FWCP Fish & Wildlife COMPENSATION PROGRAM NEWS

2020 Annual Newsletter

fwcp.ca

The projects we're funding in our Coastal, Columbia, and Peace regions are restoring habitat, conserving ecosystems, and supporting species at risk

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 in watersheds impacted by BC Hydro dams.

Upcoming priorities and projects for our FWCP team

For 2020-2021, our FWCP boards approved 99 fish and wildlife projects with a total project funding of more than $8.7 million. The projects will benefit a diversity of species across our Coastal, Columbia, and Peace regions, from Stone's sheep to sockeye salmon, and Arctic grayling to wolverines. See page nine for more information.

In the coming year, our FWCP team will be busy supporting the delivery of board-approved fish and wildlife projects, as well as addressing a number of recommendations identified in the 2019 evaluation and financial audit, with guidance from our regional boards.

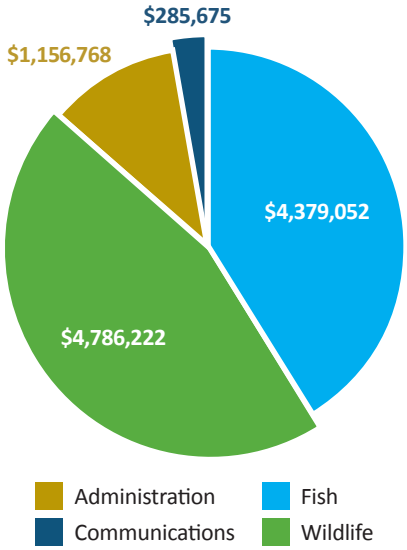
Priorities for 2020–2021 also include:

- Continuing to strengthen involvement of **Indigenous Nations, Bands, and groups**.
- Continuing to improve the **annual grant application** intake process.
- Implementing our updated **Peace Region's action plans** by August 2020, before we open our annual intake of grant applications.
- Expanding our **reporting and sharing of results** through fwcp.ca, our annual reports, and social media.

Final reports from past projects, with results and outcomes, are available through our searchable report spreadsheets, and on provincial databases. See fwcp.ca/results.

Project spending

In fiscal year 2019–2020, 86% of the FWCP's total annual budget of approximately $10.6 million went toward fish and wildlife projects. Read our annual reports at fwcp.ca.



Meet our boards

Indigenous Nations, BC Hydro, the Province of B.C., Fisheries & Oceans Canada, and public stakeholders are represented on our Coastal, Columbia, and Peace region boards, which are responsible for approving all budgets, projects, funding decisions, and annual operating plans. Each board is supported by fish and wildlife technical committees, and in our Peace Region, a First Nations Working Group ensures Indigenous views are considered in all aspects of planning and delivery.

From top, our Coastal, Columbia, and Peace region boards. See fwcp.ca for a full list of board and committee members.

Front cover photos: wood frog, A. Higginson, BC Wildlife Federation; elk, iStock; Chinook salmon, B. Scottberg

Restoration leads to most freshwater in estuary for nearly five decades

Cheakamus River Watershed

A large concrete box culvert has been installed in the Squamish River Estuary and restored access to juvenile Chinook salmon habitat. There is now more fresh water in the estuary than there has been for the last 50 years.

The new culvert replaced a smaller damaged one and is phase one of the Central Estuary Restoration Project. The project goal is to reconnect and restore habitat to support the out-migration of juvenile Pacific salmon, particularly Chinook, during their rearing life stage. Chinook are an at-risk species on the South Coast, and the primary food source for the federally listed Endangered southern resident killer whales.

Access to juvenile Chinook habitat was cut off in the 1970s, when a berm was built to channelize the Squamish River away from the estuary floodplain to support the development of a coal port in the estuary. The port was not approved, but the remaining berm continues to flush out-migrating juvenile salmon to sea prematurely, limiting their rearing life stage and likelihood of survival. The berm limits habitat function in the estuary by flushing fresh water, sediments, and nutrients into Howe Sound.

The next phase is to re-align a section of berm so it no longer flushes hundreds of thousands of emerging salmon into Howe Sound before they're ready to move into open water. The project is a partnership between the Squamish River Watershed Society, Fisheries and Oceans Canada, and the Squamish Nation, with funding from the FWCP. **Project ID: COA-F20-F-3067**

The broken culvert (left) has been replaced with a new three-metre-wide concrete box culvert (right). Photos: Squamish River Watershed Society

Restoration nearly triples available habitat for Chinook salmon

Campbell River Watershed

In the summer of 2019, 4,000 metric tonnes of gravel were placed 300 metres downstream of the John Hart Generating Station in the Campbell River. The project, led by the Campbell River Salmon Foundation, has added 3,143 m^2 of Chinook salmon spawning habitat. It will also support coho, chum, and steelhead populations.

When the John Hart Dam was constructed in 1947, it blocked the natural flow of gravel downstream, reducing the available spawning habitat for Chinook. Before this restoration work took place, the habitat downstream of the dam could support 60 to 125 spawning Chinook pairs, now there is spawning habitat for more than 300 pairs.

The project included excavating the existing riverbed material and replacing it with the spawning gravel in order to help stabilize the gravel for a longer period. The work is part of an ongoing effort to restore degraded salmon habitat in the Campbell River Watershed.

Project ID: COA-F20-F-3071

Strategic placement of spawning gravel for Chinook salmon is a priority action in our Campbell River Watershed Action Plan

Photo: Campbell River Salmon Foundation

Educating future salmon stewards

Shuswap River Watershed

Approximately 700 students and 100 parent volunteers took part in experiential, interactive learning at the Kingfisher Interpretive Centre near Enderby, as part of the Protection of Shuswap River Chinook Through Education Project. They learned about Shuswap River Chinook salmon, a vital species in the watershed, and its habitat, as well as the culture and traditional ecological knowledge of the Splatsin.

The project aims to foster future salmon stewards and salmon restoration and protection by building knowledge, awareness, and understanding among youth. **Project ID:** COA-F20-F-3096

Shona Bruce, executive director of the interpretive centre. Photo: J. Fournier

Fish ladder replaced on Thompson Creek

Stave River Watershed

An aged wooden fish ladder has been replaced with a new 8.5-metre-long steel structure on Thompson Creek, a tributary of the Stave River near Mission. The ladder will provide long-term, reliable access to good-quality, valuable habitat for salmonids including coho, chum, Chinook, sockeye, pink, cutthroat, and rainbow trout.

The structure was augmented by riparian enhancement work that replaced invasive reed canary grass with native plants in off-channel habitats. Nearly 6,000 individual plants were dug in to reduce bank erosion, provide shade, and increase the volume of leaves and other organic debris falling into the water. In addition, nearly 200 kilograms of garbage was removed from the site.

The project is coordinated by the Fraser Valley Watersheds Coalition, with support from the FWCP, Fisheries and Oceans Canada, and the Kwantlen First Nation. Volunteers play a key role, especially local champion Phillip Northrop of Thompson Creek Farms, who will monitor fish use of the new ladder. **Project ID:** COA-F20-F-3110

Clockwise from top left: An exclusion fence is set up so that fish can be safely removed from the worksite; the old wooden fish ladder is dismantled; the upper section of the new steel fish ladder is lowered into place. Photos: Fraser Valley Watersheds Coalition

65 western painted turtles released

Alouette, Coquitlam-Buntzen, and Stave watersheds

Sixty-five at-risk turtles were released at nesting sites in the Lower Mainland by the South Coast Western Painted Turtle Recovery Group, with funding from the FWCP, as part of the recovery plan for the Pacific Coast population. The project also documented a record number of 53 turtle nests, with one-third of those nests occupied by young females laying eggs for the first time.

This population of western painted turtles is federally Endangered and provincially Red-listed. There are only 18 occupied sites and two breeding sites in the lower Fraser Valley. The juvenile turtles were released into the Alouette, Coquitlam-Buntzen, and Stave watersheds, where more than half of the known occupied sites are located.

The project's goal is to recover turtle populations by increasing survival through rearing and releasing "head-started" turtles. Eggs are collected—at night during the nesting season between May and July—and then incubated. The hatchlings are reared until they reach 30 grams and then released between June and September the following year.

Project ID: COA-F20-W-3056

Students helped release head-started turtles near Mission. Photo: J. Fournier

Katzie Nation implements eco-cultural restoration plan

Alouette River Watershed

Twenty-five snags—standing dead trees—and three boxes have been installed near Pitt Meadows to provide roosting, foraging, and nesting for great blue herons and barn owls. This work is part of a five-year project to implement an eco-cultural restoration plan that integrates Katzie traditional knowledge and priorities.

The goal of the project, led by Katzie Development Limited Partnership, is to create and enhance wetland and riparian habitat within the lower Alouette River Watershed.

Snags have been driven into the ground to provide roosting and foraging posts for herons. Boxes have been added for barn owls. Photo: Roma Leon

Barn owl. Photo: iStock, GlobalIP

Before the snags were installed, provincially Blue-listed great blue herons often competed for roosting and foraging sites.

The barn owl nesting boxes were placed adjacent to ideal foraging habitat, such as grassy marshes, agricultural fields, and river shores. They're also located a safe distance from busy roads, since road mortality contributes to the barn owl's designation as Threatened under the Species at Risk Act.

Other culturally valued species to benefit from the project include juvenile salmonids, western painted turtles, short-eared owls, western toads, black swifts, and bats. Plants like wapato and tule—two highly valued species for the Katzie Nation—and Vancouver Island beggarticks, an at-risk plant, will also benefit.

Project ID: COA-F20-W-3105

70 hectares of tidal flats protected in Great Bear Rainforest

Clayton Falls Watershed

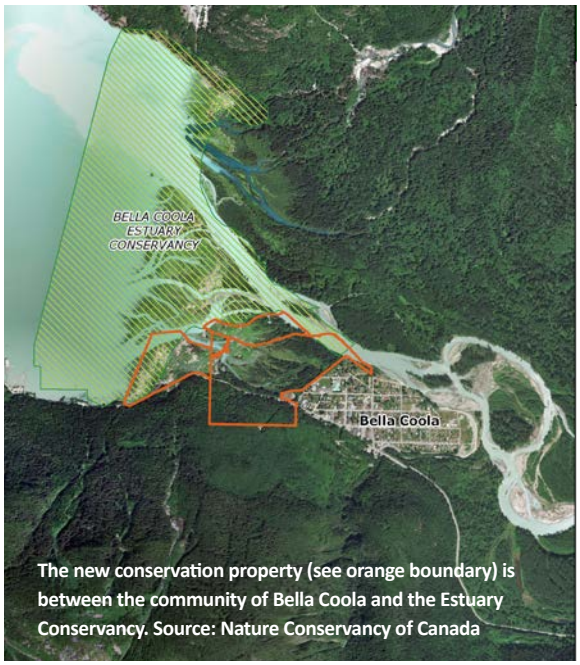
The last piece of unprotected private property at the mouth of the Bella Coola River, covering 70 hectares (174 acres), has been purchased for conservation by the Nature Conservancy of Canada, with $175,000 in funding from the FWCP.

The land is adjacent to other conservation properties, and the Bella Coola Estuary provides essential habitat for several at-risk species, including grizzly bears and marbled murrelets as well as many waterfowl and shorebirds. The purchase also supports habitat for target species identified in the Clayton Falls Watershed Action Plan, such as bats, coho salmon, and western toads.

The new Tidal Flats Conservation Area protects inter-tidal marshes, mudflats, and tidal channels. It also contains upland areas forested with western red cedar and sitka spruce. The flats are well used by the local community for recreation and wild food foraging. Members of the Nuxalk Nation value them for cultural and medicinal purposes.

Over the past ten years, the FWCP has contributed approximately $7.2 million in funding to secure more than 69,000 hectares of conservation land across its three regions.

Project ID: COA-F20-W-3259-DCA



The new conservation property (see orange boundary) is between the community of Bella Coola and the Estuary Conservancy. Source: Nature Conservancy of Canada

Important tidal flats next to Bella Coola have been protected for conservation. Photo: M. Wiggle

Collaboration to help rainbow trout at Murphy Creek Spawning Channel

West Kootenay sub-region

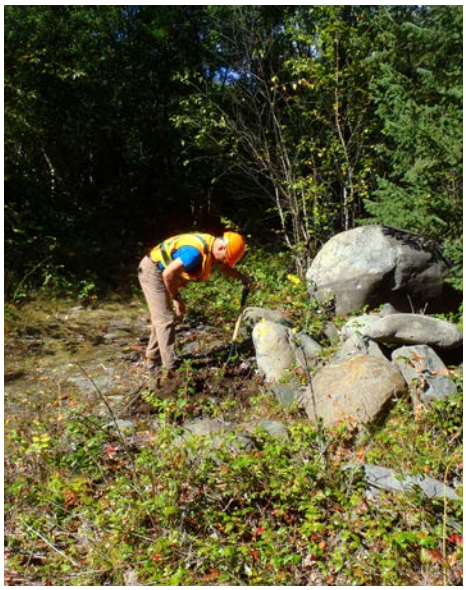
The Okanagan Nation Alliance (ONA) is leading three projects to improve Murphy Creek Spawning Channel in partnership with the Trail Wildlife Association (TWA). After decades of managing channel operations on their own, TWA volunteers find the new partnership positive, saying it has enabled more activities and will create opportunities.

Murphy Creek Spawning Channel was built in the early 1990s to provide spawning and rearing habitat for rainbow trout. The three FWCP-funded projects are aimed at channel monitoring and enhancement, infrastructure improvements, and developing a long-term maintenance plan.

Together the ONA and TWA can focus their efforts. The TWA organizes community and school involvement, as well as labour-intensive volunteer activities like planting and watering native trees and shrubs. Ninety-seven percent of more than 100 plants have survived thanks to regular watering.

The ONA brings biological expertise and manages the technical requirements each project demands. The ONA leads grant applications and report drafting, works with local stakeholders, and can draw upon additional resources for each project.

"For stewardship groups like the Trail Wildlife Association, this kind of partnership is vital," says TWA's Al Mallette. "Volunteer burnout is an issue, and restoration and enhancement projects are getting more technically demanding. Working with the ONA allows us to stay involved and bring more benefits to fish and wildlife." **Project IDs:** COL-F20-F-3073 COL-F20-F-3098 COL-F20-F-3106



Al Mallette of the Trail Wildlife Association planting native shrubs in 2019. Photo: TWA

Guardian Watch raises awareness about cultural heritage and ecological values

West Kootenay sub-region

New signs like this one being installed by Rob Fox with the Province of B.C., together with the Guardian Watch Program, have helped reduce impacts. Photo: FWCP

Nineteen members of local Indigenous Nations patrolled BC Hydro reservoirs and conservancy lands in shifts for the Guardian Watch Program. Their goal was to raise awareness about cultural heritage and ecological values.

Campers, recreationalists, and off-road vehicle users can easily, and often unknowingly, destroy culturally sensitive sites. Misuse of beaches and riparian areas can contribute to the loss of artifacts and valuable information about ancestral history, and the environmental damage impacts the health of local fish and wildlife populations.

This Indigenous-led program is a partnership between the Ktunaxa Nation, Okanagan Nation Alliance, Secwepemc Nation, BC Hydro, the FWCP, and provincial government agencies. It focuses on education and awareness, and it is run in conjunction with conservation officers and natural resource officers.

The FWCP, in partnership with the Province of B.C., also installed new signs on several conservation properties. These help clearly define property boundaries and—along with the Guardian Watch Program—have resulted in reductions in off-road damage, littering, tree cutting, dumping, and illegal camping. **Project ID:** COL-F20-W-3011-DCA

OUR WORK IN WATERSHEDS IMPACTED BY BC HYDRO DAMS

31 FWCP compensates for impacts from construction of 31 BC Hydro dams.

FWCP works in watersheds totalling **190,000 km²** almost 20% of British Columbia.

≈ 12,000 megawatts of hydro power generated by BC Hydro dams.

90% of all power generated by BC Hydro is hydroelectricity, and **80%** of that is generated in the Columbia and Peace regions.

We fund projects that align with our regional watershed-and ecosystem-based actions plans.

OUR PROJECT PROPONENTS

The 99 FWCP-funded projects for 2020–2021 are being led by:

- STEWARDSHIP GROUPS — 39%
- CONSULTANTS — 23%
- GOVERNMENT AGENCIES — 20%
- INDIGENOUS GROUPS* — 9%
- TBD — 8%

*Includes Indigenous-led societies and businesses.

Why does BC Hydro fund the FWCP?

We are funded annually by BC Hydro and direct those funds toward projects that address priority actions across our three regions: Coastal, Columbia, and Peace. BC Hydro has water licence obligations in our Columbia and Peace regions and has made voluntary commitments in our Coastal Region to compensate for the impacts to fish and wildlife as a result of dam construction. BC Hydro fulfills the applicable obligations through the FWCP, which is a partnership between the Province of B.C., Indigenous Nations, Fisheries & Oceans Canada, public stakeholders, and BC Hydro.

Since 2015

622 projects approved across our three regions

- **168** Peace
- **258** Columbia
- **196** Coastal

$9.2 M in our Peace Region

$32.2 M in our Columbia Region*

$10.6 M in our Coastal Region

*Includes $2.8 M from the Columbia Basin Trust for the Upper Kootenay Ecosystem Enhancement Plan (UKEEP).

Snapshot: a few results from 2019–2020

- **4,000** tonnes of **gravel** placed in Campbell River
- **65 Endangered turtles** released in the Lower Mainland
- **25 snags** installed near Pitt Meadows
- **70** hectares of **land protected** near Bella Coola
- **195** goats graze on **invasive plants** near Fernie
- **18.3** hectares of **ungulate habitat** restored in south-east B.C.
- **50** sites assessed for **amphibians** in the Robson Valley
- **725 wildlife trees** identified for conservation near Cranbrook
- **15 wetlands** assessed near Williston Reservoir
- **350** students involved in **wetland creation** in Mackenzie
- **13 caribou calves** released from the Klinse-Za maternity pen
- **28 tributaries** of Williston Reservoir surveyed for kokanee

For more results and a full list of project reports, visit fwcp.ca/results.

FISH AND WILDLIFE PROJECTS APPROVED FOR 2020–2021

For 2020–2021, our regional boards approved approximately $8.7 million for 99 fish and wildlife projects that support our vision of thriving fish and wildlife in watersheds that are functioning and sustainable. Many projects are from grant applications; and others are directed–approved by our boards to address a regional priority. In our Columbia Region, many are annual and ongoing projects.

Coastal Region projects

28 projects: 15 fish and 13 wildlife
$1.7 million in 2020-2021

FISH

- Adding nutrients to upper Puntledge
- Building awareness of salmon
- Improving spawning habitat
- Increasing spawning habitat
- Studying limiting factors of salmonids
- Helping rebuild Chinook stocks
- Improving fish passage
- Using eco-cultural restoration techniques
- Restoring riparian habitat for salmonids

WILDLIFE

- Helping captive breeding of Canada's most endangered owl species
- Supporting recovery of endangered Vancouver Island marmots
- Growing endangered whitebark pine
- Conserving bats and their habitats
- Assessing white-nose syndrome
- Restoring ecological function
- Restoring wildlife habitat
- Supporting recovery of western painted turtles
- Restoring species of conservation concern and cultural value
- Improving bat science and knowledge

Peace Region projects

28 projects: 10 fish and 18 wildlife
$1.5 million in 2020-2021

FISH

- Assessing bull trout spawning
- Improving knowledge about Columbia-origin kokanee
- Studying bull trout
- Studying Arctic grayling with eDNA
- Improving eDNA science

WILDLIFE

- Building capacity of Indigenous Nations to address invasives
- Helping UNBC share fish and wildlife knowledge
- Improving understanding of wetlands for fish, wildlife, and cultural use
- Assessing health of Stone's sheep
- Restoring caribou habitat for herds
- Building ecological awareness
- Improving understanding of bats
- Expanding data collection for birds and bats
- Detecting songbirds for habitat conservation
- Enhancing and maintaining nesting sites
- Improving caribou calf survival
- Helping restore wetlands
- Assessing Chase caribou response to habitat alterations
- Assessing fisher and marten populations
- Supporting amphibian restoration projects
- Increasing nesting and roosting structures
- Mapping invasive plants in wetlands
- Supporting Mugaha Marsh bird-banding station

Columbia Region projects

43 projects: 11 fish and 32 wildlife
$5.5 million in 2020-2021

FISH

- Restoring habitat for shore-spawning kokanee
- Improving habitat for bull trout and westslope cutthroat trout
- Surveying habitat with drones
- Assessing foreshore health
- Improving rainbow trout habitat
- Adding nutrients to Arrow Lakes Reservoir and Kootenay Lake
- Supporting Hill Creek and Meadow Creek spawning channels
- Supporting sturgeon recovery

WILDLIFE

- Supporting northern leopard frogs
- Conserving wetlands
- Studying grizzly bear populations
- Protecting East Kootenay ecosystems from invasive species
- Supporting whitebark pine
- Establishing bat abundance and diversity
- Reducing grizzly bear conflicts
- Supporting wolverine populations
- Improving habitat for bears, goats, sheep, and deer
- Restoring wetland habitat
- Filling pollinator information gaps
- Conserving wildlife corridors in the face of climate change
- Monitoring white-tailed deer
- Reducing wildlife highway mortalities
- Conserving at-risk turtles
- Stewarding conservations lands
- Enhancing ungulate winter ranges
- Enhancing habitat for upland and dryland, and non-game species
- Supporting land securement
- Supporting caribou recovery
- Supporting northern leopard frog recovery
- Restoring and enhancing wetlands
- Stewardship of conservation lands

1,853

FWCP project reports available at **fwcp.ca/results**

Share your photos!

Wanted: your fish, wildlife, and landscape photos. We'd love to share them. Tag us if you post a photo of fish and wildlife. We'll be in touch. More at fwcp.ca/photos. Thanks to Katie Foley for the bobcat image.

Goats eating up invasive plants on the Tobacco Plains Indian Reserve

East Kootenay sub-region

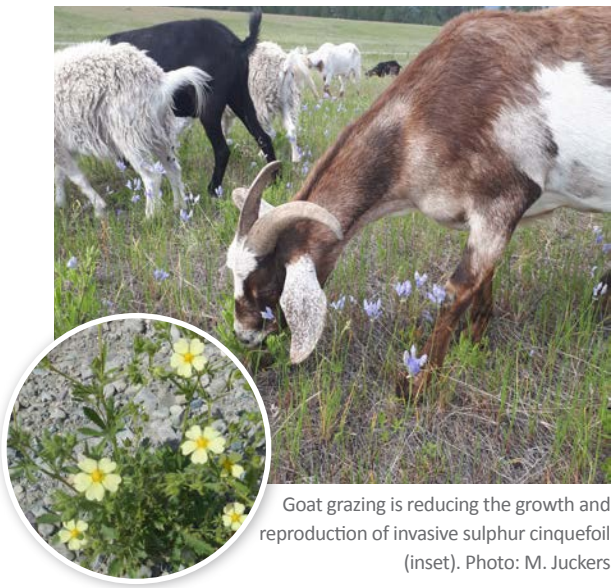
A project using 195 goats to manage the invasive plant sulphur cinquefoil on eight hectares of rangeland on the Tobacco Plains Indian Reserve is working.

Following the goat grazing treatments, the growth and reproduction of the invasive plant was reduced. After one grazing event, above-ground biomass and the number of seed heads of sulphur cinquefoil were reduced by 73% and 85%, respectively. After two grazing events, above-ground biomass and the number of seed heads were reduced by 93% and 99%, respectively.

The project, funded by the FWCP and Columbia Basin Trust, was initiated in late spring 2019 by the Tobacco Plains Indian Band, in partnership with the University of Saskatchewan and Keefer Ecological Services Ltd.

Sulphur cinquefoil has formed dense continuous stands on rangeland throughout the East Kootenay and is not eaten by wildlife due to its unpleasant taste. The study assesses the effectiveness of goat grazing to manage sulphur cinquefoil.

Project ID: COL-F20-W-3057



Goat grazing is reducing the growth and reproduction of invasive sulphur cinquefoil (inset). Photo: M. Juckers

Elk project generates migration and survival data

East Kootenay sub-region

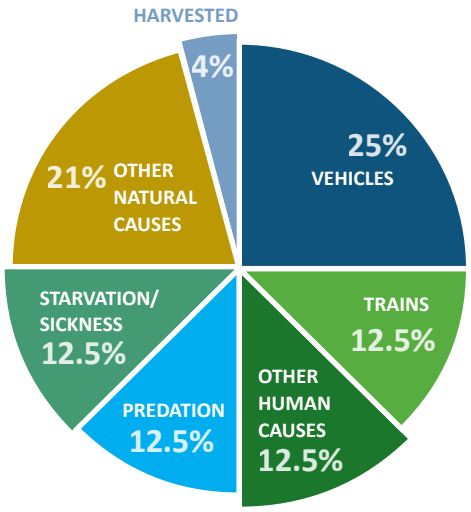
A five-year project to fill data gaps about elk in the Elk Valley is now complete. Seventy-eight adult cows were radio-collared and monitored, providing over 76,000 point locations and collating more than 160 elk-years of migration and survival data. Compared to a study from 30 years ago, the current elk population appears to have lower survival rates and a different set of mortality factors.

The recent project was initiated in 2016 by the Sparwood and District Fish and Wildlife Association to study elk migration patterns and survival. The project's purpose was to better understand why fewer elk are migrating from winter ranges into backcountry summer habitats and provide information to wildlife managers so that migratory behaviour in elk can be retained.

The project found that approximately half the elk were migrants, moving variable distances and/or higher in elevation. Migrants travelled as far as 52 kilometres and climbed nearly 1,000 metres between winter and summer ranges. About 45% of elk were classified as residents (non-migratory) with overlapping seasonal ranges. Most remained in or near the valley bottom between Sparwood and Elkford and along Highway 1 near Hosmer and east of Sparwood. Human causes of mortality were higher in residents compared to migrants, and over half of mortalities took place during mid-to-late winter. Annual survival rates ranged from 80–91%.

The project biologists compared the five-year results with the Natal Ridge Elk Study done near Sparwood during the mid-1980s to early 1990s, when elk—and allowable cow harvest—numbers were higher. Compared to that study, the proportion of residents in the current population is the same, but resident cow survival rates are considerably lower. In the earlier study, harvest was the major source of mortality in migratory cow elk, and very few other human-caused sources of mortality were recorded. **Project ID: COL-F20-W-3070**

Elk. Photo: iStock, B. Scottberg



Elk mortality causes (*n*=24) during study period
Source: Aurora Wildlife Research

Identifying valuable wetlands for future protection

North Columbia sub-region

Surveys assessing amphibians and their habitat were conducted at 50 sites in the Robson Valley near Valemount, creating the first long-term population trend data in some areas. Amphibians including western toad, Columbia spotted frog, wood frog, and long-toed salamander were detected at 34 of the 50 sites. Two or more species were documented at more than 20 sites.

The Robson Valley Amphibian Survey and Habitat Assessment—conducted by LGL Limited with field support from the Secwepemc First Nation and Splatsin Development Corporation—also assessed wetland health to establish benchmarks and identify restoration opportunities. Thirty-one riparian reaches were studied, with 23 categorized as "healthy," six as "healthy with problems," and two as "unhealthy." These assessments will be used to identify wetlands in the Robson Valley for future protection, restoration, or enhancement.

Project ID: COL-F20-W-3075

Wood frogs are one of many species using the wetlands assessed in the Robson Valley. Photos: J. McAllister and K. Tuttle, LGL Ltd.

Nearly 20 hectares of elk and mule deer habitat restored

East Kootenay sub-region

A total of 18.3 hectares of ungulate overwintering and range areas have been restored on the Marion Creek Benchlands, west of Columbia Lake in the Rocky Mountain Trench. Hand-slashing has improved habitat for Endangered badgers, Threatened Lewis's woodpeckers, elk, and mule deer.

This restoration work has reduced the stem density by an average of two-thirds, resulting in more open forests, reducing the risk of extreme wildfires, and improving sightlines to protect against predation. It will result in a thriving shrub and forb understory. The Nature Conservancy of Canada purchased the 200+ hectares in 2011 with funding from the FWCP.

Project ID: COL-F20-W-3058

Lower limbs of large trees were removed to improve sightlines for ungulates like bighorn sheep and elk and reduce fire hazard. Photo: The Nature Conservancy of Canada

Okanagan Nation Alliance collects data on old-growth and deciduous forests

North Columbia sub-region

Old-growth and deciduous tree stands between Valemount and Donald adjacent to the Kinbasket Reservoir have been studied and mapped by the Okanagan Nation Alliance (ONA). Creating an inventory of rare old-growth ecosystems is the first step toward developing larger landscape-level restoration projects to support amphibians, snakes, bats, woodpeckers, elk, and bears.

With support from Wildsight and funding from the FWCP, the ONA surveyed six sites with trees ranging in age from 150 to more than 600 years old over a 15-day period. Many of the trees were categorized as "exceptional old growth," meaning they are typically large, rare, and more than 500 years old.

The next step is to develop restoration plans to improve stand productivity and connectivity between upland forests and the shoreline. Reintroducing fire with prescribed burning and planting native species may be part of the restoration. **Project ID: COL-F20-W-3118**

Core samples were taken from western redcedar, spruce, Douglas fir, subalpine fir, western hemlock, and black cottonwood.
Photo: Doug Adama, LGL Ltd.

ʔaq'am records over 700 wildlife trees

East Kootenay sub-region

ʔaq'am is starting a five-year project to turn a dense Douglas-fir forest into open range and open forest to benefit flammulated owls, long-billed curlews, Lewis's woodpeckers, common nighthawks, and yellow badgers.

The ecosystem restoration project is on ʔaq'am's Indian Reserve, near Cranbrook. Adjacent lands have already been restored and the planned thinning and burning treatments will support important wildlife corridors for bears and ungulates.

ʔaq'am, an Indigenous community—formerly St. Mary's Indian Band—within the traditional territory of the Ktunaxa Nation, is leading the project. It has completed planning, mapping, and an archaeological overview assessment, and identified 725 wildlife trees to be conserved and inventoried. An inventory of species at risk frequently detected fringed myotis bat, a Blue-listed species with very few previous records in the East Kootenay.

Extensive flammulated owl activity was recorded and project biologists believe that ʔaq'am is still the only location where these at-risk birds reside in the East Kootenay west of the Kootenay River.

Returning the landscape to more open-forest habitat and re-introducing prescribed burns will also help local communities by reducing the risk of future catastrophic wildfires.

Project ID: COL-F20-W-3026

Pair of common nighthawk chicks found during pre-treatment monitoring. Photo: I. Adams.

Lewis's woodpecker. Photo: iStock

Wetlands flagged for restoration

Finlay sub-region

Fifteen wetlands near the Williston Reservoir were assessed as part of a traditional ecological study conducted by members of the Tsay Keh Dene Nation and Chu Cho Environmental.

Fifty-three percent of the wetlands assessed were found to be healthy, 34% were healthy with some problems, and 13% were assessed as unhealthy. A healthy wetland typically has wildlife, insects, varied plant communities, and water present.

Based on these assessments, the project's proposed next steps include restoration plans for three high-priority sites. Future restoration aims to preserve the Tsay Keh Dene Nation's ability to harvest food and medicine from the wetlands and protect the habitat of native plants, waterfowl, wildlife, and amphibians. **Project ID: PEA-F20-W-2966**

One of the 15 wetlands assessed near Williston Reservoir. Photo: Chu Cho Environmental

Advancing wetland stewardship in our Peace Region

Basin-wide

There's a new wetland in Mackenzie thanks to students at Morfee Elementary School, the BC Wildlife Federation, and FWCP funding. In addition to creating this wetland—which is serving as an outdoor classroom for the school and a critical habitat type in the region—the project saw more than 20 people take part in wetland stewardship workshops in Fort Ware and McLeod Lake. By training wetland stewards and funding the creation of this wetland, we're supporting education and building local capacity for wetland conservation and enhancement. **Project ID: PEA-F20-W-2962**

Nearly 350 students helped build a wetland in the school grounds in Mackenzie. Photo: BC Wildlife Federation

Restoring caribou habitat

Peace, Parsnip, and Dinosaur sub-regions

Efforts to restore habitat for endangered caribou west of Chetwynd are showing early signs of success. The most current data show that the deactivation and reforestation of a 2.3-kilometre section of forest service road on Mount Bickford has reduced vehicle use in a sensitive caribou calving range. More importantly, eliminating the hard-packed trail—often used by predators to access critical caribou habitat—has resulted in fewer wolves observed during the monitoring period: wolf observations went from seven to zero.

The Klinse-Za/Scott East caribou herd's population declined rapidly until 2013 when recovery measures began—habitat restoration is part of the solution to avert extirpation. This restoration project is led by Nîkanêse Wah tzee Stewardship Society, a joint venture of Saulteau and West Moberly First Nations. Given the success of this pilot project, the society received funding from the FWCP to identify and restore other high-priority linear corridors. The efforts will also complement the society's Klinse-Za maternity pen project, which is helping to enhance caribou survival during the calving period (see next page). **Project ID: PEA-F20-W-2943**

Grizzly bears, a caribou, and a wolf caught on trail cameras during pre-treatment monitoring. Photos: Wildlife Infometrics Inc.

Record number of caribou calves released into the wild from maternity pen

Peace, Parsnip, and Dinosaur sub-regions

Thirteen caribou calves born inside the Klinse-Za maternity pen were all safely released in July of 2019—the most since the project started in 2014. At that time, the Klinse-Za/Scott East caribou herd had decreased to 36 animals from approximately 190 in the mid-1990s, and it was anticipated the herd would be gone by 2016.

Caribou cows were captured in early March of 2019 and transported to the protective pen, which was patrolled 24 hours a day, seven days a week by shepherds from West Moberly and Saulteau First Nations. The calves were kept in the pen until they had grown large enough to be less susceptible to predation by wolves and bears. The caribou (16 cows, 13 calves, and one juvenile) were released into the wild in July.

Thanks in part to the maternity pen project, led by the Nîkanêse Wah tzee Stewardship Society, caribou numbers have begun to rebound, and the population is now estimated to be above 80. Extirpation has been avoided, and the trend suggests that a sustainable population size could potentially be achieved.

Caribou calves born in the maternity pen are guarded by shepherds from West Moberly and Saulteau First Nations. Photo: Wildlife Infometrics Inc.

Other complementary actions to enhance survival of the herd include habitat restoration (see previous page) and predator control. In 2019, four natural mortalities of collared caribou outside of the pen were recorded—three from wolf predation and one due to a steep fall. **Project ID: PEA-F20-W-2937**

Kokanee surveyed in 28 tributaries

Basin-wide

Aerial surveys were conducted in 28 tributaries across the Williston Reservoir. The surveys, conducted by DWB Consulting Services Ltd. for the Province of B.C., will increase understanding about the abundance and distribution of each cohort of stocked Columbia-origin kokanee spawning populations and their potential interactions with native kokanee in the reservoir and its watershed.

Following the stocking of kokanee in the 1990s, kokanee spawning populations increased dramatically until 2010. Results from 2018 and 2019 aerial enumeration surveys suggest that spawning populations are lower than in 2010. Kokanee were also collected from select spawning sites across the reservoir and sent to the University of Northern British Columbia for genetic, fecundity, and age analysis as part of a separate FWCP-funded project (**Project ID: PEA-F20-F-3143-DCA**). That project will help answer additional questions regarding kokanee life history and spawning cycles in the Williston Reservoir.

The data gathered in this study will help inform future conservation and management actions in the Williston Reservoir for native and Columbia-origin kokanee. The Kokanee Spawning Survey and Fish Collection Project aims to survey the watershed to better understand kokanee population trends in up to four cohorts.
Project IDs: PEA-F20-3359 and PEA-F20-F-3143-DCA

Collecting kokanee in Aley Creek.
Photo: DWB Consulting Services Ltd.

14 kilometres of stream assessed

Parsnip sub-region

More than 14 linear kilometres of stream habitat have been assessed in the Parsnip River Watershed near Mackenzie. The assessments were carried out over 17 separate streams above 19 culverts—or road crossings—that block passage to bull trout, burbot, Arctic grayling, and mountain whitefish.

Delivered by the Society for Ecosystem Restoration, the project involved monitors from the McLeod Lake Indian Band. They were trained for fish passage assessment and habitat-confirmation procedures, and conducted field surveys.

Culvert restoration in the Parsnip River Watershed will benefit fish by improving fish movement to habitats that offer refuge during high flows, access to food, shelter from predators, and optimal conditions for spawning and rearing. **Project ID: PEA-F20-F-2967**

Habitat was assessed upstream of culverts that were blocking fish passage. Photo: A. Irvine

Preparing for white-nose syndrome: critical bat habitat identified

Basin-wide

Caver Kirk Safford entering a cave where a large maternity roost is present. A northern myotis bat. Photos: Brian Paterson

Twenty-four tree roosts used by northern myotis, a federally Endangered and provincially Blue-listed bat species, have been identified in the Peace Region. Fifteen roosts were used as maternal roosts by female northern myotis bats.

In our Peace Region, the bat's habitat requirements are poorly understood. This project used capture and radio-telemetry to identify critical habitat, gather behavioural data, and improve understanding of the species distribution. The data will increase understanding of northern myotis habitat preferences and provide information for future conservation and management actions.

Critical habitat that may support at-risk myotis bats during the winter has been identified in crevices and caves within the Williston Reservoir. Future research will determine species use of cave habitats where winter bat presence has been confirmed.

Project ID: PEA-F20-W-2947

Lake trout: new data fills important information gaps

Peace, Finlay, and Parsnip sub-regions

Close to one million location and depth data points for lake trout in the Williston Reservoir have been logged as part of the multi-year Peace Reach Lake Trout Movements Project.

The project uses acoustic transmitters and data logging receivers stationed in the Peace, Finlay, and Parsnip reaches to fill data gaps about the reproduction and life cycle of lake trout, which have been dramatically increasing in the reservoir. The goal is to better understand their life history and, ultimately, how they interact with bull trout, since it's assumed they directly compete with bull trout, a provincially Blue-listed species.

Preliminary findings from videography and transmitter data show that the tagged lake trout tend to spawn in deep water and show high fidelity to spawning sites. Data from this project will help inform future conservation and management actions for lake trout in the Williston Reservoir. **Project ID:** PEA-F20-F-2948

Nearly 60 lake trout, including this mature male weighing 6.31 kilograms, have been tagged as part of the study. Photo: Diversified Environmental Services

Contact a regional manager anytime to learn more about the FWCP

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