SCOTCH CREEK WILDLIFE AREA
2009 MANAGEMENT PLAN UDATE

Washington Department of Fish and Wildlife

Land Management Summary

This is an update to the 2006 Scotch Creek Wildlife Area Management Plan that provides management direction for the Scotch Creek, Mineral Hill, Pogue Mountain, Tunk Valley, Chesaw, and the Charles and Mary Eder units in Okanogan County. The plan identifies needs and guides activities on the area based on the Washington Department of Fish and Wildlife (WDFW) Mission of *"Sound Stewardship of Fish and Wildlife"* and its underlying statewide goals and objectives as they apply to local conditions.

The primary goal and specific reason for purchasing the property is to establish a viable sharp-tailed grouse population on and adjacent to the Scotch Creek Wildlife Area. Other management goals for the Scotch Creek Wildlife Area are to preserve habitat and species diversity for 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.

Plans are updated annually as habitat and species conditions change, as new regulations and scientific knowledge develop, as public issues and concerns evolve, and as administration of wildlife areas change. This management plan update also includes 2008 accomplishments, new issues, new land management strategies and performance measures for 2009. For a complete copy of the 2006 management plan, and updates, go to:

http://wdfw.wa.gov/lands/wildlife_areas/management_plans/

Updates/Changes since 2008

- The Department of Fish and Wildlife successfully completed the acquisition of phase two, on the Charles and Mary Eder unit near Oroville in 2008. This 3,000-acre purchase brings the total acreage on this unit to 6,300 acres. Primary management objectives here will be the protection of a large wintering deer herd, and provide a

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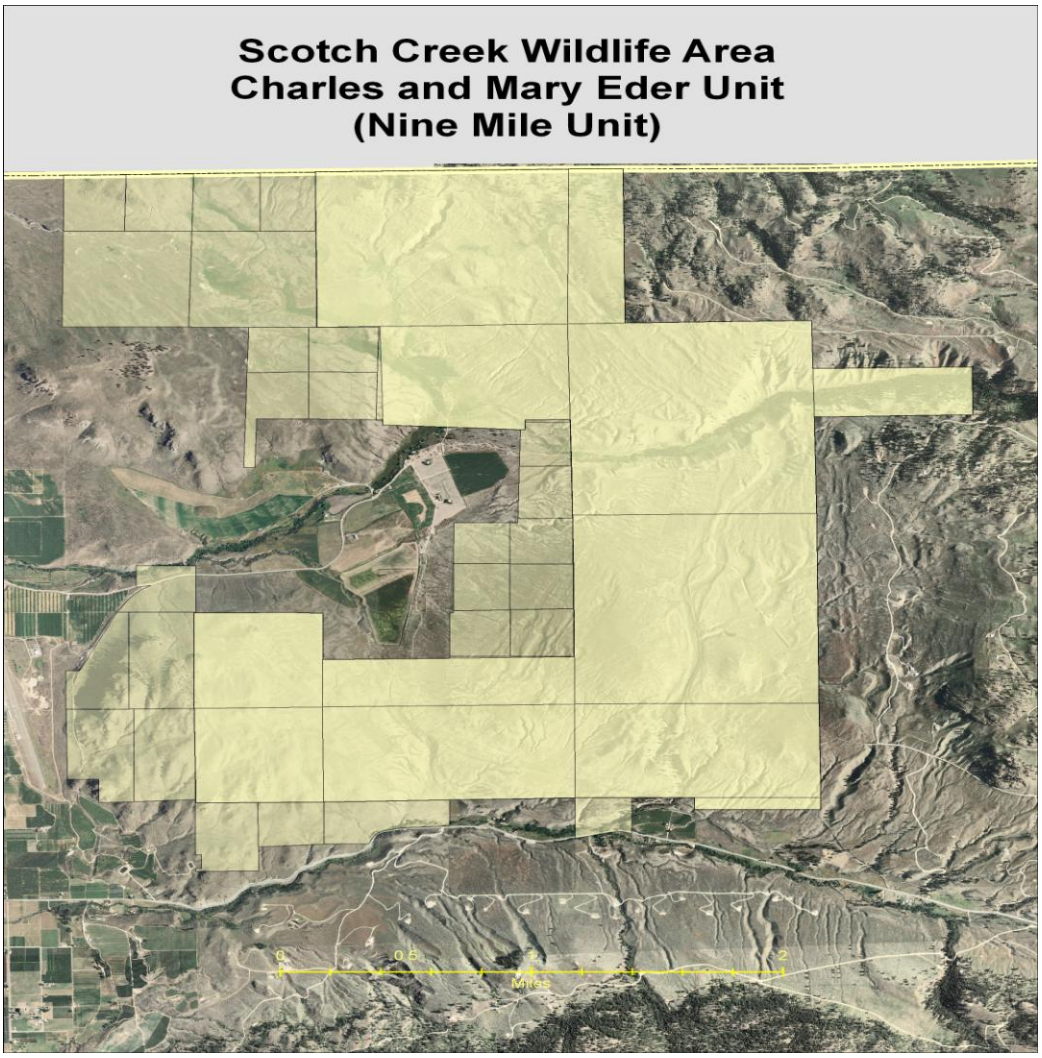
limited entry quality deer hunt for successful permit applicants. Surveys in 2007 indicated approximately 800 deer wintering on the unit. 90% of these were white-tailed deer with 10% mule deer. The phase two purchase excludes a 700-acre life estate to the sellers, Charles Junior, and Mary Eder, and their two daughters. The life estate includes all the irrigated agriculture fields as well as several residences and outbuildings associated with the agriculture of the area. Phase two also includes a 10-foot public access across the life estate along the west boundary for users of the area to access the north half of the unit. Management of the "Charles and Mary Eder Unit" has been added to the Scotch Creek complex, due to the BPA funding source for this purchase.



Map 1: Eder Unit. Phase one in lighter shades; Phase two in the darker shaded relief.

- The FFY09 budget for Scotch Creek was restored by the BPA to 2007 levels (we had a 25% reduction in 2008). Many of the work elements in the 2008 statement of work were postponed due to the budget shortfall and will be completed this year. The reduction that eliminated one month for our full time maintenance mechanic has been restored in 2009. In addition the BPA approved an increase of $74,000 for management of the new Eder property.

- A wildfire occurred on Pogue Mountain in July of 2008. The "Green Lake Fire" started at a residence in Salmon Creek and quickly spread up and over Pogue Mountain, consuming about 754 acres of wildlife area lands. Portions of the fire were 100% tree killed, while other areas burned as a ground fire and only pockets of thick timber were consumed. I had just completed the forest management plan for this

unit but unfortunately was unable to get it thinned before the wildfire. Plans are to salvage log and thin green stands of timber in 2009. A second fire, the Happy Hill fire (450 acres) was accidentally started about one month later by a DNR vehicle driving through tall dry grass. Tall dry grass and a hot catalytic converter is a bad combination. We completed re-hab work on both fires in the fall of 2008 including 3.5 miles of fence repair and seeding a native grass mix on 10 acres of dozer and hand lines.

Major Stewardship Accomplishments

- We successfully re-seeded 95 acres of old agricultural fields on Happy Hill in 2008 to a mix of native grasses and forbs. This shrub-steppe restoration project was phase two of a cost-share grant (2006) from the Natural Resources Conservation Service (NRCS). It required a summer-long program to prepare the seedbed, with a fall dormant seeding last November. The seed mix included; bluebunch wheatgrass, Sandbergs bluegrass, Idaho fescue, snow buckwheat, yarrow, blue flax, and antelope bitterbrush.

- **Maintenance on over 120,000 seedling trees and shrubs** that have been planted over the years include hand-pulling weeds, mowing to reduce competition, fertilizer applications and installation of rodent guards to insure survival and increased growth rates. These activities take place both in the spring and fall. Approximately 30 acres are maintained and this year included 500 Water Birch seedlings re-planted along Scotch Creek in the Corrals area.

- **Boundary fence repair** was completed by early summer. Inspection and repairs were made, concentrating on areas where livestock has the most pressure. Staff also completed new fence constructed around a spring and stock watering area on the Chesaw unit, and one mile of old fence repair on the north boundary of Chesaw bordering private rangeland.

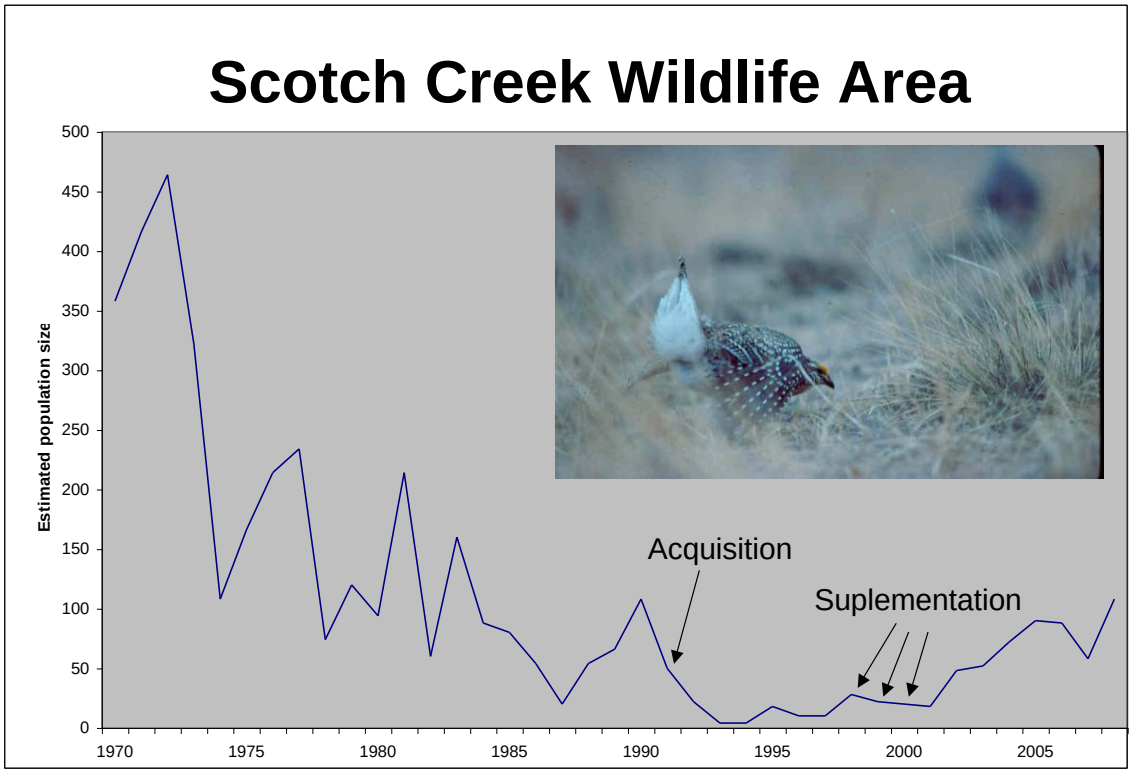
- **Weed control** efforts began in early spring, with the application of pre emergent herbicides to bare grounds, parking areas and around buildings. Applications continued though late fall on perennial species. As with previous years, control of Musk Thistle on the Chesaw unit continues to be challenging and ongoing. Extensive time was spent spot spraying and hand pulling seed heads in remote sections of the unit. One bio-control release of *Larinus minutus* occurred on Happy Hill of the Scotch Creek Unit in attempts of controlling expanding diffuse knapweed infestations. Acquisition of the Charles and Mary Eder Unit and the reseeding of fire lines added additional workloads to staff. The Eder Unit and new invaders were the focus of survey efforts in 2008.

Weed Control Summary 2009

Unit	Habitat	Weed Controlled	Acres Treated	Total Acres Weed Control	Control Method	Bioagent or Herbicide	% Control of Treated Acreage	Estimated Control Costs in $
Scotch Creek	field, agriculture	other	28	28	Chemical	Velpar	80	$600
Scotch Creek	upland	general weeds	18	18	Chemical	MCPA	90	$350
other	parking areas	bareground	4.5	0.75	Chemical	Journey	90	$500
Scotch Creek	upland	Kochia	3	20	Chemical	Starane	90	$200
Scotch Creek	upland	general weeds	119	119	Chemical	Round up pro	90	$2,000
Scotch Creek	riparian	general weeds	4	10	Chemical	2,4 D amine	90	$100
Scotch Creek	upland	Whitetop-Hoary Cress	28	100	Chemical	Escort	90	$600
Scotch Creek	field, fallow	general weeds	100	90	Mechanical		100	$1,850
Scotch Creek	field, fallow	general weeds	100	90	Mechanical		100	$1,850
Scotch Creek	field, fallow	general weeds	100	90	Mechanical		100	$1,850
Scotch Creek	field, fallow	general weeds	100	90	Mechanical		100	$1,850
Scotch Creek	upland	Toadflax, Dalmatian	<1	<1	Chemical	Escort	90	$100
Scotch Creek	riparian	Thistle, Canada	16	50	Chemical	Milestone	80	$500
Scotch Creek	Upland	general weeds	100	100	Cultural		100	$6,000
Chesaw	Upland	Thistle Musk	5	75	Chemical		90	$1,500
Scotch Creek	Upland	Knapweed Russian	40	250	Chemical	Tordon 22K	90	$1,200
Scotch Creek	Upland	General Weeds	100	100	Mechanical			$2,000
Chesaw	Upland	Thistle, Musk	Unknown	75	Mechanical			$1,000
							TOTAL	$24,050

- **Sharp-tailed Grouse Lek counts in 2008**:

  Scotch Creek: 54 (three leks)
  Tunk Valley: 69 (five leks)
  Chesaw: 20 (one lek)



- We were successful in acquiring two grants for work to begin in 2009. The Coulee Trail grant will provide new trailhead parking at Fish Lake on the Sinlahekin WLA to the north, and near Hess Lake on the Scotch Creek Wildlife Area to the south. The 7.5-mile trail will follow existing roads and trails through the Coulee Creek drainage but will be improved with turnpikes over wet areas and trail clearing and grubbing where needed. This grant from the Washington Wildlife Recreation Program (WWRP) will start in July. A second grant from the NRCS will enhance habitat on the Coulee Creek acquisition. Plans include 100 acres to be restored to native shrub-steppe, 1.5 miles of new stock fence, and the planting of 3,000 trees and shrubs. Work should start in April of this year.

Status Report of 2008 Performance Measures

Key performance measures are identified each year to monitor progress and identify any issues that might interfere with planned priority activities. This information will be used to delete, add or alter priority strategies for 2009.

2008 Performance Measure	Status of Performance Measure	Explanation of Progress/ 2009 Related Activity/ Comments
Shrub-steppe restoration. Summer fallow 95 acres and fall dormant seeding of native grasses and forbs on the Happy Hill, LLC acquisition on Scotch Creek. This is phase two of the Wildlife Habitat Incentives Program (WHIP) grant received in 2006.	Completed	Complete
Riparian restoration. Maintain all previously planted trees and shrubs to insure a high survival rate. Include 500 new water birch transplants where needed.	Completed. It appears we had poor survival due to the long hot months of July, August and September.	Complete. 300 water birch have been ordered for 2009. 100 of these will be grown-out for fall planting below the corrals to increase survival. 100 for Chesaw, and 100 for Tunk Valley.
Continue to survey and boundary fence repairs on all units. Inspect and repair in early spring as much of the 70 miles boundary fence as feasible on all units. Install or replace wildlife area boundary signs as needed.	Completed	Continue boundary fence repairs. We anticipate with many other projects in '09 that fence repair may be difficult to keep up with.
Make improvements to the irrigation pond/sediment trap. Place ecology blocks along the south shore to narrow the pond, and allow for more efficient dredging. Also pour small concrete slab around pump station for weed control, and install a fish ladder to allow in-stream passage of brook trout.	Completed the concrete slab, but other improvements were postponed due to lack of funding.	Plans and permits are in hand. This will be the first project of 2009. BPA cultural resources staff requested to be present during excavation.
Continue with weed management plan. Plans for 2008 include 40	See weed control summary above.	We fell short on these goals in 2008. Plans for 2009 are in

acres of white-top, 200 acres of Russian knapweed, and 20 acres Canadian thistle on Scotch Creek. 40 acres of houndstounge and 125 acres of musk thistle on Chesaw. 10 acres of Russian knapweed on Pogue Mountain and 40 acres on Tunk Valley.		performance measures.
Restore proper hydraulic function to Scotch Creek below the head quarters. Start the construction phase on a new meandering channel to mimic natural conditions, and a 2-year plan to eliminate the reed canary grass invasion.	Not attempted due to funding cuts. We are planning to proceed in the spring of 2009.	Construction is scheduled to start in the spring of 2009. If the conditions allow, we will attempt to mow the reed canary grass for the entire summer, in preparations of Round-up spraying in September.
Develop ½ acre irrigated shrub planting on the Boyce property. Utilize the existing irrigation system, branch off with a drip-irrigated plot, and install deer fence to protect young plants. This will be subject to funding (remaining O&M budget).	Not completed due to funding cuts.	We will attempt this project in the fall of 2009.
Apply for three RCO grants for 2009 funding. 1) Ninemile access development. 2) Coulee Creek trail system. 3) Pogue Mountain pre-commercial thinning.	Successful in getting funding for the Coulee Creek trail system. We dropped the Ninemile access development due to extreme costs associated with a new bridge and approach. Pogue Mountain thinning may still be funded.	We will start work in July 2009 on the trail system. Pogue Mountain thinning is still pending.

New Strategies

The wildlife area plan identifies many strategies or activities to address the agencies strategic plan goals and objectives, why the area was purchased, habitat conditions, species present and public issues and concerns. The following updated strategies have been added to respond to previously unaddressed or new issues or changes on the wildlife area. New strategies may also be in response to adaptive management as staff evaluate the impacts of past management activities.

No new strategies

2009 Performance Measures

Performance measures for the Scotch Creek Wildlife Area are listed below. Accomplishments and progress toward desired outcomes will be monitored and evaluated annually.

1) Shrub-steppe restoration. Summer fallow 100 acres and fall dormant seeding of native grasses and forbs on the Coulee Creek acquisition. This is part of the WHIP grant received in 2008 and will be cost shared with the NRCS. Also includes 1.5 miles of new fence, and 3,000 trees and shrubs planted along Coulee Creek.
2) Develop two trailheads and improve 7.5 miles of trail through the Coulee Creek drainage. This is funded with an RCO grant for 2009.
3) Riparian restoration. Maintain all previously planted trees and shrubs to insure a high survival rate. Include 300 new water birch transplants (100 each for Scotch Creek, Chesaw, and Tunk Valley). Also includes the development of one ½ acre irrigated shrub planting on the Boyce Property. We will utilize the existing irrigation system, branch off with a drip-irrigated plot, and install deer fence to protect young plants.
4) Continue to survey and boundary fence repairs on all units. Inspect and repair in early spring as much of the 70 miles boundary fence as feasible on all units. Install or replace wildlife area boundary signs as needed.
5) Make improvements to the irrigation pond/sediment trap. Place ecology blocks along the south shore to narrow the pond, and allow for more efficient dredging. Also pour small concrete slab around pump station for weed control, and install a fish ladder to allow in stream passage of brook trout.
6) Continue with weed management plan. Plans for 2009 include 40 acres of white-top, 200 acres of Russian knapweed, 20 acres Canadian thistle, and 60 acres of general Ag weeds on Scotch Creek. 40 acres of houndstounge and 125 acres of musk thistle on Chesaw. 10 acres of Russian knapweed on Pogue Mountain and 40 acres on Tunk Valley. Also includes 10 acres houndstounge and 20 acres Russian knapweed on the Eder Property.
7) Restore proper hydraulic function to Scotch Creek below headquarters. Start the construction phase on a new meandering channel to mimic natural conditions, and a 2-year plan to eliminate the reed canary grass invasion.
8) Survey and post the life estate boundaries and critical property boundaries on the Eder Unit to improve public identification of public land boundaries. Carsonite location markers will be used where stock fence is not needed.
9) Advertise and surplus to the public, the residence and barn on the Boyce acquisition.

Citizens Advisory Group Input

There was one CAG meeting which occurred on February 26, 2009. Those in attendance were: Tom Windsor, Okanogan Valley BCH; Tom Scott OT Irrigation District; Hugh Jensen, Self; Jerry Barnes, OC Cattlemen's Assoc.; and Rick Lind. WDFW employees were Jim Olson, Brian Dupont, Dale Swedburg, and Justin Haug. We only have one per year due to the lack of interest from the other 13 members contacted.

- It was suggested that we set up photo points on wildfire areas to monitor the fire response.
- The CAG supports increases in management funding to keep pace with increases in acreage due to recent acquisitions.

- Cattleman's association member suggested a grazing pilot project on Scotch Creek areas similar to what is happening in SE Washington.
- CAG supports salvage logging on Pogue Mountain. "The area needs active management to reduce fuels and enhance restoration".

Information for BPA's Wildlife Mitigation Program

The Washington Department of Fish and Wildlife and Bonneville Power Administration (BPA) have been partners in mitigating (compensating) the loss of fish and wildlife resources resulting from construction of dams and subsequent inundation of habitat on the Columbia River since the early 1990s. Under the Northwest Electric Power and Conservation Act, BPA has a duty to protect, mitigate, and enhance fish and wildlife and their habitats affected by the development and operation of the Federal Columbia River Power System (FCRPS). WDFW agreed that by funding the mitigation BPA earned credit in the currency of habitat units or HUs. BPA applies the HUs it earns against the HUs lost as reflected in habitat loss assessments WDFW and other wildlife managers developed to estimate and document the impact of the construction of FCRPS dams in Washington.

Mitigation has been accomplished through fee title acquisition of new lands (includes enhancements etc.) and funding enhancement, protection, and operations and maintenance (O&M) measures on publicly owned lands managed by WDFW and/or Washington Department of Natural Resources (WDNR).

The Scotch Creek Wildlife Area was approved as a wildlife mitigation project in 1996 and BPA funded habitat enhancement efforts to meet mitigation objectives have been underway since the spring of 1997. Scotch Creek is a complex of six separate management units located in Okanogan County in North Central Washington State. The project is located within the Columbia Cascade Province (Okanogan sub-basin) and partially addresses adverse impacts caused by the construction of Chief Joseph and Grand Coulee hydroelectric dams. With the addition of the Eder acquisition in 2008, the total size of all wildlife area units is 19,860 acres. This is a combination of BPA acquired lands and state purchases through the Washington Wildlife and Recreation program.

The long-term management goal for the Scotch Creek Wildlife Area is to preserve habitat and species diversity, maintain healthy populations, protect and restore native plant communities, and provide diverse opportunities for the public to encounter, utilize, and appreciate wildlife and wild areas. The monitoring and evaluation efforts consider the Columbian sharp tailed grouse species first and foremost because this species provided the justification for the acquisition of the wildlife area and its subsequent management.

Habitat Evaluation Procedure (HEP) was developed by the US Fish and Wildlife Service (USFWS) to quantify the quality and abundance of available habitat for selected wildlife species. HEP is based on ecological principles and the assumption that habitat for selected wildlife species can be described as a numerical value based on a Habitat Suitability Index (HSI). This value is derived from an evaluation of the ability of key habitat components to supply the resource needs of focal species of fish and wildlife. The HSI values (ranging from 0.0 for no value to a maximum of 1.0) are multiplied by the area of available habitat to obtain Habitat Units (HUs), which are for mitigation purposes, the 'currency' used to measure/compare habitat losses

and gains (Schroeder et al. 2008). Completion of baseline and periodic (preferably at 5-year intervals) HEP is a fundamental requirement for management of the mitigation areas.

BPA Management Activities: for 2009

Biological objective 1: Enhance shrub-steppe, riparian and forest habitats.

Work element 1.1: Re-store native shrub-steppe habitat in degraded rangeland, or abandoned agricultural fields

Methods: The Scotch Creek project has successfully restored over 3,000 acres of agricultural conversion lands back to a native shrub-steppe habitat over the past 18 years. These fields are primarily non-native crested or intermediate wheatgrass, invaded by diffuse knapweed, Russian knapweed, whitetop, St Johns wort, and other noxious weeds. Restoration begins with Roundup sprays to kill all vegetation present. We start the cultivation with deep plowing to bury the weed seeds if the soils are deep, or start by disking with a rolling plow. Continue a summer fallow program throughout the summer and finish by packing to get a firm, level seedbed. Dormant seeding occurs in early November with a Tye range drill, insuring that native grass seed is planted in the top 1/2 inch of soil. Where shallow soils are present and absent of native bunchgrasses and forbs, try a variety of methods to improve habitat conditions. This may include planting plugs, no-till drilling of a native seed mix, aerial seeding or a combination of methods.

Work element 1.2: Riparian tree and shrub planting on all streamside and mesic habitats

Methods: Plant nursery grown native plant materials along stream banks, springs, and wet areas on all units. Also includes habitat plantings where irrigation is available on the Boyce acquisition. Includes replacing mortalities from previous plantings or increasing diversity and could occur in spring or fall during dormancy. May include the use of mechanical planters or planting bars, and the initial maintenance of watering, fertilizing and weed control to insure their survival. Also may include the use of a fabric weed barrier where competition is intense and/or a 7 foot tall deer fence to prevent browsing damage where needed.

Work Element 1.3: Maintain extant shrub & tree plantings (>100,000), shrub-steppe habitat and herbaceous seeding (>3,000 acres) on all units of the wildlife area

Methods: Maintain previously developed habitat enhancements by chemical, mechanical or cultural control of undesirable vegetation. To insure success of tree and shrub planting efforts, a continuing annual maintenance schedule will be followed. Insure rodent control by applying tree guards to protect seedlings, and weed control (primarily hand pull) to reduce competition. Mowing will also reduce competition and provide sunlight. Fertilizer and watering applications may be needed to increase survival the first year. Temporary deer fencing or repellant

may be used, and replant or reseed as needed. Result will be successful establishment of seedlings and improved habitat condition.

Work element 1.4: Develop up to six ½-acre shrub/tree plots to utilize existing water delivery system on the Boyce acquisition

Methods: Plant approximately 600 native trees and shrubs in each of six ½-acre plots over the next three years and utilize the existing water line to develop a drip irrigation system on the new Boyce acquisition. Protect plant survival with temporary deer exclosure fencing and hand weeding. The preferred method is to use hand augers to excavate the hole. This provides the root systems the ability to expand into loose soil and eliminate any "J" rooting caused by a shallow hole. Rocky soils preclude the use of augers and a hand-planting bar will be used to open the soil. A slow release fertilizer tablet is placed with each plant and soil lightly compacted around the roots. "Tree guards" are placed around the base of each plant to reduce rodent damage.

Work element 1.5: Weed control on all units of the Scotch Creek Wildlife Area complex

Methods: Undesirable plant removal will follow Integrated Pest Management techniques. Cultural, biological, mechanical and chemical methods will be considered for each species we want to remove and the best method or combination of methods for the particular situation will be used. This is a continuing element to improve habitat quality over the next three years. The strategy outlined in the Okanogan sub-basin plan calls for assisting in long-term development of an implementation of a Comprehensive Weed Control Management Plan in cooperation with local weed boards. We are working closely with the Okanogan county weed control board by participated in their "Coordinated Weed Management Area Plan". This is a group who meets monthly and is comprised of one representative from each of the state and federal agencies and county government to plan long-term weed control efforts. Weed control strategies include: Produce and implement weed management plan to include weed identification and inventory, risk/threat, control priorities, and monitoring. Coordinate weed efforts with federal, state and local entities to improve efficacy and minimize costs. Mow Russian knapweed patches in July, and treat with herbicides in November on Scotch Creek and Tunk Valley units. Search and destroy new invaders and "B" designate weed species, including Dalmatian toadflax, scotch thistle, musk thistle, and whitetop on all units. Increase control efforts on Houndstounge on Chesaw, Eder and Pogue Mountain units. Continue to use Integrated Pest Management strategies, including biological control, chemicals, mechanical and cultural methods, to control invasive weeds. Continue to control weeds along all roads on the SCWA - TBD miles of roads to reduce the spread of weeds. Map all weed locations using GPS to create GIS layers showing locations of weeds and to assist in monitoring weed control efforts. We have successfully obtained a contract with the Okanogan County jail to allow use of trustee work crews to cut and pull weeds.

Work element 1.6: Fuels reduction and habitat enhancements in forested habitats on Scotch Creek, Pogue Mountain and Chesaw units

Methods: Overstocked Ponderosa Pine forests pose a risk of stand replacing wildfires as seen on a portion of the Pogue Mountain unit in the summer of 2008. For habitat protection and enhancement all timbered stands on the Scotch Creek units need thinning of both small commercial and non-commercial timber. A prescription to save and enhance the largest diameter trees will be followed while removing the overcrowded condition of smaller commercial trees to be sold. This will be followed by pre-commercial thinning of small non-commercial conifer trees while protecting woody browse species for mule deer food and cover. May include labor costs to pile and burn small saplings on steep slopes or inaccessible terrain.

Biological objective 2: Maintain viable Sharp-tailed grouse population

Work Element 2.1: Monitor and Evaluate Mitigation project

Methods: This work element will help fund M&E efforts on all WDFW mitigation projects by collecting habitat and wildlife data on mitigation projects including lek surveys. Data collected will be used to assess effects of habitat maintenance, weed control and enhancement efforts on focal species. Analysis of data will guide adaptive management strategies implemented on wildlife area.

Work Element 2.2: Monitor known existing Sharp-tailed grouse leks on Scotch Creek and Chesaw units. Also search for new or satellite leks on or adjacent to wildlife area

Methods: Male sharp-tailed grouse congregate during the spring on relatively traditional breeding sites, usually referred to as "leks" or "lek complexes". Females visit these sites during the peak of the breeding season to "select" and copulate with males. These lek surveys are designed to be consistent with similar surveys being conducted on an annual basis in all western states with populations of sharp-tailed grouse. Sharp-tailed grouse leks usually are difficult to observe. Lek counts will consist of a complete count of birds (flushing) at least two times per season on the wildlife area. Counts will be spaced at least 10 days apart between 10 March and 25 May. The peak of activity (female attendance and breeding) is early April in most years. Flushing will be accomplished with at least two observers or one person with a trained dog, as peripheral birds often will not flush if the observer is too far away. Lek counts will be conducted when the weather is good (wind < 10 MPH, no precipitation, temperatures > 20 F, >50% bare ground). Counts that are abnormally low (dropped dramatically from previous year) will be repeated. These counts may be caused by disturbance from predators, people, or unknown factors.

In addition to visiting known lek sites, we will search all adjoining lands and potential sites for sharp-tail use. Lek searches are extremely important because of lek movements, satellite leks, vacant leks, and new leks. The inferences related to populations ultimately will depend as much on the quality of lek searches as on the quality of lek counts. In this pursuit, information about lek absence is equally as important as information about lek presence. Searches will be conducted by "listening" for displaying males at points along roads, trails, ridges, or fence lines. The sound that can be heard best is the low "coo" note produced. Under perfect conditions, this noise can be heard up to 2 km. The listening points will be a maximum of 0.5 miles apart and initiated about 0.75 hours before sunrise and continued for two hours. The listening periods lasting at least five minutes at each station. These searches will include private lands when access permission has been granted.

Biological objective 3: Increase Mule Deer use of the project area

Work element 3.1: Forest stand improvement on all units of the Scotch Creek Wildlife Area complex

Methods: Conduct, in cooperation with the Mule Deer Foundation and others, prescribed fuels treatment, e.g., thinning and logging on all forested habitats within the Scotch Creek Wildlife Area complex to improve Mule deer habitat quality. We are currently working on a plan to implement a stand improvement timber sale on about 700 acres of ponderosa pine forest on Pogue Mountain. This includes salvage logging on about 400 acres that burned in the summer of 2008. The objective is to advance the ponderosa pine stands to a late seral stage by removing dense stands of young growth pine and increase spacing, and to avoid another stand replacing wildfire. By opening up the forest floor we will promote herbaceous growth and browse species for mule deer food and cover. A tractor mounted wood chipper will be used to thin pole thickets of young ponderosa pine. May also include slash piling and burning in inaccessible or steep slopes.

Biological objective 4: Implement management activities and schedules

Work element 4.1: Expand and maintain nest boxes

Methods: Western and mountain bluebirds occupy the grasslands of all Scotch Creek units. They depend on the primary excavators to create cavities for next building. Fewer natural nest sites are now available because of changing land use and those natural sites being occupied by two aggressive introduced species, the house sparrow and the European starling. Bluebird nest boxes currently in use will be cleaned out of old nest material annually to reduce nest parasites like mites and blowflies. This practice also keeps the level of the nest and young out of the reach of potential nest predators.

Work element 4.2: Equipment/vehicle maintenance and/or replacement

Methods: To efficiently access and perform habitat enhancement activities, the equipment and vehicles need to be adequately maintained. This includes scheduled fluids changed, chassis lubricated, and worn parts replaced. Vehicles need replaced after reaching expected lifespan to reduce annual maintenance costs. One ½ Ton pickup should be replaced in 2009.

Work element 4.3: Maintain Informational signs and reader boards

Methods: Signs are posted to inform users of property boundaries, regulatory items including sharp-tailed grouse hunting closure and vehicle restrictions on road use. Reader boards inform the public about resource needs, the reason for purchase and biological information on sharp-tail grouse biology. These signs and structures need attention and replaced when faded or damaged.

Work element 4.4: Community Outreach

Methods: Meetings with the SCWA Citizens Advisory Group are held at least twice per year to inform the public of department activities and report on the progress of the project. Additional meetings are requested with community groups, sportsmen's clubs, and the county weed control board. It is important to include the public and solicit comments when planning activities.

Work element 4.5: Assess Habitat Conditions

Methods: Photo points and vegetation data collection sites will be established and mapped for each unit. Staff will assess seeding and planting survival success of all enhancement efforts, and collect nested frequency and cover data on key plant species and exotic vegetation. Monitoring and evaluation protocol is being developed for all the wildlife mitigation areas (see M&E section).

Work element 4.6: Administrative duties and professional development

Methods: Administrative duties are critical to keeping the project on course and meeting timelines. Procurement, budgeting, supervising, planning, monitoring, and reporting are essential for success of the project. Increased knowledge of staff is important through seminars and training for adapting to new techniques and research.

Work element 4.7: Monitor Recreational Use

Methods: Interview hunters as they exit the area to determine hunter success. It is important to contact as many upland bird hunters as possible before they head into the field to warn them of the closed season for sharp-tailed grouse. Incidental take while pursuing legal game is a concern of WDFW. Record all recreational use, including non-hunter use of the area.

Work element 4.8: Maintain Infrastructure

Methods: Maintain all buildings, wells, fences and gates, spring developments and other infrastructure to safely operate and manage the wildlife area. Well-maintained infrastructure will prolong the life of all structures. Also as soon as conditions allow in the spring, we will survey the entire boundary fence on all units of the wildlife area (60 miles) and repair to prevent trespass livestock use on the area. One residence and one barn on the new Boyce acquisition will be advertised to the public, and sold to the highest bidder to be dismantled and removed. The bid will close on September 4th, and demolition is to be completed by the end of 2009.

Work element 4.9: Maintain existing project roads/parking areas across all units

Methods: Continued maintenance of graveled road surfaces on the project area with grading, adding gravel and shaping drainage ditches and water bars where needed. Parking area maintenance includes signs, and fence repair, litter pickup, and grading when necessary. An on-going need includes development of a fenced parking area with a reader board and regulatory signs on the new Okanogan/Simikameen purchase.

Biological objective 5: Produce Inventory or Assessment.

Work element 5.1: Assess Habitat Conditions

Methods: Photo points and vegetation data collection sites will be established and mapped for each enhancement project. Pre and post data will be collected and photos will be taken. Staff will collect nested frequency and cover data on key plant species and exotic vegetation, and assess seeding and planting survival success of all enhancement efforts.

Work element 5.2: Produce annual update to Wildlife Area Management Plan

BPA Monitoring and Evaluation

The Washington Department of Fish and Wildlife strives to manage its wildlife areas to protect and provide habitat to achieve healthy and diverse fish and wildlife populations, and provide compatible recreational opportunities. Effective management of fish and wildlife, and habitats upon which they depend, requires an adaptive approach. The Northwest Power Planning Council has stated, "Management actions must be taken in an adaptive, experimental manner because ecosystems are inherently variable and highly complex. This includes using experimental designs and techniques as part of management actions, and integrating monitoring and research with those management actions to evaluate their effects on the ecosystem." Monitoring and evaluation are critical in this process because they provide the information necessary to evaluate management activities in the past and to improve management activities in the future.

Because of the large number of wildlife areas and expansive acreage managed by the WDFW, monitoring of habitat will take place on a 5-year rotation, except for reference sites, which will be monitored annually. Breeding bird surveys will be conducted during the same year habitat data is collected, and likely annually, at least until annual variance in numbers is assessed. Small mammal surveys will be conducted every five years, using techniques that have already been

established (West et al. 2007). Although surveys of reptiles and amphibians are also possible, our experience so far has been that observations of reptiles are relatively infrequent, and therefore difficult to quantify. Consistency of data collection will be improved by having the same individuals collect data on multiple wildlife areas within a year.

Preliminary surveys have been conducted on many of the wildlife areas enabling a brief assessment of data collected to this point. Not all wildlife areas have been surveyed at this stage, primarily because of the time and money required to initiate surveys. In addition, other techniques have been used that are species-specific, such as surveys of traditional display grounds (leks) of sharp-tailed grouse and greater sage-grouse, aerial surveys of ungulates, counts of pellets, and other miscellaneous surveys (Schroeder et al. 2008). Although these techniques are different than standard breeding bird point counts, they are still standard and well-referenced in scientific literature. A substantial portion of the data has been summarized, including an examination of long-term trends (Schroeder et al. 2008). Habitat data is generally available only for HEP transects at this stage. Future data analyses will focus on comparison of treatment sites with reference sites and with the probabilistic Jaccard (Chao 2004) as a way of measuring species similarity between sites. The specific list of tasks includes the following:

1. Conduct habitat/wildlife surveys on systematic basic.
2. Monitor habitat/wildlife response due to burns.
3. Monitor habitat/wildlife response to specific restoration efforts.
4. Monitor infestations and treatments of noxious weeds.
5. Compile habitat/wildlife data in databases for subsequent storage and analysis.
6. Analyze habitat – wildlife relationships in reference to management targets.
7. Re-evaluate management direction in terms of updated species-habitat evaluations (adaptive management).

Funding Strategy:

The Scotch Creek Wildlife Area is funded primarily through the BPA mitigation program. The 2009 contract is #39276, and the project is #1996-094-01.

Cost share is provided by WDFW through game surveys, science division expertise, engineering and construction shop help and advice, and periodic capitol projects.

Grant opportunities are also pursued. For the past three years we have secured habitat money with WHIP to restore shrub-steppe and riparian habitats. WWRP grant received include the Scotch Creek Coulee Creek trail project scheduled for 2009.

Want to see the full plan?
Go to:

http://wdfw.wa.gov/lands/wildlife_areas/management_plans/

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