



FWCP
Fish & Wildlife
COMPENSATION PROGRAM

NEWS

2015 UPDATE FROM THE FISH & WILDLIFE COMPENSATION PROGRAM

fwcp.ca

SEARCH FOR THE SCOTT WEST CARIBOU HERD CONTINUES

PAGE 14



FIRING UP THE ECOSYSTEM

PAGE 10

INSIDE THIS ISSUE

COASTAL REGION

- | | |
|--|---|
| - The Complex Nature of Habitat Creation | 6 |
| - Fisher Dens Installed | 6 |
| - Foreshore Restoration | 7 |

COLUMBIA REGION

- | | |
|---------------------------------|----|
| - Aquatic Invasives | 10 |
| - Firing Up the Ecosystem | 10 |
| - First UKEEP Projects Kick Off | 11 |

PEACE REGION

- | | |
|--|----|
| - Mercury—Getting the Facts | 13 |
| - Identifying and Prioritizing Fish Barriers | 13 |
| - School Program Volunteers | 14 |



Fisheries and Oceans
Canada

Pêches et Océans
Canada



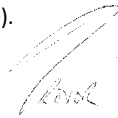
The FWCP is a partnership of BC Hydro, the Province of B.C., Fisheries and Oceans Canada, First Nations and Public Stakeholders, to conserve and enhance fish and wildlife impacted by BC Hydro dams.

MANAGER'S NOTE

Thanks for your interest in the Fish and Wildlife Compensation Program! It has been a busy year for us as we continue to try to build upon our successes, forge new partnerships, and improve, wherever possible, the way in which we support fish and wildlife.

As you can see, we are making a considerable project investment this year – nearly \$9 million across our three regions. Behind the scenes, we are rolling out a new online grant application and website where all the FWCP information is easier to access; both initiatives funded by BC Hydro so not to remove dollars from project investments.

Special thanks to all our regional Board members who continue to drive the Program forward, as well as all our partners, stakeholders, and First Nations, who deliver all the incredible fish and wildlife projects. Please contact Dan, Crystal or I if you have any questions or suggestions (see contact information on back page).



FWCP Program Manager and
Coastal Region Manager

GROWING A "SEED" PROJECT

Looking for some financial support to help develop your project idea before submitting a Small Grant application to the FWCP? Then apply for a Seed Grant first!

The maximum amount available through a Seed Grant is \$5,000, and it is especially valuable for stewardship groups and non-profits that may need some extra support to prepare the technical information required to apply for a larger FWCP Grant. The Seed Grant might help fill important information gaps on a complex project, provide an opportunity to get technical expertise, test the feasibility of a project idea, build partnerships, or identify project costs and challenges.

In 2013, the BC Conservation Foundation (BCCF) received a Seed Grant to explore a project to support fish habitat at the Bigtree Side Channel off the Salmon River on Vancouver Island. Specifically, the seed funding was to help assess fish access, increase smolt production, and determine if an intake pump could be repaired.

The Seed Grant enabled BCCF to answer some important questions and identify solutions, including working with Fisheries and Oceans Canada (DFO) to salvage a working pump from elsewhere to improve the water supply to the side-channel. It also enabled them to successfully apply for future FWCP funding in supporting their efforts to help Coho, Rainbow and Cutthroat Trout, populations in the channel.

And check out page 7 about all the work that has been happening at the Seton Powerhouse, all started a decade ago with a Seed Grant.

Visit fwcp.ca for the latest information on how to apply for a Seed Grant. If you are successful in receiving a Seed Grant, then an application for a Large Grant can be submitted in the following fall.

Grant Information Online!

Make sure you check out the latest information about our fish and wildlife grants at fwcp.ca. Our grant deadlines are in November, and don't forget that the Peace Region has an earlier deadline for the Notice of Intent form.

You can apply for a Community Engagement Grant for small amounts of funding anytime.

Read Our Reports

The FWCP prides itself on supporting technically-sound projects that help fish and wildlife species impacted by BC Hydro dams. And we want to share project outcomes with as many people as possible. Visit fwcp.ca for a comprehensive list of reports and the links to Provincial databases where the reports and associated data are stored.

Check-out our New Website!

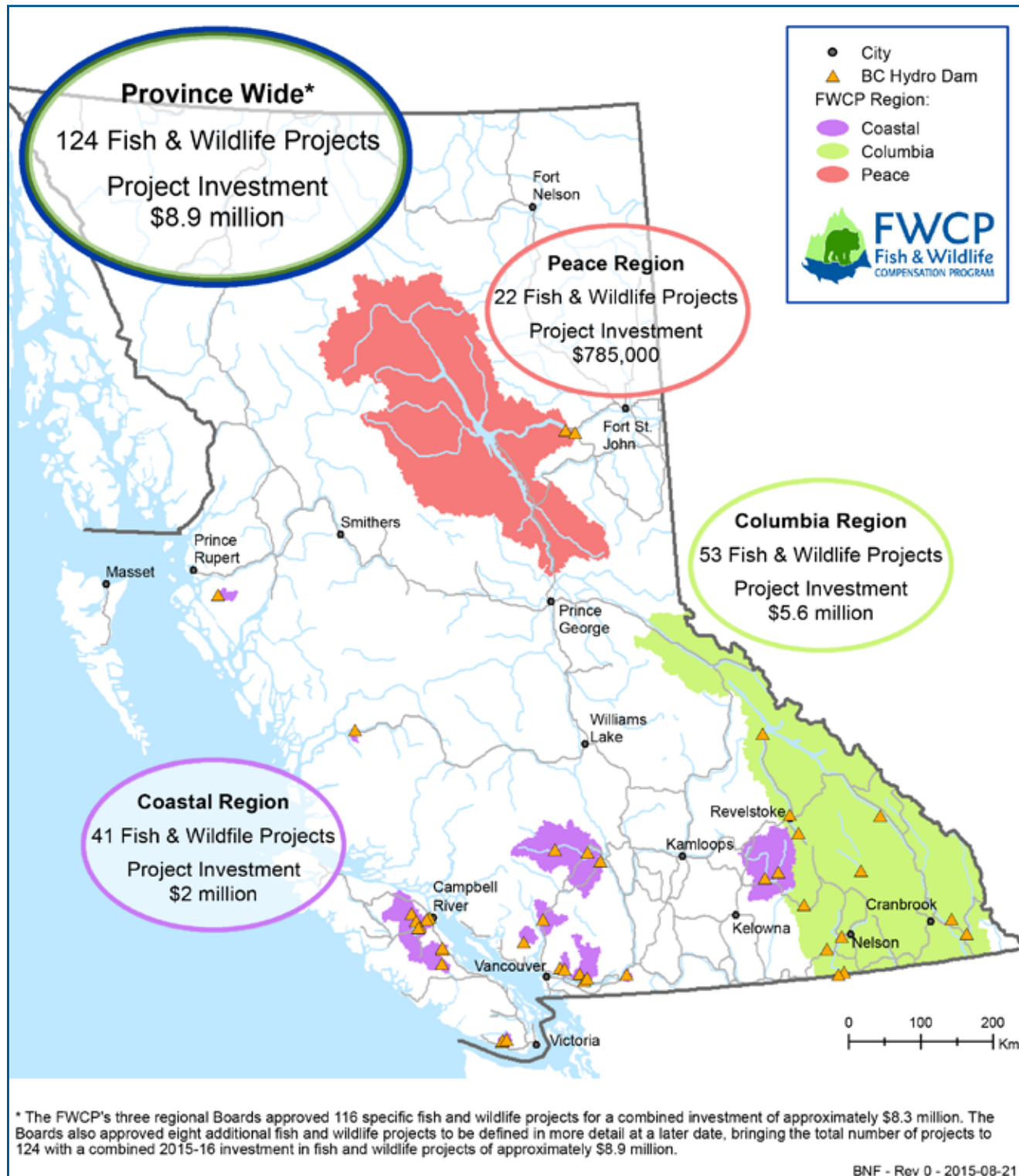
The FWCP has a new and improved website. Go ahead—check it out at fwcp.ca.



A Seed Grant, together with lots of volunteers have helped bring back wildlife like this Racer Snake (photos: Kim North, Splitrock Environmental)

FWCP PROJECT INVESTMENT 2015-2016

Learn more at fwcp.ca



Front cover: Woodland Caribou. (photo: Steve Rooke)

From “Brownfield” to Functioning Tidal Flood Plain

Squamish—The Squamish River Watershed Society, with funding from FWCP, is restoring the West Barr log sort yard back to estuarine habitat that will provide fish rearing, spawning and overwintering habitat, as well as valuable habitat for migratory and resident bird populations.

This year, the Society will remove soil, re-grade the site, and construct tidal channels to allow the natural estuarine processes to resume. Future work will include removing culverts, installing woody debris, and planting native sedges.

Splatsin to Help Caribou Numbers

Shuswap—The Splatsin is flying into action to undertake a Mountain Caribou census in the Upper Shuswap River watershed. The small and remote Monashee South herd hasn’t been inventoried since 2011, when less than a handful of endangered animals were counted. Anecdotal information collected since then indicates some caribou are still present.

Confirming numbers, age, sex, and distribution (mostly by helicopter, starting in March 2016), will be critical when it comes to supporting future management decisions to conserve and restore this population.

Growing Seed Collection to Help Whitebark Pine

Lillooet—Seeds from the endangered Whitebark Pine support many species including Clark’s Nutcracker, Red Squirrel, and Grizzly Bears (a species of interest for the FWCP). This tree, found in high-elevation ecosystems, is on the decline due to the combined impacts of the Mountain Pine Beetle, fire suppression, climate change, and especially, pine blister rust – an introduced disease that kills Whitebark Pine of all ages.

With funding from FWCP, Keefer Ecological Services Ltd., is in its second year of collecting seeds from rust-resistant Whitebark Pines throughout the St’at’imc Traditional Territory near Lillooet to help re-establish healthy trees in the area. In year one, close to 25,000 seeds were collected from 46 trees. The first of the seedlings, grown at Splitrock Environmental’s native plant nursery, will be planted in 2016.



From top: Restoration site near Squamish (photo: Edith Tobe); Mountain Caribou, FWCP photo; Wire cages collecting cones from a Whitebark Pine (photo: Splitrock Environmental); Growing seedlings (photo: Splitrock Environmental)



From top: It's easier by water: Kevin Scharffenberg with the Fraser Valley Watersheds Coalition transporting sedges (photo: FVWC); Adult Sockeye being sampled at Gates Creek (photo: Matt Casselman); Large woody debris structures. (photo: BC Conservation Foundation)

Floodplain Restoration Work at Stave River

Mission—The Fraser Valley Watersheds Coalition is in the midst of increasing off-channel rearing and overwintering habitat for Chum, Coho, Sockeye and Chinook Salmon in the lower Stave River.

The Coalition is creating cool groundwater channels, removing fish barriers, developing a plant inventory, and with the help of Kwantlen First Nation, completing an archaeological assessment. Once completed, more than 1,200 m² of new salmon habitat will be created; over 100 m² of large woody debris will be added to increase the overall habitat diversity; and approximately 6,000 m² of riparian areas and tidal benches will be re-vegetated at three sites in the watershed.

Getting a Grip on Sockeye Data at Gates Creek

Lillooet—2014 marked the third year of a four-year project to study out-migration of juvenile Sockeye and Coho Salmon from Gates Creek, and Gates Creek Spawning Channel. The project is led by the Lillooet Tribal Council with the goal of better understanding a number of biological parameters, especially on Sockeye, including abundance and timing of out-migration, egg-to-fry survival, and fry production. The project has also provided an important opportunity for N'Quatqua technicians to increase their knowledge of, and involvement with, data collection and entry techniques.

Installing Salmon River Structures

Sayward—A good home is critical for fish to survive and thrive. To this end, the BC Conservation Foundation has been installing boulder groins, clusters, and cabled large woody debris (LWD) structures to create deeper pools, enhance riffles, and halt erosion in Grilse Creek on Vancouver Island.

The Salmon River watershed has been impacted by resource development, including extensive forest harvesting and water diversions for power generation, contributing to an approximate 75 per cent decline in salmon and Steelhead Trout populations. Grilse Creek itself had been suffering serious bank erosion and subsequent heavy sediment loading and widening of stream channels, negatively impacting fish habitat.

As escapement numbers have dropped off, so too has the nutrient loading; not only are there fewer fish carcasses available, but the lack of LWD and deep pools mean that a higher percentage of those carcasses are washed downstream, and with them, the benefits to the creek's ecosystem.

Joining the FWCP in supporting the work is the Recreational Fisheries Conservation Partnership Program, Campbell River Salmon Foundation, and the Georgia Basin Living River Trust Fund. The proponents received donated timber from Western Forest Products.

There are many examples where this kind of in-stream habitat work, completed in 2014, makes a positive difference for fish. Studies have found that juvenile salmonid densities can be three or four times higher in sites with LWD, compared to sites without.

And this positive difference should be around for a while since these structures are built to stay: by early 2015 two extreme flood events had occurred and no significant movement was observed in any of the structures.



Stabilizing the bank and creating pools with cabled large woody debris helps to improve fish habitat. (photo: Lee Hesketh)

THE COMPLEX NATURE OF HABITAT CREATION

Habitat complexing is biologist jargon for creating pools to improve fish habitat. That, together with bank stabilization and protection, is exactly what the White Valley Community Resource Centre has been doing to help endangered Coho Salmon in the Middle Shuswap River, where escapement numbers are critically low. This section of the Shuswap River has lost important spawning and rearing habitat due to dam footprint and operating flows.

Their efforts, supported by FWCP funding and technical advice from Fisheries and Oceans Canada were timely since the focus of their attention, the Maltman side-channel off the Middle Shuswap River, was at high risk of being severely damaged by erosion.

Bio-engineering was used to improve bank stability and enhance riparian values over 1,500 metres of river bank in the spring and fall of 2014. Large woody debris and angular rocks were used to mimic natural log jams and create deep pools for the salmon. Fencing work is planned for the future to further protect the riparian areas.

As the name implies, the White Valley Community Resource Centre was very resourceful. The large rocks were all sourced on-site to reduce transportation costs, and six truck-loads of large habitat logs were donated from a neighbouring ranch, with the Farmland Riparian Interface Stewardship Program contributing to the cause as well.

In addition to the endangered Coho, other local fish species expected to benefit from the work include Chinook, Sockeye, Rainbow Trout and Whitefish.

FISHER DENS INSTALLED

Fishers are members of the weasel family and need large cavities in old trees to reproduce and survive. Partly due to the lack of such denning habitat available to them, they are at-risk (Blue-listed) in B.C., and a high priority for conservation efforts.

To address this limiting factor, Wildlife Biologist Larry Davis, of Davis Environmental Ltd., is testing artificial den boxes in the Bridge River watershed near Lillooet, and in the Cariboo-Chilcotin. With funding from the FWCP and the Habitat Conservation Trust Foundation, Davis has installed a total of 54 insulated den boxes over the last few years (continued on next page).

What is Bio-Engineering?

Short for biotechnical engineering, bio-engineering is the use of plants and trees to protect creek and river banks from erosion. These soil conservation techniques are considered “soft” engineering practices compared to the more traditional installation of “hard” constructions, such as the placement of gabions (wired frames filled with loose rock) or large boulders.

Bio-engineering structures introduced into the flow corridor mimic natural configurations or features that promote positive attributes for fish and wildlife habitat values, while providing stability to the channel.



Fisher checking out an artificial den box. (photo: Larry Davis)

Fisher (cont.)—These boxes mimic natural cavities used by Fishers. Most importantly, the box entrance is relatively small (7 x 12 centimetres) to keep out predators as well as the larger male Fishers that could kill the kits if they are not his.

The results from preliminary monitoring – using hair snaggers and motion detector cameras – shows Fishers had entered the dens at least 40 times, and of 15 Fisher videos collected, 10 of them recorded Fishers entering the dens for various lengths of time over this last winter.

Females give birth in late March or early April, and monitoring in 2015 identified two den boxes used by female fishers to give birth and raise their young. Research will continue to see if more boxes are used for birthing and if females will reuse the boxes in subsequent years.

Go to the Davis Environmental Ltd. Youtube channel for the video and project updates.

Quick Fisher Facts:

- Aka a Fisher Cat - related to the North American Marten
- Only the female cares for the young
- Female is about half the size of the male
- She mates very quickly after birthing her young (6-8 days)
- Delayed implantation - gestation period of nearly a year!
- Mostly nocturnal
- Eats rabbits, squirrels, snow-shoe hares, rodents and birds
- They do not eat fish, but they do eat porcupines!
- Named from the French word for polecat “fichet,” or confusion with a fish eating member of weasel family

FORESHORE RESTORATION BENEFITS SNAKES, OWLS AND PLANTS

Efforts to restore habitat values around Seton Powerhouse near Lillooet, started a decade ago, are delivering positive results for many species, and changing the flora and fauna composition of the site and surrounding area.

The total number of snakes recorded, for example, has increased four-fold in the last few years, with a record number in 2014. There has been a significant increase in the number of (provincially Blue-listed) North American Racer Snakes on site, and even sightings of new species such as the (threatened, Red-listed, catenifer subspecies) Great Basin Gopher Snake.

Call back surveys have also confirmed the presence of Great Horned Owls on site and, the Red-listed Interior subspecies of the Western Screech-Owl has been detected nearby in the Seton River Corridor.

The area had been impacted by the construction of the Seton Powerhouse in the 1950s. The earth moving altered and fragmented habitats and riparian ecosystems and the flow of the Seton River was also changed, disturbing habitats and removing wetlands near the confluence with the Fraser River.

Splitrock Environmental, an Aboriginal business owned by Sekw’el’wás (Cayoos Creek Indian Band), worked with the Lillooet Naturalist Society to restore the 11-hectare site along the Fraser River. With funding from the FWCP, the partners initiated the planning and restoration work in 2005.

Restoration actions have included using natural materials to restrict vehicle access to promote native plant growth, site contouring and decompaction, and the installation of boulders and large woody debris throughout the site. Within the riparian area cottonwoods, dogwood, and willow have been planted to stitch back the riparian area to decrease fragmentation and on the upland bench Ponderosa Pine, grassland shrubs, forbs and native bunchgrasses have been planted to replace invasive species.

The project is currently in its maintenance phase. On-the-ground work continues with mowing and hand-pulling of invasive weeds, which have decreased significantly. Removal of sagebrush through pulling and fire treatment will open up the area so that newly planted bunchgrasses will have room to grow.

The site, called Sat’atqwa7 (“The River”) by First Nations, has come a long way through the combined efforts of the partnership that started with a FWCP Seed Grant all those years ago. Many local people and visitors to the area now enjoy the site using the hiking trails established.

More owls, like these Western Screech Owls, have been observed in the area following the restoration work. (photo: J. Hobbs)



New Turtle Nesting Area Created

Argenta—Three new nesting areas for Blue-listed (vulnerable) Western Painted Turtles have been created near the community of Argenta, on Kootenay Lake. The local Western Painted Turtle population has been suffering from both road mortality and predation. Last year, for example, 15 out of 17, or 90 per cent, of the nests dug by female turtles were preyed upon, most likely by skunks.

These new areas provide better nesting habitat and are away from road shoulders where turtles have typically been laying their eggs. The turtles will also benefit from increased monitoring, funded by the FWCP, and more protective grates, which will be placed over new nests to reduce predation.

The team effort was coordinated by the Ministry of Forests, Lands and Natural Resource Operations, with support from local highways maintenance contractor, YRB, and the Youth Crew from The Nature Trust of British Columbia.



Bull Trout Redd Counts

Slocan Lake—After a couple of years of data collection by Mountain Water Research and Poisson Consulting, it is clear that Silverton Creek is the mainstay for Bull Trout spawners from Slocan Lake. In 2014, Silverton Creek accounted for nearly 79 per cent of all adfluvial (those migrating from the lake) Bull Trout redds counted in all of the creeks; the year prior it was 90 per cent. The bulk of the remaining spawning activity, for both years, occurred in the Wilson drainage.

In 2014, a total of 158 Bull Trout redds were recorded, with a total estimate of 389 spawners of this Blue-listed (vulnerable) species. The project highlights the need to preserve the quality of Silverton Creek spawning habitat – and seek opportunities to improve habitat in other creeks supporting Bull Trout.



Time to Step Up to Help Fish?

Woodbury Creek—Just under a kilometre up Woodbury Creek from its outlet into Kootenay Lake lies an abandoned small generating station, which is acting as a barrier for migrating Bull Trout. There is plenty of rich spawning and rearing habitat upstream of the barrier, if the fish were able to reach it.

With a grant from the FWCP, Redfish Consulting sub-contracted Northwest Hydraulics Consultants to review three options to improve fish passage: 1) complete removal of the structure; 2) partial removal; and 3) construction of a fishway that allows fish to bypass the barrier in smaller steps or stages. Analysis of the three options led to the recommendation that a fishway would be the best option with the least cost.



From top: Female Western Painted Turtle digging her nest; Bull Trout (photo: Jeremy Baxter); A super-imposed view of what the fishway will look like at Woodbury Creek (photo: Northwest Hydraulic Consultants)

Waste Not, Want Not

West Kootenay—What if we could use a product, derived from treated wastewater, in our streams and rivers as slow release fertilizer to improve aquatic productivity and help Bull Trout? With a Seed Grant from FWCP, Poisson Consulting undertook a pilot study in 2014 to determine if a new technology, from Saskatchewan, that produces safe, slow release fertilizer pellets from treated wastewater, can be used here. The technology removes up to 85 per cent of phosphorus and 25 per cent of nitrogen from the wastewater, and converts it into pellets called Crystal Green.

Poisson Consulting concluded that several Bull Trout streams, which were not suitable for a liquid drip system due to access issues, would be possible candidates for Crystal Green. And while there are sufficient volumes of treated wastewater in the West Kootenay to produce Crystal Green, it also concluded that municipalities would likely need to receive funding to subsidize the installation of reactors to make the product.



Bighorns Helped By Grassland Restoration

East Kootenay—Bighorn Sheep, and other at-risk species, prefer grassland and open forest habitat, which is why, with FWCP funding, the Rocky Mountain Trench Natural Resources Society, has been busy thinning about 67 hectares on Rabbit Mountain, south of Elko to create such habitat.

The Society uses hand-slashing and a masticator (to mechanically thin by mulching) to reduce forest ingrowth and create more open habitat, and a prescribed burn is planned for 2016. This work helps the community of Elko by decreasing fuel loads in the woods to help reduce the threat of catastrophic wildfires.

The project was funded under the new Upper Kootenay Ecosystem Enhancement Plan (UKEEP); see page 11 for more details.



Heron Breeding Activity Down

Columbia Basin—Between 2002 and 2008 the FWCP supported extensive monitoring of Great Blue Herons in the Columbia Basin by Pandion Ecological Research Ltd. Further - but less intensive - monitoring has been undertaken since then with the support of many volunteers and the Ministry of the Forests, Lands and Natural Resource Operations; the latest results show the lowest number of breeding sites and active nests ever recorded since the project began.

Out of a total of 28 known breeding sites, only 11 had active nests in 2014, with a total count of 191 active nests. This compares with an average of 322 active nests per year in the four years leading up to 2008. Declining numbers of heron breeding sites and active nests are due to habitat loss, nest disturbance, and eagle-induced abandonment and nest predation. Based on focal monitoring also conducted by the FWCP, bald eagle nest densities have increased measurably in the region since 2002.

Continued systematic monitoring, greater liaison with agencies approving treatments in heron habitat, increased stewardship efforts, as well as conservation of wetland habitat, is recommended to support this provincially Blue-listed (vulnerable) species.



From top: The build-up of struvite (made up of magnesium, ammonia and phosphate) can be a problem in sewage and waste water treatment plants. Producing Crystal Green reduces struvite accumulation, and reduces maintenance costs. (photo: Poisson Consulting); Bighorn Sheep in the East Kootenay Heron rookery near Golden. (photo: Phil Payne)

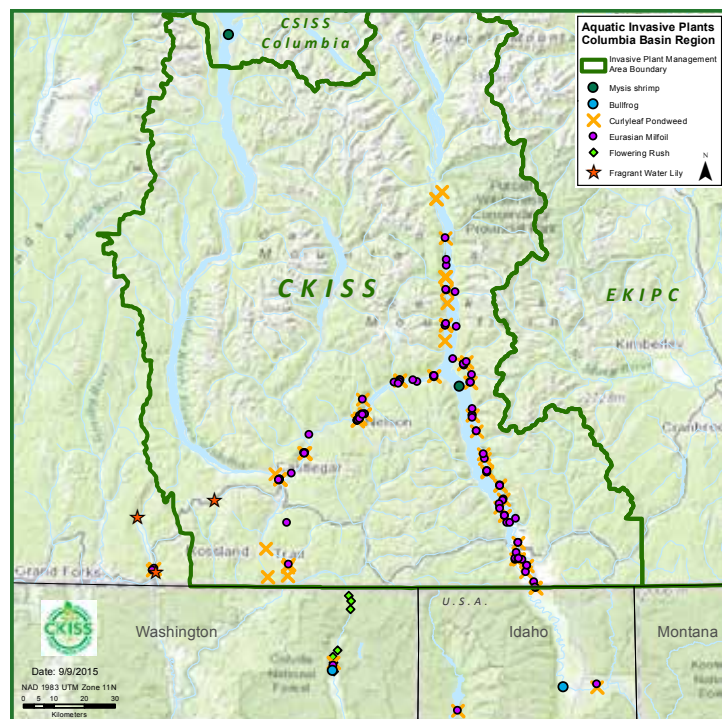
AQUATIC INVASIVES

Stewardship groups and agencies have come a long way in the last five years in the joint effort to protect our native aquatic species and ecosystems from the relentless spread of invasive species. Regulations have been passed, boat inspection stations set up, cross-border collaboration organized and aquatic invasive working groups established.

In 2014 and 2015, the FWCP provided funding support to CKISS (Central Kootenay Invasive Species Society) to survey priority water bodies for the presence, density and distribution of priority aquatic invasive species, such as highly invasive zebra and quagga mussels, as well as increase public awareness on their impacts and how to prevent their spread.

And this is just one piece of the puzzle: the results to-date have been incorporated into a five-year plan to tackle aquatic invasive species across the entire Columbia Basin, which was funded by the Columbia Basin Trust with support from the Province of BC, regional invasive species committees, and other key stakeholders.

The map on the right shows some of the highlights of the CKISS results to-date, and what aquatic invasive species you need to be on the look-out for!



FIRING UP THE ECOSYSTEM

The summer of 2015 has been a bad one for wildfires across the Province, but targeted and controlled burning is extremely valuable when it comes to ecosystem restoration. Earlier this year, before conditions became tinder-dry, a successful prescribed burn of about 10 hectares was undertaken at Tulip Creek in Syringa Provincial Park near Castlegar. The burn was coordinated through the Ministry of Forests, Lands and Natural Resource Operations (FLNRO) with the Wildfire Management Branch and B.C. Parks.

The burn, which was performed in conjunction with thinning, pruning, and shrub-slashing, is expected to enhance habitat for species such as Mule Deer, elk, Bighorn Sheep, Western Skink and Northern Alligator Lizard, as well as help fire-dependent shrubs, herbs and grasses, such as Red Stemmed Ceanothus, Bluebunch Wheatgrass, and Idaho Fescue.

Decades of fire suppression in the West Kootenay have resulted in forest ingrowth that reduces open forest and open range habitat. Prescribed burning is a great way of supporting biodiversity and reducing the risk of future catastrophic fires through the removal of fuel loads on the ground (continued on next page, see "Fire").



Fire (cont.)—For projects such as these, FLNRO always partners with the Wildfire Management Branch. While the FWCP supports the lay out of the treatment unit and develops the burning prescription, it is the Wildlife Management Branch that implements the burn and decides on timing. This maximizes safety, keeps costs down for the FWCP, and provides important planning and training opportunities for fire-fighting staff—practice that proved very valuable for the early, and extremely busy, 2015 wildfire season in the Kootenay region.

UPPER KOOTENAY RIVER WATERSHED PROJECTS KICK OFF

This is the first year for fish and wildlife projects funded under the Upper Kootenay Ecosystem Enhancement Plan (UKEEP), a joint initiative between the FWCP and Columbia Basin Trust (the Trust) to conserve and enhance ecosystems in the upper Kootenay River watershed, including Kootanusa Reservoir. Eleven grant applications were approved and the projects are starting in 2015: four fish and seven wildlife projects. Funding for other projects that will address local conservation priorities was also approved by a local committee made up of representatives from FWCP and the Trust.

For 2015, the projects under UKEEP include:

- inventory mapping of sensitive habitats around Kootanusa Reservoir;
- replacing culverts and reconnecting high-value fish habitat in the Gold Creek watershed;
- restoring grassland ecosystems near Elko and Wycliffe;
- controlling the spread of invasive plants;
- amphibian inventory;
- Westslope Cutthroat Trout and Bull Trout research; and
- testing the feasibility of relocating Mule Deer from urban areas, to areas where their populations are in decline.

Columbia Basin Trust

The Trust provided \$3 million to develop UKEEP and fund local fish and wildlife projects over the next three-to-five years, and FWCP oversees the delivery of the projects.

A range of proponents are delivering these projects including First Nations, stewardship groups, consultants, government agencies and environmental organizations. If you have a project idea to help fish and wildlife in the upper Kootenay River watershed, contact the FWCP for application details. The annual deadline for FWCP Grant Applications is in November.

The joint initiative between FWCP and the Trust will address long-standing concerns regarding the impacts of Libby Dam and Kootanusa Reservoir on fish and wildlife. The public had identified a gap in the support and delivery of such projects, which led to the development of UKEEP. The full plan can be downloaded at fwcp.ca.



Fisher Peak above the Kootenay River Valley. (photo: Ben Meunier)



Ruby-crowned Kinglet (source: audubon.org)



Bull Trout (photo: Steve Rooke)



Little Brown Bat (photo: Cori Lausen)

The Top Ten at Mugaha Marsh

Mackenzie—The Mugaha Marsh provides rich bird habitat, and for several years the FWCP has been supporting staff and volunteers at the Mackenzie Nature Observatory to record and band breeding and migratory birds during mid-summer and fall. This is when reservoir levels are at their peak and lowland riparian habitat is limited.

New records were broken in 2014 for the Cedar Waxwing, Western Tanager, Swainson's Thrush, Hammond's Flycatcher, and American Robin. One new species recorded was the European Starling. Overall, flycatcher and warbler numbers were very low.

The top ten species banded during 2014 were:

1. Ruby-crowned Kinglet (381)
2. Cedar Waxwing (148)
3. Swainson's Thrush (302)
4. Dark-eyed Junco (144)
5. Orange Crowned Warbler (189)
6. Least Flycatcher (139)
7. Tennessee Warbler (160)
8. Common Yellowthroat (113)
9. American Redstart (160)
10. White-throated Sparrow (101)

Identifying Bull Trout Habitat

Williston and Dinosaur Reservoirs—The FWCP has approved two Bull Trout projects this year in its Peace Region that will identify future habitat enhancement opportunities for this at-risk (provincially Blue-listed) fish.

The Provincial government is leading a project in selected parts of Williston Reservoir and its tributaries, to determine Bull Trout distribution and threats, as well as monitor trend abundance by counting redds – gravel nests which the trout spawn in.

In Dinosaur Reservoir, at Gething Creek, similar work is being carried out by Diversified Environmental Services to confirm the current population of large-bodied Bull Trout that migrate from the reservoir to spawn in the creek.

These types of information-gathering projects help decision-makers, and funders like the FWCP, support future on-the-ground activities.

Improving Bat Knowledge Before White Nose Arrives

Williston Reservoir—Wildlife Biologists Ingebjorg Jean Hansen, Brian Paterson and Cori Lausen are on a mission: getting to know as much about bats in the Williston Reservoir area before the likely arrival of White Nose Syndrome - a devastating disease currently causing mass population die-backs of bats in the eastern part of our continent.

Important winter hibernacula, maternity colonies, and roost habitat will be identified, and baseline winter bat data will be developed to assess the risk that White Nose poses to local bat species. Populations and habitats will be monitored so that potential future protection measures can be implemented to minimize the risk. The project will also promote awareness and education about the bats, and build local capacity to conserve valuable bat habitat.



Mercury naturally occurs in the environment, but can be elevated in reservoirs.

MERCURY—FWCP HELPS FILL INFORMATION GAPS

The FWCP's Peace Region Board has initiated a project to improve the scientific information available on mercury levels in fish in Williston and Dinosaur reservoirs, and communicate this information accurately to provincial agencies responsible for updating fish consumption advisories.

We are engaging with First Nations' band members, helping identify information gaps, reviewing work to date and working collaboratively with others to develop recommendations and next steps.

The long term goal is to improve our understanding of mercury concentrations in fish, and the potential effects on human health and the broader ecosystem. This year, some basic collection of samples from fish will occur. The FWCP is already working closely with First Nations and has created a Technical Working Group to oversee the scientific aspect of the project, as well as carry-out some opportunistic fish sampling. More intensive sampling is planned for next year.

Mercury Facts:

- Mercury is found naturally in air, water, sediment, soil, plants, animals and fish.
- The decomposition of organic material in a new reservoir leads to the conversion of naturally occurring inorganic mercury in flooded soil and vegetation, into methylmercury that can accumulate in fish that prey on other fish.
- Methylmercury is the main form of mercury found in fish, which is why there are sometimes health advisories for fish, but not for other animals.
- Over time the concentration of mercury in the reservoir returns to its natural background level.

Although the FWCP does not have a mandate to specifically address human health issues related to fish consumption, it is committed to working with others in the region to help fill any information gaps, and support the appropriate provincial agencies and local communities on this important issue.

IDENTIFYING AND PRIORITIZING FISH BARRIERS

Restoring habitat is one option to help fish - improving access to existing habitat, is another. There are thousands of culverts under the roadways in the Williston and Dinosaur basins and we don't know how many of these are preventing upstream access to fish. Poor installation or changed environmental conditions after installation can result in blocked passage. They are termed "failed" stream crossings, at least with respect to the fish that could be using them.

The FWCP funded an initial study last year to develop ideas to address failed stream crossings. This year they are funding Ecofor Consulting (who have partnered with the Tsay Key Dene Nation) to identify sites where fish passage can be improved in the Finlay Arm of Williston Reservoir and the Finlay and Ingenika River watersheds. The FWCP Peace is working with other groups as well, including the Society for Ecosystem Restoration in North Central BC and the Fish Passage Technical Working Group to determine the best approach to identify high priority areas in the Program area.

Bull Trout, Arctic Grayling, Rainbow Trout and other migratory fish species from Williston Reservoir will benefit from this work. Amphibians and small mammals may also benefit from improved stream crossings.

The primary objective is to identify failed stream crossings on non-status roads (where no group or agency owns, or is responsible for them) and then prioritize them as to which would provide the greatest potential for opening up fish habitat, if replacement or deactivation of the crossing took place (continued on next page).



Perched culvert acting as a barrier to fish passage in the Finlay Arm watershed. (photo: Ecofor Consulting)

Fish (cont.)—The scale of the problem associated with lack of upstream access is huge. Impassable stream crossings related to all kinds of resource development are, perhaps, the most important impact affecting freshwater fish in the province. They can result in lost access to spawning, rearing and over-wintering habitat; reduced genetic diversity; and / or reduced population size.

There are an estimated 18,000 fish habitat crossings within the Williston Reservoir watershed, nearly half of which (8,000) are non-status roads.

This means there are potentially plenty of opportunities to increase the amount of fish habitat available. Project results will be shared with decision-makers to fix the stream crossings that hold the most potential.



Conifex Registered Professional Forester, Aiden Wiechula, discusses with the students how fast the trees grow. (photo: Wildlife Infometrics)

VOLUNTEERS ARE AN IMPORTANT PART OF SCHOOL PROGRAM

Do you know what a mustelid is? Mackenzie area students now do thanks to a project supported by the FWCP and led by Wildlife Infometrics. The project gives students a chance to learn about caribou, plants, forestry, the food chain, fish and more, with the help of local professionals who volunteer their time.

Year one of the project has been completed where modules were developed about birds, pond ecosystems, fish, food chains, forestry, and insects, among others. So far, 14 classes have been involved with more than 332 students participating. This year, the program is expanding into other communities and secondary grades.

And in case you are curious, a mustelid is one of the oldest and largest of the carnivorous mammal families that include the wolverine, otter, badger, and Fisher (see page 6). Grade 4 students learn about them through the food chain module: “Secret Smelly Mustelids!”

SEARCH FOR THE SCOTT WEST CARIBOU HERD CONTINUES

First Nations and long-time residents of the Mackenzie area have reported that historically, the Scott Caribou herd made seasonal migrations across the Parsnip River to what is now the Manson Peninsula. The creation of the Parsnip Arm of the Williston Reservoir separated this Woodland Caribou population into two groups which are now federally-threatened.

The portion on the reservoir's west side is called the Scott West Caribou herd, and there has been only anecdotal evidence of their existence in the last decade. Caribou populations throughout the region have decreased significantly over the years.

In 2014, the FWCP funded a project led by Wildlife Infometrics, with support from the Ministry of Forests, Lands and Natural Resource Operations, to find evidence of this elusive herd. It employed a number of methods, such as setting up remote cameras, and undertaking personal interviews and surveys with backcountry users to see if anyone had sighted them. It also worked with Tsay Keh Dene Nation members, who conducted field checks with hunters in the region to collect possible sightings.

Results from 2014 and early 2015 came up empty, although the absence of any caribou observations within the study area cannot confirm that they no longer exist. The latest sighting was in 2013, however it was later determined that this was likely an animal from a neighbouring herd, chased in by predators. The last of the Scott West animals were reportedly observed in 2012.



The Scott West population has never been surveyed, and only one male caribou was collared in 2002. It later moved to the east side of the reservoir, never returning again.

In 2015 and 2016, more interviews will be conducted and infrared cameras will be used, to finally determine the presence, or absence, of the Scott West Caribou herd. Caribou are facing many challenges for survival, and their populations throughout the region have decreased significantly over the years.

The Scott West Caribou project is just one of many caribou projects the FWCP is currently supporting, including inventory work in the Coastal Region and maternity pens in the Peace and Columbia Regions.



Woodland Caribou herd. (photo: Wildlife Infometrics)

PARTING SHOT



Heron rookery at Parsons, just south of Golden in the FWCP Columbia Region. (photo: Phil Payne)

Great Blue Heron Breeding Down in the Columbia Region

It has been a tough couple of years for breeding herons in the Columbia Region. In the Parson's shrub rookery near Golden (above), for example, of the 14 active nests in 2014 all but three were abandoned, and it is estimated that only three chicks successfully fledged. In 2015 the story from the same rookery is even worse: all of the 20+ active nests were abandoned due to suspected eagle harassment and predation. For more on heron breeding success – or lack of it – across the Columbia Region, see page 9. Report Columbia Region heron sightings to mmachmer@netidea.com.

CONTACT US

Coastal Region

Trevor Oussoren
Program and Regional Manager
trevor.oussoren@bchydro.com
250 755 7152

Columbia Region

Crystal Klym
Regional Manager
crystal.klym@bchydro.com
250 365 4591

Peace Region

Dan Bouillon
Regional Manager
dan.bouillon@bchydro.com
250 783 7509

FISH & WILDLIFE COMPENSATION PROGRAM

11th Floor - 6911 Southpoint Drive, Burnaby, B.C. V3N 4X8
General inquiries: Lorraine Ens, FWCP Administrator 604 528 8136
fwcp@bchydro.com
fwcp.ca

