



FWCP
Fish & Wildlife
COMPENSATION PROGRAM

NEWS

2022 Annual Newsletter

fwcp.ca



The projects we fund are improving fish passage, conserving critical habitats, supporting at-risk species, restoring ecosystems, and filling important data gaps.



Fisheries and Oceans
Canada

Pêches et Océans
Canada



Manager's message

Welcome to our annual newsletter and thank you for taking the time to scroll through this overview of fish and wildlife projects we've funded.

Like all of you, we've had to adapt in the last two years in response to the pandemic as well as climate, social and economic influences, while continuing to deliver on our core business. And after all the hard work we're really excited to share some good news about caribou and northern spotted owls. See pages nine and 14 for more information.

This year (2022-2023), our boards approved approximately \$9.8 million to support 95 fish and wildlife projects delivered by First Nations, agencies, stewardship groups, and consultants. And this is where I want to stop and thank all the groups and individuals who applied for a grant, and who continue to deliver FWCP-funded projects in a challenging environment.

We are a small team of five employees, plus two part-time contractors, and we cannot fulfill our mission without you. Thank you.

Looking ahead, we will continue to share project results and outcomes as we advance work to improve our strategic planning and continue to work toward our vision of thriving fish and wildlife populations in watersheds that are functioning and sustainable.

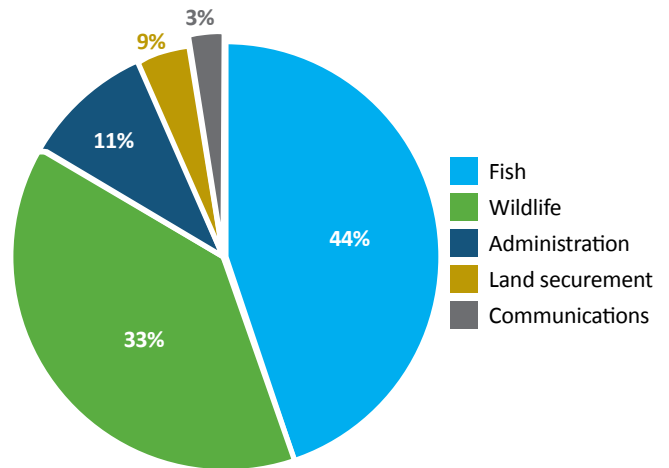
Thank you for your interest and please learn more about our projects at fwcp.ca.



Monique Stevenson

2022-2023 Financial Overview

86% of the 2022-2023 budget supports fish, wildlife, and land securement projects.



GET TO KNOW US

The Fish & Wildlife Compensation Program is a partnership between BC Hydro, the Province of B.C., Fisheries and Oceans Canada, First Nations, and public stakeholders. Together, the partners work to conserve and enhance fish and wildlife in watersheds impacted by existing BC Hydro dams. The FWCP is funded annually by BC Hydro. Learn more at [Our Story](#)



Fisheries and Oceans
Canada

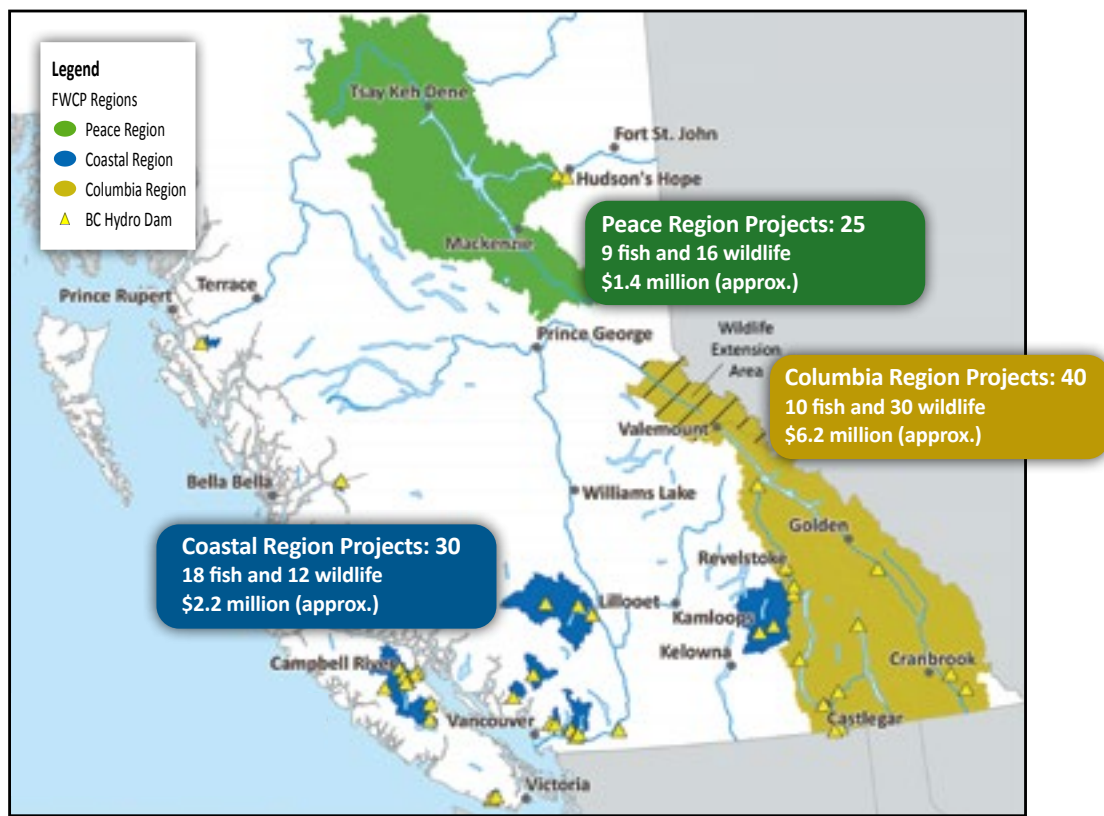
Pêches et Océans
Canada



Front Cover: The projects we fund help species at risk including provincially Red-listed caribou and the northern spotted owl. In our Peace Region with the help of the maternity pen, the Klinse-Za caribou herd has tripled in size since 2014. In our Coastal Region in 2022, northern spotted owls raised in captivity were released into the wild for the first time anywhere in the world. Spotted owls are designated as Endangered or Threatened under the British Columbia Wildlife Act. Photos: Wildlife Infometrics Inc./ Northern Spotted Owl Breeding Program.

Fish and wildlife projects for 2022-2023

In 2022–2023, our regional boards approved approximately \$9.8 million for 95 fish and wildlife projects that support our vision of thriving fish and wildlife in watersheds that are functioning and sustainable. The projects we fund are improving fish passage, conserving critical habitats, supporting endangered and at-risk species, restoring ecosystems, filling important data gaps, and more. Read our [project lists](#) and see our interactive project maps for our [Coastal](#), [Columbia](#) and [Peace](#) regions.



Grant applicants and projects

A diverse range of grant applicants deliver five types of projects funded through our annual grant intake.

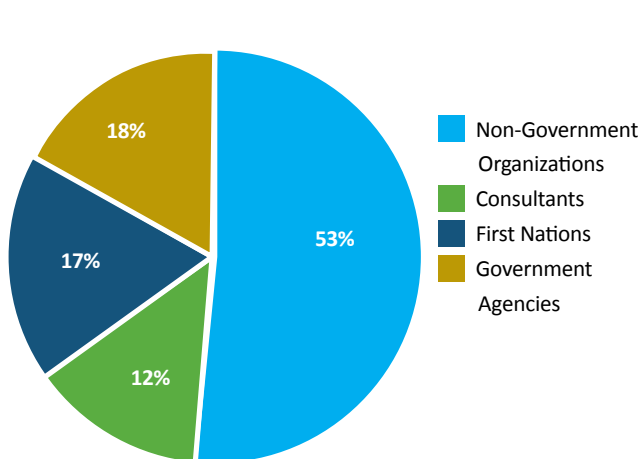


Figure 1: Project leads for 2022-2023

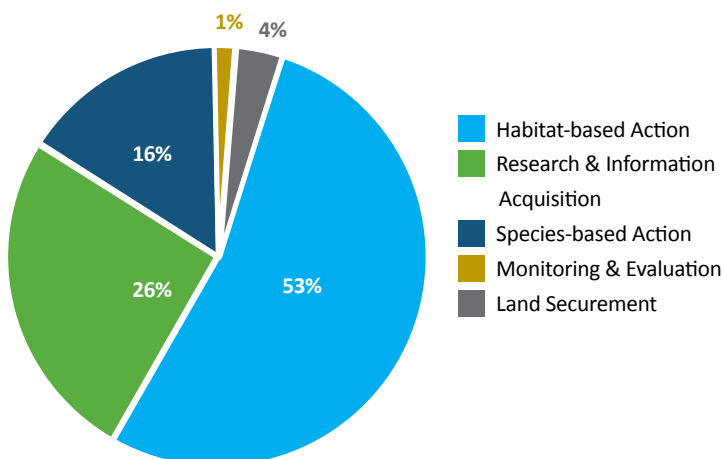


Figure 2: Types of projects for 2022-2023

FWCP's Vision: Thriving fish and wildlife populations in watersheds that are functioning and sustainable.

FWCP's Mission: The Fish & Wildlife Compensation Program compensates for fish and wildlife in watersheds impacted by BC Hydro dams.

Working in watersheds impacted by dams

The FWCP compensates for impacts from construction of BC Hydro dams, in watersheds covering approximately 190,000 km² —almost 20% of British Columbia. BC Hydro is currently compensating for pre- and post-construction impacts associated with Site C. [Learn more](#) about Site C's environmental programs.



Ruskin Dam, in the Stave River Watershed, is one of 31 dams the FWCP is working to compensate for. Six new panels were installed on the dam in 2019, thanks to Kwantlen First Nation's artist Brandon Gabriel. Photo: BC Hydro.

Our strategic approach is forward-looking

While our mission is to compensate for the impacts to fish and wildlife from dam construction, we recognize that to be forward-looking we have to continually adapt to a dynamic natural environment. We need to consider past, current, and future watershed conditions to achieve our vision of thriving fish and wildlife populations in watersheds that are functioning and sustainable.



Managing invasives helps protect biodiversity and protect pasts restoration efforts to benefit species for the long-term. Photo: CKISS/A. Guay

Why BC Hydro funds the FWCP

- BC Hydro has water licence obligations in the Columbia and Peace regions to address dam impacts.
- In the Coastal Region, BC Hydro has made a voluntary commitment to address dam impacts.
- BC Hydro fulfills the applicable obligations through the work of the FWCP.
- The FWCP directs its funding towards priority actions across its three regions, to fulfill its mission and work towards its vision.

With annual funding from BC Hydro, the FWCP conserves and enhances fish and wildlife in watersheds impacted by BC Hydro dams.

How is the FWCP structured?

5 partners make up the FWCP and guide its work.

3 regional boards comprised of 35 members.

5 full-time staff are based in BC Hydro offices in Prince George, Revelstoke, and Burnaby, plus two part-time contractors.

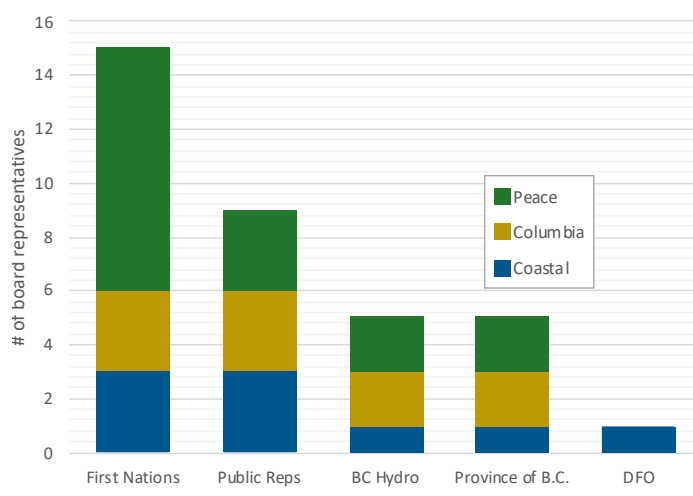


Figure 3: Board representation across all three FWCP regions

**Explore FWCP funded project results, over 1,853
FWCP project reports available online.**

Looking for a grant?

Our regional action plans identify the priority actions eligible for FWCP grants (see the action tables in each action plan). Your proposed project must align with one or more priority action(s) in any of our regional action plans.

What grants are available?

The FWCP's annual grant intake opens in August and closes in October. We offer Seed Grants to help you explore the feasibility of your project idea and Large Grants for projects that align with our action plan priorities.

For more information on how to apply for an FWCP grant, visit fwcp.ca/apply-for-funding

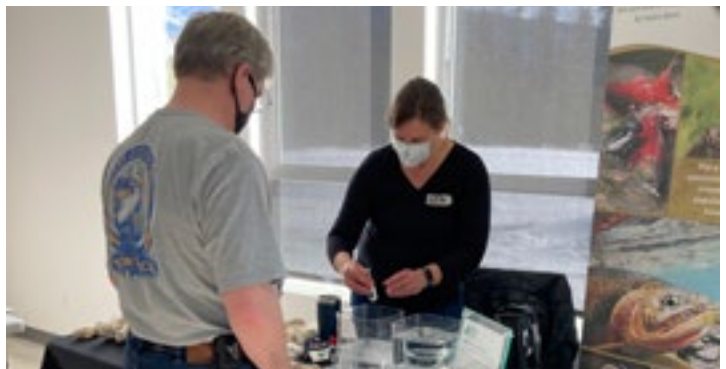


Community Engagement Grant

Apply anytime for a [Community Engagement Grant](#) up to \$1,000 to help stewardship groups and others take tangible actions to benefit fish and wildlife in any of our regions.

It's a short application and we'll get back to you quickly. Use the money to support project volunteers, run workshops, and more. The project does not have to be completed by March 31, and we can help fund projects for the 2023 field season. Tell us your ideas!

[Subscribe](#) and get our e-letters, project updates, and more.



A Community Engagement Grant helped fund Science Week, held in Tsay Keh Dene, to share information about local fish and wildlife projects in our Peace Region. The grant recipient, Chu Cho Environmental, invited the FWCP to participate with a display. Photo: FWCP



The Native Bee Society of BC hosted a workshop in Castlegar about the importance of camas meadows for native bees with help from an FWCP Community Engagement Grant. Photo: V. Huff



The Alouette River Management Society (ARMS) received a Community Engagement Grant to support Rivers Day at Ridge Meadows and share stewardship messages. Photo: ARMS

Fish passage improved in Squamish River Estuary

Cheakamus River Watershed

Access to important juvenile salmon rearing habitat in the Squamish River Estuary has improved significantly since removing part of a berm that was blocking fish passage. In 2022 the Squamish River Watershed Society removed 300 metres of the berm as part of a multi-year project to restore declining Chinook salmon stocks in the Salish Sea. This project, funded in part by our Coastal Region, also supports reconciliation with the Squamish Nation on the loss of their historic village and lands within the estuary.

The berm was constructed in the 1970s, without engagement with the Squamish Nation, and blocked access to part of the estuary that provides quality salmonid rearing habitat.

With the removal of 40,000 cubic metres of sand, rock, and gravel, out-migrating juvenile salmon, especially Chinook, now have access to more than 144 hectares of estuarine habitat. And 150 native plants were added to the remaining berm to help restore wildlife habitat.

One hundred juvenile Chinook were tagged and released in the upper Squamish River during the 2022 field season and, of the 66 that biologists were able to monitor, 21% accessed the Squamish River Estuary. Several years of monitoring will be needed to evaluate the success of the new opening in the berm.



Three hundred metres of the berm in the Squamish River Estuary have been removed, and work is planned for January 2023 to remove more and increase the size of the opening by another 500 metres. The project aims to improve access to juvenile salmonid rearing habitat in the estuary on the right side of the berm. [COA-F23-F-3643](#). Photo: Google Earth

Nearly 36,000 Chinook eggs collected to help Portage Creek Chinook *Bridge-Seton Watershed*

Efforts to support vulnerable Chinook stocks in the Bridge-Seton Watershed continued this year. Sixteen males and eight females were successfully netted in Portage Creek by staff from Fisheries and Oceans Canada, Tenderfoot Creek Hatchery, and St'at'imc Eco-Resources Ltd. Approximately 36,000 eggs were collected

and mixed with milt at the water's edge, and then the fertilized eggs were transported to the hatchery. The fish are reared in the hatchery, and later released as yearling smolts to maximize survival.

This project is both increasing the number of fry in the system, and is providing important

information about the limiting factors for the recovery of Portage Creek Chinook. This Chinook population has had diminishing returns for more than 10 years and is classified as a vulnerable single-site Conservation Unit under Canada's federal Wild Salmon Policy.



Collecting broodstock and raising smolts in the hatchery is a key tactic to support vulnerable Chinook populations in the Bridge-Seton Watershed. [COA-F22-F-3513](#). Photo: DFO

Guardians help restore estuary

Campbell River Watershed

Indigenous knowledge and techniques are helping restore the Campbell River estuary with funding from FWCP.

The Wei Wai Kum First Nation have cared for and relied on the lands, waters, and wildlife in their traditional homeland for thousands of years. Through the Guardian program they are using traditional knowledge and techniques to steward the land and help restore the estuary today.

More than 12000 m² of exclosures were installed along the Campbell River. These exclosures keep Canada geese out of sensitive marsh vegetation and were constructed using traditional fish weir techniques that will help protect the vital sedge habitat. This eco-cultural restoration will also provide greater resiliency from the risk of erosion during peak flows.

This project is led by Guardians of Mid-Island Estuaries Society and included training six full-time Wei Wai Kum Guardian Watchmen who built the exclosures, planted 15,000 native plants, and will monitor the results.

The Guardians collect data, record observations, and take thousands of photos each season to share with the elected councillors and hereditary leaders who make decisions about resource use and development in Wei Wai Kum territory.



Wei Wai Kum Nation Guardians use traditional techniques to help restore the Campbell River estuary and its vital habitats. [COA-F22-F-3550](#). Photo: Wei Wai Kum Nation

Endangered wild marmot population increases by 30%

Puntledge, Ash, and Campbell River watersheds

The most recent data on endangered Vancouver Island marmots shows a 30% increase in the wild population. The 2021 data estimates the population at 258 individuals in the Strathcona and Nanaimo Lakes colonies. This is up from below 200 in 2020. In the early 2000s, Vancouver Island marmots were on the brink of extinction, and had been extirpated from most of their former range across the Island.

With a concerted effort involving many partners, including the FWCP, the endangered marmots are showing signs of recovery. Three new marmot colonies were located, and 74 wild pups were weaned – making 2021 the most successful year for reproduction in many years.



Learn more:

[Marmot presentation](#)

[Marmot video](#)

[Netflix documentary: Island of Sea Wolves](#)



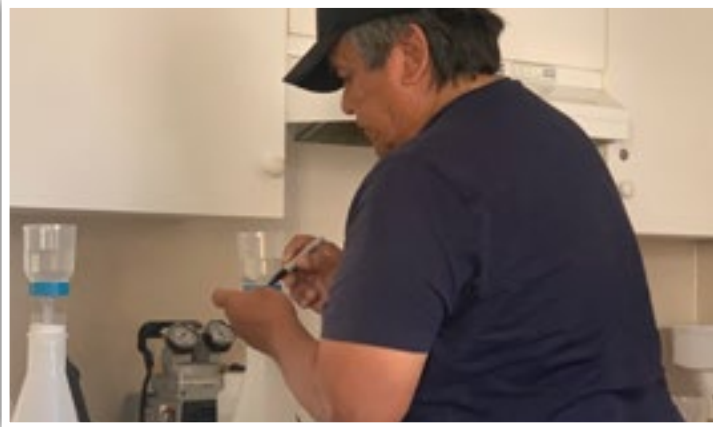
In 2003, the wild Vancouver Island marmot population was less than 30—today it is approaching ten times that. [COA-F23-W-3675](#) Photo: Marmot Recovery Foundation

Collaborating with recovery teams to support species is one way we help conserve and enhance fish and wildlife in the watersheds where we work.

Community-based fish monitoring within St'át'imc Nation

Bridge-Seton Watershed

A Community Engagement Grant from the FWCP is assisting St'át'imc Government Services (SGS) in Lillooet to build capacity and train community members to be involved in hands-on fish and fish habitat assessment work over a three-year period.



The project provides an opportunity for participants in community-based monitoring to learn about water sampling for environmental DNA (eDNA) analysis. Photos: St'át'imc Government Services

At-risk painted turtles raised and released in the Lower Mainland

Stave, Alouette and Coquitlam-Buntzen watersheds

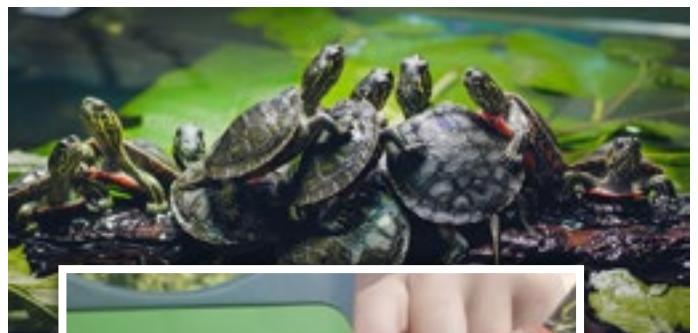
One hundred and thirty-six at-risk western painted turtles were released into Lower Mainland watersheds last year to help the province's only remaining native freshwater turtle.

Western painted turtles are currently present at only 20 sites in the Lower Fraser Valley, 10 of which are in the Coquitlam, Alouette, and Stave River watersheds.

The project includes collecting eggs and raising hatchlings in two "head-start" facilities; protecting eggs in the wild; creating and maintaining nesting habitat; installing habitat features, such as basking logs; removal of invasive plants; fencing; and monitoring turtle populations.

Turtles "head-started" in captivity for nearly a year are less susceptible to predators when released. Results are positive for the nearly 450 turtles released since 2014: follow-up telemetry and mark-recapture trapping studies show survivorship is 75% to 100% in the first 90 days following release.

The work is led by the Western Painted Turtle South Coast Recovery Group, in partnership with the British Columbia Conservation Foundation with funding from FWCP.



Each turtle raised in captivity is tagged. If recaptured, the study team can determine weight, condition, and more.

[COA-F23-W-3710](#). Photos: R. Maichin and A. Mitchell

Whitebark pine seedlings planted

Bridge-Seton Watershed

Whitebark pine restoration efforts are supporting the recovery of this keystone species in high-elevation ecosystems in the Bridge-Seton Watershed. This year, 18,750 pine seedlings were planted over approximately 25 hectares at three sites near Lillooet: Big Dog Mountain, Porcupine Ridge, and Mount McLean. With the help of volunteers, more than 2,000 cones were collected in 2020-2021 with an approximate yield of 106,600 seeds to grow future seedlings.

Whitebark pine is an important food source for grizzlies and other wildlife, and has been dramatically impacted by blister rust, mountain pine beetle, wildfires, and climate change.

This project, led by Moody Tree with FWCP funding, will help combat the decline of this species, which is Endangered under the Species at Risk Act.



The cluster of cones will be protected from birds and animals by a wire cage, and the seeds will be collected later in the season. Most seedlings are planted on open slopes, but some shaded micro-sites are selected to improve survival rates. [COA-F22-W-3468](#) and [COA-F23-W-3700](#). Photos: K. Wright (top right) and R. Moody

Endangered owls released into the wild for the first time

Bridge-Seton Watershed

In early August the Northern Spotted Owl Breeding Program reached an historic milestone and a world's first: three captive-born and bred spotted owls were released into the wild. Prior to the release, there was only one known spotted owl left in the wild in B.C. Today, there are four.

The owls were moved from the breeding facility near Langley and released into protected habitat in the Fraser Canyon. It was a transitional release, implemented by a partnership between the Province, the breeding program, and Spuzzum First Nation.

The owls were moved to large aviaries in the forest and fed for several days to allow them to get used to their environment. The aviaries were opened

and the owls could leave and hunt on their own. Monitoring has confirmed that they are faring well.

The Province has worked with First Nations in B.C. to protect more than 280,000 hectares of spotted owl habitat in the Cascade region under the Provincial Spotted Owl Management Plan, which is enough territory to support a population of 250 owls.

The long-term goal is to release as many as 20 spotted owls each year, and Bridge-Seton Watershed is one of the priority release locations. The northern spotted owl is one of Canada's most endangered species and its recovery is one of the priority actions outlined in our action plans. The FWCP is a long-time funder of the project—since 2015 more than \$650,000 has been allocated from our Coastal board.



[COA-F23-W-3637](#) Photo: N. Wajmer.



Learn more:
Northern spotted owl
[presentation \(2020\)](#).
Northern spotted owl
[video](#).

Restoring Elk Valley cottonwood habitat

The Elk River Alliance is working to assess and restore cottonwood habitat along the Elk River and its tributaries with funding from the FWCP and others.

The project will focus on floodplain and riparian areas and help address floodplain loss.

Work will include an inventory of existing and historical cottonwood forests to identify and prioritize conservation and restoration sites with input from First Nations, local groups, subject matter experts, and government representatives.

[Read more.](#)



Cottonwood forests play a vital role in stabilizing riparian areas and reducing erosion along Coal Creek during a high-water event. [COL-F23-W-3698](#). Photo: Elk River Alliance

Improving Rocky Mountain bighorn sheep and elk habitat

The Golden District Rod and Gun Club is leading a multi-year project to maintain previously treated elk winter range. This will help support habitat connectivity on a landscape-scale near the Yoho National Park boundary. The long-term goals of this project are to enhance winter range habitats for Rocky Mountain elk in the Vacation Creek area and enhance bighorn sheep habitat in the Lower Kicking Horse Canyon. This work will also benefit mule deer, white-tailed deer, and mountain goat.

Now in its second year, prescriptions for 128 hectares have been developed and treatments are scheduled to start toward the end of 2022. More than 18,000 GPS collar data points have been collected from bighorn sheep to provide baseline data, monitor habitat use, and help identify key areas for invasive plant management. The project will promote the growth of crown cover species such as Douglas fir that provide animals shelter from snow and promote on-the-ground forage species growth.



Kicking Horse Canyon where part of the habitat restoration is underway to provide better forage for many ungulates, including bighorn sheep. [COL-F23-W-3723](#) Photos: B. Gustafson / A. Glass

Yaqit ʔa-knuqʔi 'it community plans for sustainable ungulate populations

Grasslands and open forests on the reserve lands at Yaqit ʔa-knuqʔi 'it First Nation— known in English as the Tobacco Plains Indian Band—near Grasmere are heavily used by elk, mule deer, and white-tailed deer year-round, but particularly in winter. Forage habitat for these animals has become degraded due to invasive plant and forest encroachment, increasing the pressure on the remaining habitat.

Yaqit ʔa-knuqʔi 'it First Nation aims to restore ungulate habitat on the reserve and prevent further habitat degradation. To achieve this, with the help of an FWCP grant, an ungulate habitat management plan is being developed that will describe current habitat conditions and identify strategies to restore habitats to sustainably support ungulate populations year-round.

In 2022 an ecological health assessment of the entire reserve was completed, which provided Yaqit ʔa-knuqʔi 'it First Nation with information to divide areas into three categories: 1. Healthy; 2. Healthy with problems, and 3. Unhealthy. Forage biomass samples were also collected to estimate forage availability on reserve. Collectively, this information will help the Nation identify priority areas for invasive plant management and forest thinning.



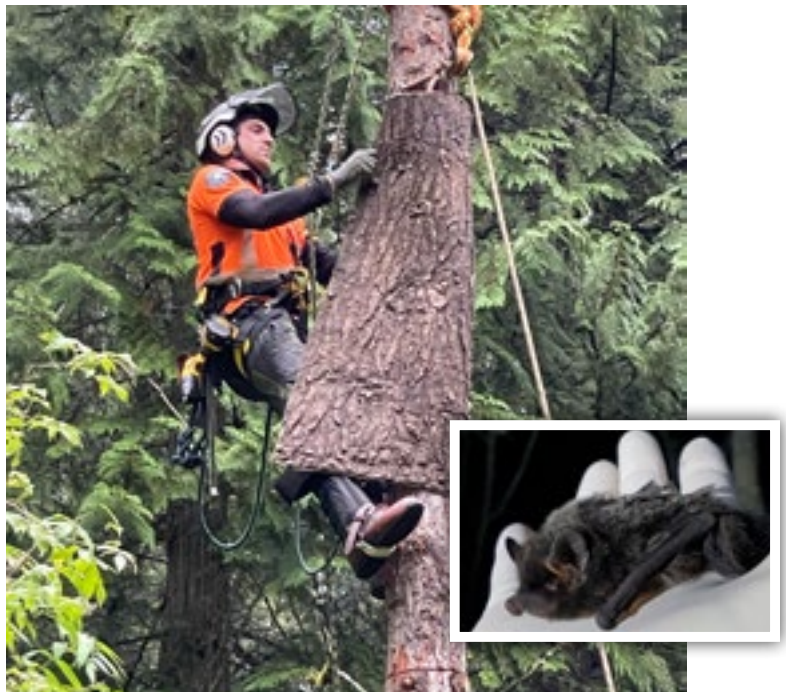
In addition to improving habitat for ungulates, such as the Rocky Mountain elk, the project may also benefit species at-risk such as Spalding's campion, Lewis's woodpecker, and common nighthawk (inset). [COL-F23-W-3682](#). Photos: iStock

Actions are helping bats in the Columbia Region

The Wildlife Conservation Society Canada is carrying out a range of actions to support bats in our Columbia Region largely in response to the emerging threat of White Nose Syndrome (WNS) in western North America.

In 2022 the project team was very busy:

- Conducting broad-scale acoustic monitoring across the whole basin
- Monitoring for the arrival of WNS by submitting bat-swab and guano samples
- Constructing 46 tree roosts using artificial bark and/or chain-saw cuts on the trees
- Documenting roost microclimates to assess the threat of climate change associated heat waves
- Using bat capture or guano collection for species' distributions
- Evaluating the effectiveness of artificial bark installation and other roost enhancements
- Radio tracking three northern myotis and documenting their use of six old-growth cedar trees for roosting
- Documenting fall migration of bats through three acoustic monitoring stations



Actions such as installing artificial bark to improve roosting sites are showing signs of success. Photo: H. Gates, WCS. Inset: Another action is investigating tree roost use and winter ecology of silver-haired bats, like this one, at the only accessible mine hibernaculum known for this species in North America.

Egg casings appear in abundance on Kootenay Lake shoreline

The mystery of a black substance on the shores and surface of Kootenay Lake in September has been solved. It turned out to be naturally occurring egg casings from daphnia (i.e., zooplankton) a target species for our Nutrient Restoration Program.

Results identified the substance as ephippia—an extra shell layer that protects the zooplankton eggs. Eggs produced earlier in the year do not have the casing, but when water temperatures drop, in the fall or winter, the casings appear. This is when daphnia typically produce two eggs at a time, each with an ephippium that is shed and floats to the surface after the egg is released.

Nutrients are added to Kootenay Lake and Arrow Lakes Reservoir to replace the phosphorus and nitrogen that would otherwise be flowing downstream were it not for the dams and reservoirs. These added nutrients help feed the microscopic phytoplankton—plant organisms that form the basis of the aquatic food web—that in turn feed daphnia which are a favoured food source of kokanee and other fish species.

“Its presence, in large numbers like this, would indicate there will be a good food source for kokanee in the months ahead,” said Marley Bassett, who coordinates the Nutrient Restoration Program.



Daphnia is a zooplankton that infrequently releases eggs in a protective casing when the water is colder, that allows the eggs to survive for years, or even decades. In fall 2022 the casings accumulated in large numbers at the north end of Kootenay Lake. [COL-F23-F-3613-DCA](#). Photo: J. Lawrence

Rainbow trout spawners double at Murphy Creek

Murphy Creek spawning channel, north of Trail, provides valuable spawning habitat for the rainbow trout population of the Columbia River. In 2022, an estimated 78 spawners used the channel—that’s more than double the four-year average of 38. Spawning typically occurs between early May and mid-July.

To effectively operate the channel and to improve its infrastructure, members from the Trail Wildlife Association (TWA)—long time stewards of the channel—are working with the Okanagan Nation Alliance (ONA). The partnership offers a blueprint for improving spawning habitat. TWA members can focus on what they do best—monitor and tend to the day-to-day channel operations, while ONA fisheries staff provide technical expertise, strategic guidance, and report writing. Together, their contribution achieves much more than each could do separately.

Ultimately, the partnership is a win for rainbow trout and many other species that rely on them. [Check out the presentation](#) we hosted this year to see some more about Murphy Creek spawning channel.

Rainbow trout is a focal species of interest in our Rivers and Riparian Areas Action Plan. This means that dam impacts on it are known to be high, and habitat and/or species-based actions can be implemented immediately.

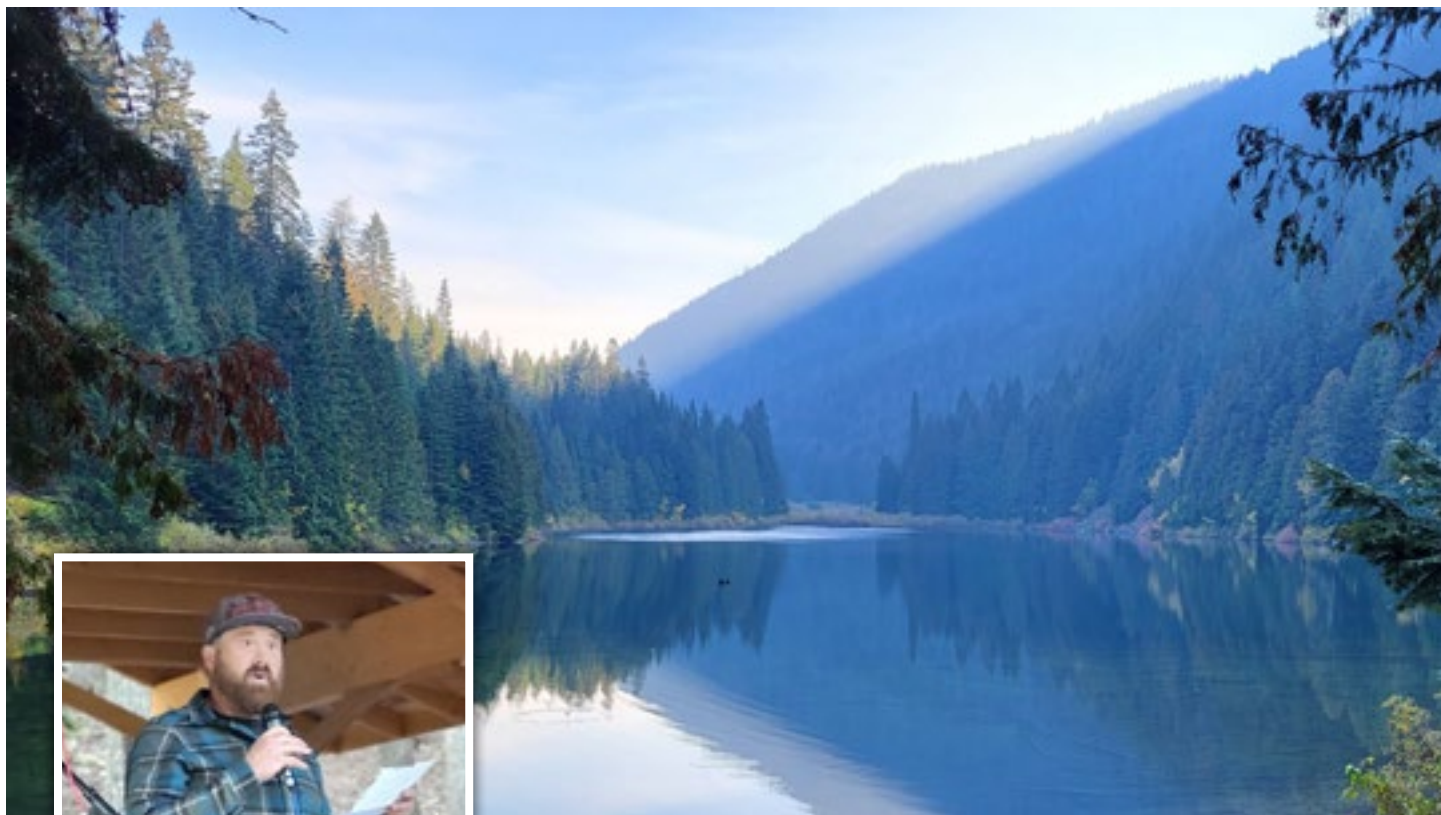


Murphy Creek Spawning Channel is 225 metres long and features 28 gravel-filled step pools that are cleaned each fall in preparation for the next spawning season. [COL-F23-F-3764](#). Photo: A. Mallette.

Celebration: Cottonwood Lake and area preserved!

Four years ago, local residents learned that the forested slopes around Cottonwood Lake was scheduled to be clear-cut. A fundraising effort, organized by the Cottonwood Lake Preservation Society, was successful in securing the lands for future conservation. Nearly \$650,000 was raised and the FWCP Columbia Region board was able to contribute \$75,000.

The land has now been transferred to the Nature Conservancy of Canada. Cottonwood Lake is an important area for conservation and provides habitat for several at-risk species. Critically, Cottonwood Lake is home to the region's best corridor for the Endangered South Selkirk grizzly bear. The lake feeds local watersheds that support up to 160 km² of land.



A recent community celebration marked the successful purchase of 48 hectares of Cottonwood Lake and surrounding area, near Nelson. FWCP Columbia board public representative Moss Giasson spoke about the long-term value of conserving land for fish and wildlife. [COL-F22-W-3557](#). Photos: A. Glass

Klinse-Za caribou herd size triples

The Klinse-Za caribou herd—near extirpation less than ten years ago—has tripled in size thanks to recovery efforts led by the West Moberly First Nations and Sauleau First Nations, and Wildlife Infometrics Inc., with funding from the FWCP and many others.

Around 114 caribou were spotted in the herd in winter 2022, up from a low of 36 in 2014.

Caribou is a priority species for local First Nations, and we're a long-time funder of this important work. This year, we continue to fund habitat restoration efforts and the maternity pen.

In March, 19 cows were captured and transported to the pen—that's the highest number yet! The caribou were fed and monitored until late July—when the calves are less susceptible to predators—and then released into their natural habitat near Chetwynd.

The success of this Indigenous-led conservation effort has attracted national and local attention as the only global example of successful caribou recovery.



Our Peace Region board members traveled to the maternity pen near Chetwynd to see this successful Indigenous-led caribou recovery project. Photo: G. Haines. Inset: Sections of the maternity pen were opened and terrestrial lichen was used to entice cows and calves out of the pen and back into their natural habitat. PEA-F23-W-3655. Photo: Wildlife Infometrics Inc.



Learn more:
[Indigenous-led Caribou Conservation.](#)

Receivers collect bird and bat data

With funding from the FWCP, Birds Canada has installed seven new Motus receivers across the Peace Region to track and better understand migration and habitat use of bird and bat species including the at-risk northern long-eared bat, little brown bat, and olive-sided flycatcher.

The digitally encoded radio transmitters and receivers are located in areas throughout the Williston Reservoir watershed and nearby wetland and agricultural areas. Under ideal conditions, each receiver can detect signals up to a 10-kilometre radius. This array will allow Birds Canada to track birds and bats across thousands of kilometres.

Results from this project will help inform future conservation planning and provide a better understanding of bat movement and ecology, which is critical to mitigate the threat of fatal white-nose syndrome.

Olive-sided flycatchers have experienced a 70% population decline since 1970. The specific factors driving these declines are still largely unclear, but the loss or degradation of habitat on the wintering grounds is likely an important factor. The Motus tracking system will help shed light on habitat use and help future conservation efforts.



Learn more:
To see how the Motus wildlife tracking system works, [watch the video.](#)

Both the olive-sided flycatcher and the little brown bat are at-risk, and will be tracked by the Motus receivers. PEA-F23-W-3646. Photos: iStock, N. Strohm and (inset) C. Lausen

Data gaps being filled to inform Stone's sheep conservation

The Wild Sheep Society of B.C is conducting surveys of Stone's sheep in the Peace Region.

The team uses radio telemetry to locate collared sheep and lambs in the Schooler and Dunlevy ranges near Hudson's Hope. In 2022 the team also captured ewes and rams from both ranges to conduct health surveys.

The Dunlevy Range herd ground-based survey counted 41 sheep, including 24 ewes and 10 lambs, which indicates good lamb production. Aerial surveys of the Schooler Range herd counted eight sheep, including one ewe, which was the same as past surveys. "The low number of sheep located in this area since the project was initiated in 2020 is concerning," says Robin Routledge, Wildsheep Society of B.C. director.

This is year four of a multi-year project, with FWCP funding, that will fill data gaps about the only genetically pure Stone's sheep population in the province—estimated at 11,000 to 15,500.

Stone's sheep run the risk of picking up parasites from elk and domestic sheep, and even interbreeding with the latter. Results of this work will support plans for managing the herd and enhancing habitat.



Wildlife biologist, Landon Birch, carrying out a Stone's sheep lamb survey below Aylard Peak near Hudson's Hope. Photo: Wildlife Infometrics Inc. Inset: Health surveys, like this one being performed on a four-year-old ewe, include hair, skin, fecal, blood, nasal, and tonsil samples. [PEA-F23-W-3663](#). Photo: Wildlife Infometrics Inc.

High species diversity recorded at the Mugaha Marsh bird banding station

Staff and volunteers at the Mugaha Marsh bird banding station, operated by the Mackenzie Nature Observatory, banded 2,360 birds between July and September. Although the number of birds banded this year is below the long-term average of 2,816, species diversity has not declined, with 61 species banded.

Highlights from this year's field season include the banding of an evening grosbeak—the second ever—a belted kingfisher, and a family of black and white warblers which is uncommon. Owls have become a bigger part of the program, with the public invited to three separate owling nights. One hundred and nine owls were recorded this year—the most ever.

With support from FWCP, this project has produced a long-term data set for more than 25 years, which is critical to inform future conservation efforts.



Trained staff are hired each year to handle the birds, and the largest funder of the bird banding station is the FWCP. [PEA-F23-W-3753-DCA](#). Photo: Chu Cho Environmental. Inset: Black and white warbler. Photo: iStock/C. Hamilton



Learn more:

Bird banding is putting a band on a bird's leg so it can be tracked.

[Watch the video.](#)

Fish passage improved in the Missinka River Watershed

A newly installed bridge across a tributary to the Missinka River will improve fish passage in the Missinka River Watershed southeast of McLeod Lake. The area is designated as a fisheries sensitive watershed under the Forest and Range Practices Act as it contains critical spawning and juvenile rearing habitat for bull trout.

A series of priority sites to improve fish passage in the Parsnip River Watershed, including the Missinka River site, have been identified through FWCP-funded work. This is the first crossing to be installed in this multi-year project supported by FWCP, the Ministry of Forests, and the Provincial Fish Passage Remediation Program. A second bridge is scheduled to replace a culvert near Arctic Lake Provincial Park in 2023.

This project is coordinated by the Society for Ecosystem Restoration in Northern B.C. Sinclair Group Forest Products managed the installation of the bridge with project components completed by Duz Cho Construction, — a company owned by the McLeod Lake Indian Band.



Before (right inset) and after photos of the newly installed bridge. Removal of culverts and installing bridges can improve fish passage for species like bull trout (left inset) in sensitive watersheds. [PEA-F23-F-3761-DCA](#). Photos: New Graph Environment Ltd./ iStock, M. Haring

Restoring lichen for at-risk caribou

The availability of lichen—an important winter food source for the Chase caribou herd—has been impacted by several factors, including wildfires, over the last decade.

Slow-growing lichen can take up to 60 years to get re-established—a long time for such a critical food—but results from this innovative project led by Tsay Keh Dene Nation, Chu Cho Environmental, and the Province of B.C. indicates that transplanted lichen can reduce this time closer to 20 years.

In 2015 and 2016, lichens were transplanted to areas used by the Chase caribou herd, near Mackenzie, that were burned by wildfires in 2014. Samples of this transplanted lichen were recently taken to a laboratory where a team of researchers and biologists studied them. Results to date are very positive: in one trial, 75% of the lichen was still surviving at least five years after transplantation, and in the second trial, nearly 100%. There was also negligible difference in survival between the three different lichens that were tested.

The next steps will be to determine the feasibility of transplanting lichen on a larger scale.



Learn more:
[Watch the video](#)

Lichen is an important winter food source for the Chase caribou herd. Photo: M. Tilson, Chu Cho Environmental. Inset: Samples of lichen are analysed in the laboratory to determine their condition. [PEA-F22-W-3428](#). Photo: Chu Cho Environmental