

Wildlife Projects

Funded in 2007 – 08



Ministry of Environment



West Kootenay Enhancement

Objective & Rationale:

Loss of valley bottom wildlife habitat from the development BC Hydro dams in the Columbia system has elevated the importance of maintaining productivity of the remaining low elevation habitat.

This project focuses on implementation of habitat enhancement/restoration activities located in the West Kootenay. As well it provides resources for new project identification and definition and pre/post habitat enhancement monitoring. Activities are primarily directed at maintaining early seral conditions on ungulate winter range to mimic historical natural disturbance patterns. In the West Kootenay, remaining low elevation, south-facing slopes provide critical winter range for elk and deer. Fire traditionally played a key role in maintaining a mosaic of mature coniferous and open early seral habitat. Slashing and burning treatments are used to recreate these disturbances in a controlled fashion. Funding for the West Kootenay burn program in 2006 was not approved by the HCTF until an Ecosystem Restoration Plan for the West Kootenay was prepared by the Ministry of Environment. This plan will be completed by December 2006 and will be followed with the development of area and species specific prescriptions based on the plans recommendations in 2007-2008. It is anticipated that specific burning projects will be identified and application to the HCTF for the 2008-2009 burn season will be undertaken. The Ecosystem Restoration Plan will primarily be focused within the NDT4 and the long-term impacts on the ecology to the restoration/enhancement sites are relatively unknown. There is considerable evidence that if invasive plants are present on site prior to burning, the treatment can create conditions that encourage invasive plant growth which generally out competes the native vegetation. In the West Kootenay there are relatively few intact ecosystems that are suitable for restoration. In order to determine the impacts it is important to get baseline data for sites that are intact.

I Project Identification/Definition:

1. Investigate enhancement opportunities in the upper reaches of Four-Mile Creek in the Pend d'Oreille valley.
2. Investigate enhancement opportunities in Grohman Creek near Nelson.
3. Investigate slashing opportunities at Rosebud Hill.
4. Finalize identification of prescribed burning opportunities in the Upper Sproule Creek area.
5. Investigate enhancement opportunities in the lower reaches of Murphy Creek near Trail.
6. Finalize private property issues (Beaumont Timber) around burning/slashing sites above Hellroaring Creek and Swift Creek, south of Salmo.
7. Continue discussions with Parks and Protected Areas regarding prescribed burning opportunities in Syringa Creek Provincial Park.
8. Finalize identification of enhancement opportunities near the confluence of Glade Creek and the Kootenay River.

II Project Implementation:

A) Arrow Lakes

The south slopes adjacent to the Arrow and Slocan Lakes provide winter habitat for deer, elk and moose. To maintain/improve habitat values in these areas the following vegetation manipulation/planning activities will be undertaken.

1. Finalize (contingent on suitable winter weather with frozen ground or sufficient snow accumulation) NDT4 habitat restoration through timber harvesting and slashing on Lot 400 on the Deer Creek Property during January and February 2008.
2. Implement conifer spacing on the Hamlin Creek MOE/FWCP property SW of Nakusp.
3. Conduct prescribed burn on TU1 of the Deer Park MOE property in the Lower Arrow Lake area to reduce fuel load and conifer ingrowth.
4. Implement fourth phase deciduous slashing at Carpenter Creek near New Denver in co-operation with New Denver Friends for Wildlife.
5. Slash 5 ha of deciduous shrubs that have grown out of the reach of browsing deer and elk at Deer Park (carryover from 2005). Smaller diameter (<12cm) Douglas-fir will be slashed in the area being treated as well.

B) Pend d'Oreille/South Salmo River

The south slopes above the Pend d'Oreille River provide winter habitat for White-tailed deer while the slopes above the South Salmo River provide winter habitat for Mule deer, elk and Rocky Mountain bighorn sheep. Fort Shepherd provides critical winter range for mule deer. To maintain/improve the habitat values on these winter ranges the following vegetation manipulation activities will be undertaken. This is necessary to improve ungulate browse and cover values.

1. Slash 4 ha of deciduous shrubs and trees that have grown out of reach of browsing Mule deer in Barrett Creek
2. Slash 10 ha of deciduous shrubs and trees that have grown out of reach of browsing White-tailed deer and elk in the Pend d'Oreille valley on MOE/FWCP property.
3. Selkirk College first year wildlife students will slash 3 to 4ha of deciduous shrubs that have grown out of reach of browsing White-tailed deer in the Charbonneau Creek drainage on MOE/FWCP property.

C) Kootenay Lake

1. Finalize restoration planning in Rover Creek in co-operation with FortisBC (they provided \$20,000 to cover planning and treatment costs).
2. Slash 5 ha of deciduous shrub to rejuvenate browse values on Duncan Flats DL 896.
3. Conduct prescribed burn on field portion of DL 881

III Project Monitoring:

Continue vegetation monitoring of past habitat restoration activities at Deer Creek and post-burn plots at Neptune Creek.

1. Monitor spotted knapweed and St John's-wort infestations at Rosebud Lake and Eldorado Creek prescribed burn sites, the slashed site on Kitchener Mountain, Marsden, Fox Tree Hill south of Creston and in the Pend d'Oreille valley at the Matthill Field and Rorick Face.
2. Establish pre-treatment plots on proposed burn sites as required by Enhancement Monitoring Strategy at Rover Creek and Upper Sproule Creek
3. Map boundaries of various habitat enhancement sites using GPS.
4. Enter and summarize vegetation monitoring data.
5. Collect baseline plant data on intact and invasive plant impacted NDT4 sites within the West Kootenay in order to provide recommendations for long term management of these sites.

Performance Measures:

1. Burning/ slashing sites successfully investigated by on-the-ground reconnaissance at a number of potential enhancement areas
2. Priority burning/ slashing sites catalogued and MOF burn plans and prescriptions produced and signed off
3. Burning and slashing operations carried out safely
4. Burned and slashed sites mapped and burn size (ha) and intensity (% burn coverage) determined
5. Rejuvenated (more palatable and available) ungulate browse present on the areas burned/slashed after one growing season and evidence of ungulate browsing after one winter season on selected sites
6. Data collected to track the vegetation response at various habitat enhancement sites in the West Kootenay
7. Project results disseminated to interested public individuals and groups

Future Activities:

These types of habitat management activities are necessary on a long-term basis to maintain/enhance wildlife populations.

Benefits:

- rejuvenated plant communities
- improved moose, elk, White-tailed deer and mule deer winter browse values
- increased wildlife viewing and hunting opportunities

East Kootenay Enhancement

Objective & Rationale:

Loss of valley bottom wildlife habitat from BC Hydro dams in the Columbia system has elevated the importance of maintaining productivity of remaining low elevation habitat.

Over the last several decades forest in-growth has resulted in an estimated loss of 3,000 hectares annually of open grassland and open forest communities in the East Kootenay Trench. The result has been the concentration of native and domestic ungulate grazing which has had negative consequences to both grassland habitats and to native wildlife populations. The loss of these habitat types have been attributed (at least in part) to the extirpation of Columbian Sharp-tailed Grouse and to the

decline of wild ungulate populations. For example, the Premier Ridge Bighorn sheep (blue-listed) population has decreased substantially since the early 1990s from estimates of 160 in 1991 to only 20 in 2000. No one thing is responsible for the decline, however conifer ingrowth has in no doubt contributed significantly. The effects ingrowth plays on Bighorn sheep are two fold. Firstly, Ingrowth results in higher densities of conifers, increased canopy closure and a reduction of suitable forage (especially near escape terrain). Secondly, ingrowth reduces the detection distances of predators by Bighorn sheep. In response to this forest ingrowth crisis, a variety of agencies have been working with government (MOF) to reverse this trend to the benefit of ecosystems, wildlife and other non-timber values.

The main goal of this project is to expedite the recovery of grassland habitat. This is facilitated by the participation by FWCP Biologists on the Trench Restoration Committees and through the funding of grassland restoration opportunities in both the Cranbrook and Invermere Forest Districts. These opportunities are operational in nature and include the development of Stand Management Prescriptions, Burn Plans, Pre-Burn Slashing and Prescribed Burning. It is estimated that 4500 ha per year will need to be treated to restore grassland and open forest habitat and their dependant wildlife.

Monitoring and weed control will also be conducted under this project.

I Project Identification/Definition

1. Participation on the Trench Restoration Committees
2. Participate on Radium Bighorn Sheep Working Group to co-ordinate activities between MOE, BCFS, KNP and FWCP
3. Develop SMP/Burn Plans for priority sites (~1500ha) as identified by the EK Trench Restoration Committees. Sites include Premier to Wildhorse, Earl Property and N. Rocks Pasture, and Marcers Pasture

II Project Implementation

Burns

Total Treatment Area: 909 ha

1. Spur Lake, (400ha, Invermere)
2. Todhunter Cr. (150 ha, Cranbrook)

Slashing

Total Treatment Area: 280 ha

1. Conservation Properties: Hofert etc. (100 ha, Invermere FD)
2. Wasa Cr Slashing (40 ha, Invermere FD)
3. Herbert Cr Slashing (40 ha, Invermere FD)
4. Echo Pasture (100 ha, Invermere FD)

III Project Layout and Monitoring

1. Vegetation monitoring: Hoferts, Rocks Pasture, N. Stoddart
1. Fire Effects Monitoring
2. Layout and GPS

IV Reporting

1. Annual summary report
2. 10 year activity report
3. Database for tracking and document ER projects

Performance Measures and Deliverables:

1. Prescribed Burning: Burning reduces conifer stocking to restoration target (Open Forest 76-400 sph; Open Range 0-75sph)
2. Pre Burn Slashing: Slashed sites meet conifer stocking targets in SMP. Slash is readied for fol low up burn where prescribed.
3. Contribute $\geq 25\%$ (1125 ha) toward goal of restoring 4500 ha. per year
4. Planning: Successful development of 1500 ha. restoration prescriptions (SMP's) for future years
5. Reporting: Annual summary report
6. Monitoring Data and Report
7. GPS linework

Future Activities:

Continue to support efforts and develop projects to restore grassland habitat by developing operational plans (Stand Management Prescriptions and Burn Plans) or through operational activities (Slashing and Prescribed Burning).

Benefits:

- Improve grassland habitat for a number of grassland dependant wildlife species
- Provide feedback to the program about treatment effectiveness

Non-Game Enhancement

Objective & Rationale:

FWCP has developed and implemented small-scale enhancement projects to benefit western painted turtles, cavity nesting ducks, wetlands, snakes, skinks, Sharp-tailed Grouse, and bats. These species have been affected by hydroelectric development and in some cases are blue-listed. To date, activities have included creation of alternate nest sites for turtles, enhancement of cavity-nesting duck populations through installation of nest boxes, snag creation, and construction of a secure maternity roost for Townsend's big-eared bats. This project covers costs for development, implementation, monitoring, and maintenance of these enhancement initiatives. Specific activities include:

- Monitor and maintain nestboxes in Columbia Valley
- Control vegetation on alternate nest sites created for turtles near Argenta, Revelstoke and Cranbrook
- Monitor use of alternate nest sites created for turtles at Elizabeth Lake, Revelstoke and Argenta
- Investigate the potential for a population assessment of western painted turtles in conjunction with the CVWMA
- Monitor and maintain Townsend's big-eared bat maternity roosts near Cranbrook, including liaison with First Nations and resort developers at the St Eugene Mission
- Monitor wildlife tree recruitment and longevity at ecosystem restoration sites (Rocks Pasture, Sharptail/Ashfire pasture and Hofert) with a focus on nesting sites for Lewis' woodpecker and Flammulated Owls. Plans to maintain breeding populations with nest boxes or wildlife tree creation will be developed if required
- Support badger recovery actions in the EK, including stewardship and translocations as identified by the Recovery team
- Restoration pre treatment monitoring and treatment for Western skink habitat in the Creston Valley
- Resurvey of bat roost trees in the Pend d'Oreille Valley
- Compile existing information and investigate the potential for future projects on candidate species at risk including the Olive-sided Flycatcher and Barn Swallow

- Investigate the potential for a population study of Long-billed curlews in reservoir drawdown zones
- Identify project partners, study areas and existing information for a project on the importance of riparian cottonwood forests as stopover sites for migratory birds
- Sharp-tailed Grouse (blue-listed) recovery strategy for the East Kootenay
- Identify and implement wetland enhancement opportunities in the West Kootenay
- Monitor Great Blue Heron nest colonies to track nest success; coordinate stewardship with private land owners

Future Activities:

These types of habitat management activities are necessary on a long-term basis to maintain/enhance wildlife populations.

- Conservation and preservation of identified Townsend's big-eared bat maternity colonies, roosting sites and hibernacula.
- Maintenance of viable populations of Western Painted turtle.
- Reintroduction of Sharp-tailed Grouse.
- Enhancement/protection of small wetlands and riparian cottonwood forests.
- Recovery projects for newly identified species at risk
- Conservation and preservation of identified racer hibernacula.
- Conservation and protection of Western skink habitat.
- Determine the value/impact of reservoir draw down zones on species at risk.

Benefits:

- Conservation of ecologically important and vulnerable bats, lizards, and snakes.
- Improved nesting success of cavity nesting ducks.
- Increased wildlife viewing and hunting opportunities.
- Maintain cavity nesting species at risk.
- Improve viability of local painted turtle populations.
- Reverse the loss of ecologically important wetlands.
- Re-establish the once relatively common Sharp-tailed Grouse in the East Kootenay.

Large Mammal Monitoring

Rationale & Results:

In 1998, a basin-wide Large Mammal Monitoring Plan (LMMP) was developed. This plan detailed activities to address the need for population trend data basin-wide for the 7 species of ungulates. Trend data is used to detect changes in species numbers, so that we manage accordingly to the needs, by species and areas. The FWCP adopted a scaled down version of the plan with expectations that other partners would also participate.

This year we would like to focus our efforts on collecting data on elk in the West Kootenay, moose in the Robson Valley (McBride Area) and mlk in the East Kootenay, concentrating on areas surrounding our enhancement sites. Last years plans to inventory elk in the East Kootenay were delayed one year. Funding identified last year for elk inventories will be used to radio collar a number of elk to aid in the development of a sightability model. The Elk Radio Collaring Project is a cooperative project with the Ministry of Environment. Carry over counts for deer will also occur in the East Kootenay. Counts involve local Rod and Gun Club participation. Previously identified transects will be counted at least 4 times each spring. Spotlight night counts will also be carried out by staff in the Pend d'Oreille (10 days) and survivorship of radio collared deer will also be monitored (10 days).

Performance Measures:

1. Aerial Inventories completed to RIC standard
2. Results considered in Restoration/Enhancement plans
3. Carry over count and aerial survey data considered in habitat and population management plans

Future Activities:

- Monitor animal response to enhancement or protection activities where possible.
- Use data as pre-enhancement population estimates.
- Use information to assist in developing detailed enhancement projects.
- Use data to track the status of ungulate species

Benefits:

- Help identify areas of high use to aid in long-term plan development.
- Aid in evaluating the success of the enhancement or protection activities.
- Improve ability to identify a trend in populations before it becomes a serious problem.

Native Grass Seed Collection and Trials

Rationale & Results:

Soil disturbance as a result of project delivery is often quite common. Ecosystem restoration requiring timber harvesting, conservation property fencing requiring equipment for pounding posts, road deactivation are only a few examples. The desire and ability to re-vegetate these disturbed sites back to their natural condition is often hampered by the lack of available native seed, the cost of purchasing native seed and the urgency of re-establishing the vegetation before noxious weeds appear or erosion occurs.

This project will examine the requirements for native seed collection, storage and planting. A seed collection device, fabricated by the MOF (Invermere) has been offered for our use. This device was used successfully for collection of Needle and Thread and Blue Bunch wheat grass in the late 1990s.

Suitable collection sites will be identified concentrating on conservation held properties first. If suitable sites are found, small scale collection of a few different species will occur. Seeds will be prepared and stored at suggested temperature and planted the following spring in a number of different trial plots.

We are also planning on developing a tool that will enable us to take a portion of a mature bunch grass. The tool will be similar to a shovel, but instead of the spade at the bottom it will have a round piece of pipe, that is sharp on the bottom. This pipe will act as a punch and will be forced through the clump of grass, removing both a portion of the foliage and roots. The samples will be collected on adjacent sites and planted on the disturbed sites in a similar fashion to the way they were collected. This technique will complement the broadcast seeding of the native grasses and will allow us to replicate the species composition of some of the rare or listed plant communities. Bunch grasses are also used as nesting cover by Sharp-tailed Grouse. The establishment of healthy bunch grass communities is essential if we plan on re-establishing Sharp-tailed populations in the future.

Performance Measures:

1. Identification of healthy desirable plant communities suitable for collection
2. Successful collection of desirable seeds
3. Successful germination and establishment of seeds
4. Successful establishment of bunch grass bunches.

Future activities:

- Continued experimentation aimed at improving establishment and viability of plants
- Increased scale of plant diversity, collection and establishment
- Increased management and protection of preferred collection sites

Benefits:

- Re-establishment of native grassland habitats
- Reduction of noxious weeds
- Reduction of soil erosion

Premier Ridge Bighorn Sheep Augmentation

Rationale & Results:

Twenty-five Rocky Mt. Bighorn sheep were successfully relocated from the Radium/Stoddart Cr. herd to the Premier Ridge area in February 2005. The Premier Ridge Bighorn sheep population had decreased substantially since the early 1990s from estimates of 160 in 1991 to only 20 in 2000, with a slight increase to 30 in 2004. From the 25 sheep re-located, 16 ewes were fitted with radio collars. Thus far, only 2 have died (cougar predation and avalanche) and the 3 GPS collars have been removed. The remaining marked animals continue to occupy traditional sheep habitat, however lamb recruitment has been low. Coyote predation on lambs is suspected and we are hoping that the relocated sheep adapt by spending more time in suitable escape terrain. Monitoring of these remaining 11 ewes will continue through to fiscal ending March 2008. If this augmentation is deemed successful, another 20-25 bighorn sheep will be transplanted in the winter of 2008. Sheep moved in 2008 will only be eared tagged to reduce costs associated with monitoring.

In April 2007, 19 bighorn sheep were moved from the Golden area to the Whiteswan Lake and Lussier River canyon areas. Ten ewes and nine rams were corralled, assessed and air-lifted in an effort to

bolster herds between Canal Flats and Fort Steele, where sheep populations are at an all-time low. Relocating a portion of the Golden herd should also help reduce collisions with vehicles along the Trans-Canada highway and reduce the need for the local rod and gun club to feed sheep that winter along the highway.

Performance Measures:

1. Maintenance of 50-70 bighorn sheep at Premier Ridge
2. Reduction of an additional 20-30 bighorn sheep for Radium to reduce chances of disease
3. Reduction of 25 sheep off the Trans-Canada Highway
4. Reduce the amount of winter feeding required by this Golden sheep population

Future Activities:

- Monitor survivorship of radio collared, transplanted bighorn sheep through to end of fiscal 2007 - 08 for Premier and 2010 for Lussier
- Continue to treat existing habitat to improve survivorship of the population
- Monitor population over time
- Potentially add another 25 bighorn to the Premier - Wildhorse area

Benefits:

- Viable bighorn population at Premier Ridge
- Reduce feeding burden of Golden Rod and Gun Club

Small Wildlife Projects

Objective & Rationale:

This task will address the need for increased club or organization participation with the FWCP. Clubs will be invited to approach the program for technical and small financial assistance in club-initiated projects.

Projects in the past have included: Skattebo Slashing – Selkirk College, Dione Copper Butterfly Assessment: RM Naturalists, Fort Shepherd Biodiversity Inventory – Trail Wildlife Association, construction and placement of nestboxes; caribou/snowmobile conflict signage and pamphlet; planting of conifers for wildlife cover, slashing of decadent browse and fertilization of wintering areas, wetland protection-city pasture and Munn Lake, and Griffith habitat restoration. Small projects arising from previous land stewardship projects may also be considered.

Performance Measures:

1. Complete 4 or more small projects
2. Capture data on location and type of activity undertaken

Future Activities:

Continued involvement in club-initiated projects

Benefits:

- Enable clubs to play an active role in the enhancement of wildlife.
- Provide volunteers with the necessary funds for equipment and material.
- Increase public awareness of the FWCP.

Footprint Impact Assessment: Wildlife

Rationale & Results:

The FWCP is conducting a project to evaluate the footprint impacts of BC Hydro's developments within the Columbia Basin by estimating changes in habitat, primary productivity, and fish and wildlife populations resulting from dam construction. It will provide a better understanding of the amount and significance of these impacts to the ecosystem, as well as assist the FWCP to develop, prioritize and monitor compensation projects. The results will help guide future FWCP planning. This review does not consider impacts due to dam operations, which are addressed in the BC Hydro-led Water Use Planning (WUP) process.

Habitat mapping, including wetlands, streams and upland types that were present prior to flooding of the BCH Columbia Basin Dams, was completed in April 2005. The Primary productivity chapter was completed in April 2007, with Habitat Loss and Wildlife Population Impacts chapters to complete prior to March 2008. Species Interaction chapter will be written once these 3 are complete. A summary document will be produced outlining key results, compensation options, priorities and costs, at the conclusion of the project.

Performance Measures:

1. Pre flooding map coverage created
2. Wildlife and habitat productivity losses estimated
3. Results and recommendations delivered to Steering Committee
4. Powerpoint presentations prepared and made available to Technical and Management audiences

Future activities:

Update as required (every 5 –10 years).

Benefits:

- Reduce conflicts within FWCP committees
- Identifies priority activities relating to impacts

Caribou Recovery

Objective & Rationale:

Caribou in the Columbia Basin are red-listed due to habitat loss and fragmentation from hydro dams, logging, settlement and recreation. Complex dynamics, likely driven by predators, multiple prey and habitat changes are placing pressure on populations. Inventories in 2002 suggested significant declines in the Central Selkirks (including Duncan), Revelstoke, Monashee herds and dangerously low populations in the South Selkirk, Southern Purcell and Monashee herds. Although management interest has been high in the main herd areas, little attention has been given to several sub populations which were substantially affected by Columbia Basin dams including Duncan, Kinbasket. Over the next 2 years we are proposing to complete reviews of these areas, in co-operation with MOE and SARCO, to clearly define recovery actions and priorities. This project covers FWCP involvement in 4 aspects of caribou recovery in the region:

1. Participating in co-ordinated caribou population censuses region-wide; and
2. Maintain aerial monitoring of radio collared South Selkirk caribou to assess live/dead status and habitat use;
3. Participate in cougar-caribou studies in the Revelstoke area; and
4. Complete Duncan and Kinbasket Caribou sub population review/conservation assessments; identify follow-up actions.

Performance Measures:

1. Census completed in late winter if snowpack is suitable
2. South Selkirk herd monitoring completed
3. Cougar kill rates and types documented within Recovery area

Future Activities:

Depending on the outcome of SARCO determinations regarding caribou management in the Kootenays, transplants may be proposed.

Benefits:

- Increase the opportunity to respond to the causes of mortality, particularly if they are being killed by carnivores (cougar).
- Improve knowledge regarding role of cougar in predator prey system in the Revelstoke caribou recovery area

Land Acquisition and Stewardship

Rationale & Results:

Land acquisition is an effective means to ensure key parcels of wildlife habitat are protected from non-compatible uses. The FWCP Land Acquisition strategy provides direction to aid in prioritising potential purchases based on their value to the fish & wildlife resource. The parcel(s) recommended for purchase will depend on availability, priority ranking and cost. We will work closely with MOE and ENGO Land Management staff throughout the process to ensure co-ordination with other land acquisition initiatives. A detailed proposal outlining the parcels being considered, their conservation values, purchase options and partnerships will be submitted separately for Steering Committee consideration. Final Approval for the purchase of any property will be sought from the Technical and Steering Committee prior to purchase negotiations.

In the East Kootenay, a co-ordinated, multi partner Land securement program (East Kootenay Conservation Program) similar to SOSCP in the Okanagan has been formed during 2002. FWCP is a key partner in this initiative, greatly enhancing our ability to leverage funds for both acquisition and stewardship.

In the West Kootenay, several projects are being worked on by ENGO's that may come forward as minor partner opportunities during 2007/08. Our (proposed) priorities for 2007/08 are:

1. Contribute to the Fort Shepherd acquisition being spearheaded by The Land Conservancy (TLC).
2. Complete necessary due diligence to enable completion of at least one additional West Kootenay Land acquisition with The Nature Trust (TNT).
3. Continue to update West Kootenay priority list in conjunction with the Nature Trust to help guide future acquisitions.
4. FWCP retains a limited ability to participate as a minor partner on East and West Kootenay acquisitions.

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Performance Measures:

1. Participate in 2 priority acquisitions
2. Update Acquisition List and develop partnerships with other funding sources for future acquisitions

Future Activities:

Appraisal, legal fees and property taxes may be assessed. Depending on the nature of the parcel purchased, management and/or enhancement activities may also be required in the future.

Benefits:

- Protection of key wildlife habitats from incompatible land uses.

Fringed Bat Distribution and Habitat Requirements

Objective & Rationale:**Background:**

Reports of the Fringed Bat (*Myotis thysanodes*) are rare in its Canadian Range. The Committee on the Status of Endangered Wildlife in Canada designated it as a species of Special Concern in 1988, but after a status re-examination in May of 2004 its status was changed to "Data Deficient" (COSEWIC 2004). The Fringed bat is provincially blue-listed (CDC 2002).

Previously thought to be restricted to the Intermontane Grassland portions of British Columbia, recent bat work in the Creston Valley identified a population of Fringed bat in the Interior Cedar-Hemlock Biogeoclimatic zone (Hill and Reid 2005). This was the first account of the species east or west of the dry interior (see figure 3 COSEWIC status report p 8). Captures included a reproductive adult female, an adult male and a juvenile female.

Roost Requirements:

Roost sites vary throughout this species range. Caves, mines, rock crevices, buildings and trees have been documented as day roosts (including maternity colonies). Currently, information concerning the roosting ecology of the Fringed bat in B.C. is based on opportunistic finds or inferences derived from captures. No radiotelemetry studies have been conducted in the province. Only two maternity roosts have been identified in BC since 1938 (COSEWIC 2004), both of which were in the attics of buildings. An adult male Fringed bat was captured entering an abandoned mine to night roost in the Creston Valley. This species hibernates in other parts of its range, however there are no winter records for B.C.

Foraging Habitat:

In a light tagging study conducted near Oliver B.C., 21 Fringed bats were marked with light tags and followed to their foraging areas (Collard et al 1990). Foraging was concentrated in riparian areas from 3 to 10 meters above the ground. Firman 1994 observed a light tagged Fringed bat foraging over the forest canopy along the edge of a lake. Most captures of Fringed bats in BC are from riparian thickets adjacent to water bodies (Holroyd et al. 1994, Roberts and Roberts 1993, Sarell and Hanley 2000, Hill and Reid 2005), suggesting a reliance on these habitats for foraging.

Significance:

The Fringed bat reaches the northern limit of its range in southern B.C. Considering this species association with riparian habitats in B.C., extensive development in the lowland portions of the Columbia Basin from agriculture, hydro-electric activities may have had an impact on the distribution and availability of roost sites.

Objectives:

1. Document roost features used by Fringed Bats in the Creston Valley
2. Collect information on environmental and structural characteristics of identified roosts
3. Through radio-tagging locate maternity roosts and forage habitat
4. Attempt to locate hibernacula
5. Make recommendations regarding specific conservation measures to protect Fringed bats and critical habitat

Future Activities:

Conservation/protection for Fringed bat maternity, hibernacula, day roost features, and foraging area.

Benefits:

Distribution and conservation of ecologically important blue-listed species.

GIS & Data Management Operations

Objective & Rationale:

Geographic Information Systems (GIS) support for FWCP projects provides a valuable service in data analysis, presentation, dissemination and storage. Two FWCP Program Partners are currently using GIS to support their business functions. FWCP GIS Operations play an important role, assisting its Program Partners by sharing data and expertise. As the FWCP matures, the amount and value of data and reports increases. External requests for map-based (e.g. GIS) data, reports and other datasets are also increasing as Canadas' Species at Risk Act and other provincial/federal initiatives (eg. FN treaty negotiations) and Water Use Planning are implemented. In 2005/06 we began scoping the data management needs and structure. In 2007/08 we will complete the conceptual framework and begin migrating our data into the format. Along the way we have been working with BCH and MoE to ensure we co-operate in areas of overlap (eg. species-at-risk data) in an efficient manner. For this year we will also focus on providing project-level support in data analysis, storage and presentation. Project level GIS map products to be completed during this year include:

1. presentation and analysis of Large Mammal inventory data
2. presentation and analysis of bat, cougar, badger, leopard frog, skink, racer and deer location data
3. storage of enhancement site locations and monitoring data
4. storage and presentation of data from other projects such as Dam Impact Assessment as required
5. presentation of data for communications and fisheries program needs
6. extension of the map extent to other parts of the basin, hosting a live map application with direct navigation bar linkages to the existing biodiversityatlas.org (SGRC contribution agreement & staff time for meeting)
7. maintenance of the Biodiversity Atlas application for hosting the surrounding website
8. Data Management contract to tie final GIS coverages with FWCP reports

GIS support time has been distributed among the projects to fully capture project costs.

Future Activities:

- Continued need for this type of service is expected

Benefits:

- Ability to store data in accessible geo-referenced format
- Accessibility to all project-related data
- enables accurate, quantitative analysis of habitat data
- Facilitates sharing of information amongst the two parent agencies and the program
- Produces high quality products for presentation purposes
- Prevents data loss (ie. spatial data and/or excel database buried in a directory)
- Will help to eliminate misinterpretation/misuse of data

FWCP Land Management Operations

Objectives and Rationale:

FWCP manages approximately 7,500 ha in the vicinity of the Arrow Lakes, Pend d'Oreille River, Kootenay Lake, and Rocky Mountain Trench as well as participating in management activities on Big Ranch/ Musil properties in the Elk Valley. Detailed management plans direct enhancement activities on the MoE/FWCP properties in the Pend d'Oreille valley, near Arrow Lakes Reservoir, Nelson, Meadow Creek, and in the Rocky Mountain Trench. Additional land purchased will require management plans.

Base funding (Items 1-4) allows FWCP staff to deal with land management issues as they arise. Item 5 provides funding to the Central Kootenay Invasive Plant Committee (CKIPC). During 2003/04 and again in 2004/05 considerable effort was necessary in the Pend d'Oreille valley to investigate bark beetle outbreaks in age class 6 Douglas-fir on DL8077. Other examples included the construction of an illegal cabin, trespass grazing, mud bogging in a wetland and road/fence repair on MoE/FWCP properties in the Pend d'Oreille valley, illegal firewood extraction on Lot 400 at Deer Park and illegal camping and firewood cutting at Marsden. These funds will also support essential weed control efforts in the Pend d'Oreille, at Deer Park and the Coleman Ranch and thistle mowing and DL881 haying at Meadow Creek. Developing management plans in conjunction with NGO partners on two

recently acquired properties is planned, as well as a co-operative land management program for East Kootenay properties. Specific tasks are listed below.

1. Pend d'Oreille, Arrow (Coleman Ranch + Deer Park) & Marsden noxious weed control, grass seeding and fence removal
2. Hofert noxious weed control
3. Meadow Creek haying, thistle mowing
4. Maintenance of information signs, roads, fences, and other required activities as they arise
5. East Kootenay Land Management Activities: Elk Valley, Hofert, East Columbia Properties; in conjunction with The Nature Trust
6. Develop Wildlife Management Plans for properties that do not currently have plans (Renata, Edgewood and Slocan)
7. Implement a vehicle closure under the wildlife act at Heinz field
8. Conduct weed inventories or biocontrol releases on conservation properties as identified in the Central Kootenay Invasive Plant Committee Strategic Plan

Performance Measures:

1. Management plans completed for all FWCP/MoE/TNT properties
2. Weed distribution and abundance decreases year to year in selected areas
3. Management approach on early successional habitat in Meadow Creek completed
4. Big Ranch/Musil Property Management Plan implemented
5. Pend d'Oreille Valley Wildlife Management Plan implemented
6. Coleman Ranch Wildlife Management Plan implemented
7. Annual land management report

Future Activities:

- "Rapid response" type activities are expected to occur on an ongoing basis
- Other properties will require management plans
- Development of management plans will lead to habitat enhancement opportunities

Benefits:

- Funding will allow Program staff a "rapid response" to land management issues as they arise
- Management plans provide direction for future enhancement activities

Northern Leopard Frog Recovery

Rationale & Results:

Northern leopard frogs (*Rana pipiens*) were one of the most common amphibians in North America. However, over the past three decades there have been drastic declines across the western extent of their range. Once common throughout south-east British Columbia, by the 1990s only a single population in B.C. remained. Recent surveys suggest that habitat loss and alteration, disease, introduced fish species, and low recruitment threaten this population. Both COSEWIC and the CDC list B.C. population of leopard frogs as Endangered.

In 2000, a recovery effort was initiated under the direction of a multi-agency recovery team. A recovery strategy has been in development with the primary goals of (1) securing the existing population and (2) establishing 5 additional populations. A reintroduction program was established, and from 2001 to 2005 over 14,000 were released. In addition, habitat enhancement, disease research, and outreach initiatives have been undertaken.

For 2007/2008 it is proposed that the FWCP; (1) continue to monitor leopard frogs in the CVWMA and in the Bummers Flats reintroduction site, (2) summarize habitat data in report format and prepare a critical habitat document for Northern leopard frogs, (3) explore opportunities for habitat enhancement in the CVWMA, (4) continue to monitor and support research on the affects of chytridiomycosis on the population of leopard frogs in the CVWMA, and (5) collaborate with recovery efforts in Alberta, Washington, and Montana.

Future Activities:

- Population Monitoring
- Expansion of reintroduction efforts
- Habitat enhancement

Benefits:

- Reduce the threat of extirpation by expanding the distribution of Northern leopard frogs in southeast B.C.

Western Screech-owl Inventory and Breeding status 2007

Objectives:

Specific objectives of this project are to:

1. conduct Western Screech-owl detection surveys along established and new survey routes;
2. conduct nest searches at all owl detection sites and continue monitoring sites to determine breeding status and reproductive success;
3. assess habitat characteristics in occupied territories and at known nest sites to provide information for habitat stewardship, restoration and potential WHA designation if applicable; and
4. initiate contact and provide information to private land owners with identified and potential screech owl habitat.

DESCRIPTION OF WORK

Project Location

The inventory will take place in the south west and central Kootenay region. Specific locations to be covered in the inventory include:

- Previously un-surveyed areas (Casino and Big Sheep Creek).
- Locations of reliable owl sighting records in (Dulisse and Beaucher 2006).
- Other locations based on mapping or pre-work meeting and consultation with FWCP and MoE staff.

TASKS AND DELIVERABLES

Tasks

Contractor shall:

1. Develop a list of prioritized survey transects for review at pre-work meeting. Information to consider includes:
 - a) Results previous inventory surveys
 - b) Knowledge of suitable habitats
 - c) Preliminary listing of areas to be surveyed include: Needles, Slocan Valley, Creston, West Arm of Kootenay Lake, Salmo River; Fruitvale/Waneta/Trail; Pass Creek / Robson;
2. Conduct approximately 30 days of field surveys. Field surveys will include;
 - a) Owl call playback surveys over the period of April 15 to July 31, 2007. Surveys will be conducted to RISC standards (Hausleitner 2006) along established and new transects to confirm presence of Western screech-owls.

b) Nest searches where Western screech-owls are detected. Nest searches will consist of field visits during daylight hours to conduct visual searches of the area for Owls, their sign, nesting and roosting locations. Record nest stand, and where possible, nest or roost location and attributes (tree species, DBH, Height, cavity description, cavity height, cavity orientation).

c) Call playback surveys for Barred Owls and Great-Horned owls may be conducted at historically occupied sites if sufficient field days remain after completion of WSOW surveys and nest searches.

3. Spend approximately 4 days on communication and liason with owners of private land with Western screech-owl detections or potential habitat. This will include site visits, phone calls and providing written information. Maintain a database of public residents and landowners of potential WSOW habitat. This should include contact information, information provided and their response to the project and potential/ priority for future covenants (Appendix 2).

4. Capture survey location data and results from 2007 in a single excel workbook to enable upload to SPI at a later date. Include Datum, Zone, Easting and Northing for all spatial references. Format will follow attached spreadsheet (Appendix 2). The contractor will work with FWCP GIS co-ordinator to develop maps for inclusion in the final report.

5. Prepare a draft and final report summarizing project activities, results and recommendations. Format will follow attached "Report Guidelines".

FWCP shall provide support with the following activities;

- 1.** Production of maps for the report, presentations and outreach materials.
- 2.** Call playback surveys and nest searches as required.
- 3.** Stewardship activities including preparing and providing information for land owners.

Deliverables:

- 1.** Re-work Meeting with FWCP to discuss and finalize survey transects, schedule and data/report requirements.
- 2.** Completion of call playback surveys and nest searches by July 31, 2007.
- 3.** Progress Report: Electronic email briefly outlining survey transects completed and description of results in database/spreadsheet format.
- 4.** Draft and Final reports.
- 5.** Community Presentations and Media Relations
 - a)** Two community presentations will be completed following the project to present results to stakeholders and the public. Venues will be selected in consultation with the contract monitor.
 - b)** A media release, profiling the project results will be prepared in conjunction with the FWCP Communications Coordinator.