FWCP
Fish & Wildlife
COMPENSATION PROGRAM

Project Outcomes

Peace Region
2023–2024

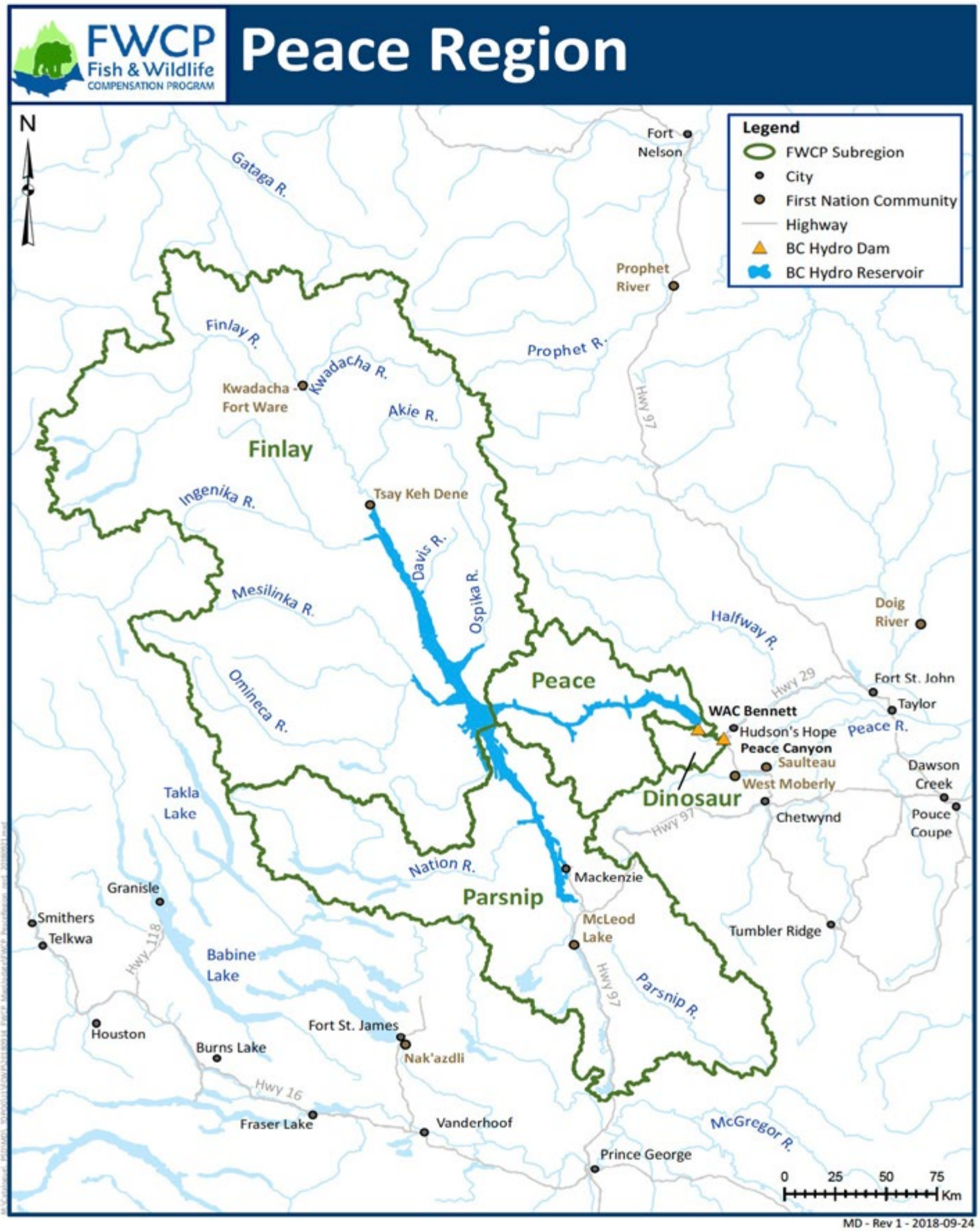
fwcp.ca





BC Hydro
British Columbia
Fisheries and Oceans Canada / Pêches et Océans Canada

The FWCP is a partnership between 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.



Front cover: Arctic grayling (iStock mlharing); caribou (Wildlife Infometrics Inc); white-throated sparrow (Birds Canada), Grade 2 fishing (DWB Consulting Services Ltd); northern myotis (Zonal Ecosystem and Wildlife Consultants Ltd.)

FWCP fish and wildlife projects 2023–2024

Our Coastal, Columbia, and Peace region boards approved ~$10.2 million for 56 wildlife and 33 fish projects in 2023–2024. Each project aligns with our regional action plans, which reflect our strategic objectives, mission, and vision.

Read our story.

Project outcomes and annual reports are also available for our Coastal and Columbia regions fwcp.ca.

Peace Region projects 2023–2024

In our Peace Region, 28 projects were approved by our board for $1.61 million.

Approximately 33% of approved funding went to projects in the Parsnip sub-region, 18% in the Finlay sub-region, and 3% in the Peace sub-region. See Figure 1 for a breakdown of funding by sub-region.

This year, approximately two-thirds or 65% of approved funding went toward habitat-based projects, and a further 33% for species-based actions. See Figure 2 for a breakdown of funding by project type.

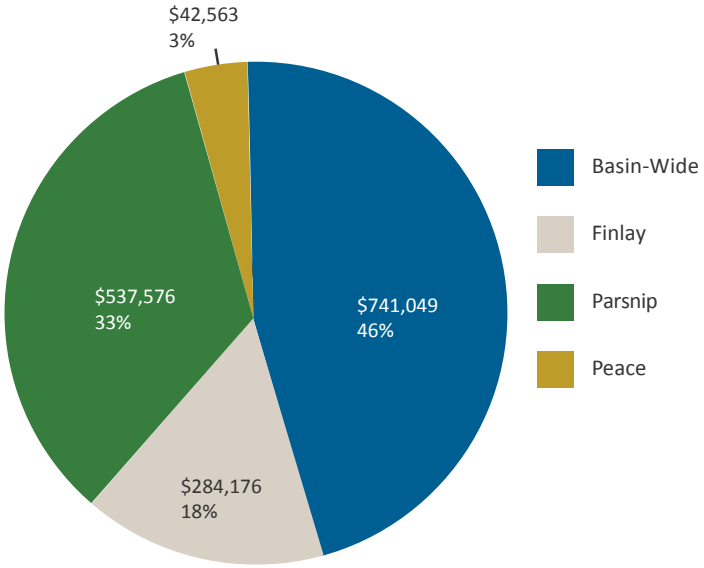


Figure 1: F24 Approved projects by sub-region

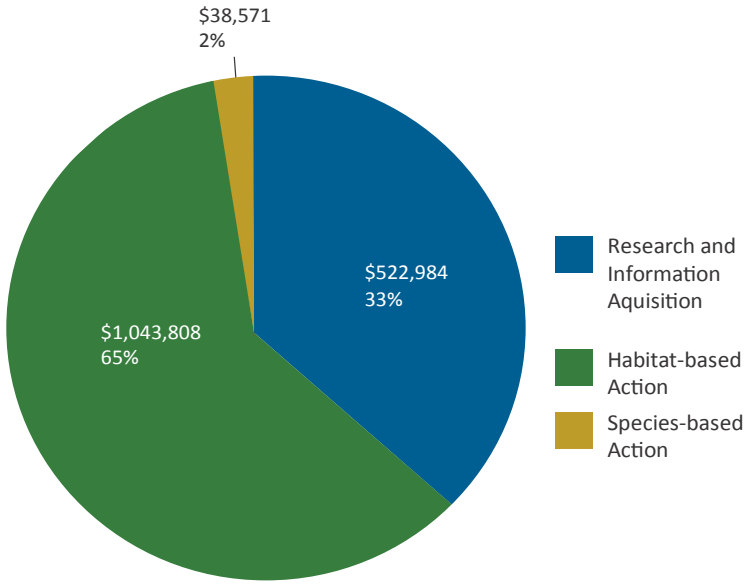


Figure 2: F24 funding by action type

Project outcomes

Project outcomes for projects approved for 2023–2024 are summarized on the following pages.

We post final project reports on provincial databases so the results of projects we fund are available to everyone. Searchable spreadsheets of reports for each FWCP region are available at fwcp.ca/results.

Learn more about our projects

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Fish & Wildlife Compensation Program

Improving understanding of degradation rates of eDNA

PEA-F24-F-3868

University of Northern British Columbia (UNBC)

$63,083

Basin-Wide

Research & Information Acquisition

iStock mlharing

Application of an Aquatic eDNA Degradation Rate Assay: Understanding eDNA degradation rates is critical to the interpretation of eDNA projects and will ultimately provide more information about critical habitats that would benefit from conservation or enhancement.

Report pending

Learn more

Examining bull trout spawner abundance and critical habitats

PEA-F24-F-3848

Chu Cho Environmental LLP

$70,536

Basin-Wide

Research & Information Acquisition

iStock mlharing

Bull Trout Spawner Abundance and Critical Habitats: This multi-year project will provide estimates of bull trout spawner abundance by performing ground-based counts of bull trout spawning sites (i.e., redds) within index sites in four streams that have been monitored annually since 2001, as well as four new index sites.

Downward trend for bull trout redds

Monitoring of bull trout spawning redds in the Williston Reservoir Watershed shows downward (i.e., Scott Creek and Misinchinka River) or stable (i.e., Point Creek) trends for most of the streams.

The Davis River bull trout population is the only population in the long-term index streams that showed an upward trend.

Four new index sections were surveyed in Anzac River, Pelly Creek, Pesika Creek, and Lay Creek. A cumulative effects model was assessed for use in a limiting factors analysis and this type of modelling tool is recommended to evaluate limiting factors using data from concurrently funded FWCP projects.

Learn more

Understanding reservoir impacts on Williston bull trout

PEA-F24-F-3847

Chu Cho Environmental LLP

$117,251

Basin-Wide

Research & Information Acquisition

Steve Rooke

Williston Bull Trout Population Structure and Life History: This three-year study will fill gaps in Williston bull trout data through biological sampling of adult and juvenile fish, and laboratory analysis of tissue samples. This research was identified in our 2019 Bull Trout Synthesis Report and 2020 Rivers, Lakes, & Reservoirs Action Plan.

Bull trout genetic samples collected in Williston Reservoir

This project resulted in a robust database of genetic samples which will help fill data gaps about bull trout population structure in the Williston Reservoir.

Seven hundred genetic samples were collected from 665 juvenile bull trout, representing 23 populations within 18 watersheds.

Samples of mature Davis and Misinchinka river bull trout showed similar mean body sizes relative to each other and samples collected in 1999 and 2004–2005, indicate that over time, bull trout are similarly long-lived and attain similar body sizes at maturity.

Many bull trout sampled from the Davis River have infestations of a copepod parasite.

Analysis suggests identical growth rates for Davis and Misinchinka bull trout in the adult rearing environment, but these growth rates were lower than the Thutade Lake reference system bull trout, indicating lower average spawner size which could be attributed to reduced competition and predation in the reference system.

Learn more

Supporting cold-water fish in the face of climate change

PEA-F24-F-3845

Chu Cho Environmental LLP

$82,638

Basin-Wide

Research & Information Acquisition

iStock mlharing

Modelling Thermal Regimes of the Upper Peace River Basin: This project will focus on the cumulative effects of land use, climate change, and water flow regulation on river water temperatures in the upper Peace River Basin.

Temperature loggers monitor cold-water fish habitat

In 2023, the focus was an expanding the array of temperature loggers to include the Nation, Omineca, and Osilinka River watersheds. By summer 2023, 111 temperature loggers were deployed and capturing important data about temperature and other watershed characteristics.

Five real-time hydrometric stations were also added to the Nation River, Parsnip River, and Pack River watersheds, for a total of 16 active stations.

Together, the new loggers and stations will provide important data for the management of cold-water adapted fish.

Learn more

Improving fish passage in our Peace Region

PEA-F24-F-3944-DCA

Society For Ecosystem Restoration in Northern BC (SERNbc)

$200,424

Parsnip Sub-Region

Habitat-Based Action

iStock mlharing

F24 Fish Passage with Society for Ecosystem Restoration in Northern BC Year 3: This multi-year project will start implementing fish passage restoration actions based on priority sites identified from previously funded projects (PEA-F20-F-2967 and PEA-F22-F-3577).

Fish passage improvements continue at priority sites

This project is achieving the intended outcomes of restoring access to fish passage and building momentum and capacity for ecosystem restoration in the FWCP's Peace Region.

This year the project partners identified and conducted fish passage planning and restoration activities at multiple priority sites.

A collaborative GIS environment has been established and collaborators can view or share spatial datasets that support the development of restoration and monitoring plans for this fish passage project.

Project data is being used by BC Timber Sales to support road deactivation which is leading to the restoration of fish passage at numerous crossings in the Parsnip River watershed, including two priority sites.

Fish sampling with PIT tagging of target species and the acquisition of aerial imagery took place in 2023 as part of baseline monitoring.

Learn more

Conserving critical habitats for Arctic grayling

PEA-F24-F-3834

University of Northern British Columbia (UNBC)

$111,298

Parsnip Sub-Region

Research and Information Acquisition

iStock mlharing

Critical Habitats of Arctic Grayling in Parsnip Tributaries : This year of the project will combine radio telemetry, snorkel surveys, and drone and thermal imaging to show how the fine-scale behaviour and distribution of Arctic grayling can locate and inform conservation actions for critical habitats in the Anzac and Table rivers.

Project cancelled

Project was withdrawn by the proponent subsequent to board approval.

Restoring caribou habitat for a Peace Region herd

PEA-F24-W-3883

Nikanese Wah tzee Stewardship Society

$112,845

Basin-Wide

Habitat-Based Action

Nikanêse Wah tzee Stewardship Society

Restoring Caribou Habitat in the Klinse-Za Herd Year 5: In the fifth year of this multi-year project, work will continue to implement and monitor the functional and ecological restoration of 12 linear corridors in the herd area.

Linear corridors treated and restored for caribou

This project continued to deliver important habitat restoration to benefit the Klinse-Za caribou herd.

Heavy machinery was used to treat 33.6 kms of linear corridors by creating mounds and barriers and decompacting the soil to facilitate additional treatments. Additionally, 25,110 seedlings were planted along 9.1 kms of linear features. Wildfires and drought impacted the number of kms that were proposed for treatment.

Learn more

Promoting environmental stewardship in youth

PEA-F24-W-3874

Chu Cho Environmental LLP

$24,804

Finlay Sub-Region

Research & Information Acquisition

iStock mlharing

Tsay Keh Dene Environmental Outreach Week: Youth in the Tsay Keh Dene community will take part in a week-long environmental education program that promotes environmental stewardship.

Students gain environmental stewardship skills

This stewardship project, delivered in the Tsay Keh Dene community, increased awareness of local environmental issues, understanding of Indigenous ecological knowledge, and strengthened connections with cultural heritage.

Thirteen classroom sessions with students from Kindergarten to Grade 11 were delivered. Younger students took part in walks focused on plant and lichen identification, which instilled curiosity about the natural environment. Grades 6-8 explored insect trapping and identification. Grades 9-12 engaged in wildlife monitoring through wildlife cameras. Sessions alternated between outdoor learning and community settings to maximize exposure to diverse environments. Students actively participated and showed enthusiasm and curiosity about their environment.

Learn more

Stone's sheep: filling data gaps to inform conservation plans

PEA-F24-W-3865

Wild Sheep Society of British Columbia

$29,299

Peace Sub-Region

Research & Information Acquisition

iStock Chuck Schug

Health and Behaviour of B.C.'s Southernmost Stone's Sheep Year 5: This project to assess health of Stone's sheep will focus on the two southernmost functionally viable herds of the species: the Dunlevy and Schooler herds.

24 health assessments completed

Twenty-four Stone's sheep were captured – 17 were already collared – and health assessments were completed. The assessments showed no significant evidence of major pathogens, though one ewe tested positive for Parainfluenza virus antibodies and another for Toxoplasmosis. Low to severe hair loss was common among sheep at lower elevations but did not significantly affect survival or reproduction. Seven mortalities were recorded, with causes ranging from capture-related trauma to predation and birth complications.

The annual survival rate and recruitment indicate a stable Dunlevy Herd while the Schooler Herd appears to have undergone a significant decline to just seven sheep, only one of which is a female. Movement analysis showed migratory behavior among low-elevation ewes and resident behavior in high-elevation sheep, with one ram demonstrating significant long-distance movement, highlighting connectivity and potential disease transmission between ranges. Compared to the historical data, little has changed in movement.

Learn more

Studying caribou predation in Nak'azdli Whut'en territory

PEA-F24-W-3864

Nak'azdli Whut'en

$66,000

Finlay Sub-Region

Research & Information Acquisition

Roy Rea

Wolf Density and Distribution in the Wolverine Caribou Herd: The project will track wolves in the range of the Wolverine caribou herd to help understand wolf movements and kill rates. This information is critical to develop management, conservation, and enhancement actions to support the herd's recovery.

Thirteen wolves collared to inform caribou herd recovery

Thirteen wolves were safely captured, fitted with GPS collars, and released back into Nak'azdli Whut'en territory.

The project team shared project outcomes at wildlife week hosted by the Nak'azdli Whut'en First Nation, and the team attended two community meetings to talk about the project.

Learn more

Caribou: improving calf survival and herd size through maternity penning

PEA-F24-W-3861

Nikanese Wah tzee Stewardship Society

$38,571

Basin-Wide

Species-Based Action

L. Betts

Enhancing Caribou Survival in the Klinse-Za Herd: This multi-year project aims to enhance the survival rate of caribou cows and calves in the Klinse-Za herd through maternity penning.

At-risk caribou herd quadruples in 10 years

The Klinse-Za caribou population decline has been arrested through recovery actions in the past 10 years. This year, 17 calves and 20 cows were released from the maternity pen.

The population trajectory has been positive and there has been an observed quadrupling of the population growth since management actions started in 2013. The herd is now 159 strong (as of spring 2024) and the annual per capita growth rate this year was the highest yet.

The annual per capita growth observed in the March 2024 survey (0.205) is the second highest next to the growth observed in 2016. The three-year geometric mean of per capita growth (0.161) in 2024 is the highest recorded and is higher than the overall average annual growth since the project began (0.128).

Learn more

Restoring the Rochfort caribou maternity pen

PEA-F24-W-3851

Nikanese Wah tzee Stewardship Society

$8,316

Peace Sub-Region

Habitat-Based Action

Post-operation Restoration of the Rochfort Maternity Pen: The goal of this project is to plant native species within the pen and surrounding area to stimulate the restoration process and monitor the planted species for survival to determine if further restoration is needed.

Restoring maternity pen for at-risk caribou

This project achieved most of its objectives to re-plant and restore a caribou maternity pen that has been an important part of herd recovery.

More work is needed to restore the pen site and will include planting green willow and translocating Cladonia lichen mats. It is still unknown if scrub birch—an important food source for caribou—can be planted successfully and further investigation is required.

Learn more

Gathering knowledge of sensitive habitats in Williston's Carbon Inlet

PEA-F24-W-3841

Saulteau First Nations

$4,948

Peace Sub-Region

Research & Information Acquisition

Identifying Sensitive Habitat Areas in the Carbon Inlet: This Seed Grant will allow Saulteau First Nations to use existing data, government, and independent studies to determine the best way to identify sensitive habitats in the Carbon Inlet area of Williston Reservoir.

Carbon Inlet sensitive areas: next steps confirmed

This project is intended to inform a broader monitoring plan for sensitive areas in the Carbon Inlet and resulted in a study diagram which includes four ecotypes (general, mountain, riparian, and upland) and study categories (focal species, monitoring, and cultural).

The importance of this work is underscored by a study conducted by the Saulteau First Nations that revealed numerous utilized areas and culturally significant sites that have not undergone monitoring for an extended period.

The study determined how to use existing data, fill the gaps, and proceed with field work to provide adequate information to assist with the Klinse-Za Provincial Park Management Plan. The study considered the intrinsic benefits to the Saulteau First Nations community and the capacity of the land guardian program.

Learn more

Determining non-invasive ways to assess at-risk wolverine

PEA-F24-W-3839

Chu Cho Environmental LLP

$5,000

Basin-Wide

Research & Information Acquisition

iStock Waitandshoot

Feasibility Analysis of Wolverine Abundance and Connectivity: This Seed Grant project will investigate the feasibility of using genetic sampling to estimate wolverine abundance and new methods to identify wolverine den locations within Tsay Keh Dene territory.

Non-invasive assessment of wolverines confirmed

As a result of this Seed Grant, Chu Cho Environmental LLP successfully engaged with stakeholders and developed methods for a wolverine population assessment that will provide valuable insights into wolverine density and abundance in Tsay Keh Dene First Nation Territory.

The results of this project informed a density and abundance study design based on input from community members who shared their views on wolverine conservation and management, and input from multiple subject matter experts. The study is proposed for the Chase caribou range in Tsay Key Dene First Nation territory.

Learn more

Studying grizzly bear movement in Tsay Keh Dene territory

PEA-F24-W-3833

Chu Cho Environmental LLP

$35,000

Finlay Sub-Region

Research & Information Acquisition

iStock J. Huevel

Understanding Grizzly Bear Habitat Use and Populations: This multi-year project will increase understanding of grizzly bear populations and the way they move through Tsay Keh Dene territory. An at-risk species, grizzly bears are culturally significant to the Tsay Keh Dene Nation.

Grizzly movements: 94 detections at 17 sites

This project monitored 15 paired corridor and reference sites in two study areas for grizzly bear movements between May and October 2023. Initial outcomes confirm capture rates did not differ between corridor and reference stations, and grizzly bear capture rates did not vary by month.

Camera traps included 94 independent grizzly bear detections across 17 sites. The team also collected 99 hair samples from rub trees which will help increase understanding of movements, demographics, and health.

Learn more

Restoring abandoned access roads to caribou habitat

PEA-F24-W-3827

Chu Cho Environmental LLP

$39,800

Finlay Sub-Region

Habitat-Based Action

Chris Gale, Wild North Photos

Chase Caribou Road Restoration Program: This multi-year program will use ecological and functional restoration techniques to restore abandoned resource roads in the Chase caribou herd range, and accelerate their return to a mature forest environment, reducing human and predator use.

Chase caribou herd habitat restored

Ecological and functional restoration techniques were applied to an 8.5-kilometre linear section (~4.25 hectares) of the Chuyaza Road in the Chase caribou herd range.

Twenty-nine culverts were removed, crushed, and stacked for later removal. Restoration proceeded according to the prescription, with no significant deviations or unexpected conditions encountered.

In all, the restoration of the Chuyaza Road contributed to the incremental restoration of the 110,534.8-hectare Wədzih Yinè' Indigenous Protected and Conserved Area (IPCA). The IPCA encompasses the Swannell River Valley, which is a focal area of the Chase Caribou Road Restoration Program for the next several years.

Learn more

Caribou: confirming the benefits of supplemental feeding

PEA-F24-W-3826

University of Northern British Columbia (UNBC)

$28,178

Parsnip Sub-Region

Research & Information Acquisition

Wildlife Infometrics Inc.

Physiological Effects of Supplemental Feeding in Caribou: This multi-year project will provide insights into how supplemental feeding influences caribou pregnancy rates and calf survival, and it may help evaluate whether feeding is most beneficial in spring or fall.

Report pending

Learn more

At-risk olive-sided flycatchers: filling important data gaps

PEA-F24-W-3825

Chu Cho Environmental LLP

$51,853

Finlay Sub-Region

Research & Information Acquisition

Julie Hagelin

Olive-sided Flycatcher Habitat across a Disturbance Gradient: This multi-year project will evaluate olive-sided flycatcher occupancy, habitat characteristics, and prey abundance and diversity at various sites across a natural and anthropogenic disturbance gradient.

Monitoring update: Olive-sided fly-catcher detections at five sites

This project completed call playback surveys at 34 locations in slightly or moderately disturbed sites in 2023. The team detected at-risk olive-sided flycatchers at five sites and completed the habitat assessment protocol at these sites.

The presence of a grizzly bear influenced habitat assessment work but the team relocated and detected two more birds.

Habitat assessments were completed at 12 sites—half are known sites for olive-sided flycatchers—across five grid cells. Drone images were collected at 24 assessment plots to help map additional habitat attributes.

Learn more

Improving science and knowledge of bat populations

PEA-F24-W-3824

Wildlife Conservation Society Canada

$68,683

Basin-Wide

Research & Information Acquisition

A. Glass

North American Bat Monitoring Program: Williston Expansion: This project will continue to gather baseline data on bats in the Willison Reservoir Watershed, prior to the potential arrival of white-nose syndrome in B.C.

Report pending

Learn more

Developing new methodology to map lichen in caribou ranges

PEA-F24-W-3815

LGL Limited Environmental Research Associates Ltd.

$66,719

Finlay Sub-Region

Research & Information Acquisition

Michael Tilson Chu Cho Environmental

Using Remote Sensing to Map Lichen in Caribou Habitat: This project will estimate lichen distribution and abundance in the ranges of northern caribou.

Models can predict lichen abundance for caribou

The project was successful in achieving its data collection, modelling output, and community engagement objectives. Nineteen sites near Tsay Keh Dene were surveyed for lichen abundance and distribution, and a lichen survey workshop was delivered at Tsay Keh Dene.

The project team created a model using the per cent cover lichen data to compare to the lichen biomass data and then compared the models. The results show both models were able to accurately predict the areas of the lowest lichen abundance. With further data collection and refinement of the model, it may be possible to use per cent cover data to predict lichen relative abundance with greater accuracy.

Learn more

Expanding data collection for birds and bats

PEA-F24-W-3792

Birds Canada

$101,184

Basin-Wide

Research & Information Acquisition

Cori Lausen

Motus Wildlife Tracking System: Peace Basin Expansion: This project will continue to expand the Motus Wildlife Tracking System to track birds and bats affixed with digitally encoded radio transmitters.

Tracking system expanded for birds and bats

This monitoring and data collection project successfully expanded the Motus Wildlife Tracking System by adding three new stations, plus one temporary station, to track birds and bats. The design has been adjusted for remote, mountainous areas.

The project achieved its goal of tagging and tracking white-throated sparrows as part of a larger research project. Monitoring suggests sparrows are using the Central Flyways, but data about use of the Pacific Flyway was inconclusive. Thirty-five at-risk bank swallows were tagged but only after the team moved to a new site where they were present. Wildfires meant tagging of the little brown myotis was postponed to 2024.

Multiple classroom sessions were also held with students at Moberly Lake Elementary.

Learn more

Maintaining nesting enhancements in the Williston Watershed

PEA-F24-W-3790

Blackbird Environmental Ltd.

$28,725

Basin-Wide

Habitat-Based Action

Blackbird

Maintaining Peace Region Waterfowl Nesting Enhancements: This project will revisit these enhancements—such as floating islands and nest boxes—to inspect, maintain, and replace if needed.

Monitoring update: 13 floating waterfowl nesting islands inspected and maintained

This project successfully monitored 13 floating islands, and inspected and maintained 52 waterfowl nest boxes, which resulted in the replacement of three nest boxes in the Parsnip and Dinosaur sub-regions.

Of the floating islands, all of them are functional and 92% of the floating islands showed signs of use.

Nest box monitoring confirms 83% of the nest boxes were functional, and more than half were used by waterfowl. Mergansers were most common, accounting for 71% of all observations, but there was an observation of a wood duck using a nest box at Neilsen Lake.

Monitoring and maintenance fieldwork within the Parsnip sub-region was done in collaboration with a land monitor from McLeod Lake Indian Band.

Learn more

Building ecological awareness in our Peace Region

PEA-F24-W-3945-DCA

DWB Consulting Services Ltd.

$32,534

Basin-Wide

Research & Information Acquisition

BCWF

F24 Williston School Ecology Project: This multi-year project will improve understanding of local ecology for Peace Region elementary and high-school students through outdoor-based, hands-on environmental education in rural schools.

Four hundred students build ecological awareness

Twelve learning modules were delivered to approximately 400 students at Morfee Elementary, Mackenzie Secondary, and Moberly Lake Elementary schools.

Hands-on and outdoor ecological learning opportunities included observing and interacting with their environment on field trips, fostering environmental stewardship, and building a greater knowledge and appreciation of local fauna and flora.

Learn more

Gathering important breeding bird data at Mugaha Marsh Bird Banding Station

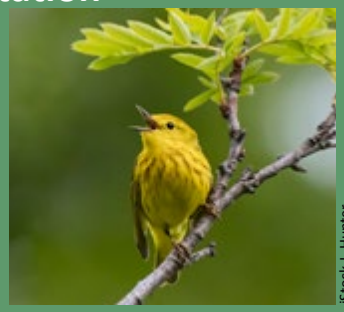
PEA-F24-W-3943-DCA

Mackenzie Nature Observatory

$25,050

Parsnip Sub-Region

Research & Information Acquisition



iStock J. Hunter

Mugaha Marsh Banding Station 2023–2024: This long-term, multi-year project will add to 20-plus years of bird monitoring data.

2,799 birds banded at Mugaha Marsh

This long-term data collection project resulted in valuable data related to songbird populations, migrations, and health. There were 62 species among the 2,799 birds banded between July and September.

Public benefits were realized through educational, recreational, and tourism opportunities.

Learn more

Building knowledge and understanding with support from UNBC

PEA-F24-W-3942-DCA

University of Northern British Columbia (UNBC)

$15,000

Basin-Wide

Research & Information Acquisition

iStock mlharing

F24 UNBC Presentation Series: This multi-year project provides education and outreach by building connections and developing relationships through a series of free presentations focused on research that is underway in, or could be applied to, our Peace Region.

Three presentations delivered to ~200 people

Three presentations delivered online and in-person were delivered in 2023-2024. Topics shared to approximately 220 people included spatiothermal ecology of Arctic grayling in the Parsnip River Watershed, parasitic lice and birds, and maternal roosting characteristics of northern myotis.

Learn more

Enhancing winter range for moose

PEA-F24-W-4115-DCA

Society for Ecosystem Restoration in Northern BC (SERNbc)

$103,070

Parsnip Sub-Region

Habitat-Based Action

Roy Rea

F24 Moose Habitat Enhancement Project in the Parsnip Watershed: Building on an FWCP Seed Grant, this project will assess and enhance priority areas of winter range for moose west of McLeod Lake.

Moose habitat enhancements confirmed and prescriptions drafted

In Year 1 the Society for Ecosystem Restoration BC (SERNbc) and the McLeod Lake Indian Band met with experts and others to guide development of moose habitat enhancement treatments.

Commercial thinning for habitat enhancement was prioritized this year and the focus was on developing treatments within plantations aged 30 to 45 years.

Opportunities to enhance moose habitat through forage availability, ungulate winter range recruitment, beaver habitat enhancement, and promoting huckleberry production were confirmed through field reconnaissance.

Learn more