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FWCP-Columbia Core Projects 2014-2015
Delivered on behalf of the FWCP

Fisheries

Kootenay Lake Nutrient Restoration Program (North Arm)
To address nutrients being trapped by Duncan Dam, a "bottom-up" approach is being undertaken in Kootenay Lake through the addition of nutrients (nitrogen and phosphorus in the form of liquid fertilizer) to increase the production of algae which provide food for zooplankton - a main food source for kokanee. Nutrient additions have occurred in the lake since 1992. Results to date have been positive: kokanee biomass (the weight of kokanee per hectare) has, for example, more than doubled in Kootenay Lake since nutrient addition started.

Nutrients are dispensed from a chartered vessel over a 15 km section of the North Arm between the end of April and early September. Extensive monitoring at various stations throughout the lake occurs to ensure water quality is not negatively impacted and the correct balance of nutrients is added. Fish populations benefitting from the nutrient additions include kokanee, bull trout, rainbow trout, and Gerrard rainbow trout, as well as terrestrial species such as osprey, heron, bald eagle, and grizzly bear). There are also benefits for angling, recreation and local tourism opportunities. The project is jointly coordinated by the FWCP and the MoFLNRO (Ministry of Forests, Lands and Natural Resource Operations). BC Hydro Water Licence Requirements (WLR) Program provides an additional eighteen per cent of the overall costs. This project fits within the Large Lakes Action Plan.
FWCP funding: $748,048

Arrow Lakes Reservoir Nutrient Restoration Program
Similar to the approach taken in Kootenay Lake, nutrients are added to Upper Arrow Lakes Reservoir to compensate for nutrients being trapped upstream by Mica and Revelstoke dams. Nutrients have been added since 1999, and are dispensed from ferries between the end of April and mid-September.

The program benefits kokanee as well as rainbow and bull trout populations which is positive for the ecosystem and also for recreational and economic opportunities. The increased lake productivity also benefits to wildlife such as eagles, ospreys, and bears.

It is jointly coordinated by the FWCP and the Province (MoFLNRO) with one quarter of the project cost coming from the Columbia Power Corporation to offset the impacts from the Arrow Lakes Generating Station. This project fits within the Large Lakes Action Plan.
FWCP funding: $790,024

Meadow Creek Spawning Channel
The channel was constructed in 1967 to compensate for the loss of spawning habitat for an estimated 2.8 million kokanee following the construction of Duncan Dam. The spawning channel operations are predominantly funded by the FWCP and managed by the Province (MoFLNRO).

Annual activities include gravel scarification (removing the finer sediments from the gravel), cleaning the settling pond, monitoring the adult kokanee escapement, and monitoring fry emigration to evaluate egg to fry survival. The target egg to fry survival is above 35 per cent with a target egg deposition of 40 million eggs, resulting in a target of at least 14 million fry emigrating from Meadow Creek in the spring of each year. This project fits within the Large Lakes Action Plan.
FWCP funding: $179,769

Hill Creek Spawning Channel
The channel has been in operation since the early 1980s to compensate for kokanee and rainbow trout spawning habitat lost as a result the construction of Revelstoke Dam. Funding covers basic operations, maintenance and monitoring adult kokanee spawning escapement, kokanee fry emigration and rainbow trout redds. Egg to fry survival has consistently been above 50 per cent for the last few years, higher than the target of 30%. The target egg deposition is currently under review by MoFLNRO. The channel also produces rainbow trout and bull trout. The channel in conjunction with the nutrient restoration program is aimed towards maintaining healthy fish stocks which provide angling opportunities and economic benefits. The spawning channel operations are predominantly funded by the FWCP and managed by MoFLNRO. This project fits within the Large Lakes Action Plan.
FWCP funding: $152,646

Upper Columbia Sturgeon Culture
White sturgeon of the upper Columbia river are an endangered species. There has been virtually no successful natural recruitment in the wild for several decades and therefore the sturgeon aquaculture program (spawning, rearing and raising juvenile white sturgeon at the Fisheries Hatchery near Wardner in the East Kootenay) is a critical “stop-gap” measure to ensure the population continues.

The FWCP provided funding towards the sturgeon conservation aquaculture program. Several thousand juvenile sturgeon will be raised to the age of 10 months prior to being released into the Columbia River. The FWCP, on behalf of the Upper Columbia White Sturgeon Recovery Initiative, coordinates the involvement of local schools and public in the release events that occur in late April/early May each year. The FWCP is also an active partner in the Upper Columbia White Sturgeon Recovery Initiative. This project fits within the Species of Interest Action Plan.
FWCP funding: $230,000

Wildlife

West Kootenay Enhancement
Loss of valley-bottom wildlife habitat from the construction of hydro-electric facilities in the Basin has highlighted the importance of maintaining productivity of low elevation habitat in the West Kootenay. The work focuses on project identification, implementation of habitat enhancement or restoration activities including monitoring and invasive plant monitoring in the West Kootenay. Species targeted include elk, deer, bighorn sheep as well as a variety of non-game species including red and blue listed species. Priority areas identified for work include: North Deer Park, Twobit Creek, Tulip and Greymouth Creek. Wildlife tree creation is also a component of this project, focusing on Lewis's Woodpecker. This project fits within the Upland/Dryland Action Plan.
FWCP funding: $253,604

East Kootenay Enhancement
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. The East Kootenay Enhancement Project includes the coordination, oversight and implementation of restoration activities including: prescription development; slash, pile and burn; burn planning; prescribed burns; monitoring and reporting. Priority areas identified for work include: Lazy Lake (slashing and piling), Stoddart Creek (ecosystem restoration prescription), Akisqnuk First Nation Reserve vegetation slashing and piling and, Brewery Ridge (spring prescribed burn with Wildlife Management Branch), Estella (fall prescribed burn, potentially with Wildfire Management Branch), and Wolf Creek (burn plan development). Vegetation monitoring occurs at previously treated restoration sites (Lewis Creek, North and South Stoddart Creek). Wildlife tree creation is also a component of this project, focusing on Lewis' Woodpecker. Flammulated Owl surveys are also a component of this project. Mineral licks will be identified and ranked for wildlife use. This project fits within the Upland/Dryland Action Plan.
FWCP funding: $338,278

Land Management Operations
The FWCP leads and supports land management on conservation land acquired with the help of contributions from the FWCP, as well as lands transferred from BC Hydro, to the provincial government as compensation for Seven Mile and Arrow Lakes Reservoir impacts. Land management plans guide actions on conservation properties that include access management, invasive plant control, habitat restoration and protection, signage, and public involvement.

Areas to be targeted for action in 2014-2015 include the Pend d'Oreille Valley, Lower Columbia, Marsden Face, Deer Park (Arrow Lakes Reservoir), North Kootenay Lake, Elk Valley, East Kootenay Trench and Darkwoods Property (South Kootenay Lake). Other components of the project include the development of a restoration prescription for one of the North Kootenay properties, a Grizzly Bear management plan for one of the North Kootenay conservation properties and monitoring access at a Slocan Island conservation property. This project fits within the Upland/Dryland and Wetland/Riparian Action Plans.
FWCP funding: $332,009

Non Game Enhancement
The Non Game Enhancement Project includes the coordination, oversight and implementation of a wide variety of projects on non-game species impacted by reservoir habitat losses and the associated monitoring and reporting. The projects focus on critical habitat features that are important for species reproduction and survival such as roosting, denning and nesting habitat. Inventory and monitoring of non-game species is conducted to increase our understanding of species distribution and their habitat requirements in the Columbia basin. Tasks within this project that fit within the scope of the Species of Interest, Wetland and Riparian, Uplands and Drylands, Small Lakes and Large Lakes Action Plans.

Activities for 2014-15 include monitoring and maintaining Townsend's big-eared bats maternity roosts near Cranbrook, maintaining badger crossing and structures in the East Kootenays, monitoring and maintaining loon nests in Whatshan Reservoir, completing an inventory of Great Blue Heron next colonies in the East and West Kootenays, monitoring Lewis's Woodpecker and Vaux's nest boxes, controlling vegetation and monitoring turtle nesting sites in Argenta and Elizabeth Lake near Cranbrook, and continuing with maintaining, managing and monitoring of fencing for Western Toads at Summit Lake. The Ministry of Transportation and Infrastructure is a partner in upgrading toad-crossing infrastructure. There is also support for the annual toad event held in late August at Summit Lake. This project fits within several action plans: Species of Interest – focal and recovery species, Large Lakes, Small Lakes and Wetland/Riparian.
FWCP funding: $174,840

Northern Leopard Frog
The northern leopard frog is a wetland dependant species that has been adversely impacted by dam construction and operation due to the significant loss of wetland habitat within their historic range in the Columbia Basin. Although once widespread within the Columbia Basin, northern leopard frogs are now restricted to only two sites: the remnant wild population of the Creston Valley Wildlife Management Area (CVWMA) and the reintroduced population at Bummers Flats. Activities for this year include performing monitoring during the spring migration to determine timing and over-wintering habitat (to help address road mortality); monitoring population status; continuing the augmentation of the Bummers Flats population; supporting Vancouver Aquarium in its attempt to breed the northern leopard frogs in captivity; supporting the frogs' reintroduction into Columbia Marsh; and supporting habitat enhancement at Leach Lake Unit #4. This project fits within the Species of Interest Action Plan (recovery species).
FWCP funding: $187,410

Large Mammal Monitoring
The Large Mammal Monitoring project includes completing night counts in the Pend d'Oreille. Originally it was used to try to estimate pre and post dam populations sizes. In more recent years, Large Mammal Monitoring has been used to detect changes in species numbers, so that management can be applied accordingly to the needs, by species and areas. Where possible future restoration sites are identified and where treatments have occurred, responses of ungulate populations can be monitored. Deer will be counted at pre-selected areas on consecutive days, during green up, until the maximum number of deer observed is achieved. This technique has been employed in the Pend d'Oreille since 1974. In addition, the dataset will be analyzed to determine if there is a correlation between deer observed, harvest rates and inventory results. This project fits within the Uplands/Drylands and Species of Interest Action Plans**.**
FWCP funding: $29,050

Caribou Recovery
The Species of Interest Action Plan sets out priorities to guide projects within the FWCP, with direction for three category species: Recovery, Focal, and Inventory. Recovery species such as the mountain caribou, are those of the highest priority and conservation concern that have been adversely affected by dam construction.

Dam footprint impacts on caribou include loss of spring and early winter habitat in valley bottoms of the Duncan, Arrow, Revelstoke and Kinbasket dam units. Effects of dam-caused fragmentation, microclimate warming, and altered predator-prey systems are not known, but may also impact the caribou. In addition, forestry, recreation, transportation and human settlement affect caribou distribution and abundance directly and indirectly.

The Caribou Recovery Project includes the FWCP participation in the Provincial Mt. Caribou Transplant Committee, South Purcell caribou augmentation, predator track surveys and Revelstoke moose pellet group survey. This project fits within the Species of Interest Plan (recovery species).
FWCP funding: $78,144

Land Acquisition
The Land Acquisition project envelope includes the resources required for FWCP involvement in Land Acquisition in the Columbia Basin. Funding is designated for one or more high priority acquisitions that are developed through FWCP's involvement in the Kootenay Conservation Program (KCP). In addition FWCP provides base funding to KCP and specific funds for property evaluations and land donation facilitation. Support is provided through active participation in KCP stewardship team meetings, evaluating the wildlife and habitat values of FWCP based acquisition inquiries, providing GIS support for land evaluations and support of the KCP Securement Committee. The project envelope fits within all action plans.
FWCP funding: $456,404

Wetland & Riparian Enhancement
Wetland and riparian habitats were highly impacted by the reservoir footprints. Wetland and riparian habitats support diversity of fish and wildlife species. They also contribute significant role in the transfer of primary production between terrestrial and aquatic habitats. Given the combination of high values and high impacts, the Program recognizes the need to increase its efforts to restore wetland and riparian areas. FWCP has worked on a variety of impacted wetland species through the non-game core envelope.

The project envelope includes identifying candidate restoration sites, compile background information, pre-treatment inventory of sites, complete restoration plans working with a wetland specialist, and develop partnerships, permits and budgets for implementation of the restoration projects for next year. The work also involves geomatics time to create mapping products for restoration sites, including background investigations into historic conditions as well as investigating options for mapping and identifying riparian habitat as identified in the wetland action plan. This project fits within Wetland and Riparian Action Plan. Wetland and Riparian focal species work continues to be delivered through Non-Game Enhancement.
FWCP funding: $34,170