Bernatowicz, 2003) with herd objectives at 140-160 sheep. Bighorns utilize the steep cliffs, rock outcrops and talus slopes for security and the surrounding grasslands for forage along the bulk of Cleman Mountain. This herd is a highly visible group of animals that are fed during the winter. The feeding operation is conducted to provide benefits to public viewing opportunities, to provide supplemental food during harsh winter conditions when snow covers natural forage, and to facilitate trapping and research operations.

The Tieton Bighorn sheep herd began with re-introductions in 1998 and continued through 2002 with the release of 52 sheep from a variety of source populations. This herd appears healthy and increasing with last estimates above 80 sheep in the population. Herd objectives are 140-150 Bighorns. Some of these animals have been observed above the Oak Creek Headquarters near elk feeding sites during the winter, but for the most part range west as far as Soup Creek.

The threat of most concern continues to be a disease outbreak of *Pasturella heamolytica* within the bighorn sheep herds. Domestic sheep, which are not affected, can carry this disease and infect wild sheep where it can be devastating, with death possible within 30 days or less.

Merriam's Turkey

Merriam's turkeys were introduced into Rattlesnake Creek and Oak Creek areas in the 1990's. The population has grown moderately, most likely due to mild weather conditions since the last hard winter of 1996-97. If the population is to sustain itself in this area, consideration should be given to developing a supplemental feeding program. Current weather conditions have allowed adequate foraging, but past harsh weather conditions likely caused population declines. Some controversy surrounds the establishment of this game bird with concerns that they may eat native species of insects, mollusks, and invertebrates, causing unknown impacts. To date, there are no studies that have documented detrimental impacts to native species, but little definitive information is known. Turkeys subsist on mast producing plants during the fall and winter months and rely on insects, forbs and succulent grasses during the spring and summer.

Sage Grouse

Sage grouse numbers have dramatically declined from historical levels and are listed as a Washington State Threatened species. They are listed as a federal candidate species by the U.S. Fish & Wildlife Service (USFWS). Sage grouse inhabited the sage steppe communities of eastern Washington and were considered widespread but with the advent of agricultural development, overgrazing, and wildfire, it is approximated over 92% of the historical habitat has been lost (Stinson, et al. 2004). The remaining populations exist in Douglas County, residing on mostly private property where CRP programs have allowed habitat to recover to help sustain the population, and in Kittitas and Yakima Counties where sage grouse reside mostly on the U.S. Army Yakima Training Center. The Oak Creek Wildlife Area has never supported large populations of sage grouse, but certain areas such as the Cowiche unit is considered historical range and may contribute to the overall objective of increasing populations in the future. The State of Washington Greater Sage Grouse Recovery Plan (Stinson, et al. 2004) identifies protecting the remaining habitat and restoring degraded habitat

and re-establishing populations outside their current range as key to maintaining sage grouse populations in Washington.

Chukar

Chukars are exotic game birds successfully introduced in the 1930's and are highly sought after by sportsmen throughout the western United States. Chukars prefer deep river canyons with rocky terrain for security and feed on arid grasses, as well as seeds, forbs, shrub fruits and insects. Severe winters and local low precipitation levels, are factors extremely harmful to maintaining population levels. The Oak Creek Wildlife Area supports Chukar on Cleman Mt. and Bethel Ridge. These populations are at the western fringe of the range and only contribute to limited hunting opportunities.

Forest Grouse (Blue, Spruce, Ruffed)

Blue and Ruffed grouse are the most prominent grouse species on the Oak Creek Wildlife Area while Spruce grouse may occur in low numbers at higher elevations. Although surveys have not been conducted to monitor populations statewide harvest trend data suggests a decline in forest grouse populations since records have been kept in the early 1960's (Game Mgmt. Plan, 2003). Blue grouse require succulent vegetation adjacent to water sources during the breeding season and have strong site fidelity to wintering areas and require large fir trees for food and roosting (Cade 1984). Forbs and grasses are major food sources in their diets during summer months while fir species are primary items in the winter. Habitat management requires a mix of dense conifer stands for wintering habitat while providing open areas for breeding and brood rearing. Logging and fire can help open stands in lower elevations and allow forbs and grasses to increase but care should be taken not to overgraze the same area, thereby reducing the amount of forage available for grouse (Rodrick & Milner, 1991).

Blue Grouse

Golden Eagle
Golden eagles are listed as a Washington State Candidate species. They require large open areas for feeding and generally nest on cliffs or in large trees (Anderson & Bruce 1980). Home range size depends on the amount of prey and prey habitat available. They use the same territory annually but may use alternate nests in different years. Territories vary in the number of alternate nests most likely due to the amount of cliff space and material to make nests. On Oak Creek there are at least four identified territories, with two others on adjacent ownerships. Impacts from rock climbing activities and other disturbances may have caused abandonment of some sites, with birds moving to alternate nest cliffs. This has resulted in climbing restrictions of some cliff habitats during courtship and nest-building activities. If birds are not found on these territories by the advent of incubation, these restrictions are lifted and recreational activities are allowed to resume as early as possible that year. Limiting factors can vary on success of sites and in the case of the Oak Creek Wildlife Area, the main threat is most likely disturbance of nest sites and possibly a diminished source of prey from adjacent agricultural lands, especially on the north side of the Tieton River. Golden eagles main prey source of hares, rabbits, ground squirrels and marmots are in limited supply. This may be due to orchard development converting open habitats and conversion of historical shrub steppe habitat to agricultural lands.

Bald Eagle
Bald eagles migrate through and spend the winter at the Oak Creek Wildlife Area during the months December through March. Bald eagles use the rocky cliffs and snags along the Naches and Tieton Rivers as perch sites when not soaring looking for food. Bald eagles are scavengers and will forage on deer and elk carcasses on the winter range as well as from the winter feedsites. WDFW disposes of road kill animals on the project where eagles can utilize the animal as a food source providing safety to the eagles as well as the public. They will also forage in aquatic habitats where fish and waterfowl provide additional food sources, especially during the winter months. Riparian habitats that provide large snags along the shorelines is important for providing perch sites for bald eagles, in addition to nesting sites for a variety of other species. This species is another highly sought after bird for the enjoyment of public viewing.

Western Gray Squirrel
Western Gray Squirrels were historical occupants of portions of the land now owned by WDFW called the Oak Creek Wildlife Area. Interviews with local residents (Stream, 1993) indicated most of the gray squirrels resided in the North Fork Ahtanum and Cowiche Creek area where a mixture of older ponderosa pine and oak trees existed. In addition, it appears there were small numbers of gray squirrels in Oak Creek as well, but a mange outbreak in the 1950's may have been the cause of a crash in the population. Efforts to re-introduce gray squirrels to Oak Creek resulted in 13 squirrels being released between 1970-71. Those releases allowed the population to expand with squirrels reported as far west as Weddle Canyon and Jump Off lookout area. However, during this period there were a number of road kills noted, possibly suppressing the population. In 1984, a survey was initiated in an attempt to document the population numbers, as well as distribution along Oak Creek. This study (Gaulke & Gaulke, 1984) monitored this site for the months of February – May when the squirrels are most visible during the breeding season. The researchers were only able to document 10 individuals in the population, mostly males. They speculated the females may

have been on nests, indicating the population could have been as high as 20 squirrels. However, the last documented sighting occurred in 1989, indicating the population died out. Habitat in this area burned in 2002 eliminating larger trees that could support nesting and foraging. As the habitat recovers, potential still exists for a population to develop.

Wood Duck

Although not an abundant species on the Wildlife Area, Wood ducks are found in the riparian woodlands along the Naches and Tieton Rivers where WDFW owns and manages limited amounts of land. There is also a viable population that inhabits the stream channels and beaver ponds along the South Fork Cowiche Creek. These ducks are cavity nesters utilizing tree cavities and artificial nest structures. Young drop from the cavities when fledging and forage on placid waters where floating vegetation grows more abundantly, providing a food source. The Wood duck migrates south for the winter, returning in spring to breed and rear their young. Riparian woodlands that provide a mix of inundated, dense vegetation and open water patches are becoming less abundant due to human expansion. Management activities that protect or create this type of habitat are desirable.

Shrub steppe Obligates

More than 100 bird species forage and nest in shrub steppe / sagebrush communities, and at least four of them, including the greater sage grouse, sage thrasher, sage sparrow, and Brewer's sparrow are obligates (Braun et al. 1976). In a recent analysis of birds at risk within the interior Columbia Basin, the majority of species identified as high management concerns were shrub steppe species (Vander Haegen et al. 1999). Moreover, over half of these species have experienced long-term population declines according to the Breeding Bird Survey (BBS) (Saab and Rich 1997). Changes in land use over the past century have resulted in the loss of over half of Washington's shrub steppe habitat. Dramatic increases in dry-land agriculture and use of irrigation to expand farming and orchards has reduced the once expansive native grasslands and shrub steppe to a fragmented landscape with very few large contiguous areas of native vegetation (Dobler, F. et al, 1996). The eastern portion of the Oak Creek Wildlife Area, particularly the Cowiche and Cleman Mt. units contains shrub steppe communities that support these species.

Mature Forest Obligates

The Oak Creek Wildlife Area is situated adjacent to USFS land and contains checkerboard DNR ownership throughout the project. Historically, the forested area contained mature timber stands that supported old forest obligate species such as goshawk, pileated woodpecker, and likely spotted owls. WDFW has no management control of the forested area due to the PTR's. Efforts are underway to re-acquire these rights in the future, and possibly block up ownerships allowing more control over habitats than in the past. If this occurs, it will allow WDFW to manage forested habitats with the objective of establishing older, mature stands of timber than currently exist. The USFS manages for spotted owls on adjacent lands with dispersing owls occasionally inhabiting WDFW lands for short periods of time. If sufficient habitat was allowed to recover on the Oak Creek Wildlife Area these birds might be able to nest there as well. Recognizing many of these stands were predominately ponderosa pine before the advent of fire suppression, any such incursion of spotted owls onto this portion of land will be minimal. Goshawks have been suspected of nesting in the North Fork Oak Creek prior to harvest of older trees, but have not been seen since. There is a stronger likelihood of

goshawks re-inhabiting the area than spotted owls since they are not as vulnerable to predation. Pileated woodpeckers are occasionally found foraging throughout the area as well. As timber stands mature these species should be able to re-populate these habitats as they historically did.

Priority Species
Other priority species found on the Wildlife Area include: bald eagle, primarily a winter migrant; prairie falcon, a cliff nester along the Tieton River, Rattlesnake Creek, Cleman Mountain, and some adjacent side canyons; northern goshawk, found in mature forest and affected by timber harvest; Lewis's woodpecker, found in oak habitats; and loggerhead shrike, found in quality shrub-steppe habitat. (Information on WDFW Priority Habitats and Species are available at http://wdfw.wa.gov/hab/phsvert.htm#birds

Much of the following information on fish has been excerpted from the Yakima Sub Basin Plan.

Steelhead Trout
Steelhead trout are known to exist in the Naches River, Oak Creek and Rattlesnake Creek. Steelhead are listed as Threatened within the Columbia Basin Evolutionarily Significant Unit (ESU). The Oak Creek Wildlife Area resides within this boundary and basin wide management applies here.

Steelhead trout were widely distributed in the Yakima basin prior to Euro-American settlement and were known to utilize virtually all of the major streams and tributaries for some aspect of their life history. It is probable that the historical spawning distribution of summer steelhead included virtually all accessible portions of Yakima Basin, with highest spawning densities occurring in complex, multi-channel reaches of the mainstem Yakima and Naches, and in third and fourth order tributaries with moderate (1-4%) gradients. The historic abundance of steelhead trout is poorly known. Howell et al., (1985) estimated that over 80,000 adult steelhead trout might return to spawn in the Yakima Sub-basin.

The current range of steelhead/rainbow trout in the Yakima Subbasin is slightly smaller than under historic conditions. Fewer tributaries are utilized for spawning and rearing than were historically. Relevant examples include Tieton River and Wenas Creek. Sections of many streams thought to formerly support spawning and rearing are now utilized only as migration corridors due to habitat degradation. When compared to other rivers with similar elevation, the proportion of the steelhead/rainbow trout population that exhibits anadromy is significantly reduced. There are several theories that attempt to reconcile this difference in rates of anadromy – current environmental conditions favor residency; interbreeding with introduced resident rainbow; and loss of anadromy due to reduced access caused by early operations of Roza Dam. It is also known that growth of juvenile rainbow trout is well below rates in similar Columbia Basin systems, reinforcing the hypothesis that the young of the year life stage is limiting rainbow/steelhead trout production in the Upper Yakima sub-basin.

Yakima sub-basin steelhead typically spend between one and three years in the ocean before returning to natal streams to spawn. Analysis of scales collected from fish captured at Prosser

Dam revealed that 52% of steelhead trout spent one year in the ocean, 44% spent two years, and 3% spent three years (YSBP 2001).

Key Findings for Steelhead:

- Steelhead populations have been dramatically reduced from pre-settlement abundance levels.
- Survival of steelhead kelts (mature spawned out fish with the potential to spawn again) migrating out of the Yakima Basin and through the main stem Columbia to the ocean is at or near zero.
- Capture, rehabilitation, and release of these fish in the Yakima Basin increases survival and could act as a source of broodstock/genetic material for reintroduction efforts.
- Satus and Toppenish steelhead populations are healthy.
- Production of Steelhead within the Yakima Basin is heavily weighted towards Satus and Toppenish Creeks, increasing population levels in other creeks within this AU and in other AU's will decrease risk of extinction of steelhead in the Yakima Sub-basin.
- Existing and forecast future levels of abundance and straying indicate that natural colonization of suitable habitats (after removal of obstructions to passage) would be very slow or non-existent in this Assessment Unit. Supplementation into newly re-opened habitats could accelerate/greatly improve the success rate of population reestablishment.
- Growth of juvenile rainbow trout is well below rates in similar Columbia Basin systems, reinforcing the hypothesis that the young of the year life stage is limiting rainbow/steelhead trout production in the Upper Yakima sub-basin.
- Anadromy in rainbow trout populations in the Upper Yakima River is presently much decreased from historic levels.

Spring Chinook Salmon

Spring Chinook are known to exist in the Naches River and Rattlesnake Creek. Spring Chinook are not currently listed under the ESA.

The current distribution of spring chinook salmon in the Yakima Sub-basin has likely remained relatively similar to historic distribution. Notable exceptions include streams rendered inaccessible or unusable by unladdered dams (the upper Cle Elum River and the North Fork Tieton River) or by excessive irrigation diversions or releases (Taneum, Manastash and Wenas Creeks; the lower Tieton River) (YSBP, 2001). The Naches stock spawns in the Bumping River, the Little Naches River, Rattlesnake Creek and in the mainstem Naches above the Tieton confluence. The American River stock spawns exclusively in the American River. Although the overall distribution of spring chinook in the Yakima Sub-basin has changed little, far fewer fish utilize the remaining areas than did so prior to Euro-American settlement (YSBP, 2001).

Three genetically distinct stocks of spring chinook have been identified in the Yakima Basin: the upper Yakima, the Naches, and the American River stocks (Marshall et al 1995). The Upper Yakima stock is a native stock with composite production; the Naches and American River stocks are native stocks with wild production (WDFW, 2002). The Upper Yakima Stock which includes the Yakima River, the Teanaway River, and Swauk Creek; the Naches Stock includes the Naches River, the Tieton River, and Rattlesnake Creek; and the American River stock resides exclusively in the American River. The stocks have some similarities in the

timing of spawning runs, smolt outmigration and emergence, as well as in pre-smolt migration patterns and smolt age (YSBP 2001).

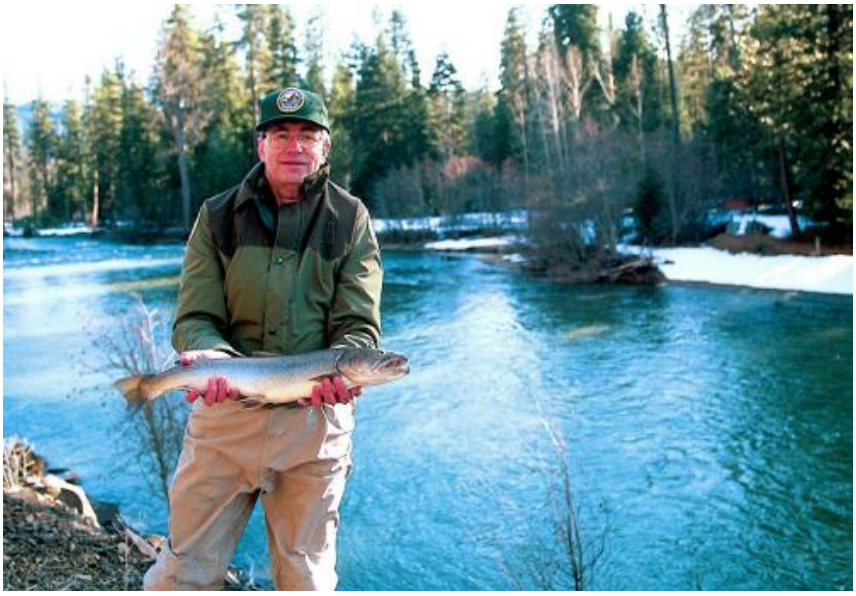
Yakima spring chinook spawn the last 3 weeks of September, whereas Naches spring chinook generally begin spawning a few days earlier than this. American River fish spawn in late July through early August. Spring chinook in the Yakima Sub-basin may spawn near holding areas or move upstream into smaller tributaries. Spawning activity may be delayed by elevated water temperature, but generally peaks between August 8 and August 15 for American River fish, between September 8 and September 18 for the Naches stock, and between September 15 and October 1st for the Upper Yakima stock.

Key Findings for Spring Chinook:

- Spring Chinook populations have been dramatically reduced from pre-settlement abundance levels.
- Natural spawn timing is related to incubation temperature, earliest in cold temperatures and later in warmer temperatures.
- Spring Chinook have expanded range into the upper Little Naches basin, but productivity and abundance are poor in this recently (20 years ago) opened habitat.
- Juveniles from all stocks redistribute themselves downstream during the summer and fall after emergence, with highest densities in fall being found well below the major spawning areas.
- An introduction of Spring Chinook from the Cle Elum Supplementation Hatchery has increased the abundance of spawning fish and helped re-establish a spring Chinook population (sub-population) in the Teanaway.
- Introductions of Spring Chinook from the Cle Elum Supplementation Hatchery has increased the abundance of spawning fish and stabilized the decline of the Upper Yakima spring Chinook population.

Bull Trout

Bull trout are known to exist in the Tieton River, Naches River, and Rattlesnake Creek. Bull Trout are listed as Threatened within the Columbia Basin Evolutionarily Significant Unit (ESU). The Oak Creek Wildlife Area resides within this boundary and basin wide management applies here.



Bull Trout. Naches River

Bull Trout can live to 12 or more years of age and to sizes of 20 pounds or more where forage is

adequately available. The adfluvial history form is characterized by a migratory behavior to lakes and reservoirs for major growth and maturation to adulthood. This form is common in the Yakima basin, with adults growing to between 20 and 32 inches. Fluvial bull trout spawn and rear in smaller tributaries for 1-3 years, then move downstream to rear in mainstem rivers where major growth and maturation occurs. They may move randomly throughout river systems, generally congregating near spawning tributaries in summer. Mature adults are usually smaller than anadromous or adfluvial char, ranging from 16 to 26 inches long. The resident life history form completes all life stages in their natal and/or nearby streams. This life form is typically found in the smaller headwater streams, including some in which lower portions of the system have been blocked by impassable barriers. Adults of this life history form are typically the smallest, usually reaching about 12 inches in length, with a range of 8-15 inches. Resident bull trout have been known to interbreed with other forms when opportunities are present. Bull trout are known for their diverse life histories. A member of the char family, they exhibit resident and migratory life histories in varying degrees across their range. In the Yakima basin, the anadromous life history form is not found, though it has been speculated that there may have been anadromous bull trout present in the past. The other three life history forms are fully represented. Bull trout exhibit both resident and migratory life-history strategies (Rieman and McIntyre 1993). Resident bull trout complete their entire life cycle in the tributary (or nearby) streams in which they spawn and rear. Migratory bull trout spawn in tributary streams where juvenile fish rear one to four years before migrating to either a lake (adfluvial form), river (fluvial form) (Fraley and Shepard 1989; Goetz 1989), or in certain coastal areas, to saltwater (anadromous) (Cavender 1978; McPhail and Baxter 1996; Washington Department of Fish and Wildlife. et al. 1997). Resident and migratory forms may be found together, and either form may give rise to offspring exhibiting either resident or migratory behavior (Rieman and McIntyre 1993).

Bull trout in the Yakima basin are currently found in 12 local populations (USFWS identified 12 stocks, while WDFW identified 9 stocks). Fragmentation of habitat in the Yakima Core Area impedes bull trout migration and has resulted in restricted distribution and might have contributed to the isolation of some of these populations (Reiss 2003).

Historical distribution of bull trout was much wider than present distribution in the Yakima basin. Historic abundance is not well understood and should be regarded as a data gap. It is likely that the four known life history forms (including the anadromous form) were found in the basin historically from the delta to upper most reaches of the basin. Anadromous , fluvial and adfluvial forms would have been foraging in the mainstem Yakima historically since there were thermal refugia for them to use and an abundance of food for them to take advantage of. They also have a connection to their cold headwater spawning tributaries that are presently cut off by dams or thermal blocks.

According to WDFW (1998) there are nine distinct bull trout stocks present in the Yakima River sub-basin. US Fish and Wildlife Service (2002) identified eight bull trout subpopulations in the Yakima sub-basin. There have been no previous studies to indicate that these are genetically distinct stocks; and thus the agencies have treated them separately because of the geographical, physical and thermal isolation of the spawning populations (WDFW 1998). All of these bull trout stocks in the Yakima basin are native fish sustained by wild production. Five of the recognized bull trout stocks are adfluvial, residing in reservoirs

and spawning in tributaries to these lake systems. Two river systems, the American-Naches and the Yakima River, are considered to have stocks of fluvial bull trout with various spawning tributaries. There are also two resident populations, delineated as such for their small adult size and the presence of thermal and water quality barriers.

Radio telemetry and tagging studies by USFS & WDFW are being conducted on fluvial fish in the Yakima that should fill in data gaps on life histories and migration patterns.

Key Findings for Bull Trout:

- Bull Trout use/ migrate throughout the Yakima system, including the mid and lower Yakima floodplains.
- Bull Trout have reduced population viability due to competition and interbreeding with brook trout.
- Harassment such as poaching is high in Box Canyon and Gold Creek, resulting in decreased spawning success.
- Box Canyon bull trout population is naturally limited by spawning habitat that limits viability due to low population size and low spatial diversity of spawning habitat.
- Existing and forecast future levels of abundance and straying indicate that natural colonization of suitable habitats (after removal of obstructions to passage) would be very slow or non existent in this Assessment Unit. Supplementation into newly re-opened habitats could accelerate/greatly improve the success rate of population reestablishment.
- Bull trout population was fragmented by loss of passage at Rimrock and Bumping dams, making these populations more vulnerable to extinction over the long term.

There are numerous fish-bearing streams and ponds on the Wildlife Area that contain resident trout. Additionally, there are streams and tributaries that historically contained anadromous stocks that are currently federally listed. WDFW and other state and federal agencies are actively pursuing the removal of barriers from these streams to re-establish anadromous use. Great care is taken so that fishery resources are not impacted by management practices.

Table 2. Listed species that occur or have the potential to use the Wildlife Area.

Bald eagle	ST, FSC
Burrowing owl	SC, FSC
Ferruginous hawk	ST, FSC
Flammulated owl	SC
Golden eagle	SC
Loggerhead shrike	SC, FSC
Northern goshawk	SC, FSC
Peregrine falcon	SE, FSC
Pileated woodpecker	SC
Sage grouse	ST
Sage sparrow	SC
Sage thrasher	SC
Townsend's big-eared bat	SC, FSC
Vaux's swift	SC
Western bluebird	SC

Federal endangered (FE), Federal candidate (FC), Federal species of concern (FSC), State endangered (SE), State threatened (ST), State candidate for listing (SC).

Information on the WDFW Priority Habitats and Species list is available at: (http://wdfw.wa.gov/hab/phsvert.htm)

2.12 Cultural Resources

Cultural, geological, and other non-renewable resources are protected, and may not be removed unless such removal is beneficial to wildlife, habitat, or the Wildlife Area, or for scientific or educational purposes. WDFW will coordinate with the appropriate agency of jurisdiction for the protection of such resources. Past issues have included the removal of various rock formations, Native American artifacts, plants, seeds, and other items by members of the public.

CHAPTER III. MANAGEMENT OBJECTIVES, ISSUES & STRATEGIES

Statewide goals and objectives listed in Chapter One are derived from the WDFW Strategic Plan and shape management priorities on wildlife areas. Specific wildlife area information including why the area was purchased, habitat conditions, species present, and public issues and concerns are evaluated and will be used to identify existing and proposed wildlife area activities or strategies. Management strategies that address public issues from past planning efforts or input from the Citizens Advisory Group *are noted in italics.* Public issues and comments that have been identified as part of this management planning process are captured in Appendix A.

Objectives and associated strategies or tasks specific to the Oak Creek Wildlife Area are listed where appropriate under applicable agency objectives. The timeframe to accomplish these objectives will be determined by staffing levels, funding, and future management issues that may arise. Unfunded needs are underlined.

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

1. Protect Habitats

The Oak Creek Wildlife Area is managed to protect and preserve habitat for species diversity or wildlife populations.

A. Strategy: Protect through acquisition of lands, purchase of conservation easements, or other legal mechanisms, those priority habitats that promote wildlife populations or protect species diversity. *Justification*: Acquire strategic, key habitats and land parcels.

2. Maintain big game populations

The Oak Creek Wildlife Area was purchased to provide and protect critical winter range for the Yakima elk herd to reduce use and conflict on adjacent private lands, as well as provide habitat for mule deer, bighorn sheep, upland birds, and other wildlife species. The Game Management Plan calls for reduction and then maintenance of the Yakima elk herd size at 9500; maintenance of the Cleman bighorn sheep population at 140-160; an increase of the Tieton bighorn sheep population to 150; and maintenance or increase of the deer herd size. Public concerns include *elk damage to private lands* and the *use of grazing* on the Wildlife Area.

A. Strategy: Provide supplemental elk winter-feed at the Oak Creek headquarters, Junction, Nile, Stensen, Sunset, Cleman, and West Valley sites. *Justification*: Maintain Cascade Slope sub-herd of the Yakima elk herd on the Oak Creek Wildlife Area. Timeframe: Winter.

B. Strategy: Maintain 21 miles of elk fence and re-entry gates along low elevation boundary of the Wildlife Area. *Justification:* Minimize elk depredation of agricultural lands. Timeframe: Fall/Winter.

C. Strategy: Maintain 6 miles of stock fence along the south and west boundaries of the Cowiche sub-unit. *Justification:* Minimize cattle trespass on forage used for winter and spring ranges. Timeframe: Spring.

D. Strategy: Determine viability of using cattle as a tool to improve forage values on winter range. *Justification:* May enhance elk preference for forage on WDFW lands.
E. Strategy: Maintain a winter closure to motorized vehicles (from start of feeding to May 1) on the winter range portion of the Oak Creek Wildlife Area. *Justification:* Minimize energy expenditures of big game during the most stressful period of their lives. Timeframe: Winter/Spring.
F. Strategy: Maintain a March-April closure to public entry on large areas of the Oak Creek Wildlife Area adjacent to big game winter-feed sites. *Justification:* Minimize energy expenditures of big game during the most stressful period of their lives. Timeframe: Spring.
G. Strategy: Monitor public use on the Oak Creek Wildlife Area to determine if other closures to vehicles or public access are needed to protect big game from disturbance during critical periods. *Justification:* Minimize energy expenditures of big game during the most stressful period of their lives.
H. Strategy: Conduct weed control and reseed degraded areas. *Justification*: Improves habitat conditions, increases plant diversity. Timeframe: Spring/Fall.
I. Strategy: Reseed timber harvest areas (PTRs) with compatible forage mix. *Justification*: Provide high quality forage to reduce elk movement onto private lands.
J. Strategy: Maintain 12 impoundment dikes at seasonal spring locations. *Justification*: Provides water for wildlife, distributes populations. Timeframe: Summer.
K. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and their Habitats. Sub-objective 7. *Justification*: Provide improved forage in shrub steppe habitat.
L. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and their Habitats. Sub-objective 8. (forest habitats). *Justification*: Manage forest habitats for big game populations.

3. Improve and maintain fish populations

Steelhead, spring Chinook, and bull trout are all considered important culturally, ecologically and economically to the Yakima River sub basin. These three species are present (or were historically present) year-round throughout the watershed in one life stage or another. It is assumed that other aquatic life will benefit from managing toward suitable conditions for these species, due to their wide range of habitat requisites (YRSBP 2004). The most common limiting factors for both summer steelhead and spring Chinook are stream flow, water temperature, habitat diversity, sediment load, and quantity of key habitats for various life stages.

There are no artificial fish passage barriers known to exist on natural streams on the Oak Creek Wildlife Area.

A. Strategy: Assess fish species composition and abundance on all streams of the Oak Creek W.A. *Justification:* Needed to plan habitat improvement projects and measure success.

B. Strategy: Continue Road Maintenance and Abandonment Planning (RMAP) work to address sediment delivery and other issues related to roads and fish, particularly in the case of stream adjacent roads. *Justification:* Stream adjacent roads deliver sediment to streams, detrimental to fish. State law requires RMAP work. Timeframe: Ongoing.
C. Strategy: Reduce sediment delivery and water quality degradation to Naches and Tieton Rivers near feed sites. *Justification:* Concentrated animal activity causes sediment movement during runoff. Timeframe: Fall/Winter.
D. Strategy: Restore riparian habitat with shrub and tree plantings; placement of large debris in Cowiche Creek. *Justification:* Quality riparian habitat reduces sediment in streams, shades water and reduces temperatures.
E. Strategy: Install diversion catch basin west of Junction feed site. *Justification*: Reduce sediment and improve water quality in Naches River.
F. *Strategy*: Convert water right diversion from Oak Creek to Tieton River pump system during low flows. *Justification:* Withdrawal of legal right dewaters lower reach of stream channel. Timeframe: Ongoing.
G. Strategy: Replace Cowiche Creek water diversion structure. *Justification*: Structure does not properly protect against fish passage.

4. Manage for upland birds

The Oak Creek Wildlife Area is managed to provide appropriate habitat types for upland birds, primarily California quail, Hungarian partridge, and chukar. Natural production of these upland birds on the wildlife area is expected to continue to provide significant recreational opportunities.

A. Strategy: Maintain developed springs to provide water for upland birds and other species. *Justification:* Available water influences distribution of upland birds and other wildlife. Timeframe: Annual.
B. Strategy: Maintain guzzlers to provide water for upland birds and other species. *Justification:* Protect capitol investments while allowing greater dispersion of wildlife. Timeframe: Annual.
C. Strategy: Continue to maintain and fill 12 upland bird feeders. J*ustification:* Provides enhanced winter survival for some upland birds during harsh winters and embraces public support. Timeframe: Annual.
D. Strategy: Conduct weed control activities. *Justification:* Weeds degrade quality of habitats. Weed control required by State law. Timeframe: Spring/Fall.

5. Manage for species diversity

Develop and maintain quality habitat that will provide life requisites for a diversity of species. Nearly all activities on the Wildlife Area benefit a diversity of species.

A. Strategy: Utilize CWCS as guide to survey Wildlife Area to identify and determine quality and extent of wildlife habitats. *Justification*: Provide baseline data for population management.
B. Strategy: Determine species use by performing surveys for breeding birds, amphibians, or explain what general rules will apply so as not to indirectly create threats to intrinsic species. *Justification:* Prevents inadvertent detrimental impacts to species residing on the project.

C. Strategy: Determine species use and need by conducting and or facilitating surveys of various bird, reptile, amphibian and mammal species. Cooperate with agencies and birding groups to acquire information on wildlife use of the area. *Justification:* Data allows better management of species and habitats and coordination avoids duplicity and saves capital resources.
D. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 8. (re-acquire PTR's). *Justification*: Healthy, diverse forests support wildlife species diversity. Timeframe: As funding allows.
E. Strategy: Assess remaining low elevation timbered stands on the Tieton parcels of the Oak Creek Wildlife Area for understory thinning and prescribed burning need and potential to reduce risk of catastrophic fire, insect and disease potential. *Justification:* Create forest conditions more suitable to a diversity of species.

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

A. Strategy: Implement channel stabilization project and recovery of side channels in South Fork Cowiche Creek. Incised stream channel detrimental to floodplain function.
B. Strategy: Conduct weed control and reseed degraded areas. Justification: Improves habitat conditions, increases plant diversity. Timeframe: Annually.
C. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 3. *Justification*: Quality riparian habitat reduces sediment in streams, shades water and reduces temperatures.
D. Strategy: Monitor Forest Practices regulations regarding riparian buffer requirements for timber harvest practices on Oak Creek Perpetual Timber Right (PTR) ownerships. *Justification*: Reduce sediment delivery to creeks and protect riparian zones. Timeframe: Ongoing.
E. Strategy: Replace stock fence along Wildlife Area boundary on the Cowiche unit. Prevent damage to riparian areas caused by trespass livestock.
F. Strategy: Acquire Oak Flats inholdings to protect and restore riparian corridor. *Justification*: Improve riparian habitats and floodplain function on the Naches River.

7. Protect and restore shrub steppe habitat
The agency has prioritized shrub-steppe habitat management and protection. Shrub steppe areas provide habitat for a diversity of fish and wildlife species and for comparatively high densities of animals. Shrub steppe is also very vulnerable to habitat conversion and alteration practices.

A. Strategy: Perform shrub steppe condition surveys to assess habitat quality and determine wildlife grazing impacts. *Justification:* Data is needed to monitor changes and trends, identify degraded areas, identify wildlife species and use, and measure success of improvement activities.

B. Strategy: Evaluate use of prescribed fire to rejuvenate and improve shrub-steppe habitat and reduce the risk of catastrophic fires. *Justification:* History of fire suppression may have negatively altered habitat conditions. Before fire is used current data and research should be considered.

C. Strategy: Conduct species diversity surveys. *Justification*: Determine present species and baseline to measure population increases.

D. Strategy: Conduct weed surveys and continue control of legally mandated weeds. *Justification:* Weed control improves habitat condition and increases plant diversity. Timeframe: Annually.

E. Strategy: See Agency Objective: Agency Objective: Protect, Restore & Enhance Fish and Wildlife and their Habitats. Sub-object 6. *Justification*: Prevent damage and over-grazing to shrub-steppe habitat by trespass livestock.

8. Protect and restore forest habitats

The agency has prioritized mature forest habitat management and protection. Mature forests support high wildlife populations and species diversity, and are important as wildlife breeding and seasonal use habitats. Many forest stands on the Wildlife Area are unhealthy due to overstocking, over-harvest, insects and diseases. Restoration is needed to move these stands towards a more mature, diverse, healthy condition.

A. Strategy: Re-acquire PTR's on the Oak Creek Wildlife Area. *Justification:* Manage forest habitats for wildlife diversity.

B. Strategy: Reseed native grasses, forbs and shrubs in landings, skid trails, roads and other disturbed areas. *Justification*: Reduces weed invasion and erosion; increases big game forage.

C. Strategy: Coordinate with adjacent landowners on use of prescribed fire to restore forest ecosystems. *Justification:* Reduce fuel load and risk of catastrophic loss of habitat across landscape.

D. Strategy: Monitor prescriptions and timber harvest activities within Wildlife Area boundaries. *Justification*: Promote wildlife habitat values. Timeframe: Ongoing.

E. Strategy: Coordinate with WDNR and local fire districts on burn bans, fireworks closures, signage, and public outreach. *Justification*: Increases public awareness and enhances fire protection. Timeframe: Annually.

9. Protect and manage other species

Develop and maintain quality habitat that will provide life requisites for a diversity of species. Nearly all activities on the wildlife area benefit a diversity of species.

A. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 2. (assess fish species; protect water quality). *Justification:* Improves habitat conditions necessary for fish species. Timeframe: Year-round.

B. Strategy: Maintain high quality shrub-steppe, forest, and riparian habitat conditions to enhance obligate species protection. *Justification:* Supports high wildlife species diversity and reduces weed intrusions. Timeframe: Year-round.

C. Strategy: Protect and preserve sensitive wildlife sites such as active golden eagle and peregrine falcon nests, big horn sheep lambing areas, and big game wintering and early spring grazing areas from human disturbance. *Justification:* Human disturbance increases stress and reduces survival of wildlife. Timeframe: Year-round.

D. Strategy: Protect snags for cavity excavators, nesting and foraging wildlife species. Enforce "no woodcutting" policies, place additional signage, armor "at risk" snags with wire. *Justification:* Snags have been eliminated from many forest stands by public woodcutting and during logging operations and are becoming scarce, reducing available foraging habitat. Timeframe: Year-round.

E. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 8. (Re-acquire PTR's). *Justification:* Manage for diversity. Timeframe: As funding allows.

F. Strategy: Maintain and expand nest box placement on all units. *Justification*: Limited cavity nest sites for wood ducks and passerine cavity nesters.

Agency Objective: Provide Sustainable Fish and Wildlife-Related Recreational and Commercial Opportunities Compatible With Maintaining Healthy Fish and Wildlife Populations and Habitats. Improve the Economic Well-Being of Washington by Providing Diverse, High Quality Recreational and Commercial Opportunities.

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

A. Strategy: Maintain and administer the Cooperative Green Dot Road Management System to provide open roads on WDFW ownership where no resource issues exist and when there are sufficient resources to maintain them. Address requirements in Road Management and Abandonment Plans. *Justification:* Provides public access and provides management consistency. Timeframe: Year-round.

B. Strategy: Close road access, either seasonally or permanently, where road conditions are not safe or *where use by public may have a significant negative impact on fish and wildlife. Justification*: Increase safety and reduce habitat impacts. Timeframe: As required.

C. Strategy: Implement the Oak Creek WA Road Management and Abandonment Plan as required by Forest Practices regulations. *Mitigate existing legal easements. Justification:* Legally mandated and provides resource protection.

D. Strategy: Provide limited, primitive camping where no resource issues exist. Dispersed camping is allowed throughout the Oak Creek Wildlife Area. Vehicle use is allowed within 100 feet of open, green dot roads unless otherwise posted. Camping is limited to 14 days within a 60 day period on all WDFW owned or managed lands within Yakima County. Limit is extended to

30 days in a 60-day period from September 1 through November 30. No permanent camps or structures are allowed. Woodcutting is not allowed on WDFW ownership and public users are liable at all times for their campfires. *Justification*: Provides public use opportunities while protecting resources. Timeframe: Year-round.

E. Strategy: Provide enhanced hunting opportunities by maintaining road designation where motor vehicle use is allowed only by persons with disabilities. *Justification:* Provide reasonable access to increase opportunities for the disabled. Timeframe: Fall.

F. Strategy: Develop fishing opportunity and trail access at Tim's Pond for persons with disabilities. *Justification*: Provide reasonable access to increase opportunities for the disabled.

G. Strategy: Develop GIS layers of all resources, roads, trails, parking and camping areas, and other facilities available to the public. *Justification:* Improves management efficiency and aids the public.

H. Strategy: Develop a GIS-based Green Dot Road Management map for distribution to the public. *Justification:* Improves management efficiency and aids the public.

I. Strategy: Maintain bighorn sheep winter feed site at Cleman Mtn.. *Justification*: Facilitate research and trapping options and provide for public viewing. Timeframe: Winter.

J. Strategy: Provide educational/interpretive tours to public during elk feeding season. *Justification*: Improve public knowledge; support for WDFW programs.

K. Strategy: Staff interpretive center with permanent Conservation Education Specialist. *Justification*: Increase public access; educational opportunities.

L. Strategy: Provide signing and educational materials to public users that explain WDFW regulations and checkerboard ownerships. *Justification*: Facilitate proper use of Wildlife Area. Timeframe: Year-round.

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

Consider commercial activities on the wildlife area when benefits to fish, wildlife, and their habitats outweigh the impacts or when mandated by state law.

A. Strategy: Develop commercial opportunities for local community businesses relating to wildlife viewing. *Justification*: Build cooperative relationship with local community; promote education. Timeframe: Year-round.

B. Strategy: Develop wireless internet system, in conjunction with local Internet Service Provider (ISP). *Justification*: Support wildlife cameras; provide public wildlife viewing on WDFW website; improve administrative efficiency.

C. Strategy: Consolidate white-water permit process with USFS for commercial river guides on Tieton River. *Justification:* Provides commercial opportunity with minimal impact. Timeframe: Spring.

D. Strategy: Provide gifts/merchandise at Oak Creek visitor center to promote public donations. *Justification*: Generate revenue for feeding programs and operations.

Agency Objective: Minimize Adverse Interactions between Humans and Wildlife

1. Provide refuge areas for wildlife and reduce winter disturbance

Human activity on the Wildlife Area can displace wildlife populations. If this activity is determined to be detrimental, areas are posted to limit public entry. Winter disturbance is especially critical because of the higher energy requirements needed by wildlife during severe weather.

A. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 2 (winter closures and monitor public use). *Justification:* Reduce body energy loss to wildlife. Timeframe: Winter/Spring.

B. Strategy: See Agency Objective: Provide Sustainable Fish and Wildlife-Related Recreational and Commercial Opportunities Compatible With Maintaining Healthy Fish and Wildlife Populations and Habitats. Improve the Economic Well-Being of Washington by Providing Diverse, High Quality Recreational and Commercial Opportunities. Sub-objective 1. (green dot road mgmt). *Justification*: Reduce disturbance to wildlife. Timeframe: Year-round.

2. Implement strategies to reduce elk damage on private lands

The Agency owns, maintains and manages a large land base to provide habitat requisites for wildlife populations. Additional strategies such as supplemental elk feeding, fencing, and herding are implemented to reduce elk damage to crops on adjacent private lands.

The Oak Creek Wildlife Area has a high concentration of big game adjacent to winter feed sites that must forage on early spring grasses to replenish their energy levels. Human disturbance can move these animals off the Wildlife Area and onto private lands, causing damage to crops and range pastures.

A. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 2. (supplemental winter feeding). *Justification*: Reduces elk leaving public lands. Timeframe: Winter.

B. Strategy: Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 2. (winter closures and monitor public use). *Justification*: Maintains big game herds on public lands during winter. Timeframe: Winter/Spring.

C. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 2. (reseed forage). *Justification*: Improve habitat on public lands. Timeframe: Spring/Fall.

D. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 8. (forest habitats). *Justification:* Improve habitat on public lands. Timeframe: Year-round.

E. Strategy: See Agency Objective: Provide Sustainable Fish and Wildlife-Related Recreational and Commercial Opportunities Compatible With

Maintaining Healthy Fish and Wildlife Populations and Habitats. Improve the Economic Well-Being of Washington by Providing Diverse, High Quality Recreational and Commercial Opportunities. Sub-objective 1. (green dot road mgmt.). *Justification:* Reduce wildlife disturbance on public lands. Timeframe: Year-round.

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

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

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

Weed control on the Oak Creek Wildlife Area has been a high priority for many years, and has been accomplished in close coordination with the Yakima County Noxious Weed Board. Funds are dedicated annually from the wildlife area-operating budget for the control of noxious weeds.

A. Strategy: Produce and implement a weed management plan **(Appendix B)** to include weed identification and inventory, risk/threat, control priorities, and monitoring. *Justification:* Increase weed control efficiency. Timeframe: Ongoing.

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

C. Strategy: Continue to use Integrated Pest Management strategies, including biological control, chemicals, mechanical and cultural methods, to control invasive weeds. *Justification*: More effective and environmentally responsible weed control. Timeframe: Year-round.

D. Strategy: Continue to control targeted weeds along roads on the Wildlife Area. Expect to fall treat 80 miles of roadside and dispersed camp areas annually to reduce the spread of noxious weeds. *Justification:* Vehicles spread many weeds. Timeframe: Fall.

E. Strategy: Electronically map weed locations. Utilize hand-held GPS to record infestations. *Justification:* Improves weed control efficiency. Timeframe: Spring/Fall.

F. Strategy: See agency objective: Agency Objective: Protect, Restore & Enhance Fish and Wildlife and their Habitats. Sub-objective 6. (replace stock fence). *Justification*: Overgrazing by trespass livestock promotes weed establishment.

G. Strategy: Add educational literature identifying weeds found on the Wildlife Area to information racks in the visitor center. *Justification*: Improve public knowledge and ability to report observations. Timeframe: As funding allows.

2. Manage species and habitats in compliance with the Endangered Species Act and Washington State fish passage, road management and forest practice rules
Federal law requires the protection and management of threatened and endangered species. State law requires fish passage and screening issues and forest road sedimentation issues to be addressed on state public lands. Silviculture and harvest activities on agency lands must follow state forest practice law.

A. Strategy: Conduct wildlife and habitat surveys. Identify and prioritize information and survey needs on priorities established in CWCS. *Justification:* Determine status of wildlife populations and habitat conditions to guide management decisions.

B. Strategy: Protect buffers adjacent to wetlands and riparian habitat. *Justification*: Reduces sedimentation & keeps water cooler. Wetlands and riparian zones support unique habitats and species. Timeframe: Year-round.

C. Strategy: See Agency Objective: Provide Sustainable Fish and Wildlife-Related Recreational and Commercial Opportunities Compatible With Maintaining Healthy Fish and Wildlife Populations and Habitats. Improve the Economic Well-Being of Washington by Providing Diverse, High Quality Recreational and Commercial Opportunities. Sub-objective 1. (road mgmt. plan). *Justification:* Legally required and provides sedimentation control. Timeframe: Year-round.

D. Strategy: See Agency Objective: Protect, Restore & Enhance Fish and Wildlife and Their Habitats. Sub-objective 3. (water quality and sedimentation). *Justification*: Legally required. Timeframe: Year-round.

E. Strategy: Map all ESA species and their habitats on the Wildlife Area and develop GIS layers depicting the location and species. *Justification*: Increases management efficiency and effectiveness for ESA species.

F. Strategy: List specific management practices associated with ESA species present or likely present. *Justification:* Reduce inadvertent negative impacts to wildlife while increasing management efficiency. Timeframe: Ongoing.

3. Provide fire management on agency lands (Appendix C)
Fire suppression agreements must exist for all agency lands to protect the people of Washington and to protect natural and economic resources of the agency and adjacent landowners.

A. Strategy: Contract with local, state or federal entities to provide primary fire suppression on the Oak Creek Wildlife Area. *Justification:* DNR & USFS have firefighting equipment and personnel to control catastrophic unplanned wildfires. Timeframe: Year-round.

B. Strategy: Maintain Red Card fire training for Wildlife Area manager and assistant manager. *Justification:* Increases liaison effectiveness and safety of staff. Timeframe: Spring.

C. Strategy: Coordinate with fire-fighting entities. Maintain list of fire responsible individuals. *Justification*: Improves efficiency of response. Timeframe: Ongoing.

D. Strategy: Provide an on-site liaison to fire-fighting entities when a wildfire occurs on or adjacent to any part of the Wildlife Area. *Justification:* Improves

efficiency of response, provides guidance on Agency priorities. Timeframe: Spring/Summer/Fall.

4. Protect cultural resources consistent with state and federal law

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

A. Strategy: Assess cultural resource value (historic and archaeological) of all structures before renovation or removal. *Justification:* Prevents inadvertent loss of culturally important structures.

B. Strategy: Perform cultural resource survey and assessment before undertaking activities that affect the landscape, including digging, performing agricultural activities, prescribed burning, etc. *Justification:* Required by State law.

5. Pay county PILT (Payment in lieu of taxes) and assessment obligations

A. Strategy: Pay PILT and assessments to counties. Timeframe: By April 15th of each year. *Justification:* State law requires the agency to pay PILT and county assessments.

Agency Objective: Reconnect with Those Interested in Washington's Fish and Wildlife

The knowledge and experience of visitors to the wildlife area could be enhanced regarding fish and wildlife habitat management by providing onsite interpretive signs explaining management activites and public use. *Educate the public regarding public access and other regulations through green dot reader boards, other signage, and news releases. Issues include road management system, camping, fires, firewood cutting, permanent structures, mineral extraction, etc.*

1. Participate in local cooperative groups

Participating in local groups ensures that issues on or adjacent to the wildlife areas are being identified and addressed in a cooperative manner involving the public, our users, and our neighbors.

A. Strategy: Continue to participate in White Pass Scenic Byways group and Chinook Pass Scenic Byways group. *Justification*: Maintains communication and coordination with public and local communities. Timeframe: Ongoing.

B. Strategy: Attend and participate in CRM meetings that involve grazing permits adjacent to the Oak Creek WA that could impact management on the wildlife area. *Justification*: Increases management efficiency and coordination between entities involved. Timeframe: Ongoing.

2. Involve the public in projects on the wildlife areas

Volunteers provide a valuable source of labor and knowledge for various projects on the Wildlife Area. Minimal staffing limits what the Agency staff can accomplish.

A. Strategy: Liaison and coordinate with volunteer Wildlife Education Corp group to operate visitor center. *Justification*: Maintain staffing; provide public education. Timeframe: Year-round.

B. Strategy: Solicit help from local conservation groups and clubs on habitat enhancement projects. *Justification:* Assists WA staff in accomplishing desired projects and increasing public awareness. Timeframe: Ongoing.
C. Strategy: Coordinate with local user groups on Wildlife Area clean-ups. *Justification:* Assure clean-up projects occur. Timeframe: Spring.
D. Strategy: Provide, as available, projects for Advanced Hunter Education (AHE) participants to complete their community service requirement. *Justification*: Assist in hunter education while accomplishing needed tasks. Timeframe: Ongoing.

Agency Objective: Provide Sound Operational Management of WDFW Lands, Facilities and Access Sites

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

A. Strategy: Maintain the headquarters facility to provide a safe and effective workplace. Maintain structures such as residence, shops, hay barns, fuel depot, and equipment storage. Provide utilities, phone, and office equipment. *Justification:* Efficient operation of the W.A. requires maintenance of a functional headquarters. Timeframe: Ongoing.
B. Strategy: Maintain all fences to prevent trespass livestock. Survey boundary stock fence, prioritizing repair work based on sections that will have livestock on adjacent ownerships. *Justification:* Excludes trespass livestock. Timeframe: Ongoing.
C. Strategy: Maintain visitor center and educational displays. *Justification:* Provides information and program interpretation to public visitors. Timeframe: Ongoing.
D. Strategy: Assess the need for livestock fencing and remove all un-needed fences particularly where they are a hazard and/or barrier for humans and wildlife. *Justification:* Reduces wildlife barriers and entanglements.
E. Strategy: Maintain roads to prevent resource damage and provide access. Maintain parking areas. *Justification: Maintains public access and prevents resource damage.*
F. Strategy: Maintain all signs and reader boards. *Justification:* Allows education and management of public use and controls vehicle travel. Timeframe: Ongoing.

2. Maintain other structures and physical improvements

A. Strategy: Maintain all gates, culverts, water structures, wells and irrigation systems. *Justification:* Required for efficient operation of Wildlife Area. Timeframe: Ongoing.
B. Strategy: Replace/install new boundary and unit signs as needed. *Justification*: Allows public to identify property.
C. Strategy: Remove unneeded, damaged, or surplus infrastructure. *Justification*: Improve safety for public, improve stewardship of public lands.

3. Maintain equipment

A. Strategy: Service all equipment including trucks, tractors and implements, weed sprayers, trailers, etc. Request replacement equipment when needed. *Justification*: Increase service life of equipment, reduce down time. Timeframe: Ongoing, as funding allows.

B. Strategy: Rent equipment when it is more efficient to do so or when needed. *Justification:* More cost effective. Timeframe: Ongoing.

C. Strategy: Manage an extensive equipment inventory used for habitat maintenance, enhancement, restoration and preservation. *Justification*: Ensure successful operations. Timeframe: Ongoing.

4. Pursue funding opportunities

A. Strategy: Apply for grants and other funding opportunities consistent with planned priorities to supplement funding. *Justification:* Supplements limited budgets. Timeframe: Ongoing.

B. Strategy: Expand donation and concessionaire program at visitor center. Auction surplus WDFW wildlife parts such as skulls, shed antlers, etc. *Justification*: Generate revenue to support feeding operations. Timeframe: Winter/Spring.

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

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

A. Strategy: On non-PTR owned lands, assess and implement timber-thinning and fuels reduction projects to reduce potential insect and fire danger and create forest conditions more suitable to a diversity of species. Coordinate with other resource management entities to affect conditions on a landscape basis. *Justification:* Provides healthier, sustainable forest habitats.

6. Perform administrative responsibilities

A. Strategy: Develop and monitor budgets. *Justification:* Determines outcomes. Timeframe: Year-round.

B. Strategy: Supervise employees. *Justification:* Legally required. Timeframe: Year-round.

C. Strategy: Maintain files and records. *Justification:* Track work over time. Timeframe: Year-round.

D. Strategy: Write reports. *Justification:* Agency required. Timeframe: Year-round.

E. Strategy: See Agency Objective: Agency Objective: Reconnect with Those Interested in Washington's Fish and Wildlife. Sub-objective 1. (Attend and participate in local cooperative groups). *Justification:* Enhances communications on resolving issues. Timeframe: Year-round.

F. Strategy: Work with staff to ensure high morale and job satisfaction. Promote self-motivation and good work ethics. *Justification:* General part of supervision. Timeframe: Year-round.

G. Strategy: Supervise contractors, lessees, permittees, volunteers, AmeriCorp members, other WDFW personnel, and public and private organizations on the Wildlife Area. *Justification:* Ensures safety of personnel and compliance of work. Timeframe: Year-round.
H. Strategy: Write, update and implement a Wildlife Area management plan, weed control plan and fire control plan. *Justification:* Agency policy and assists in systematic approach to management. Timeframe: Year-round.
I. Strategy: Plan for and purchase supplies, tools and equipment. *Justification:* Part of administrating the W.A. Timeframe: Year-round.
J. Strategy: Attend meetings and foster good relations with private individuals, organizations, and agency representatives as needed. *Justification:* Facilitates effective management. Timeframe: Year-round.
K. Strategy: Evaluate performance measures and produce an annual performance report. *Justification*: Monitor progress and provide accountability. Timeframe: Year-round.
L. Strategy: Update Wildlife Area Plan. *Justification*: Monitor progress and incorporate new issues and changes. Timeframe: Year-round.

7. Maintain a knowledgeable and well-trained work force

A. Strategy: Maintain red card training for wildlife area staff. *Justification:* Increases safety of staff and required to be on site during fire suppression. Timeframe: Year-round.
B. Strategy: Maintain public applicator pesticide license recertification training for required staff. *Justification:* Legally required. Timeframe: Year-round.
C. Strategy: Maintain first aid and CPR training for all staff. *Justification:* Agency policy. Timeframe: Year-round.
D. Strategy: Attend resource training seminars and workshops as appropriate. *Justification*: Improves staff effectiveness. Timeframe: Year-round.

8. Protect and apply water rights for best use

Water rights can impact wildlife area operations including food plots, restoration projects, etc. Water use can also reduce in-stream volumes for fish and other animals.

A. Strategy: Identify and record all water rights and beneficial uses of water **(Appendix D)**. *Justification:* Determines management options. Timeframe: Ongoing.
B. Strategy: Move all unneeded water rights permanently or temporarily into the State Trust Water Rights Program. *Justification:* Better use of water resources. Timeframe: As needed.

CHAPTER VI. PERFORMANCE MEASURES, EVALUATION AND UPDATES TO THE OAK CREEK WILDLIFE AREA PLAN

Wildlife Area Plan performance measures are listed below. Accomplishments and desired outcomes will be evaluated to produce an annual performance report. The Wildlife Area plan is a working document that will evolve as habitat and species conditions change, as new regulations are enacted, and as public issues and concerns change. Annual plan updates will address these changes.

1. The Oak Creek Wildlife Area performance measures for 2006 include:

- Maintain supplemental winter feeding operation at seven sites.
- Maintain 21 miles of 8' elk fence.
- Maintain existing and install new one-way re-entry gates as needed to control elk population.
- Maintain or replace 6 miles of stock boundary fence on the Cowiche unit.
- Maintain vehicle closure Jan 1 – Apr 30 in the Sanford Pasture / Mud Lake area.
- Maintain vehicle and public access closures around feed sites during winter feeding period.
- Maintain Mar – Apr public disturbance closures on early spring range above feed sites.
- Maintain eagle nesting closure and site protection as needed.
- Post fire closure signs and patrol areas during periods of high risk.
- Implement Weed Management Plan (Appendix B) in coordination with Yakima County Noxious Weed Board for the entire Wildlife Area.
- Reseed to a big game forage mix approximately 150 acres of timber harvest disturbance in the North Fork Oak Creek drainage.
- Monitor Forest Practice Applications and PTR harvest activities for compliance.
- Maintain 12 bird feeding stations on the W. A.
- Maintain or rebuild 6 upland bird water development structures on the W.A.
- Inspect and maintain bighorn sheep water collection system in Section 7.
- Design and install 3 educational sig*ns at Cleman bighorn winter range access points to limit human disturbance.*
- Maintain 1.0 acre controlled wetland for wood duck nesting. Maintain 4 nest boxes.
- Rebuild 3 earthen impoundment dikes at spring locations in the Sanford Pasture area.
- Maintain or construct road drainage structures and ditches on 2 miles of the Bethel Ridge Road.
- Monitor sediment delivery potential for entire Wildlife Area road system.
- Excavate HQ watershed sediment collection ponds to restore retention capacity.
- Clear rockfall from service road between Junction and Cougar Canyon.
- Install wireless internet tower and camera system at HQ site.
- Expand gift merchandise and donation collections at visitor center.
- Provide educational truck tours for public at the HQ elk feed site.
- Arrange auction of WDFW collection of wildlife parts and shed antlers.
- Complete construction of low water pump station at HQ.
- Perform W.A. hunter camp / litter cleanup project utilizing volunteers.
- Maintain ADA hunting access road system in Cougar Canyon.

- Cut firewood from logging slash for use at HQ and AmeriCorp residence.
- Submit IAC grant for ADA development at Tim's Pond.
- Submit WWRP Riparian grant for Oak Flats acquisition.
- Develop GIS-based Green Dot road management maps for distribution to public.
- Maintain Green Dot "Area Regulations" signs and markers on Wildlife Area road system and update maps and protective frames.
- Construct and install road name signs at major road junctions.
- Provide liaison and guidance to WEC volunteer program to staff interpretive center.
- Coordinate AmeriCorp program for Oak Creek Naches team.
- Coordinate commercial white-water rafting permits and conditions on the Wildlife Area along the Tieton River.
- Coordinate project requests from Advanced Hunter Education applicants. Utilize applicants as a labor force to accomplish Wildlife Area objectives.
- Facilitate land acquisition of 15 acre private parcel adjacent to bighorn sheep winter range.
- Complete Wildlife Area management plan, weed plan, and fire plan.
- Maintain facilities, vehicles, and equipment.
- Maintain required training and recertification for manager and staff.

APPENDIX 1: PUBLIC ISSUES

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

Issue A: Weed Management

- Develop posters on noxious weeds, post interpretative signage, and use other means to educate users on weed species, ways weeds are spread, and generally what to watch out for.
- Good progress being made, work with County Weed Boards.
- Should raise fines for illegal off-road travel as a way of financing some outreach and education.
- Begin educating with kids in school, just like hunter ed. Raise conservation awareness at an early age.
- Include something in the hunting/fishing pamphlets on weeds (and on the DFW Website).
- Hit on user groups for help in outreach and projects.
- Many noxious weeds are spread by both domestic and wild animals.
- Weed spread by vehicle travel; focus on the roads first.
- Prepare an integrated weed management plan.
- Current and future use of bio-controls an important component.
- Comment reinforcing the need for re-vegetation efforts once weeds are under control, and encouraging more of that work.
- Re-vegetation agreed to be a priority to improve habitat that has deteriorated as a result of weed infestation. Some commented that native over non-native is good if the native species are hearty and aggressive enough to compete and establish, but felt that sometimes non-native species are quicker to establish.
- Question asked if WDFW receives much public input and identification of problem areas by users of the Wildlife Areas. Response was that input by users has been an important way of identifying weed infestations, particularly in the more remote areas that staff doesn't see regularly.
- Discussion followed with the consensus being that WDFW needs more education and interpretive signage and literature to help users know what species are weeds, how they are spread, and how they can be controlled.
- New seed mixes are being made available to the general public that are marketed as being attractive plants to wildlife. Many contain noxious weed seed in the mix.

Issue B: Recreation/Access

- Need more signage and education on littering.
- Limit camping to a maximum of 14 days within a 60-day period (during general hunting seasons, 21 days within a 60-day period).

- Acquire fee title or easements on key inholdings to maintain public access.
- Need increased enforcement on the wildlife areas.
- Off road vehicles, mudders, hill climbs, campfires, target shooting (safety issue), littering, damage to elk fence.
- Find new, more effective methods such as aerial reconnaissance, tell public how to report a violation (give them a phone number).
- Use annual report form enforcement to help focus efforts.
- Educate the public regarding public access and other regulations through green dot reader boards, other signage, and news releases. Issues include road management system, camping, fires, firewood cutting, permanent structures, mineral extraction, etc.
- Inventory public use of the areas using standard, consistent methods, such as vehicle counters.
- Use monitoring to focus efforts; determine objectives for monitoring.
- Identify key areas of public use.
- Consider how to use local knowledge.
- Winter Range Protection:
    - If areas need to be closed seasonally to protect elk, then WDFW should do it.
    - Regulate public access in big game wintering areas. Seasonally close roads, snowmobile use etc.
    - Too many elk are being pressured (particularly in late winter/early spring) by 4-wheelers and other ATVs. How do we change that, enforce it, and improve the situation for elk?
    - Comment that the degree to which a seasonal closure or restriction is needed has to be established. DFW must quantify it somehow to prove undue pressure on the animals (monitor the elk traffic for example). Enforcement is key, and tough to carry off. Also, is it mostly activity that is already illegal that is most of the problem?
    - Comment that this relates directly to elk crop depredation, and can mean weighing recreational opportunity (legal or not) against economic loss to the agricultural community.
    - Discussion on closure options; vehicle closure only versus closure to access of any kind.
    - Other factors to consider that relate to private ownership.
    - Consensus that public outreach is needed to help fight mudding and other illegal practices like chasing elk.
    - Comment that USFS regulations vs. DFW, County, other State, etc. can be a problem, particularly with ATVs (different regulations are confusing).
    - Four-wheel clubs want to get involved in advocating legal use of the resources, and there is a need to reach out to them.
- Road Management:
    - Most users on roads are hunters paying for licenses; they expect and deserve access.
    - Numerous hunters (he said most) want less roads to improve hunting and reduce the number of lazy road hunters.
    - Need for more Enforcement presence on the WAs. "You whack a few bad apples, and the word gets around." More flights to check for off road use!

    - Put up a reward of some sort for turning offenders in, like the points thing for hunters who do so.
- Limit access to permit only.
- Consider more road improvements on the roads we want the folks using ("harden the good roads"), to reduce illegal use of others and off-road infractions. Channel the people where we want them with road management and fence.
- Would hate to see the WAs become too restricted.
- Conduct more surveillance by staff or hidden camera at problem spots; also more gates in key places.
- Get volunteers (jeep club members and others) to work on some key spots (machinery and hand work) and routes. DFW staff needs do outreach for help.
- We should charge for Green Dot maps.
- Solid data and evidence of resource damage, etc. is needed to back up decisions for closure.
- Spend time with staff outlining things they need to document regularly when in the field. Get some data on paper, informal or not.
- DFW shouldn't worry so much about pleasing everyone, just do what is right. Only 10% gripe about what DFW does for wildlife and habitat anyway.
- Closing road A may only mean more traffic for road B, and that always needs to be a consideration.
- Need to consider more seasonal closures and gates as an alternative to abandoning roads. Many people want to see the majority of roads remain open for travel when it is not a resource issue. Closing roads can also limit access for fire suppression.
- Need more signage and education to explain road management practices.
- Include rules and information with the new ATV paperwork at dealerships, educate to tread lightly, establish and enforce speed limits. Provide info in the hunting and fishing pamphlets.
- <u>Work with Forest Service to resolve differences in green dot versus green diamond road management.</u>
- <u>Maintain/close roads to prevent impacts to water quality.</u>
- <u>Green dot is a good road management system for the type of open country that we are dealing with.</u>
    - <u>When closing roads, use physical barriers where and when they can be effective.</u>
    - On any Road Abandonment Plan, mitigate any legal easements that may be affected by closing the road.
    - Need to provide "pass-through" motorized access to higher elevation lands above big game winter range (defined by mgr. as 4500' and below)
- **Fences/Gates:**
    - <u>Maintain the elk fence.</u>
    - Firm statement that there are enough public access locations already in place. Agreement that only more problems would result if new access points were established.
- **Target Shooting:**
    - More signage and information needed on the sites where target shooting occurs to reduce littering and use of inappropriate targets (glass, tv's, washers/dryers).

- Concensus that there is a need for more enforcement presence by DFW and by County Deputies. Someone expressed the feeling that there is sometimes a climate of fear over who is out there shooting auto and semi-auto firearms.
- No laws that restrict shooting on the wildlife areas, but safety issues are real.
- Look at creating backstops, formal ranges, or shooting restrictions.
- Question as to whether or not it boiled down to designating only certain areas for shooting and or imposing sanctions for use other than what is acceptable? John responded that if we provide the place and promote the use in any fashion, it increases the liability for DFW. Dumpsters were suggested, so that people can dump their shooting trash (apparently done in Montana). The managers agreed that more than shooting trash would soon be dumped there.
- CAG consensus suggested more outreach, and communication that the litter associated with these shooting areas is unacceptable. DFW needs to publicize, inform, and make people aware.

Issue C: Grazing

- Consensus that many riparian areas and degraded habitat should not be grazed, but recommended the agency use it as a tool where needed (with very strict controls imposed on it).
- Consensus that grazing could be a good management tool, when used within strict guidelines for movement and rotation of stock. Timing is an essential component with regard to when land is grazed, and for how long.
- Generally the impact of spring grazing heavier than with fall grazing.
- DFW needs to work with DNR and other agencies to control cattle grazing better, with riders, etc, and focus on protection of riparian and sensitive areas; require riders and or fencing to keep moves/rotations of cattle on track. Need better assessment tools, and strict time frames that are enforced.
- Some would like to see more grazing tried on DFW lands. Some felt that it fits as an enhancement to grazing on private lands, can be of economic benefit, and also work to enhance habitat. Can be good for sage grouse habitat.
- Do the managers decide whether or not it is appropriate to try?
- Comment that it can be bad PR to discourage grazing, and limits revenue generated by the agency.
- Stressed that grazing needed strict planning and control, and there are contractors who do that sort of thing (like Solar Dollars).

Issue D: Fire Management

- Use media coverage to explain the reasons and justifications for prescribed burning.
- Need to be more consistent on implementation of campfire restrictions.
- Develop a fire plan. Treat fire (wild and prescribed) as an integral part of grassland and shrubland management. Recognize that fire is difficult to exclude.
- Question about existing contracts for fire districts or DNR to fight or control fires for WDFW.
- Discussion followed relative to liability in wildfire situations, the need for more adjacent landowner cooperation (whether public or private), and what success, or not, that WDFW has had with prescribed burning. The managers explained that it was

pretty new for us other than on very small scale, and that the L.T. Murray work would be the first larger burn done in decades.

Issue E: Wildlife/Habitat Management

- Include watershed planning and Multiple Species Habitat Conservation Plan (HCP) information in all management plans. Cooperate with Planning Units.
- Protect and restore PHS habitats.
- Restore shrub-steppe for sage grouse.
- Use appropriate tools to protect key habitats on private lands.
- Chapter 3.1 of the Wildlife Area Plans (Oak Creek and the L.T. Murray/Wenas): Andy Stepniewski (from Audubon and the Cowiche Canyon Conservancy) had questions about this chapter. He asked that if the target number of elk for the Yakima Herd was 9,500, did that not conflict with species diversity and habitat objectives? He was mostly concerned with feed site elk and that concentrated impact, as well as adjacent impact in transition areas as those elk travel in and out. These elk are impacting other species in the concentrated areas. Andy subsequently submitted a letter outlining his concerns and comments in writing with good detail about species affected, loss of biodiversity, and specific areas of concern.
- Ken McNamee of DNR suggested more focus on the importance of down logs and snags to wildlife. Many are removed every year by the illegal cutting of firewood on DFW and DNR lands. Educate and inform with signage and in the hunting and fishing pamphlets, etc.

Issue F: Wildlife Damage

- What about night hunting for damage control? It has been effective in Oregon. What about seeking out those lead cows in herds causing damage during dark hours?
- Suggestion of outsourcing some functions such as damage assessments.
- Suggestion to augment natural controls by predators (cougars, wolves, etc.).
- What about ungulate damage to sensitive habitats, and overuse by not just cattle, but elk?
- Reduction in overgrazing at higher elevations (USFS lands as example) needed to relieve the pressure put on DFW lands and lower range, ag lands, protected areas.
- More spot hunts need to be organized, but in a better fashion. More communication with adjacent landowners, better coordination across ownerships.

Issue G: Forest Management

- Does WDFW have a timber/forest plan in place? Some areas are in need of thinning.
- Comment on the upcoming thinning/habitat improvement planned for an area of the Colockum Wildlife Area on WDFW land, and how that could be a revenue generator for getting other things done. All seemed to be ok with timber management objectives (removal of small fir, focus on the pine habitat, prescribed burning, seeding, etc.) that are currently occurring on the wildlife areas.
- Comment that if current thinnings were success stories, WDFW should get the word out, that we needed the good public relations stuff in print to offset all of the negative that we invariably seem to get. "Let folks know!" Group stressed using the newspaper to promote this kind of work.

- Comment that WDFW needs to establish some clear criteria for timber practices on their lands.
- Suggestion that we relate our goals to past successful work, and work in progress.
- Encouragement to continues efforts to acquire the perpetual timber rights on all DFW lands.

Issue H: Land Acquisition

- DFW needs to take better care of what we have.
- Acquire strategic, key habitats and land parcels.
- Discussion of related tools such as agreements with private landowners and private sportsmen's' clubs to work cooperatively on projects like turkey management and protection of game birds.
- Comment regarding use of conservation easements; key is landowner incentives to participate, whether that be in the form of tax breaks or what.
- Discussion on block management units in Montana where access to private lands adjacent to government lands bring day fees of $10.00 or more per hunter. Benefit was providing control of hunting pressure by limiting the volume of hunters.
- Idea of incentive tags and or sale of access by other means.
- General feeling that private landowners definitely need some recourse, some incentives to allow wildlife on private ownership in any sort of density.
- Game species don't recognize changes in ownership.
- Concern over the potential land swap between DFW and DNR, and the danger of differing management practices affecting wildlife and habitat. Some felt that there might be alternatives to the land swap that could still help both DFW and DNR. Most felt cooperative management agreements are key to the successful stewardship of public lands.

Issue I: Commercial Use/Non-Renewable Resource Extraction

- Statement that WDFW Commercial Use Permits are too cheap, and the realistic market for this commercial use will bear more. There is money for wildlife and habitat projects to be gained.
- Comment that commercial use fees need to go back to the Wildlife Area.
- Promote it and the cost/benefit, and it can also be a tool to focus use where we want use.
- Question whether these fees limit use and reduce impact, or if there should be more restrictions on commercial use.
- CAG members wanted to know how much really gets to the Wildlife Area? Is it really fee for service? Group consensus that it should be.
- Someone stated/asked that some wildlife areas have the potential to make more money than others; should fee money go to the Wildlife Program and be distributed?
- Comment that we may need to be prepared to sacrifice some areas for undesirable uses. DFW could designate some areas for use by motorbikes, mudders, and the like to help limit those uses in more critical areas. There was no consensus amongst group members.
- The managers moved discussion on to commercial and related activity. They posed the question: Should we issue Permits for rock pits, gold panning, removal of petrified

wood, etc? There was some discussion about how this affects the habitat, who controls it, and who enforces it.

- Regarding mineral extraction and related activities, group concensus was that unless there is real money in it, or a benefit to fish and wildlife, then permits should not be issued at all. Discussion followed that spanned from rock hounds to gravel pits. Strong group consensus that strict guidelines need to be established in the plan to define what is allowable, DFW needs to make users aware of the rules. The feeling was that many times folks did not know what was allowed, and what was not.

Issue J: Wildlife Releases:

- Comment on the wild turkey management plan. Individual not supportive of only planting birds where a population already exists. Individual felt that the economic benefit of more release sites would outweigh other factors.
- Comment that there are differing opinions on whether or not the turkeys and other game birds should be winter-fed. Most felt that it was dependent on the quality of the habitat how well they would survive, in the interim they should be fed in harsh winters, and over the long haul that good management and habitat development would create a climate for a healthy naturally sustained population. All felt that WDFW should manage for sustainable numbers.
- Some discussion on big horn sheep, more general comments supporting WDFW's winter-feeding programs for several species.

APPENDIX 2: OAK CREEK WEED MANAGEMENT PLAN

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

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

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

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

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

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

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

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

Treatment- Treatment of a weed using biological, cultural, mechanical, and chemical control serves to eradicate pioneering infestations, reduce established weed populations below densities that impact management objectives for the site, or otherwise diminish their impacts.

The method used for control considers human health, ecological impact, feasibility, and cost-effectiveness. Applications using chemical treatments for control of weed species will utilize product diversification to avoid development of chemical resistance by target weeds.

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

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

Weed Species of Concern on the Oak Creek Wildlife Area.
The following list of weeds of concern (Table 3) is based on species that have been identified for control on the Wildlife Area or have been designated for control by the Yakima County Noxious Weed Board (YCNWB).

Table 3. Weeds currently growing on the Oak Creek Wildlife Area for which control measures are planned.

Weed Species	Weed Class	2006 County Weed Class	Wildlife Area Location(s)	2005 Treated Acres
Dalmatian Toadflax	B-D	B-D	Oak Creek	0
Japanese Knotweed	B	B	Cowiche	Spot (4)
Musk Thistle			Rattlesnake	Spot (1)
Diffuse Knapweed			All	1500
Russian Knapweed	B	B	Cowiche	10
Scotch Thistle	B	B	All	4500
Spotted Knapweed	B	B-D	All	2
Puncturevine			Cowiche	0.1
Yellow Starthistle				Spot (2)

s state-listed and mandatory for control to prevent seed production/spread.

The YCNWB has identified a list of weeds as occurring in areas adjacent to the Oak Creek Wildlife Area. A "watch list" for the following weeds will be maintained by the Oak Creek staff:

Houndstongue
Meadow Knapweed
Myrtle Spurge
Oxeye Daisy
Purple Loosestrife
Rush Skeletonweed
St. John's Wort
Tansy Ragwort

Management for individual weed species identified in Table 3 can be found in the following "Weed Species Control Plan" sections.

DALMATIAN TOADFLAX CONTROL PLAN

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

Updated: 2005

DESCRIPTION: Dalmatian toadflax is an erect, short-lived, perennial herb, 0.8 to 1.5 m tall. Dalmatian toadflax is a perennial species that spreads by horizontal or creeping rootstocks and by seed. A mature plant can produce up to 500,000 seeds, which are primarily dispersed by wind. The seeds may live up to ten years in the soil (Robocker 1974; Morishita 1991). Most seedlings emerge in the spring when soil temperature reaches 8° C at 2.5 cm. Germination in the fall is probably limited by soil water content, as well as possibly seed dormancy with the average life span of a plant being three years (Robocker 1974).

Mature Dalmatian toadflax plants are strongly competitive. Studies indicate that plots without Dalmatian toadflax may produce two and a half times as much grass as plots with toadflax (Robocker 1974). Mature plants are especially competitive with shallow-rooted perennials and winter annuals. Because of its competitive ability, Dalmatian toadflax is a concern in pasture and rangelands, as well as in natural areas, where it may out-compete more desirable, native species. Dalmatian toadflax occurs in a variety of habitats, including: roadsides, pastures, rangelands, and waste areas. It has spread most extensively west of the 100th meridian, occurring primarily on coarse-textured soils, ranging from sandy loams to coarse gravels (Alex 1962).

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

MANAGEMENT INFORMATION:
Intensive clean cultivation can effectively control Dalmatian toadflax. A successful approach includes at least a two year effort, with eight to ten cultivations in the first year and four to five cultivations in the second year (Morishita 1991; Butler and Burrill 1994). Cultivation should begin in early June and be repeated so that there are never more than seven to ten days with green growth visible (Butler and Burrill 1994). Since Dalmatian toadflax seedlings do not compete well for soil moisture against established winter annuals and perennials, control efforts should include attempting to establish and manage desirable species that will compete with toadflax (Morishita 1991; Butler and Burrill 1994).

Herbicide can be an effective tool for control and applicators should refer to the PNW Weed Management Handbook, or other reputable resources, for product recommendations and timing.

Calophasia lunula, a defoliating moth, is well established in Washington and reportedly provides good control (William et al. 1996) and *Mecinus janthinus,* a recently introduced stem-boring weevil, shows promise. *Brachypterolus pulicarius,* although usually associated with yellow toadflax, can survive and may reduce seed production of Dalmatian toadflax.

CURRENT DISTRIBUTION ON THE SITE
Oak Creek Wildlife Area. Found along the Naches and Tieton River riparian corridors and in uplands along the north side of State Route 410.

ACRES AFFECTED BY WEED: est. 2500 **WEED DENSITY**: Low

GOALS
Control existing populations
Prevent new occurrences

OBJECTIVES
Survey and map existing populations
More accurately calculate the acres affected by Dalmatian toadflax
Treat all plants before they produce seed
Survey nearby areas for pioneering infestations

ACTIONS PLANNED
In 2006 infestations will be spot treated and hand pulled incidental to other control efforts.

CONTROL SUMMARY AND TREND
2005 – Incidental control performed by hand pulling.

DIFFUSE KNAPWEED CONTROL PLAN

Scientific name: *Centaurea diffusa* **Common name:** Diffuse knapweed
Updated: 2006

DESCRIPTION: Diffuse knapweed is a diffusely branched biennial or short-lived perennial herb, 1 to 2 feet tall. It is a native from southern Europe to north-central Ukraine. This species reproduces only by seed. Diffuse knapweed plants first form low rosettes and may remain in this form for several years depending on environmental conditions. Rosettes over-winter and bolt in early spring. Floral buds are formed in early June, flowering occurs in July and August, and mature seeds are formed by mid-August. Flowers are generally white. A single diffuse knapweed plant can produce up to 18,000 seeds. Seed dispersal is mainly by wind. When the seed capsule sways in the breeze or is disturbed, the seeds fall from the small opening in the top of the flower head and are distributed around the parent plant. However, most involucres remain closed until the plant dries up, breaks off at ground level and effectively becomes a tumbleweed, dispersing seeds over long distances. The stalks readily lodge under vehicles, expanding their dispersal.

Diffuse knapweed is a pioneer species that can quickly invade disturbed and undisturbed grassland, shrub land, and riparian communities. It is generally found on light, dry, porous soils. Once established, it out competes and reduces the quality of desirable native species. Diffuse knapweed contains allelopathic chemicals, which can suppress competitive plant growth and create single species stands. Diffuse knapweed stands can range in density from 1-500 plants/m2. The replacement of native grasslands with knapweed can reduce biological activity and increase soil erosion.

Diffuse knapweed is a state-listed class B weed. In Yakima County it has spread rapidly and now infests roadsides, waste areas, disturbed sites, lots, pastures, forests and rangelands.

MANAGEMENT INFORMATION:
Diffuse knapweed is best controlled by a combination of chemical, mechanical and biological methods. Herbicides such as Tordon (picloram), Transline (clopyralid), Curtail (clopyralid + 2,4-D) or Banvel (dicamba) can control diffuse knapweed. A single application of Tordon may control knapweed for two to three years, but the weeds will reinvade the area unless other management techniques are used.

Hand pulling and mowing can reduce knapweed densities, but must be repeated for several years to prevent seed production and deplete the soil seed bank. Much progress has also been made in biological control of diffuse knapweed, with several insects now available that can dramatically reduce knapweed infestations. Seeding competitive, desirable native plants after control of knapweed is required to prevent reinvasion.

CURRENT DISTRIBTUTION ON THE SITE
Encompasses all of the Oak Creek Wildlife Area from 1000’ to 5000’ in elevation. It is found most commonly along roadsides, in and around agricultural fields, and in degraded rangelands on the Wildlife Area.

ACRES AFFECTED BY WEED: 10,000 **WEED DENSITY:** Low-Medium

GOALS
Decrease occurrence of diffuse knapweed on the Wildlife Area.
Increase quality of infested plant communities.

OBJECTIVES
Survey and map existing populations.
More accurately calculate the acres affected by diffuse knapweed.
Reduce knapweed densities by chemical, cultural and biological methods.
Rehabilitate degraded areas with competitive native plants.

ACTIONS PLANNED
Continue spring chemical applications on local infestations where feasible, in rangelands, winter feed sites, or along roadsides and parking areas. Coordinate with YCNWB on fall chemical application of WA roadsides and parking / camping areas.

CONTROL SUMMARY AND TREND
Diffuse knapweed control has reduced weed infestations and occurrence across the Wildlife Area. Roadsides have been consistently treated by YCNWB since 1996 to stop seed production and spread by vehicles.

SCOTCH THISTLE CONTROL PLAN

Scientific name: *Onopordium acanthium* **Common name:** Scotch Thistle
Updated: 2006

DESCRIPTION: Scotch thistle is an erect, biennial, and some times annual weed that grows up to 12 feet tall. Its large, coarsely lobed, hairy leaves have a velvety-gray appearance and are lined with sharp, conspicuous spines. The stems are branching, with spiny leaf wings extending down the stems from the leaves. Scotch thistle has purple to violet flowers and a large, fleshy taproot.

Scotch thistle is a biennial that produces a large, ground level rosette the first year and a tall, spiny plant the second. It reproduces only by seed, with one plant producing 70-100 flowering heads containing 100-140 seeds per seed head. Seeds may remain viable in the soil for over 30 years. Plumed seeds are dispersed by wind and by attaching to clothing and animal fur. Seeds may also be transported in hay and machinery, or be carried by wind and water.

Scotch thistle grows in sunny areas where soils have been disturbed and competition from other plants has been reduced. It is often found along roadsides, irrigation ditches, waste areas, and on rangelands. It is especially fond of areas that are adjacent to riparian or sub-irrigated deeper soils along stream courses, lower alluvial slopes and bottomlands. Once scotch thistle becomes established and forms a defined colony, it spreads by dominating other plants. Its large size and quick growth takes light, nutrient and water from other plants, while its rigid growth and spines protect the plant from grazing and trampling. Scotch thistle also contains a germination inhibiter that allows only a portion of its seeds to germinate each year while stopping other plant seeds from sprouting.

Scotch thistle is a state-listed class B noxious weed in Yakima County. It is a high priority for control.

MANAGEMENT INFORMATION:
Scotch thistle is best controlled in the rosette stage. Its taproot can easily be severed with a shovel 1-2 inches below the ground. Control can be enhanced by a follow-up application of herbicides to surviving rosettes. An integrated approach to scotch thistle management involves: 1) managing grazing to increase grass vigor and reduce ground disturbance; 2) spray rosettes with Tordon (picloram), Curtail (clopyralid), Escort (metsulfuron) or Weedmaster (2,4-D + dicamba); 3) follow-up with spot cutting of entire plants when the first flowers appear annually for several years to deplete the seed bank in the soil.

CURRENT DISTRIBTUTION ON THE SITE
Scotch thistle historically has been widespread on the Cowiche unit of the WA, and is still common across the county, especially in areas where rangeland has been degraded by livestock overgrazing. Scattered patches are also found around the Oak Creek WA headquarters and along Highway 12. One location was recently found (2005) in the Little Rattlesnake drainage in forested habitat. This site was chemically treated in the fall with Tordon and will be closely monitoredof eradicated.

ACRES AFFECTED BY WEED: Less than 50 **WEED DENSITY:** Low

GOALS
Keep the Oak Creek Wildlife Area free of scotch thistle.
Reduce spread of Scotch thistle from adjacent lands.

OBJECTIVE
Survey and map any existing scotch thistle populations.
More accurately calculate the acres affected by scotch thistle.
Control scotch thistle by using an integrated weed management approach coordinated with adjacent landowners and the YCNWB.
Rehabilitate any degraded areas with competitive native plants.

ACTIONS PLANNED
An aggressive, active spring control program has been undertaken for over twenty years for Scotch thistle on the Oak Creek WA, using chemical, mechanical, and hand-pulling methods. An application of Tordon and 2,4-D is applied in the spring to locations where infestations are still dominant, with the remaining sites checked by ground crews and hand-pulled. In 2006, weed surveys will continue and any plants found will be eradicated.

CONTROL SUMMARY AND TREND
1990: estimate 500 acres sprayed with 2,4-D
1995: estimate 200 acres sprayed with 2,4-D
2002: 4300 acres surveyed, 80 acres treated, 25 acres hand pulled
2003: 4300 acres surveyed, 50 acres treated, 20 acres hand pulled
2004: 4500 acres surveyed, 50 acres treated, 10 acres hand pulled
2005: 4500 acres surveyed, 30 acres treated, 10 acres hand pulled

SPOTTED KNAPWEED CONTROL PLAN

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

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

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

Spotted knapweed is a state-listed class B weed. It has spread through many areas of Yakima County.

MANAGEMENT INFORMATION:
Spotted knapweed can be managed similarly to diffuse knapweed. It is readily controlled with herbicides such as Tordon, Transline, Banvel or Clarity. One pint/A. of Tordon will control spotted knapweed for two to three years, but the weed will reinvade the area unless other management techniques are used. As with diffuse knapweed, seeding competitive, desirable native plant species after control of spotted knapweed is required to prevent reinvasion.

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

CURRENT DISTRIBTUTION ON THE SITE
Across the Wildlife Area, but infestations are not as severe as diffuse knapweed. Found in higher precipitation, higher elevation sites.

ACRES AFFECTED BY WEED: 200 **WEED DENSITY:** Low.

GOALS
Decrease occurrence of spotted knapweed on the Wildlife Area.
Increase quality of infested plant communities.

OBJECTIVES
Survey and map existing spotted knapweed populations.
More accurately calculate the acres affected by spotted knapweed.
Reduce spotted knapweed densities by chemical, mechanical and biological methods.
Rehabilitate degraded areas with competitive native plants.

ACTIONS PLANNED
Continue chemical applications on local infestations where feasible.

CONTROL SUMMARY AND TREND
2004: Control spotted knapweed incidental to diffuse knapweed control program.
2005: Control spotted knapweed incidental to diffuse knapweed control program.

Spotted knapweed control has reduced weed infestations and occurrence across the Wildlife Area. Roadsides have been consistently treated to stop seed production and spread by vehicles.

YELLOW STAR-THISTLE CONTROL PLAN

Scientific name: Centaurea solstitalus **Common name:** Yellow Star-thistle
Updated: 2006

DESCRIPTION: Yellow star-thistle is a gray-green to blue-green, winter annual plant with a vigorous taproot. It produces bright, dandelion like yellow flowers with sharp spines surrounding the base. The stems are rigid, branching, covered with a cottony fiber, and vary from 6 inches to 3 feet. Basal leaves are 2 to 3 inches long and deeply lobed. The upper leaves are not lobed and are small and sharply pointed.

Yellow star-thistle seeds germinate in the fall through spring, depending on moisture. Seed output can be as high as 29,000 seeds per square meter, with about 95 percent of the seed being viable. Most seed germinate the following year, but some can last 10 years or more in the soil. After germination, the plant initially allocates most of its resources to root growth. By late spring, roots can extend 3 feet or deeper into the soil profile although the portion above ground is a relatively small basal rosette. This allows yellow star-thistle to out compete shallow rooted annual species during the drier summer months. This also allows it to survive well into the summer long after other annual species have dried up. Yellow star-thistle bolts in late spring and flowers June through August.

Yellow star-thistle invades rangelands, pastures, roadsides, croplands and wastelands. It is intolerant of shade and requires light on the soil surface for winter growth and taproot development. Yellow star-thistle is capable of establishing on deep, well drained soils as well as shallow, rocky soils that receive from 10 to 40 inches of annual precipitation. In the Pacific Northwest, yellow-star thistle favors sites that were formally dominated by big sagebrush, bluebunch wheatgrass, Idaho fescue and sand berg bluegrass.

Yellow star-thistle causes a neurological disease (nigropallidal encephalomalacia) in horses that eat it.

MANAGEMENT INFORMATION

Yellow star-thistle is readily controlled with herbicides such as Tordon, Transline, Banvel or Clarity. One pint/A. of Tordon will control yellow star-thistle for two to three years, but the weed will reinvade the area unless other management techniques are used. As with diffuse knapweed, seeding competitive, desirable native plant species after control of yellow star-thistle is required to prevent re-invasion.

Hand pulling and mowing can reduce weed densities but is labor intensive and not suited to large infestations. Seed production must be prevented for many years to prevent reestablishment.

CURRENT DISTRIBTUTION ON THE SITE

Yellow star-thistle is found in one known location on the Cowiche unit of the WA adjacent to the county road. Another location was identified near Mud Lake, but was eradicated in 2004 and continues to be monitored.

ACRES AFFECTED BY WEED: 2.0 **WEED DENSITY:** Low

GOALS
Eliminate presence of yellow star-thistle on the Oak Creek Wildlife Area.

OBJECTIVE
Survey and map existing Yellow Star-thistle populations.
Eradicate densities by using an integrated weed management approach.
Rehabilitate degraded areas with competitive native plants.

ACTIONS PLANNED
Continue chemical applications on local infestation(s) where feasible. Continue to survey WA to identify any new infestations.

CONTROL SUMMARY AND TREND
2005: Treat 1.0 acre, survey one additional location for re-invasion.

MUSK THISTLE CONTROL PLAN

Scientific name: *Carduus nutans* **Common name:** Musk Thistle
Updated: 2006

DESCRIPTION: Musk thistle is an erect, freely branching biennial weed native to Europe and Asia. It is a deep, tap-rooted plant that grows up to 8 feet tall. The waxy leaves are dark green with a green midrib and mostly white margins. The large flowers are terminal, flat, nodding, purple, sometimes white and surrounded by numerous lance-shaped, spine-tipped bracts. Seedlings usually emerge early in spring, develop into rosettes and spend the first season in this growth stage. Seedling emergence can also occur in the fall. Early in the spring of the second year, over-wintered rosettes resume growth. Shoots bolt in late March through May. Musk thistle flowers and begins to produce seed 45 to 55 days after it bolts. Musk thistle is a prolific seed producer. One plant can produce up to 20,000 seeds, although only one-third of the seeds are viable. Seeds appear to remain viable for at least 10 years.

Musk thistle is a highly competitive weed, which invades disturbed areas, pastures, rangeland, forestland, cropland and waste areas. It does not appear to have any specific climatic requirements other than a cool period of vernalization for flowering. Musk thistle establishes best on bare soil, and small shallow cracks are ideal for seedling establishment. It grows in all soils, but soils must be well-drained. Musk thistle spreads rapidly and forms extensive stands, which force out desirable vegetation. Musk thistle may produce allelopathic chemicals that inhibit desirable plants.

Musk thistle reproduces by seed only. Wind and water are good dissemination methods and seeds are also spread by animals, machinery and vehicles.

Musk thistle is a state-listed class B noxious weed in Yakima County

MANAGEMENT INFORMATION
The best control of musk thistle results from an integrated management approach. Maintaining forest, pasture and rangeland in good condition is a primary factor for musk thistle management. To favor competitive grass growth, do not overgraze. Musk thistle can easily be removed by severing its root below the ground with a shovel or hoe. Mowing can effectively reduce seed output if plants are cut when the terminal head is in the late-flowering stage. Gather and burn mowed debris to destroy any seed that has developed.

Several herbicides are effective on musk thistle, including Tordon (picloram), Curtail (clopyralid+2,4-D), and Banvel (dicamba). Apply these herbicides in spring or fall to musk thistle rosettes. The use of a good surfactant will enhance penetration. Due to the long seed viability of musk thistle, control methods may have to be repeated for many years to completely eliminate a stand.

Several seed head weevils (*Rhinocyllus and Trichosirocalus spp.)* may be available and can reduce seed production significantly.

CURRENT DISTRIBTUTION ON THE SITE
Musk thistle is found in one location on the WA on Cowpuncher Ridge in the Rattlesnake drainage. It established alongside a logging road the year following a completed timber harvest, most likely carried in on grading equipment. The site is monitored closely and has been found aggressively spreading downslope from the original location.

ACRES AFFECTED BY WEED: 0.5 **WEED DENSITY:** Moderate

GOALS
Eliminate presence of musk thistle on the Oak Creek Wildlife Area.

OBJECTIVE
Survey and map existing Musk Thistle populations.
Eradicate densities by using an integrated weed management approach.
Rehabilitate degraded areas with competitive native plants.

ACTIONS PLANNED
Continue chemical applications on local infestation, eliminating any possibility of seed production. Continue to survey WA to identify any new infestations.

CONTROL SUMMARY AND TREND
2003: Treat 0.1 acre, survey for re-invasion and seed production, and monitor WA for new infestations.
2004: Treat 0.3 acre, survey for re-invasion and seed production, and monitor WA for new infestations.
2005: Treat 0.3 acre, survey for re-invasion and seed production, and monitor WA for new infestations.

PUNCTUREVINE CONTROL PROGRAM

Scientific name: *Tribulus terrestris* **Common name: Puncturevine/Goathead**
Updated: 2006

DESCRIPTION: Puncturevine was introduced from southern Europe and is now widely scattered over much of the U.S. It grows in pastures, cultivated fields, waste areas, and along highways and roads. The hard spiny burs damage wool, are undesirable in hay, and may be injurous to livestock and humans. Bicycle tires are frequently punctured by the burs. The seed will remain dormant in the soil for 4 to 5 years, which makes eradication difficult. Because of its sharp burs, puncturevine has been spread over a wide area by animals and vehicles. Flowering and seed production occur from July to October.

Puncturevine is annual, prostrate or somewhat ascending, mat forming, with trailing stems, each ½ to 5 feet long. Leaves opposite, hairy, divided into 4 to 8 pairs of leaflets, each about ¼ top ½ inch long and oval. Flowers are yellow, 1/3 to ½ inch wide with 5 petals, borne in the leaf axils. Fruits consist of 5 sections, which at maturity, break into tack-like structures with sharp, sometimes curving spines, each section 2- to 4-seeded.

MANAGEMENT INFORMATION
Puncturevine is readily controlled with broadleaf herbicides such as Tordon, Transline, Banvel or Weedar 64. The recommended mixes for these broadleaf herbicides will control puncturevine for two to three years, but the weed will reinvade the area unless other management techniques are used. As with diffuse knapweed, seeding competitive, desirable native plant species after control of Puncturevine is required to prevent re-invasion.

Hand pulling, severing of the taproot, and mowing can reduce weed densities, but is labor intensive and not suited to large infestations. Seed production must be prevented for many years to prevent reestablishment.

CURRENT DISTRIBTUTION ON THE SITE
Puncturevine found on the WA has normally been associated with gravel surfaces and vehicle use areas such as the headquarters parking areas, along county road shoulders, and along the edges of the WA Green Dot road system. This weed is very aggressive and can be spread rapidly if allowed to produce mature seed and then driven over by vehicles. The largest infestation is along the south shoulder of the Cowiche Mill Road at the east edge of the Cowiche unit and along the left entrance drive at the Oak Creek headquarters.

ACRES AFFECTED BY WEED: Incidental **WEED DENSITY:** Very low

GOALS
Eliminate presence of puncturevine on the Oak Creek Wildlife Area.

OBJECTIVE
Survey and map existing puncturevine populations and locations.
Eradicate densities by using an integrated weed management approach, and individual plants by careful removal of seed sources.

Eliminate viable seedbank in infested locations.

ACTIONS PLANNED
Continue chemical applications, mechanical applications and hand pulling on local infestation(s) where feasible. Continue to survey WA to identify any new infestations.

CONTROL SUMMARY AND TREND
2005: 0.1 acre (roadside/parking areas)

JAPANESE KNOTWEED CONTROL PLAN

Scientific name: *Polygonum cuspidatum* **Common name: Japanese Knotweed**
Updated: 2006

DESCRIPTION: A perennial from long creeping rhizomes. Stems are stout, reddish-brown, 4 to 9 feet tall, woody, but die back at the end of growing season. The nodes are slightly swollen and surrounded by thin papery sheaths. The flowers are greenish white to cream, borne in large plume-like clusters at ends of stems and in leaf axils. The fruit is 3-sided, black and shiny. Also known as Japanese bamboo because of its hollow jointed stems.

Introduced from Asia as an ornamental, but has persisted and become invasive in natural ecosystems. It has moved into riparian communities in the west and often forms monocultural stands, and is found along roadsides, ditch banks, stream banks, waste areas, and pastures.

Japanese Knot weed is a State-listed class B noxious weed in Yakima County

MANAGEMENT INFORMATION
Control of this noxious weed is extremely difficult, due to the extensive rhizomatous growth put out by the plant, especially if growing adjacent to moisture. YCNWB has completed treatment on all four sites identified on or adjacent to the WA, and advises will continue to do so.

CURRENT DISTRIBTUTION ON THE SITE
Japanese Knotweed is found in four known locations on the Cowiche unit of the Wildlife Area adjacent to the South Fork Cowiche Creek. Two locations are on private property adjacent to the WA.

ACRES AFFECTED BY WEED: 0.25 **WEED DENSITY:** High

GOALS
In close cooperation with YCNWB, eliminate presence of Japanese Knotweed on the Oak Creek Wildlife Area.

OBJECTIVE
Survey and map existing Japanese Knotweed populations.
Eradicate densities by using an integrated weed management approach.
Rehabilitate degraded areas with competitive native plants.

ACTIONS PLANNED
Continue chemical applications on local infestation(s) where feasible. Continue to survey WA to identify any new infestations.

CONTROL SUMMARY AND TREND
Advise YCNWB of any infestations on WA, and undertake control measures as directed.

2006
YAKIMA COUNTY NOXIOUS WEED LIST AND CONTROL POLICY

The YAKIMA COUNTY NOXIOUS WEED BOARD (here in after referred to as the BOARD) shall promote weed control by personal contact with LANDOWNERS and through public media. The BOARD will also promote weed control through public seminars, hearings, demonstrations, field tours, school lectures, and at regularly scheduled board meetings. LANDOWNERS are responsible for the control of noxious weeds on their property as per RCW 17.10.140 prior to blooming stage, seed maturity and the development of a root system that would enable said weeds to propagate and spread.

The BOARD shall encourage landowners to control noxious weeds on their own property through their own means, or by means commercially available. Control is defined as stopping all seed production, and containing the noxious weeds to the current infested locations. The Weed Board Coordinator and Inspectors will assist landowners in locating and identifying noxious weeds and encourage the landowner to report to the BOARD other noxious weed infestations. The BOARD, or AUTHORIZED STAFF, has the authority to enter all property within the jurisdiction of this BOARD for the purpose of administering the weed laws of the State of Washington under R.C.W. Chapter 17.10.160.

If the property owner does not promptly take action to control the noxious weeds in accordance with R.C.W. 17.10 and this policy, the YAKIMA COUNTY NOXIOUS WEED BOARD may cause their being controlled at the expense of the landowner as per R.C.W. 17.10.170. Charges for regulatory work shall be incurred by the landowner on the basis of the cost, including labor and materials and, if necessary, legal and administrative fees. Such expenses when necessary shall constitute a lien against the property after a hearing and determination has been made on such expense and approved by the BOARD.

The W.A.C. Chapter 16.750 constitutes the Washington State Noxious Weed List, which is classified as “A”, “B”, and “C” weeds. The following shall constitute Yakima County’s Noxious Weed List and control is required within Yakima County:

All Class “A” Weeds,
Class “B” Weeds, (All designated, some listed)
Yellow Starthistle-*Centaurea solstitialis*
Tansy ragwort-*Senccio jacobaea*
Scotch thistle-*Onoprodum acanthiun*
Meadow knapweed-*Centaurea pratensis*
Yellow nutsedge-*Cyperus esculentus*
Purple loosestrife-*Lythrum salicaria*

Educational Weed List
Knapweed species-All known species
Canada thistle-*Cirsium arvense*
Perennial pepperweed-*Lepidium latifolium*

The Yakima County Noxious Weed Board will conduct regularly scheduled meetings and will encourage public attendance and participation.

Resolution: #55 The following requirements will be the policy for placing a weed on the County’s Noxious Weed List:

A. The Weed Board shall announce the noxious weed list within the guidelines set forth in R.C.W. 17.10.090.

B. The order in which a weed be submitted to the Board for consideration to be placed on the noxious weed list, the following information must be submitted to the Noxious Weed Board.

1. Location of weed, with an estimation of acreage.
2. Verification that adjacent property owners have been notified on the intent to have the weed placed on the Noxious Weed List.
3. Characteristics of the weed in consideration.

C. The Weed Board has the right to place the weed in question on a review and study list for a set period of time not to exceed one year and, at that time, make a policy statement on the weed in question.

RESOLUTION #118

YAKIMA COUNTY NOXIOUS WEED LIST FOR 2006

In accordance with R.C.W. 17.10 a County Noxious Weed List comprising the names of the following plants, which have been declared noxious by the State of Washington Noxious Weed Board, and Yakima County Weed Control Board. Said Board find these plants to be weedy; highly destructive, competitive, or difficult to control by cultural or chemical practices. Said weeds shall comprise the NOXIOUS WEED LIST for Yakima County for 2006 or until another list is adopted by this Board.

Yakima County lies in Regions 6 and 9.

State and Yakima County Noxious Weed List

ALL CLASS "A" NOXIOUS WEEDS. (Mandatory Control)
(** Known to be in Yakima County)

COMMON NAME:	SCIENTIFIC NAME:	COMMON NAME:	SCIENTIFIC NAME:
bean-caper, Syrian	*Zygophyllum fabago*	knapweed, Vochin	*Centaurea nigrescens*
blueweed, Texas**	*Helianthus ciliaris*	kudzu	*Pueraria Montana* var. *lobata*
broom, Spanish	*Spartium junceum*	lawnweed	*Soliva sessilis*
buffalobur **	*Solanum rostratum*	mustard, garlic	*Alliaria petiolata*
clary, meadow	*Salvia pratensis*	nightshade, silverleaf	*Solanum elaeagnifolium*
cordgrass, denseflower	*Spartina densiflora*	primrose-willow, floating	***Ludwigia peploides***
cordgrass, salt meadow	*Spartina patens*	sage, clary	*Salvia sclarea*
crupina, common	*Crupina vulgaris*	sage, Mediterranean	*Salvia aethiopis*
flax, spurge	*Thymelaea passerina*	spurge, eggleaf	*Euphorbia oblongata*
four o'clock, wild	*Mirabilis nyctaginea*	starthistle, purple	*Centaurea calcitrapa*
goatsrue	*Galega officinalis*	sweetgrass, reed	***Glyceria maxima***
hawkweed, yellow devil	*Hieracium floribundum*	thistle, Italian	*Carduus pycnocephalus*
hogweed, giant	*Heracleum mantegazzianum*	thistle, milk	*Silybum marianum*
hydrilla	*Hydrilla verticillata*	thistle, slenderflower	*Carduus tenuiflorus*
johnsongrass **	*Sorghum halepense*	velvetleaf **	*Abutilon theophrasti*
knapweed, bighead	*Centaurea macrocephala*	woad, dyers	*Isatis tinctoria*

CLASS "B" NOXIOUS WEEDS (**Known to be in Yakima County)
(bd classifications require mandatory control) Note: bd - Class B designate

COMMON NAME:	SCIENTIFIC NAME:
arrowhead, grass-leaved bd	*Sagittaria graminea*
alyssum, hoary bd	*Berteroa incana*
blackgrass bd	*Alopecurus myosuroides*
blueweed bd	*Echium vulgare*
COMMON NAME:	SCIENTIFIC NAME:
broom, Scotch bd**	*Cytisus scoparius*
bryony, white bd	*Bryonia alba*
bugloss, annual bd	*Anchusa arvensis*
bugloss, common bd	*Anchusa officinalis*
camelthorn bd	*Alhagi maurorum*
carrot, wild bd**	*Daucus carota*
catsear, common bd **	*Hypocharis radicata*
chervil, wild bd	*Anthriscus sylvestris*
cinquefoil, sulfur bd	*Potentilla recta*
cordgrass, common bd	*Spartina alterniflora*
cordgrass, smooth bd	*Spartina anglica*
daisy, oxeye bd**	*Leucanthemum vulgare*
elodea, Brazilian bd	*Egeria densa*
fanwort bd	*Cabomba caroliniana*
fieldcress, Austrian bd	*Rorippa austriaca*
floating heart, yellow bd	*Nymphoides peltata*
gorse bd	*Ulex europaeus*
hawkweed, mouseear bd	*Hieracium pilosella*
hawkweed, orange bd	*Hieracium aurantiacum*
hawkweed, polar bd	*Hieracium atratu*
hawkweed,Queen-devil bd	*Hieracium glomeratum*
hawkweed, smooth bd	*Hieracium laevigatum*
hawkweed, yellow bd	*Hieracium caespitosum*
hedgeparsley bd	*Torilis arvensis*
helmet, policeman's bd	*Impatiens glandulifera*
herb-Robert bd	*Geranium robertianum*
houndstongue**	*Cynoglossum officinale*
indigobush bd	*Amorpha fruticosa*
knapweed, black bd	*Centaurea nigra*
knapweed, brown bd	*Centaurea jacea*
knapweed, diffuse **	*Centaurea diffusa*
knapweed, meadow bd**	*Centaurea jacea x nigra*
knapweed, Russian **	*Acroptilon repens*
knapweed, spotted bd**	*Centaurea biebersteinii*
knotweed, Bohemian	*Polygonum bohemicum*
knotweed, giant	*Polygonum sachalinense*
knotweed, Himalayan	***Polygonum polystachyum***
knotweed, Japanese	***** ***Polygonum cuspidatum***
kochia**	*Kochia scoparia*
lepyrodiclis bd	*Lepyrodiclis holosteoides*
loosestrife, garden bd	*Lu\ysimachia vulgaris*
loosestrife, purple bd**	*Lythrum salicaria*
loosestrife, wand bd	*Lythrum virgatum*
nutsedge, yellow **	*Cyperus esculentus*
oxtonge, hawkweed bd	*Picris hieracioides*
parrotfeather bd**	*Myriophyllum aquaticum*
pepperweed, perennial **	*Lepidium latifolium*
primrose, water	*Ludwigia hexapetala*
puncturevine**	*Tribulus terrestris*
ragwort, tansy bd**	*Senecio jacobaea*
saltcedar bd	*Tamariz ramosissima*
sandbur, longspine	*Cenchrus longispinus*
skeletonweed, rush bd**	*Chondrilla juncea*
sowthistle, perennial bd**	*Sonchus arvensis*
spurge, leafy bd**	*Euphorbia esula*
spurge, Myrtle**	*Euphorbia myrsinites*
starthistle, yellow bd**	*Centaurea solstitialis*
swainsonpea**	*Sphaerophysa salsula*
thistle, musk bd**	*Carduus nutans*
thistle, plumeless bd	*Carduus acanthoides*
thistle, Scotch bd**	*Onopordum acanthoides*
toadflax, Dalmatian**	*Linaria dalmatica*
watermilfoil,Eurasian bd**	*Myriophyllum spicat*

Class "C" Noxious Weeds

COMMON NAME:	SCIENTIFIC NAME:	COMMON NAME:	SCIENTIFIC NAME:
babysbreath	*Gypsophila paniculata*	mayweed, scentless	*Matricaria perforata*
bindweed, field	*Convolvulus arvensis*	old man's beard	*Clematis vitalba*
butterfly bush	*Buddleja davidii*	pondweed, curly-leaf	*Potamogeton crispus*
canarygrass, reed	*Phalaris arundinacea*	poison-hemlock	*Conium maculatum*
cockle, white	*Silene latofolia*	reed, common	*Phragmities australis*
coclebur, spiny	*Xanthium spinosum*	rye, cereal	*Secale cereale*
cress, hoary	*Cardaria draba*	spikeweed	*Hemizonia pungens*
dodder,smoothseed alfalfa	*Cuscuta approximata*	St. Johnswort, common	*Hypericum perforatum*
goatgrass, jointed	*Aegilops cylindrica*	tansy, common	*Tanacetum vulgare*
groundsel, common	*Senecio vulgaris*	thistle, bull	*Cirsium vulgare*
hawkweed, spp*	non-native *Hieracium*	thistle, Canada	*Cirsium arvense*
henbane, black	*Hyoscyamus niger*	toadflax, yellow	*Linaria vulgaris*
iris, yellow flag	*Iris pseudocorus*	water lily, fragrant	*Nymphaea odorata*
ivy, English	*Herdera Hibernica*	whitetop, hairy	*Cardaria pubescens*
ivy, English	*Hedera helix, Baltica*	willowherb, hairy	*Epilobium hirsutum*
ivy, English	*Hedera helix, Pittsburgh*	wormwood, absinth	*Artemisia absinthium*
ivy, English	*Hedera helix, Star*		

APPENDIX 3: FIRE MANAGEMENT PLAN

Fire Control Plan Template

Responsible Fire-Suppression Entities: The Oak Creek Wildlife Area, with the exception of the Cowiche sub-unit, lies within the State Fire Protection Boundary under the jurisdiction of the Washington State Department of Natural Resources (DNR). The Cowiche unit lies within Yakima County Local Fire District # 1 (LFD-Tieton).

Fires that occur within the LFD's (non-timbered areas of the wildlife area) are the responsibility of the LFD's and fires that occur within the state fire protection boundary are the responsibility of the DNR. Therefore, depending upon where the fire occurs, the appropriate entity must be contacted first, followed by an immediate call to other jurisdictions adjacent to the fire. In some cases, where there are multiple landowners or fire responders, fire suppression activities may involve two or more fire fighting entities. Most responders have Mutual Aid Agreements and coordinated dispatch, so jurisdictional networking is quite effective.

WDFW pays an annual fee to Yakima County LFD #3 (Naches) to respond outside their district boundary to provide fire protection services for the Oak Creek headquarters complex on Highway 12. This fee is in addition to Payment In Lieu of Taxes (PILT) paid to the county and is based on the assessed value of the Wildlife Area within their district. Suppression on WDFW forestlands within the State Fire Protection Boundary is performed by DNR. WDFW pays an assessment fee for each acre within the fire protection boundary for these services.

Department Fire Management Policy: It is the Departments policy that wildlife area staffs are not firefighters and should not fight fires. Wildlife Area staff are trained in fire fighting and fire behavior, however, staff will only provide logistical support and information regarding critical habitat values to the Incident Commander of the responding fire entity. To improve fire-fighting coordination and personnel safety during wildfires on the WA, the Oak Creek manager and assistant manager have undertaken "Red Card" certification and maintain this level of training annually. Oak Creek staff will maintain equipment (slip-in vehicle pumper units) during fire season that will enable them to provide limited initial attack actions on small fires on the WA.

Wildlife Habitat Concerns: The Oak Creek Wildlife Area contains fire sensitive habitat such as riparian corridors, upper canyon springs and seeps, and mature sagebrush that provide high value wildlife habitat. In addition, many miles of costly infrastructure (elk fence) is found on the wildlife area. Deciduous trees and shrubs provide critical winter and spring fawning / calving habitat within shrub steppe communities. WDFW requests that the Incident Commander or other fire fighting personnel on site notify WDFW personnel immediately in the order listed in Table 5 below. A WDFW Advisor will provide information to the Incident Commander regarding habitat concerns.

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

Reporting: Report any fire on or adjacent to all units of the Oak Creek Wildlife Area by contacting the Central Washington Interagency Communication Center (CWICC) dispatch in Wenatchee (See contact numbers below). It is absolutely critical that any fire on the Wildlife Area is attacked as aggressively as possible during the initial attack. The importance of aerial support cannot be overstated.

Table 4. Fire Contacts

Fire Districts – DIAL 911

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

NAME	TELEPHONE
DNR Dispatch (CWICC)	800-826-3383 509-884-3473

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

Contact	**Radio Number**[1]	**Contact Number**	
John McGowan, Wildlife Area Manager	Wildlife 278	509-653-2390	Work #
		509-653-1206	Home #
		509-952-0246	Cell #
Bruce Berry, Assistant WA Manager	Wildlife 461	509-961-0566	Cell #
		509-678-5957	Home #
		509-653-2390	Work #
Regional Office – Yakima		509-575-2470	
Regional Program Mgr. – Ted Clausing		509-457-9313	Work #
		509-952-8990	Cell #

APPENDIX 4: WATER RIGHTS

Table 5: Water Rights - Part 1

Oak Creek Water Rights								
Location	**File #**	**Cert #**	**Person**	**Stat**	**Doc**	**Priority Dt**	**Purpose**	**Qi**
Oak Cr WA*	G4-048142CL		WN ST DEPT GAME	A	Claim S		DG	
Oak Cr WA*	G4-048145CL		WN ST DEPT GAME	A	Claim S		DG	
Oak Cr WA*	G4-099385CL		DEPT OF GAME	A	Claim L		DG	
Oak Cr WA*	S4-048144CL		WN ST DEPT GAME	A	Claim S		ST	
Oak Cr WA*	S4-099390CL		DEPT OF GAME	A	Claim L		IR	
Oak Cr WA*	S4-048143CL		WN ST DEPT GAME	A	Claim S		DG	
Oak Cr WA*	S4-098530CL		DEPT OF GAME	A	Claim L		IR	
Oak Cr WA*	S4-099387CL		DEPT OF GAME	A	Claim L		IR	
Oak Cr WA*	S4-099388CL		DEPT OF GAME	A	Claim L		IR	
Oak Cr WA*	G4-048141CL		WN ST DEPT GAME	A	Claim S		DG	
Oak Cr WA*	S4-099386CL		DEPT OF GAME	A	Claim L		IR	
Oak Cr WA*	S4-099389CL		DEPT OF GAME	A	Claim L		IR	
Oak Cr WA*	S4-099339CL		DEPT OF GAME	A	Claim L		No ID	
Oak Cr WA*	S4-099343CL		DEPT OF GAME	A	Claim L		No ID	
Oak Cr WA*	S4-099344CL		DEPT OF GAME	A	Claim L		No ID	
Oak Cr WA*	S4-099346CL		DEPT OF GAME	A	Claim L		IR	
Oak Cr WA*	S4-099342CL		DEPT OF GAME	A	Claim L		No ID	
Oak Cr WA*	S4-099348CL		DEPT OF GAME	A	Claim L		IR	
Oak Cr WA*	S4-099337CL		DEPT OF GAME	A	Claim L		No ID	
Oak Cr WA*	S4-099345CL		DEPT OF GAME	A	Claim L		No ID	
Oak Cr WA*	S4-099338CL		DEPT OF GAME	A	Claim L		No ID	
Oak Cr WA*	S4-099350CL		DEPT OF GAME	A	Claim L		No ID	
Oak Cr WA*	S4-099340CL		DEPT OF GAME	A	Claim L		No ID	
Naches R*	S4-31965		WDFW and US Bureau Reclamation	A	NewApp	4/8/94	FR	9.1
Oak Cr WA*	CS4-CTCL2109		WA DFW	A	Chng/ROE	6/13/96	IR	
Oak Cr WA*	CS4-CTCL2109@1		WA DFW	A	Chng/ROE	6/13/96	IR	
Nile Springs*	S4-*16379CWRIS	8692	WA DFW	A	Cert	10/7/60	FS,DM	10

Table 5: Water Rights (continuation of Part 1)

Oak Creek Water Rights								
Location	**File #**	**UOM**	**WRIA**	**County**	**TRS**	**QQ/Q**	**Src's**	**1stSrc**
Oak Cr WA*	G4-048142CL	GPM	38	YAKIMA	14.0N 16.0E 03		1	WELL
Oak Cr WA*	G4-048145CL	GPM	38	YAKIMA	14.0N 16.0E 03		1	WELL
Oak Cr WA*	G4-099385CL	GPM	38	YAKIMA	14.0N 16.0E 03		1	WELL
Oak Cr WA*	S4-048144CL	CFS	38	YAKIMA	14.0N 16.0E 03		1	TIETON RIVER
Oak Cr WA*	S4-099390CL	CFS	38	YAKIMA	14.0N 16.0E 03		1	OAK CREEK
Oak Cr WA*	S4-048143CL	CFS	38	YAKIMA	14.0N 16.0E 04		1	OAK CREEK
Oak Cr WA*	S4-098530CL	CFS	38	YAKIMA	14.0N 16.0E 04		1	OAK CREEKEK
Oak Cr WA*	S4-099387CL	CFS	38	YAKIMA	14.0N 16.0E 08		1	TIETON RIVER
Oak Cr WA*	S4-099388CL	CFS	38	YAKIMA	14.0N 16.0E 08		1	TIETON RIVER
Oak Cr WA*	G4-048141CL	GPM	38	YAKIMA	14.0N 16.0E 09		1	WELL
Oak Cr WA*	S4-099386CL	CFS	38	YAKIMA	14.0N 16.0E 09		1	TIETON RIVER
Oak Cr WA*	S4-099389CL	CFS	38	YAKIMA	14.0N 16.0E 10		1	TIETON RIVER
Oak Cr WA*	S4-099339CL	CFS	38	YAKIMA	15.0N 16.0E 10		1	SPRING
Oak Cr WA*	S4-099343CL	CFS	38	YAKIMA	15.0N 16.0E 14		1	SPRING
Oak Cr WA*	S4-099344CL	CFS	38	YAKIMA	15.0N 16.0E 14		1	SPRING
Oak Cr WA*	S4-099346CL	CFS	38	YAKIMA	15.0N 17.0E 28		1	SPRING
Oak Cr WA*	S4-099342CL	CFS	38	YAKIMA	15.0N 17.0E 29		1	SPRING
Oak Cr WA*	S4-099348CL	CFS	38	YAKIMA	15.0N 17.0E 29		1	WILLOW CREEK
Oak Cr WA*	S4-099337CL	CFS	39	YAKIMA	15.0N 16.0E 03		1	SPRING
Oak Cr WA*	S4-099345CL	CFS	39	YAKIMA	15.0N 16.0E 10		1	SPRING
Oak Cr WA*	S4-099338CL	CFS	39	YAKIMA	15.0N 16.0E 13		1	SPRING
Oak Cr WA*	S4-099350CL	CFS	39	YAKIMA	15.0N 17.0E 12		1	SPRING
Oak Cr WA*	S4-099340CL	CFS	39	YAKIMA	15.0N 17.0E 17		1	SPRING
Naches R*	S4-31965	CFS	38	YAKIMA	13.0N 18.0E 09		1	NACHES RIVER
Oak Cr WA*	CS4-CTCL2109	CFS	38	YAKIMA	14.0N 16.0E 10	NE/NW	1	OAK CREEK
Oak Cr WA*	CS4-CTCL2109@1	CFS	38	YAKIMA	14.0N 16.0E 10	NE/NW	1	OAK CREEK
Nile Springs*	S4-*16379CWRIS	CFS	38	YAKIMA	16.0N 15.0E 34	NW/SW	1	NILE CREEK

APPENDIX 5: AGENCY POLICIES

Commission Policy 6003:
Domestic Livestock Grazing on Department Lands
FISH AND WILDLIFE COMMISSION POLICY DECISION

POLICY TITLE:	Domestic Livestock Grazing on Department Lands POLICY NUMBER: POL-C6003
Cancels:	N/A
Effective Date	December 6, 2002
Termination Date	Not applicable
See Also:	RCW 79.01.295WAC 232-12-181WAC 232-12-174RCW 77.12.204RCW 90.58
Approved by:	/s/ Russ Cahill Fish and Wildlife Commission Chair

The Washington Department of Fish and Wildlife acquires and manages land to protect fish and wildlife and their habitats, maintain biodiversity and provide opportunities for fish and wildlife related recreation.

GENERAL POLICIES: Domestic livestock grazing on Department owned or controlled lands may be permitted if determined to be consistent with desired ecological conditions for those lands, or with the Department's Strategic Plan.

1. Livestock grazing on Department lands is a practice that can be used to manipulate vegetation for fish and wildlife, accomplish a specific habitat objective, or facilitate coordinated resource management. If permitted, livestock grazing must be integrated with other uses to ensure the protection of all resource values, the most important of which is maintaining ecological integrity.
2. Grazing permits are of agency-wide interest. The Department will develop procedures that include a cross-program review to ensure all grazing permits are subject to the best available science.
3. New grazing permits will be made available for Commission review before being forwarded to the Director for approval. All grazing permits, excluding temporary permits, must include a domestic livestock grazing management plan that includes a description of ecological impacts, fish and wildlife benefits, a monitoring and evaluation schedule, and a description of the desired ecological conditions.
4. Coordinated Resource Management Plans will be encouraged where appropriate.
5. The Department will promote adaptive management and continued improvement of programs and practices as new knowledge and understanding of habitat ecology becomes available.

Policy 6010:
Acquiring and Disposing of Real Property

Effective Date: 3/14/01
POLICY Replaces: WDW 2100
See Also: RCW 77.12.210; RCW 77.12.220
Approved By: /s/ Larry Peck

This policy applies whenever the WDFW proposes to acquire or dispose of real property. Real property includes interests, benefits and rights inherent in the physical ownership of, and appurtenances affixed to, the land, e.g. fences or buildings.

1. State and Federal Regulations and Contractual Obligations Govern Real Property Transactions
   Real property shall be acquired and disposed of in conformance with state and federal regulations and contractual obligations. Governing regulations include: the Revised Code of Washington (RCW), the Washington Administrative Code (WAC) and Federal Public Law 91-646 as amended. Real property may be acquired through purchase, donation, exchange, condemnation, and bequest.
2. Purpose of Acquisitions and Disposals
   WDFW will acquire real property to secure habitats that are necessary to recover, maintain or enhance the integrity and/or habitat diversity of Washington ecosystems. WDFW will acquire property to provide wildlife-related recreational opportunities for the public and for the purpose of WDFW administrative support. Property which does not serve an appropriate habitat, recreational, or administrative support function will be considered surplus and may be disposed.
3. Fish and Wildlife Commission Approves Acquisitions and Disposals
   The Washington Fish and Wildlife Commission must approve all proposed acquisitions and disposals before WDFW may make any commitments to acquire or dispose of real property.
4. Real Estate Services Manages All Acquisitions and Disposals
   A. Only employees authorized by the Real Estate Manager may negotiate to acquire or dispose of real property.
   B. It is the responsibility of WDFW staff to notify the appropriate Real Estate Services personnel when they identify properties for acquisition or disposal.
5. WDFW Holds Title in Fee Simple or Less than Fee Simple Estates
   The Department may hold the following estates in real property:
   A. Fee Simple Estate - ownership of the fee estate.
   B. Conservation easement - a restriction that limits the future use of a property to the preservation or conservation of the real property for public purposes.
   C. Public hunting, fishing or recreational easement - a right to allow the public on privately owned land for hunting, fishing or recreational purposes.
   D. Easement/Right-of-way - a privilege to pass over the land of another for access or utility use.
   E. Leasehold interest - contract for possession of land for a period of time.
   F. Other fractional interests - other enforceable legal interest in property.
6. Acquisitions and Disposals Require Appraisals

Real Estate Services shall conduct or contract all appraisal report services required to establish fair market value of proposed acquisitions and disposals, including review appraisals.

7. Acquisitions Require Environmental Assessments

Real Estate Services shall coordinate with the Engineering Division to conduct or contract environmental reports on all proposed acquisitions to ensure that they do not carry an identified environmental concern or liability.

Policy 5211:
Protecting and Restoring Wetlands

WDFW will accomplish long-term gain of properly functioning wetlands where both ecologically and financially feasible on WDFW-owned or WDFW-controlled properties.

Effective Date:	5/20/2004
Cancels:	WDW POL 3025, WDF POL 409
See Also:	Wild Salmonid Policies: Mitigation Policy 5002RCW 77.85; RCW 90.71.005, -.020, -050; RCW 90.84WAC 173-22-080; WAC 173-500-040Gov. Exec. Orders 89-10 & 90-04
Approved By:	/s/ Jeff Koenings

This policy applies:

A. To all habitat protection assignments where WDFW issues or comments on environmental protection permits, documents, planning efforts, or violation settlements
B. To artificial wetlands that have developed because of a regional or local rise in the water table as a result of irrigation related activities structures, or other causes
C. When WDFW recommends restoration of previously drained and degraded wetland systems in landowner incentive programs
D. When WDFW has construction or land management activities that could affect wetlands
EXCEPTION: Artificial wetlands constructed from upland habitat to service WDFW operated wastewater treatment facilities are exempt from this policy, except as regulated by existing law.

Definitions:

Best Available Science: Scientific methodology that is the product of a valid scientific process. Such a process will have undergone peer review, be replicable, contain logical conclusions and reasonable inferences, and be based on any one or all of the following: scientific research, inventories, surveys, assessments, and statistical analysis conducted by a qualified expert.

Sensitive Wetland: A wetland that has a higher value due to the presence of a particularly sensitive resource, such as a bog, a fen, or a wetland that provides habitat for an endangered, threatened, sensitive, or candidate species.

Transfer of Development Rights: Concentrating development on a portion of a property parcel in order to protect sensitive resource elements on another portion of the parcel. (This normally allows for a higher density of development on the developed portions of the property, e.g., smaller-sized lots.)

Water Resource Inventory Area (WRIA): One of 62 state-designated major watershed inventory areas (see WAC 173-500-040).

Wetland: Land transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification on all WDFW wetland determinations, wetlands must have one or more of the following attributes:

A. At least periodically, the land supports predominantly hydrophytes.

B. The substrate is predominantly undrained hydric soil.

C. The substrate is nonsoil and is saturated with water or covered by shallow water at some time of the growing season of each year. (Source: U.S. Fish and Wildlife Service, Cowardin, 1979)

D. Examples:

1. Swamps, marshes, bogs, mudflats, wet riparian areas, shallow waters, and similar areas.
2. Lands that may only be inundated or wet for part of the growing season.

Wetland Buffer: An upland area adjacent to a wetland that is part of the wetland ecosystem. The buffer influences the wetland's functions and biodiversity.

Wetland Delineation: The process of determining the break between wetland and upland.

Wetland Mitigation Bank: An area that has been restored, created, or enhanced and (in exceptional circumstances) preserved for the purpose of providing mitigation for a future project or projects whose unavoidable impacts might adversely affect wetlands.

Wetland Replacement Ratio: The acreage size ratio by which a wetland that replaces or mitigates for an existing wetland exceeds the size of the original wetland. For example: "a 2:1 replacement ratio" is where the replacement wetland is twice the size of the original wetland.

1.When Identifying and Delineating Wetlands, WDFW Will use the 1997 US Army Corps of Engineers Manual. This is represented in the "Washington State Wetlands Identification and Delineation Manual" and subsequent revisions.

2. WDFW Will Implement the "No Net Loss, and Long-Term Gain" of Wetland Area and Function Goals of Governor Executive Order 89-10 and 90-04

WDFW adopts the goals of Governor Executive Order 89-10 and 90-04 and The National Wetland Policy Forum:

A. No net loss of wetland habitat, function, and acreage.

B. Accomplishing long-term gain to increase the quantity and quality of Washington's wetland resource base.

EXCEPTION: Both executive orders allow for some loss that would accompany water conservation measures. In these cases, the orders call for a balance between water conservation and wetland protection measures. Acceptable changes to, and some loss of, artificially created wetlands may occur in restoration of altered wetland and stream systems. Water conservation measures that cause wetland loss should result in saved water being left in the stream for fish and wildlife usage.

1. WDFW Will Accomplish The Goal of "No Net Loss" of Wetland Habitat Function and Acreage by Enlisting Appropriate Strategies

These strategies may include:

A. Mitigation sequencing (See Policy 5002).

B. Wetland replacement ratios.

C. Wetland buffer recommendations.

D. Transfer of development rights.

2. WDFW Will Accomplish the Goal of "Long-Term Gain" of Both the Quantity and Quality of Wetlands by Enlisting Appropriate Strategies

These strategies may include:

A. Encouraging restoration of previously degraded habitat through:
    1. Landowner incentive programs such as USDA's Wetland Reserve Program.
    2. WDFW acquisition or cooperation with land trusts that acquire habitat for restoration.
    3. Transfer of development rights.

B. Encouraging conversion of upland habitat to wetlands, where appropriate.

3. WDFW Will Encourage and, Within the Limits of its Authority, Require That Constructed Replacement Wetlands are Both Functional and Sustainable This should happen before project activities are initiated that may cause unavoidable wetland loss.

4. Where Wetland Loss Cannot be Avoided, WDFW Will Ensure Wetlands Will be Compensated at the Following Minimum Ratios:

A. A 1:1 ratio if the mitigation site is fully functional prior to impact.
B. A 2:1 ratio if compensation is concurrent.
C. Even greater ratios if any of the following are present:
    1. Sensitive wetlands.
    2. Functions that are difficult to replicate.
    3. Wetlands in subbasins that have greater than 10 percent impervious surface.
    4. Losses in time until the site is fully functional.
    5. Losses in geographical distribution in off-site or out-of-kind replacement.

5. When Regulating or Developing Wetland Mitigation Banks, WDFW Will Ensure That Unavoidable Adverse Impacts on Resources Will be Compensated for in the Following Preferred Order:

A. On the site of the impact.
B. Within the same sub-basin as the impact, unless otherwise recommended by WDFW and affected Tribal Parties, or in the case of non-fish related resources.
C. In the same WRIA.

EXCEPTION: This policy may not apply when WDFW determines that greater habitat function could be provided for affected resources through other methods.

6. WDFW Will Recommend Buffers That:

A. Provide wetland habitat and functions.
B. Protect those habitats for wetland-associated fish and wildlife species.
C. These buffers will most often be in the 100-300 foot range. Actual buffer width will be based on best available science.

7. WDFW Will, Within the Limits of Its Authority, Require That Compensatory Mitigation be Monitored at the Project Proponent's Expense in Accordance With a Plan

The plan will be developed by the project proponent, and will include the following elements:

A. Financial commitments to ensure that any needed corrective action be taken.

B. Performance of biological monitoring or hydrological monitoring, or both, until the compensatory site can be demonstrated to be both functional and sustainable in the landscape.

C. An annual report submitted to WDFW. The final version of that report will be submitted for publishing in peer reviewed literature

8. WDFW Will Recommend or Require Habitat Replacement When Habitat Has Been Damaged.

9. WDFW Will Incorporate Concerns About Wetlands And The Functions They Provide In Watershed And Landscape Planning Efforts

10. WDFW Will Consider Cumulative Effects Of Watershed Development

11. WDFW Will Accomplish Long-Term Gain Of Properly Functioning Wetlands Where Both Ecologically And Financially Feasible On WDFW-Owned Or WDFW-Controlled Properties

12. WDFW Will Promote The Restoration Of Original Hydrology, Elevations And Native Plant Communities

13. WDFW Will Promote The Use Of Native Plants And Local Stocks In Restoration Efforts In Wetlands And Their Buffers

14. WDFW Will Encourage Similar (See Items 13, 14, And 15 Above) Wetland Restoration On Other Public And Private Lands

Policy 5001:
Fish Protection at Water Diversions/Flow Control Structures and Fish Passage Structures.

Replaces:
See Also: WDW 3150 RCW 75.10.110, 75.20.040, 75.20.060, 75.20.061, 75.20.100, 77.21.010, 77.12.425, 77.16.160, 77.16.210, and 77.16.220 WAC 220-110 and 220-120

Purpose:
This policy applies to water diversions and man-made fish passage barriers in all state waters. It compiles and defines Department application of state laws and applies to all state and private facilities and activities. Its purpose is to restore and maintain healthy fish populations by achieving compliance with state requirements to provide effective fish passage into and out of fish habitat and to prevent fish loss and injury to fish while diverting or controlling water from lakes, rivers or streams. This policy is important to restore fish populations that are at low levels and to maintain healthy fish populations.

Definitions:

Department:	Washington Department of Fish and Wildlife
Director:	Director of the Washington Department of Fish and Wildlife
Fish Protection:	Use of fish guard to protect fish from entrainment mortality, undue stress or predation, or injury at surface water diversions and flow control structures (e.g., reservoir outlets) and to safely bypass them back to the waters or origin
Fish Guard:	Facility or device such as fish screens and bypasses that effectively provides fish protection
Fish Passage:	Volitional upstream or downstream movement of fish
Fishway:	Facility or device that is designed to enable fish to effectively pass around or through an obstruction without undue stress or delay
Obstruction:	Man-made barrier to fish passage

1. Existing laws address fish passage; fish protection at water diversions and flow control structures; actions that are necessary to construct, operate, or maintain devices that provide fish passage and protect fish; actions that adversely affect those devices; and fishing in those devices.
    A. Salmon and steelhead passage has been required at all dams and man-made obstructions of any kind since at least 1881 (Code of Washington, Chapter XCIV, Section 1173). In 1893, that protection was extended to all food fish (Chapter CLXXVI, Section 2481). At least as early as 1913, that protection was extended to all game fish (Chapter VIII, Section 5395-49).
    B. Any person who breaks open, damages, or interferes with the proper operation of a fishway or fish guard is in violation of state law.
    C. Any person who fishes in a fishway or fish guard is in violation of state law.
    D. An Hydraulic Project Approval (HPA) is required for construction, operation, or maintenance of a fishway, fish screen, bypass, or other fish guard. The Department will ensure coordination among the appropriate programs and divisions to facilitate a consistent, timely approach to fish passage and protection. Compliance with and on-site possession of the current edition of the Irrigation and Fish pamphlet constitute an HPA

for non-equipment maintenance and operation of existing irrigation and stock watering diversions.

2. Remedies to illegal obstructions to fish passage can include collaborative plans.
   A. Persons managing, controlling, or owning a dam or other obstruction across or in a river or stream shall remove the dam or obstruction or construct, operate, maintain, and repair durable and efficient fishways approved by the Department for the purpose of allowing the free passage of fish around or through the obstruction. The Department must approve plans and specifications for the fishway prior to construction.
   B. Fishways shall be operated, maintained, and continuously supplied with sufficient water to ensure the free passage of fish into and through the device.
   C. Within 30 days of notification by the Department that the owner has failed to properly construct, or failed to properly operate and maintain a fishway, the owner shall:
      1. Obtain an HPA and construct or operate and maintain, as applicable, a fishway and notify the Department upon compliance; or
      2. Submit to the Department for approval, a written compliance plan, including an application for an HPA, to construct or operate and maintain a fishway. The plan can be developed collaboratively and shall describe a schedule and means for compliance.

      (Note: The attached Thurston County letter is an example of a collaborative plan to address fish passage at county culverts in general. Individual projects are subject to normal permit requirements.) The Department shall reject the compliance plan if the Department determines it does not effectively provide fish passage. If the Department rejects the compliance plan, the owner may be immediately subject to all applicable legal remedies. An approved compliance plan may be modified by the Department to provide effective fish passage. The Department may approve modifications requested by the owner.

   D. If the Director determines that upgrades to a previously approved fishway are necessary to meet a higher state of efficiency for the protection of fish life, the Department may remove, relocate, reconstruct, or modify the device, without cost to the owner. After the Department has completed the upgrades, the fishway shall be operated and maintained at the expense of the owner.

3. Remedies to illegal water diversions and flow control structures can include collaborative plans.
   A. It is unlawful to divert water or control flow from a lake, river, or stream unless the water diversion or flow control structure is equipped with a fish guard to prevent the entry of fish into the diversion or flow control outlet and, if necessary, with a means of effectively returning fish from immediately in front of the guard to the waters of origin. The Department must approve the plans for the guard prior to construction.
   B. The owner shall operate and maintain the fish guard in effective condition to prevent fish loss and injury as long as water is being diverted.
   C. Within 30 days of notification by the Department that the owner has failed to properly construct or failed to properly operate and maintain a fish guard the owner shall:
      1. Obtain an HPA and construct or operate and maintain, as

applicable, a fish guard and notify the Department upon compliance; or

2. Submit to the Department for approval, a written compliance plan, including an application for an HPA, to construct or operate and maintain a fish guard. The plan can be developed collaboratively and shall describe a schedule and means for compliance. The Department shall reject the compliance plan if the Department determines it does not effectively provide fish protection. If the Department rejects the compliance plan, the owner shall be subject to all applicable legal remedies. An approved compliance plan may be modified by the Department to provide effective fish protection. The Department may approve modifications requested by the owner.

D. If the Director determines that upgrades to a previously approved fish guard are necessary to meet a higher state of efficiency for the protection of fish life, the Department may remove, relocate, reconstruct, or modify the device, without cost to the owner. After the Department has completed the upgrades, the device shall be operated and maintained at the expense of the owner.

4. Failure to comply with Sections 2 and 3 above can result in criminal proceedings. Any person who fails to construct a fish guard prior to diverting water or controlling flow from a lake, river, or stream; or fails to operate and maintain an effective fish guard when required by law to do so; or manages and controls, or owns a dam or other obstruction across or in a river or stream and fails to construct or operate and maintain an approved fishway; is guilty of a gross misdemeanor.

5. Illegal diversions and obstructions to fish passage are subject to judicial action to enjoin a public nuisance. Any diversion of water or control of water flow from a lake, river, or stream commenced without an approved fish guard is a public nuisance and subject to civil judicial action. A dam or other obstruction across or in a river or stream without an approved fishway is a public nuisance and subject to civil judicial action. The Director may stop the diversion of water, remove the dam or obstruction, or construct a fishway. Expenses incurred by the Department constitute the value of a lien upon the diversion device or the dam and upon the personal property of the owner.

6. There are exceptions to fish passage and protection laws that will be minimized wherever possible to ensure fish stock recovery and maintenance.

A. Diversion owners are not required to provide or operate and maintain fish guards on diversions in waters without food fish if the diversion was lawfully diverting water prior to 1947. Any work on a pre-1947 irrigation diversion that significantly modifies the structure, changes the point of diversion, or changes the method of diversion, constitutes a new project and removes the fish protection exemption. The Department may elect to develop collaborative plans to construct and/or operate and maintain fish guards on exempted diversions provided the owner's ability to legally divert water is not hindered.

B. Fish protection and fish passage facilities are not required in waters having no fish or no future potential for fish use. Department biologists will determine if fish are present or if the habitat has the potential to support fish.

C. Federal projects and federally licensed projects are generally exempt from state law. Existing federally owned or licensed projects without effective fish guards or fishways will be evaluated as opportunities arise (i.e., Federal Energy Regulatory

Commission relicensing process) to provide for fish protection and fish passage, if necessary.

D. Fish passage may be exempted at fish culture facilities under specific circumstances. These will be identified and reviewed in concert with strategies and procedures designed to implement the Wild Salmonid Policy and other pertinent Department resource management documents.

7. There are guidance documents (attached) to facilitate protection of fish at diversions and flow control structures and fish passage. The "Screening Requirements for Water Diversions" dated 6/29/95, the "Decision Guidelines for Fish Passage Barriers at Road Crossings" dated 7/23/96, the "Fishway Design Guidelines for Salmonids" dated 5/22/96, and the "Water Crossing Structures" dated 11/10/94, define the conditions required for acceptable fish protection and fish passage decisions and design. The HPA constitutes design approval. In addition, there is a protocol titled "New Fish Protection Technology Development" that prescribes the process for developing experimental juvenile fish protection concepts.

Appendix A: Thurston County-Owned Fish Passage Barrier Inventory and Correction Program Proposal

Appendix B: Screening Requirements for Water Diversions

Appendix C: Decision Guidelines for Fish Passage Barriers at Road Crossings

Appendix D: Fishway Design Guidelines for Salmonids

Appendix E: Water Crossing Structures (WAC 220-110-070)

Appendix F: New Fish Protection Technology Development

Policy XXX: Recreation management on WDFW lands – DRAFT in Progress

Policy XXX: Commercial Use of WDFW lands- DRAFT in Progress

Policy XXX: Weed Management on WDFW lands – DRAFT in Progress

Policy XXX: Fire Management on WDFW lands- DRAFT in Progress

Policy 3400: Cooperative Road Management

This policy is to guide establishment of cooperative road management area agreements. It applies to lands throughout the state.

1. Cooperative Agreements Shall Incorporate One or More of These Objectives

   Cooperative agreements with public and private landowners will be sought (see PRO-3400A) to control the operation of motorized vehicles, including snowmobiles, on certain lands in order to meet one or more of the following objectives. Priority shall be given to agreements that meet several objectives.

   a. Reduce disturbance of wildlife during critical periods, thereby increasing habitat use.
   b. Reduce siltation of lakes and streams.
   c. Provide nonmotorized wildlife and fish recreation opportunities which reduce crowing of hunters, fishermen, and other visitors.
   d. Reduce poaching of wildlife and fish.
   e. Improve herd structure and/or reproduction.
   f. Minimize landowner/sportsmen conflicts.

   Landowners may have objectives such as public safety or road maintenance. These objectives can be recognized as long as wildlife objectives are also met.

2. Public Shall be Notified in Advance of Proposed Road Closures
   a. The major points of entry of a proposed area will be posted one year in advance to provide opportunity for input from users.
   b. A public meeting will be scheduled to receive input from interested parties.
   c. A news release will be provided in at least one newspaper of general circulation and one of local circulation.
   d. Where areas may incorporate ceded lands, open and unclaimed lands, or other lands on which Indian tribe(s) may have an interest, such tribe(s) shall be provided the opportunity to participate in the planning stages for the proposed closure.
3. Area Closures Are Preferred Over Road Closures

   Area closures of a network of roads are preferred to single road closures because they provide better control of off-road vehicles and over-the-snow vehicles.

4. Permanent Closures Are Preferred Over Temporary Closures

   This avoids the need to annually reauthorize agreements.

5. Year-round Closures Are Preferred to Seasonal Closures

   Longer seasonal closures are also preferred over shorter closures. This extends the effectiveness of the closure.

6. Agreements Can Allow For Selected Uses of Closed Roads

   Uses of closed roads must not conflict with program objectives.

7. Six Types of Road Closure Systems Are Available
   a. Tank trap or barricade
   b. Gate and/or gate and sign
   c. Sign
   d. "Green Dot" system
   e. Road abandonment in accordance with WAC 222-24-050(5)
   f. Camouflage
8. A Signed Management Agreement is Necessary to Enforce

   Department of Wildlife must have a management agreement signed by the Director or the Director's designee and landowner to enforce road closures on non-WDW lands. If WDW posts lands under a management agreement, citations may be issued for violation of WAC 232-12-177(b).

9. Shared Enforcement, Implementation and Maintenance With Landowners/Managers is Preferred
10. Regional Habitat Biologists Will Implement

    Within each region, the Regional Habitat Biologist will take lead in implementing the Department's share of this program, in cooperation with the Wildlife Enforcement, Wildlife Management and Fisheries Management Divisions, the cooperating landowners in implementation, and affected tribes.

Policy 3401 (1990): Road Management Recommendations

This policy is to guide Department of Wildlife road management recommendations to landowners in areas that are not in WDW cooperative road management areas.

1. New Roads in Previously Unroaded Areas Should be Closed to Public Traffic

   Public use should be restricted on all new roads. Road abandonment should be sought where possible.

2. New Roads Should Not be Constructed Near Sensitive Habitats

   New roads should avoid sensitive habitats such as unstable slopes, riparian areas, wetlands, or ponds. In site-specific situations, sensitive habitats can also include natural openings or open ridge-tops. Use vegetation or topography to screen roads.

3. Existing Open Road Densities Should be Limited

   Road densities open to public vehicular traffic in a ten-square mile drainage should not exceed:

   a. One mile of open road per square mile in big game winter range distributed throughout elevation zones and timber types.
   b. Two miles of open road per square mile in areas not considered big game winter range, distributed throughout elevation zones and timber types.

4. Seasonally Critical Habitats Should be Closed to Vehicles

   During periods of use, motorized vehicles should be restricted from:

   a. Fawning or calving areas.
   b. Critical wintering areas.
   c. Migration routes.
   d. Raptor nesting areas.
   e. Bald eagle winter feeding areas.
   f. Other critical habitats as described in Brown, et al.; or as described in Wildlife Evaluation Processes for ORV, Hiking, and Horse Backcountry Recreation in Washington (1988); or habitats of interest described in the Forest Practices Board Manual.

Policy 2155 (1989): Protection of Cultural Resources

The Department of Wildlife acknowledges cultural resources, including native Indian burial grounds and historic graves, to be finite, irreplaceable, and nonrenewable. The department recognizes the value and importance of respecting all cultural resources and the spiritual significance of such sites to the people of this state.

1. Archaeological Sites on Department lands Will be Protected

   It is unlawful for any person, firm, corporation, or any agency or institution of the State of Washington to knowingly remove, alter, dig into, or excavate by mechanical, hydraulic, or other means, or to damage, deface, destroy, or remove any historic or prehistoric archaeological object, resource, or site on department owned or controlled land. (RCW 27.53.060, RCW 27.44) It is unlawful to remove artifacts found on the surface of department lands without a permit issued by the director. (WAC 232-12-251)

2. The Department of Wildlife Shall Consult with Department of Community Development

   All known or newly-discovered historic or prehistoric archeological resources or sites on department owned or controlled lands shall be reported to the Department of Community Development (DCD). The department shall consult with the DCD in regard to protecting existing, known sites before engaging in ground-disturbing activities

   If a site is accidentally disturbed, all activity will be immediately halted and such inadvertent disturbance shall be reported to the DCD. The department shall re-inter native Indian remains, accidentally disturbed, under the supervision of the appropriate Indian tribe. The department shall re-inter non-Indian human remains, accidentally disturbed at a historic grave, under the supervision of The Cemetery Board. (WAC 25-48)

APPENDIX 6: WASHINGTON STATE SPECIES LISTS

STATE LISTED SPECIES

Revised March 2006

The Washington Fish and Wildlife Commission has classified the following 46 species as Endangered, Threatened, or Sensitive. Many also hold a federal designation, such as Federal Endangered (FE), Threatened (FT), Proposed Threatened (FPT), Candidate (FC), or Species of Concern (FSC).

STATE ENDANGERED

A species native to the State of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state.

The 28 State Endangered species are designated in Washington Administrative Code 232-12-014

MAMMALS (14)

Pygmy Rabbit FE
Sperm Whale FE
Fin Whale FE
Sei Whale FE
Blue Whale FE
Humpback Whale FE
Black Right Whale FE
Killer Whale (transients, offshores, others) -
Southern Resident FE
Gray Wolf FT
Grizzly Bear FT
Fisher FC
Sea Otter -
Columbian White-tailed Deer FE
Woodland Caribou FE

BIRDS (7)

American White Pelican -
Brown Pelican FE
Sandhill Crane -
Snowy Plover FT
Upland Sandpiper -
Spotted Owl FT
Streaked Horned Lark FC

REPTILES (2)

Western Pond Turtle FSC
Leatherback Sea Turtle FE

AMPHIBIANS (2)

Oregon Spotted Frog FC
Northern Leopard Frog -

INSECTS (3)

Oregon Silverspot Butterfly FT
Taylor's Checkerspot FC
Mardon Skipper FC

STATE THREATENED

A species native to the state of Washington that is likely to become endangered within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats.

The 11 State Threatened species are designated in Washington Administrative Code 232-12-011

MAMMALS (4)

Western Gray Squirrel FSC
Mazama Pocket Gopher FC
Steller Sea Lion FT
North American Lynx FT

BIRDS (5)

Bald Eagle FT
Ferruginous Hawk FSC
Marbled Murrelet FT
Greater Sage-Grouse FC
Sharp-tailed Grouse FSC

REPTILES (2)

Green Sea Turtle FT
Loggerhead Sea Turtle FT

Find us on-line at
http://wdfw.wa.gov/wildlife.htm

For more information on federal status, contact the US Fish and Wildlife Service or the National Marine Fisheries Service

STATE SENSITIVE

A species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened in a significant portion of its range within the state without cooperative management or removal of threats.

The 7 State Sensitive species are designated in Washington Administrative Code 232-12-011

MAMMALS (1)

Gray Whale -

BIRDS (2)

Common Loon -
Peregrine Falcon FSC

FISH (3)

Pygmy Whitefish -
Margined Sculpin FSC
Olympic Mudminnow -

AMPHIBIAN (1)

Larch Mountain Salamander FSC

For more information, contact the Wildlife Program
(360) 902-2515

STATE CANDIDATE SPECIES

Species that the Department will review for listing as State Endangered, Threatened, or Sensitive.
The Department reviews species for listing following procedures in Washington Administrative Code 232-12-297. Public comment is solicited before the Department takes its listing recommendation to the Washington Fish and Wildlife Commission, which makes listing decisions. Listing is based solely on the biological status of the species.

MAMMALS (11)

Merriam's Shrew -
Townsend's Big-eared Bat FSC
Keen's Myotis Bat -
White-tailed Jackrabbit -
Black-tailed Jackrabbit -
Gray-tailed Vole -
Brush Prairie Pocket Gopher -
Washington Ground Squirrel FC
Townsend's Ground Squirrel -
Wolverine FSC
Pacific Harbor Porpoise -

BIRDS (23)

Western Grebe -
Short-tailed Albatross FE
Brandt's Cormorant -
Northern Goshawk FSC
Golden Eagle -
Merlin -
Common Murre -
Cassin's Auklet FSC
Tufted Puffin FSC
Yellow-billed Cuckoo FC
Flammulated Owl -
Burrowing Owl FSC
Vaux's Swift -
Lewis' Woodpecker -
White-headed Woodpecker -
Black-backed Woodpecker -
Pileated Woodpecker -
Loggerhead Shrike FSC
Purple Martin -
Slender-billed White-breasted Nuthatch FSC
Sage Thrasher -
Oregon Vesper Sparrow FSC
Sage Sparrow -

REPTILES (4)

Sagebrush Lizard -
Sharp-tailed Snake -
California Mountain Kingsnake -
Striped Whipsnake –

AMPHIBIANS (6)

Dunn's Salamander -
Van Dyke's Salamander FSC
Cascade Torrent Salamander -
Western Toad FSC
Columbia Spotted Frog FSC
Rocky Mountain Tailed Frog FSC

FISH (37)

Mountain Sucker -

Lake Chub -
Leopard Dace -
Umatilla Dace -

Lake Chub -
Leopard Dace -
Umatilla Dace -
River Lamprey FSC
Pacific Herring FSC
Eulachon (Columbia River Smelt) -
Pacific Cod
South and Central Puget Sound FSC
Walleye Pollock
South Puget Sound FSC
Pacific Hake (Whiting) Georgia Basin FSC
Black Rockfish# -
Brown Rockfish# FSC
Copper Rockfish# FSC
Quillback Rockfish# FSC
Tiger Rockfish# -
Bocaccio Rockfish# -
Canary Rockfish# -
Yelloweye Rockfish# -
Yellowtail Rockfish # -
Greenstriped Rockfish# -
Widow Rockfish# -
Redstripe Rockfish# -
China Rockfish# -
Chinook Salmon
Snake River Fall FT
Snake River Spring/Summer FT
Puget Sound FT
Upper Columbia Spring FE
Lower Columbia FT
Chum Salmon
Hood Canal Summer FT
(includes Strait of Juan de Fuca, not Puget Sound)
Coumbia River FT *# Puget Sound, the San Juan Islands, and the Straight of Juan de Fuca east of the Sekiu R.*
Sockeye Salmon
Snake River FE
Ozette Lake FT
Steelhead
Snake River FT
Upper Columbia FT
Middle Columbia FT
Lower Columbia FT
Bull Trout FT

MOLLUSKS (10)

Giant Columbia River Limpet -
Great Columbia River Spire Snail FSC
Newcomb's Littorine Snail FSC
California Floater FSC
Northern Abalone FSC
Olympia Oyster -
Columbia Oregonian (snail) -
Poplar Oregonian (snail) -
Dalles Sideband (snail) -
Blue-gray Taildropper (slug) -

INSECTS (18)

Beller's Ground Beetle FSC
Mann's Mollusk-eating Ground Beetle -
Columbia River Tiger Beetle -
Hatch's Click Beetle FSC
Long-horned Leaf Beetle -
Columbia Clubtail (dragonfly) -
Sand-verbena Moth -
Yuma Skipper -
Shepard's Parnassian -
Makah Copper FSC
Chinquapin Hairstreak -
Johnson's Hairstreak -
Juniper Hairstreak -
Puget Blue -
Valley Silverspot FSC
Silver-bordered Fritillary -
Great Arctic -
Island Large Marble FSC

NOT STATE CANDIDATES

These fish stocks have been the subjects of federal register notices, but have not yet been added to the state candidate list.
Coho Salmon
Puget Sound/Strait of Georgia FSC
Lower Columbia/SW Washington FT
Coastal Cutthroat Trout
SW Washington/Columbia River FSC