



SCOTCH CREEK WILDLIFE AREA 2012 MANAGEMENT PLAN UPDATE

Washington Department of Fish and Wildlife



Land Management Summary

This is an update to the Scotch Creek Wildlife Area Management Plan that provides management direction for the Scotch Creek, Pogue Mountain, Tunk Valley, Chesaw, Ellemeham, Similkameen – Chopaka and the Charles and Mary Eder units in Okanogan County (Fig. 1). 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 long term management goal and purpose of the original acquisition to the Scotch Creek complex is to establish a viable sharp-tailed grouse population on and adjacent to the Scotch Creek, Tunk Valley, and Chesaw units of the 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 biannually 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: 2010-11 accomplishments, new issues, new land management strategies and performance measures for 2012. For a complete copy of the management plan, and updates, go to:

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

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Updates/Changes in 2011

Land acquisition: The Department of Fish and Wildlife completed acquisition of 1,814 acres on Ellemeham Mountain and along the Similkameen River in northern Okanogan County. This purchase was divided into two management units due to geographical and habitat differences. These are the Ellemeham, and the Similkameen – Chopaka units. The Department also completed a land trade with the Washington Department of Natural Resources in 2011 that acquired land on Dunn Mountain to the Scotch Creek unit (Fig 2). This also has the benefit of providing trail access through Coulee Creek to the Sinlahekin WLA and points north. With this trade the Department traded its property (980 acres) on Mineral Hill, transferring title to the DNR (Fig 3).

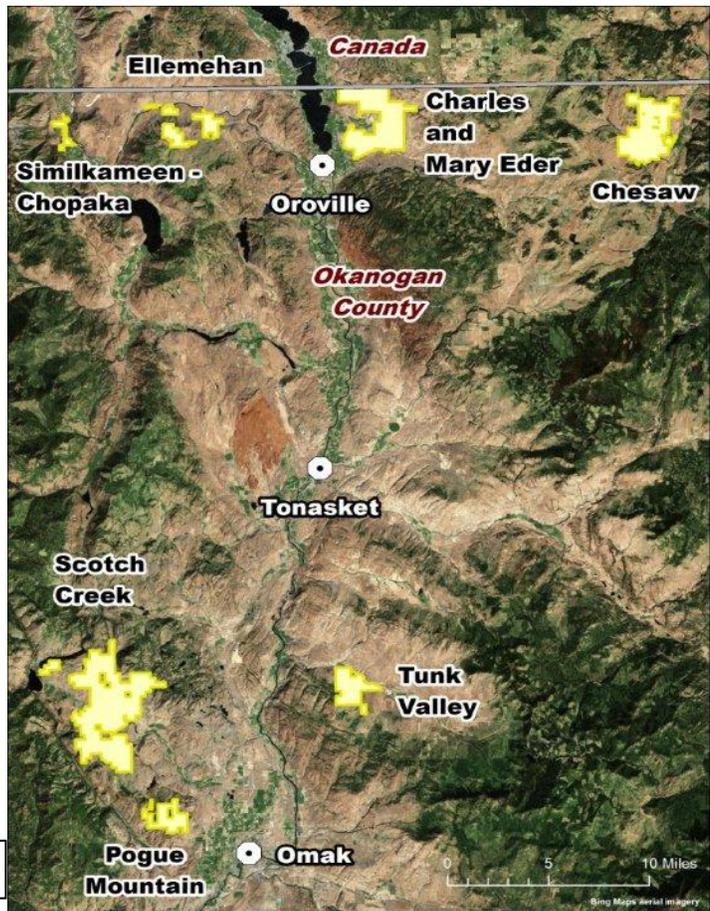


Figure 1

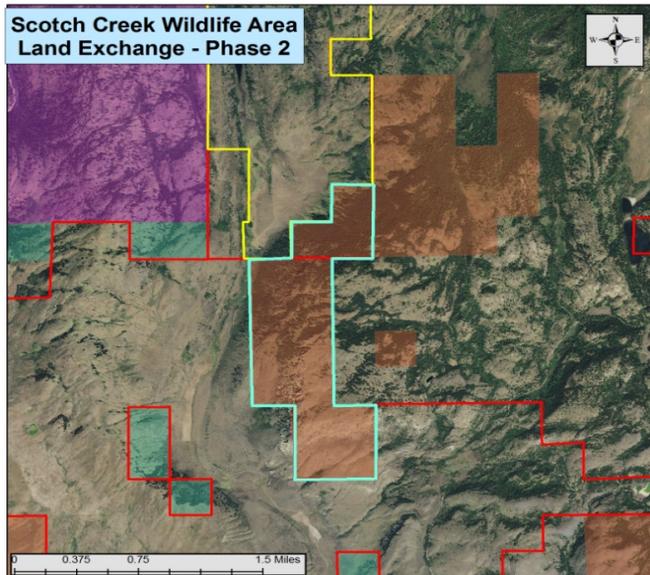


Fig 2. Dunn Mountain land acquired

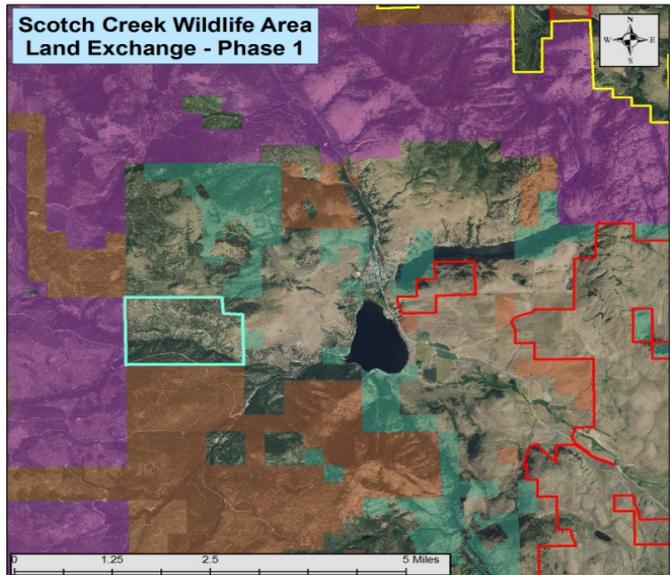


Fig 3. Mineral Hill unit traded to the DNR

The 2012 budget for Scotch Creek was approved by the Bonneville Power Administration (BPA) in November of 2011. The annual performance period will start on December 1, 2011, and run through November 30, 2012. The amount of this year's contract is the same as in 2011, reflecting the slowdown in the economy.



Major Stewardship Accomplishments

Pull and pile 20 acres of Russian olive trees on the Eder unit. We successfully completed this work element in July 2011. This marks the beginning of a larger restoration project that will eventually reseed the sub-irrigated ground north of Nine mile creek on the Eder unit, and plant native deciduous trees and shrubs.

Restore native Shrub-steppe habitat on the Scotch Creek unit. This was the continuation of the project to restore a meandering channel for Scotch Creek, and eradicate 40 acres of Reed canary grass that had invaded the meadow below the Headquarters. We were successful in preparing the low lying ground along Scotch Creek and seeded in November a native grass/forb mix that included: bluebunch wheatgrass, prairie June grass, Idaho fescue, Sandberg's bluegrass, blue wild rye, Great Basin wild rye, western yarrow, Lewis flax, shaggy fleabane/daisy, arrowleaf balsamroot, and Weyth's buckwheat. We also installed over 13,000 lineal feet of fabric mulch that will receive approximately 2,600 native deciduous trees and shrubs in the spring of 2012.



Tree and shrub Maintenance.

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 300 water birch seedlings re-planted along Scotch Creek in the Corrals area. These plants were specially grown at the Methow Natives



Nursery in Winthrop and were propagated from Sinlahekin Valley seed source in Okanogan County.

Cattle exclusion fence. The cattle exclusion fence was completed in two locations along Tonasket Creek on the Eder unit. This new stock fence will protect critical riparian habitat while allowing cattle access to water by exposing the creek in two water gaps. The access points will be rock hardened in the spring of 2012.

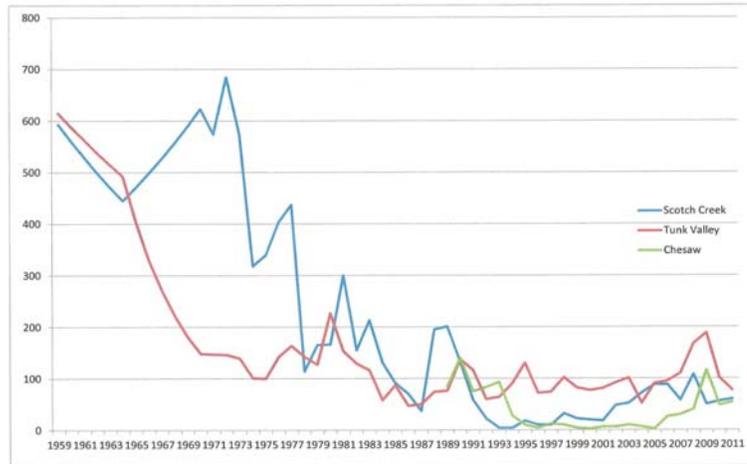
Eder unit boundary fence. New stock fence (2.5 miles) was constructed along a surveyed boundary on the Eder unit. The Northeast and southeast corners were completed in the fall of 2011.

Coulee Creek Trail. This project was funded by a Recreation Conservation Office (RCO) Non Highway and Off Road Vehicles Activities (NOVA) grant and was completed in December 2011. Several locations along the trail route in the Doheny Lake area were raised to allow user access in the spring of the year when waters from the lake flooded the trail. Rock fill was hauled in to raise the tread 18 inches along the east slope. Vegetation was cleared, and loose rock all along the route was cleared. One slide area was filled with crushed rock to make the surface useable to livestock as well as pedestrians.



Weed control. Efforts began in early spring, with the application of pre-emergent herbicides to bare grounds, parking areas and around buildings. Spring applications target annuals and biennials, and applications though late fall target 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. A total of 593 acres were treated in 2011.

2011 Sharp-tailed Grouse Population Estimates



Status Report of 2010/2011 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 2012.

2010 Performance Measure	Status of Performance Measure	Explanation of Progress/2010 Related Activity/ Comments
Administration	Complete	Continued office and field management responsibilities, professional development, and insure the wildlife area management/mitigation plan is carried out. Ensured environmental compliance documentation was complete before any ground disturbing activities take place, and submitted status and annual reports to BPA. Coordinated Citizens Advisory Group meetings, and ensured payments of Payment in Lieu of Taxes (PILT), weed assessment and fire protection contracts.
Maintenance	Complete	Continued maintenance on

		fences, existing habitat enhancements, reader boards, informational and regulatory signs, roads and parking areas and all facilities on the complex.
Shrub-steppe restoration	Complete	Summer fallow up to 120 acres and fall dormant seeding of native grasses and forbs. This is phase two of the Wildlife Habitat Incentives Program (WHIP) grant received in 2008 and will be cost shared with the Natural Resources Conservation Services (NRCS).
Fuels treatment on Pogue Mountain	Received all permits, private road agreements and completed road improvements. Also received cultural resource exemption if work is completed on frozen ground. Logging to begin in winter of 2011-2012.	A grant was received from the Washington Wildlife and Recreation Program (WWRP) State Lands Restoration (SLR) to remove small diameter conifers causing overstocked forest conditions and fuel for potential wildfire. Fire killed trees from the Salmon Creek fire in 2008 will also be treated in the fall of 2010. Includes cultural resource surveys, photo plot documentation, and road improvements.
Plant bitterbrush plugs, and other deciduous shrubs on Pogue Mountain to improve mule deer winter range	Complete	With the help of 35 Spokane Community College students we planted bitterbrush, service berry, chokecherry, elderberry, and other deciduous shrubs.
Collect a native seed source from the Scotch Creek/Eder area to be propagated at a commercial grower and returned to the area for future restoration.	Incomplete	Missed the narrow window for seed collection.
Develop two trailheads and improve 7.5 miles of trail through the Coulee Creek drainage. This is funded with an RCO NOVA grant for 2009-2010	Complete	Improved parking areas at both trailheads, installed two new 4x8 reader boards, cleared vegetation and rocks along trail, designed and installed 5 interpretive signs, and built up

		trail around the seasonally wet edge of Doheny Lake.
Riparian restoration	Complete	Maintained all previously planted trees and shrubs to insure a high survival rate. Included 3,000 trees and shrubs planted in the Coulee Creek drainage as part of the WHIP grant.
Continue with Weed management plan.	Complete	Weed management activities completed include; musk thistle, houndstongue, and Canada thistle control on the Chesaw unit. Scotch Creek has seen a large influx of Canadian thistle within the last couple of years. A majority of it was treated in 2009. Treated acres for 2010 were < 20 acres primarily in the wetter portions of the unit. Russian knapweed infestations on the Scotch Creek Unit continue to remain stable. 2010 treatments focused on the Silver Hill and Honey Lake sections of the unit; treated acres again exceeded 200 acres. White top infestations primarily occur on the most degraded sites within the unit. Infested acres remain stable; approximately 45 acres treated in 2010. In addition about 50 acres of general Ag weeds treated and 15 acres of St. Johns wort on Silver Hill. Treatments to the Eder unit focused on Russian knapweed and houndstongue. Houndstongue in the Ninemile Creek area was the primary focus; approximately 10 acres treated. The Tunk Valley unit has seen a large expansion in Russian knapweed, treated acres in 2010 exceeded 50 acres.

2011 Performance Measure	Status of Performance Measure	Explanation of Progress/ 2011 Related Activity/ Comments
Maintain Facilities	Complete	Includes all buildings, wells, and other infrastructure to safely operate and manage the wildlife area.
Maintain fence; repair, replacement, or removal.	Complete	Boundary fence was inspected and needed repairs made. ¼ mile new fence was completed along the Dixon acquisition shared boundary.
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).	Complete	Maintenance to all existing plantings.
Pull and pile 20 acres of Russian olive trees on the Eder unit.	Complete	Complete and piled for burning or chipping in 2012-2013.
Restore 40 acres of native shrub steppe on the Scotch Creek unit.	Complete	Summer fallowed and seeded 40 acres to a mix of native grasses and forbs. Also installed over 13,000 linear feet of fabric mulch for tree and shrub planting in the spring of 2012.
Increase sharp-tailed grouse winter habitat on the Tunk Valley unit.	Not complete	Staff time and injuries prevented us from planting in 2011. We will finish this work element in 2012.
Cattle exclusion fence for Tonasket Creek	Complete	We completed ¼ mile of stock fence to exclude cattle from Tonasket Creek on the Eder unit. Hardened water gaps were included to allow some access to water.
Develop pond	Cancelled	After measuring static water levels through the dry season, it was decided the pond would fluctuate by over 4 feet. Project was canceled.
Enhance floodplain along Scotch Creek	Cancelled	After engineered plans were made, it was decided the

		disturbance and cost was prohibitive to complete this plan. 21 rock structures would have been needed.
Eder boundary fence	Complete	We successfully completed 2.5 miles of new stock fence.
Fuels treatment on Pogue Mountain.	Complete. Hand crews will pile slash in 2012.	Awarded contracts for timber sale and logging activities. Finished removal of timber in spring of 2012.

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.

Agency Objective: Ensure WDFW activities, programs, facilities and lands are consistent with local, state and federal regulations that protect and recover fish, wildlife and their habitats.

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

New Strategy: A two year fallow will be initiated this year to ensure complete removal of intermediate wheatgrass in 2012 - 2013.

2012 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) Administration: Continue office and field management responsibilities, professional development, and insure the wildlife area management/mitigation plan is carried out. Ensure environmental compliance documentation is complete before any ground disturbing activities take place, and submit status and annual reports to BPA. Coordinate Citizens Advisory Group meetings, participate in community educational events when available, ensure payment of PILT, weed assessment and fire protection contracts.
- 2) Continue maintenance on fences, existing habitat enhancements, reader boards, informational and regulatory signs, roads and parking areas and all facilities on the complex.
- 3) Shrub-steppe restoration. Begin a two year summer fallow on up to 90 acres in 2012. The presence of intermediate wheatgrass requires us to insure a complete kill of existing vegetation before seeding in 2013. Fall dormant seeding of native grasses and forbs will occur in the fall of 2013. This project is located on the bench field above the coulee alfalfa fields on the Scotch Creek unit.
- 4) Fuels treatment on Pogue Mountain. Cost shared with RCO, we will continue to remove small diameter conifers causing overstocked forest conditions and fuel for potential wildfires.

We completed the commercial harvest in 2011, and will hand treat the non-commercial trees in 2012.

- 5) Mark up to 20 miles of barbed wire fence with visual markers to help prevent grouse collisions. Recent research indicates fence collisions are a high mortality factor to grouse, and possible other upland game birds.
- 6) Develop drip irrigation to the shrub planting below the corrals on the Scotch Creek unit. This is a critical area for wintering sharp-tailed grouse and water birch is an important winter food source.
- 7) Riparian restoration. Plant up to 2,600 native deciduous trees and shrubs along Scotch Creek.
- 8) Continue with weed management plan. Weed Management activities for the 2012 field season will again focus on the musk thistle problem at the Chesaw Unit. The large area, difficult terrain, and density of infestations make control efforts very time consuming. Efforts may exceed 500 hours to cover the unit twice to treat plants at varying maturity levels. In addition houndstongue and Canada thistle will be treated during the same time period. The Scotch Creek unit has seen a large influx of Canadian thistle within the last couple of years. Russian knapweed infestations on the Scotch Creek Unit continue to remain stable. 2012 treatments will focus on the Silver Hill and Honey Lake sections of the unit; treated acres should again exceed 200 acres. White top infestations primarily occur on the most degraded sites within the unit. Infested acres remain stable; approximately 45 acres will be treated in 2012. In addition about 50 acres of general Ag weeds will be treated and 15 acres of St. Johns wort on Silver Hill. Treatments to the Eder unit will focus on Russian knapweed and houndstongue. Houndstongue in the Ninemile Creek area will be the primary focus; approximately 10 acres will be treated. The Tunk Valley unit has seen a large expansion in Russian knapweed, treated acres in 2012 should exceed 50 acres.
- 9) Aspen regeneration on the Chesaw unit. Methods for aspen regeneration, including cutting and burning, will be explored this year to stimulate this important habitat feature on Chesaw.

Citizens Advisory Group Input (2012) (and response in italics)

CAG meeting: January 27, 2012

Attendees

Brian Derting
Larry Hudson
Jerry Barnes
Dick Finch
Joe Berney
Heather Findlay
Garry Schalla
Bryce Krueger
Matt Marsh
Bryan Dupont

Representing

Washington Department of Natural Resources
Okanogan County Noxious Weed Control Board
Washington Cattleman's Association
Omak Sportsmen's Club
Neighboring landowner/agriculture
North Central Wash Audubon Society
Okanogan Land Trust
Natural Resources Conservation Service
U.S. Forest Service
WDFW

Input and Issues discussed:

- Contact the U.S. Border Patrol (USBP) with the suggestion of helping out with weed control if they continue to drive across public lands, causing soil disturbance. Larry said he would discuss with the weed office a possible informational talk/brochure to the USBP to make aware of their affects on spreading weeds. *In discussions with the USBP they indicated that they have trespass rights within ¼ mile of the border, indicating that they do not need permission to access this area. This is the area where Jim has noticed the off road vehicle disturbance. We will pursue providing educational materials to make them aware of the potential problems with weed invasion.*
- Land acquisitions: Jerry commented that agriculture and grazing on our lands is critical to our community and wants to see that continued where possible. Also fences should be a high priority and need to be maintained. *The WDFW has continued grazing leases on both new properties, which now includes 5 of the 7 wildlife area units on Scotch Creek WA. An interim grazing plan has been written to manage grazing through 2013 on the new areas, while a new plan will be drafted and will include CAG input. One agricultural lease was also extended through 2013 to allow irrigation and haying on the Similkameen – Chopaka unit.*
- Matt would like to see public access and signing developed on the new properties. *There are a couple places on both new properties that could work for a small parking area with reader board information. Jim will pursue this in 2012.*
- Dick also wants to pursue public access to Pogue Mountain if/when it becomes possible. Brian mentioned that would require some kind of purchase from the trust, since parking and trail access would be on DNR. *Pogue Mountain access will require an easement or fee title purchase to get through two private holdings between DNR and DFW lands. At this time we don't have willing sellers, but we are continuing to monitor and will pursue this when the time is right.*
- The group generally liked the timber thinning and plans for prescribed burning on Pogue Mountain, i.e. being actively managed.
- Joe asked what sharp-tail eats after the grass gets so tall and dense. Would like to see something to reduce the fire danger as well, possibly graze. Dick commented that the fire frequency was 4 - 12 years in our lower elevations, and that possibly prescribed fire could be used to enhance the grasslands. *Summer food habits for sharp-tail includes green leaves, flowers and seeds of grasses and forbs. In the fall grasshoppers can make up a large portion of their diet. The comment is how they find such food in the tall dense mature residual grass stand created without grazing. Nesting and brood rearing cover is critical to sharp-tail survival. We are managing for 18- 24 inches residual grass cover to provide some hiding cover from hawks, owls, and coyote predation. Some areas are certainly too thick for ideal sharp-tail habitat, and we are discussing methods to improve the habitat. Prescribed fire might be the tool to do this, and we will research that possibility.*
- Larry asked that we watch for weeds in the Chopaka area, including Leafy spurge, Longspine sandbur, and puncture vine. Diffuse knapweed in this area was mentioned as a long time problem, and liked the idea of using bio-controls. *The Department is not yet in complete control of the lands in the Chopaka area. The Trust for Public Land (TPL) has purchased the property from the private landowner, and WDFW is pursuing funding to acquire the land from TPL. When WDFW has ownership, we will aggressively attack the noxious weeds on the area.*

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Want to see the full plan?

Go to -

[Hhttp://wdfw.wa.gov/lands/wildlife_areas/management_plans/](http://wdfw.wa.gov/lands/wildlife_areas/management_plans/)

Summary of BPA funded activities

The Scotch Creek Wildlife Area complex is primarily funded by the Bonneville Power Administration (BPA) as well as the WDFW wildlife account to manage non-mitigation activities. BPA funded activities include administrative duties including training and professional development, and duties necessary to oversee the completion of the wildlife mitigation management plan. Other funded activities include maintenance activities on facilities, fences, signs and reader boards, and roads and trails. Enhancement activities include shrub steppe and riparian restoration. For a summary of Scotch Creek annual reports, search author Jim Olson at BPA website:

www.cbfish.org/Report.mvc/SearchPublications/SearchbyTextAndAuthorAndDate.

Mitigation Project

The Washington Department of Fish and Wildlife and Bonneville Power Administration 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 that 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 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 seven 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, and the Ellemeham and Similkameen – Chopaka units in 2011, the total size of all wildlife area units is 24,947 acres. This is a combination of BPA acquired lands and state purchases through the Washington Wildlife and Recreation program.

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.

Management Activities:

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 since the initial acquisition in 1991. These fields are primarily crested or intermediate wheatgrass, and invaded by diffuse knapweed, Russian knapweed, white top, Saint Johnswort, and other noxious weeds. Restoration begins with glyphosphate sprays to kill all vegetation present. We start the cultivation with deep plowing to bury the weed seeds if the soils are deep, or by disking with a rolling plow when soils are shallow. Continue a summer fallow program throughout the season and finish by packing to get a firm, level, and vegetation free seedbed. Dormant seeding occurs in early November with a grass seeding drill to insure 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. Includes replacing mortalities from previous plantings or

increasing diversity and could occur in spring or fall during dormancy. Also includes 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 feet 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 pulling and mowing, to reduce competition and provide sunlight. Fertilizer and watering applications may be needed to increase survival the first year. Temporary deer fencing or repellent may be used, and replant or reseed as needed. Result will be successful establishment of seedlings and improved habitat condition.

Work element 1.4: Pull and pile 20 acres of Russian olive trees in the Eder unit.

Methods: Russian olive is a non-native tree that tends to form a thick monoculture, out competing native riparian vegetation. With the use of a rented excavator we plan to pull and pile for burning approximately 20 acres north of Nine Mile Creek. Suckering from the roots will need to be treated for two years before re-vegetating with a diversity of native deciduous trees and shrubs.

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 participating 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 white top 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. Listening periods will last 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 stands 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 may 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.

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 annually 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 takes while pursuing legal game is a concern of the 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.

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.

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

Methods: Each winter, an annual update will be prepared and presented at the annual CAG meeting, as well as posted on-line. This is an example of the 2012 annual update.

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 5 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 basis.
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 2012 contract (#55402) has been approved, 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, Road Maintenance Abandonment Plan compliance and periodic capital projects.