



Message from our board co-chairs

Welcome to our annual report for 2021–2022 (i.e., fiscal year F22). This annual report is one of many ways that we are transparent and accountable to you about the funding we receive annually from BC Hydro, and how our Columbia Region board allocates funding toward projects that support our mission to conserve and enhance fish and wildlife in watersheds impacted by existing BC Hydro dams.

In fiscal year 2021–2022, our board approved approximately \$5.7 million for 11 fish and 32 wildlife projects. Despite the pandemic restrictions and the intense heat, wildfires and smoke that defined the summer of 2021, most projects carried on, although some restoration work planned for the Arrow Lakes Reservoir was postponed due to wildfires. We know from experience that being resilient and adapting to change is critical and that is what we will continue doing.

Projects funded in 2021–2022 helped to improve habitat and connectivity for bull trout, support First Nations delivery of Fish & Wildlife Compensation Program (FWCP) directed projects, address invasive species, support kokanee, restore wetland habitats, protect species at risk, and much more.

We also continued long-term funding for spawning channels on Kootenay Lake and the Arrow Lakes Reservoir, and the Nutrient Restoration Programs (NRPs) in both systems. This was also the year we initiated a technical review of our NRPs and moved closer to completing our wetland effectiveness evaluation framework. Both projects address recommendations from our 2019 independent evaluation and financial [audit](#).

Please take a moment to look at our [project list](#) or visit our interactive map at [fwcp.ca](#) and learn more about the 2021–2022 fish and wildlife projects we funded.

We want to extend a sincere thank you to the First Nations, stewardship groups, agencies, consultants, and academic researchers who, despite the year's challenges, continued to deliver projects to help fish and wildlife. Thank you on behalf of the FWCP.

An important part of our work this year was about strengthening engagement of First Nations in the FWCP's leadership, decision-making, project planning, and project delivery. A guiding document jointly developed by our Ktunaxa, Secwepemc and Syilx Okanagan Nation partners is now approved by our board and we look forward to continuing this important work.

In addition, this was a busy year for the entire FWCP team as we:

Continued working to address the recommendations from the independent evaluation and financial audit, including updates to the Governance Manual that guides our work. See our update on page 5.

Renewed our three-year communications strategy that focused on refreshing our products, engaging youth, and strengthening our communications with Indigenous Nations across our three regions.

We want to take a moment to recognize the work of our fellow board member Howie Wright, our Okanagan Nation Alliance representative. Howie has been on the board since 2015 and was a leader in helping us strengthen engagement with First Nations. Howie left the board in spring 2022 and we all wish Howie the best in his new endeavors.

If you have any questions about our projects, grants, or this annual report, please [contact us](#). Our team is available to answer your questions.

Sincerely,



Monique Stevenson
FWCP Columbia Region
Board Co-Chair



John Krebs
FWCP Columbia Region
Board Co-Chair

Cover: Installing artificial bark is part of an Indigenous-led directed project to enhance habitat for the silver-haired bat in the West Kootenay. This is the first year the board approved funding for Indigenous-led directed projects that align with our action plan priorities. COL-F22-W-3578-DCA. Photo: Okanagan Nation Alliance



Annual reports are also available for our Peace and Coastal regions at [fwcp.ca](#).

1.0 Organizational overview

1.1 INTRODUCTION

With annual funding from BC Hydro, the Fish & Wildlife Compensation Program (FWCP) conserves and enhances fish and wildlife in watersheds impacted by 31 existing BC Hydro dams. The FWCP directs those funds toward priority actions across its three regions—Coastal, Columbia, and Peace—to fulfill its mission and work toward its vision of thriving fish and wildlife populations in watersheds that are functioning and sustainable.

BC Hydro has water licence obligations in the Columbia and Peace regions and has made voluntary commitments to address the impacts of dams in the Coastal Region. BC Hydro fulfills the applicable obligations through the work of the FWCP.

The FWCP is governed through a framework that recognizes the regulatory accountabilities of agency partners (i.e., BC Hydro, the Province of B.C., and the DFO) and ensures active participation and input from First Nations and public stakeholders. Independent board members in each region review, evaluate, and approve funding for all projects. Our boards include representatives from each of our FWCP partners: BC Hydro, the Province of B.C., First Nations, and public stakeholders. The Coastal Region board also has a representative from the DFO. When it comes to decision-making, input from each board member is given equal consideration through collaborative discussion. Learn more at fwcp.ca/our-story.

Combined, our three regional boards have the following representatives:

- BC Hydro: 5
- Federal government: 1
- First Nations: 15
- Provincial government: 5
- Public stakeholders: 9

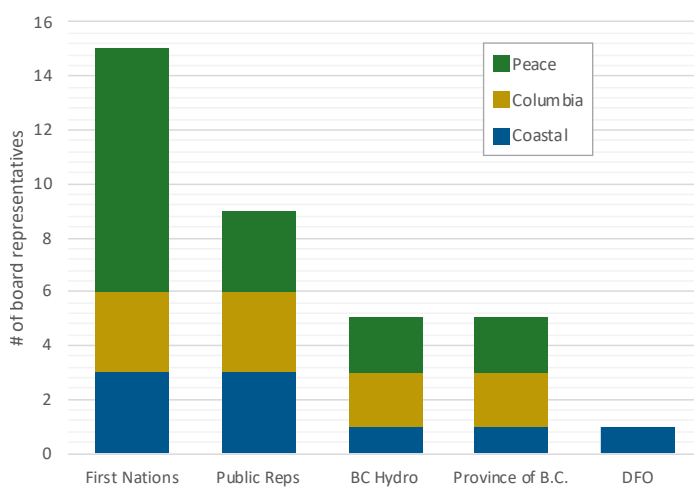


Figure 1.1: Board representation across all three FWCP regions

Board representation by region is shown in Figure 1.1. In F22, the boards approved approximately \$9.4 million for 100 fish and wildlife projects.

Since 1988, BC Hydro has provided over \$200 million to the FWCP to compensate for dam impacts, and the FWCP has funded more than 2,200 projects across its three regions.

The FWCP's Columbia Region was established in 1995 to compensate for fish and wildlife populations affected by the construction of

BC Hydro dams in Canada's portion of the Columbia River Basin (Figure 1.2).

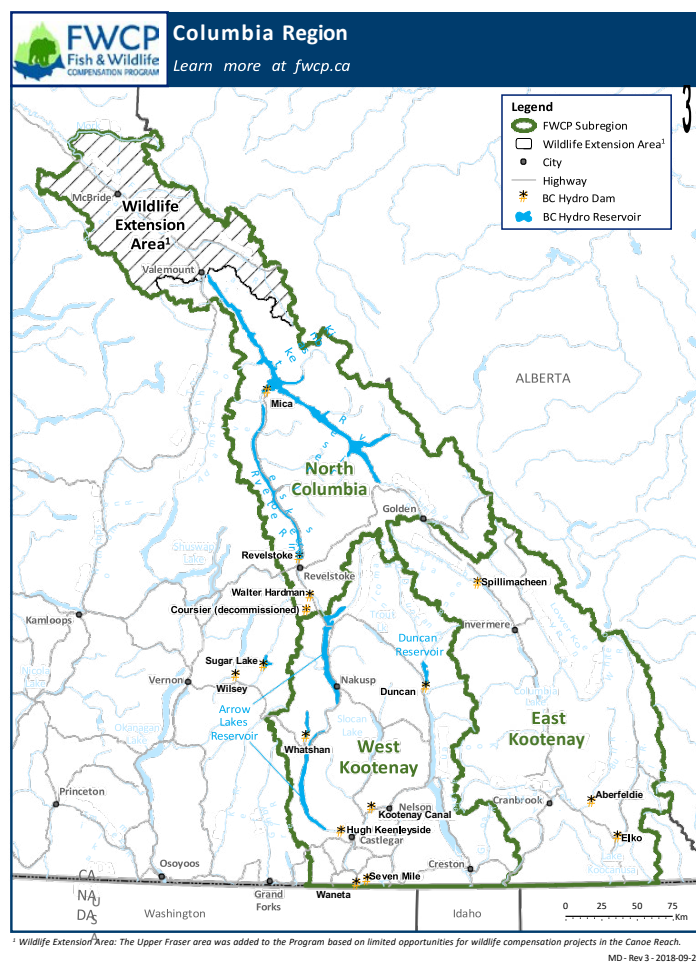


Figure 1.2: Map of the FWCP's Columbia Region

2.0 Our strategic approach

2.1 VISION AND MISSION

Our vision is for thriving fish and wildlife populations in watersheds that are functioning and sustainable, and our mission is to compensate for fish, wildlife, and their supporting habitats in watersheds impacted by BC Hydro owned and operated generation facilities.

We take a forward-looking, ecosystem-based approach that defines the desired outcomes and takes actions to restore, enhance, and conserve priority species and their habitats. The FWCP's strategic objectives are:

Conservation

Maintain or improve the status of species or ecosystems of concern.

Maintain or improve the integrity and productivity of ecosystems and habitats.

Sustainable use

Maintain or improve opportunities for sustainable use, including harvesting and other uses. Harvesting includes First Nations, recreational, sport, and commercial harvests. Other uses may include cultural, medicinal, or non-consumptive uses.

Community engagement

Build and maintain relationships with stakeholders and Indigenous communities. This objective stems from BC Hydro's social responsibility policy and the Province of B.C.'s shared stewardship objective.

See our [Governance Manual](#) for more details on our strategic approach.

2.2 ACTION PLANS

Our action plans guide FWCP investments in fish and wildlife projects. They are referenced annually by our regional boards to track progress toward implementation, set annual priorities, and guide decision-making in setting out and approving the annual operating plan for each region. Actions in our action plans are eligible for FWCP funding and align with our vision, mission, and geographic scope.

Our five Columbia Region [action plans](#) were updated in 2019 with local input from First Nations, stakeholders, and public stakeholders:

- Reservoirs & Large Lakes Action Plan
- Rivers & Riparian Areas Action Plan
- Small Lakes Action Plan
- Upland & Dryland Action Plan
- Wetland & Riparian Areas Action Plan

2.3 UPDATE: EVALUATION AND FINANCIAL AUDIT

Responding to the nine recommendations from our 2019 independent evaluation and financial audit remains a priority. Steady progress is being made on all recommendations as we balance core business priorities and human resources.

Across all our regions, the evaluation and financial audit recommended

exploring the potential increase in the use of directed projects, and now each region is delivering between five to eight directed projects in addition to the board-approved funding for grant-based projects.

In September 2021, a tri-region meeting of the boards endorsed an action to clarify the scope and intended outcomes of Strategic Objective #2: maintaining or improving opportunities for sustainable use.

During this year, a technical review of the Nutrient Restoration Programs in Kootenay Lake North Arm and the Arrow Lakes Reservoir in our Columbia Region was initiated. It includes a review of the program objectives and recommendations for trend monitoring frequency. The review is scheduled for completion in fall 2022. A similar review is underway to determine the effectiveness of FWCP-funded wetland projects. These reviews are in response to recommendation #2 in the evaluation and financial audit to ensure projects reflect the intent and priorities of the partnership and maximize the achievement of the intended outcomes of the program.

In response to recommendation #6 to increase engagement of First Nations in the Columbia Region, the board approved a strategic document that reflects tri-Nation input and provides guidance to strengthen engagement of First Nations in the region's leadership, decision making, and project planning and delivery.

Progress this year includes: funding for Indigenous-led directed projects; capacity building funding was increased; engagement in the region's annual and ongoing projects was strengthened; work is underway to establish a First Nations Working Group; and the Nations provided early engagement guidance to grant applicants.

Learn more about our evaluation and financial audit <https://fwcp.ca/evaluation-audit-2018-2019/>



With FWCP funding, land stewardship activities, led by the Nature Trust of B.C., included a youth crew that maintained and enhanced biodiversity and wildlife values on conservation properties. While doing an aquatic inventory on an East Kootenay lake, the crew observed an invasive pumpkinseed fish, a species introduced from Northeastern North America. [COL-F22-W-3494](#)

Photo: Nature Trust of B.C.

3.0 Board, committee members, and staff

3.1 FWCP COLUMBIA REGION BOARD

The board guides our work and is responsible for approving our Columbia Region projects and budget. In addition to funding projects through our annual grants, the board may choose to direct projects and approve funding to address regional priorities.

Columbia Region board:

Damien Joly	Province of B.C.
Giles Shearing	Public
Howie Wright	Okanagan Nation Alliance
John Krebs, Co-chair	Province of B.C.
Karen Bray/Kim Cox	BC Hydro
Mark Thomas	Secwepemc Nation
Misun Kang	Ktunaxa Nation Council
Monique Stevenson, Co-Chair	BC Hydro
Moss Giasson	Public
Wendy Booth	Public

3.2 TECHNICAL COMMITTEES

The board is supported by fish and wildlife technical committees that act in an advisory role by providing technical review, evaluation, and ranking of fish and wildlife grant applications; supporting the development of strategic plans; assisting in the development and oversight of directed projects; and providing advice on the effective implementation of action plans.

Fish technical committee:

Amy Duncan/Evan Smith	Okanagan Nation Alliance
Ben Meunier	Ktunaxa Nation Council
James Crossman	BC Hydro
Karen Bray, Chair	BC Hydro
Tyler Weir	Province of B.C.
Will Warnock	Province of B.C.
Vacant	Secwepemc Nation

Wildlife technical committee:

Cathy Conroy/Nikki Heim	Ktunaxa Nation Council
David DeRosa	Okanagan Nation Alliance
Lindsay Anderson, Chair	Province of B.C.
Patrick Stent	Province of B.C.
Tom Appleby	BC Hydro
Vacant	Secwepemc Nation

3.3 POLICY COMMITTEE

The policy committee sets the FWCP's overall policy direction including the governance structure and strategic framework. It also oversees periodic evaluations, approves significant changes to the FWCP, and addresses dispute resolution, when necessary, among other responsibilities beyond the FWCP. For more details, refer to our [Governance Manual](#).

Policy committee:

Brian Fanos
Regional Director Pacific Region, Fisheries and Oceans Canada

James Mack
Assistant Deputy Minister, B.C. Ministry of Environment & Climate Change Strategy

Karen Popoff
Director, Environment, BC Hydro

3.4 STAFF

In the Columbia Region, program management and operations were implemented by the region manager Crystal Klym during this reporting period, supported by Monique Stevenson, FWCP manager, and Lorraine Ens or Melissa Fiel de Sousa, environmental project coordinator.



In spring 2022 the board toured several FWCP-funded projects including the 69 ha Cherry Meadows wetlands and open forest habitat north of Cranbrook. In 2014, the FWCP contributed one-quarter of the nearly \$1 million purchase price and more funds several years later for stewardship activities. Photo: FWCP

4.0 Project funding and grants

4.1 PROVINCIAL PROJECT FUNDING

In F22, FWCP boards approved 100 projects for a total FWCP contribution of approximately \$9.4 million. The total value of these projects—including leveraged funding from other organizations and in-kind resources—was \$14.4 million.

Final reports for all FWCP-funded projects are uploaded to Ecocat or [SIWE](#) provincial databases, and searchable spreadsheets of reports for each FWCP region are available at fwcp.ca/results/.

4.2 COLUMBIA REGION PROJECT FUNDING

In our Columbia Region, the FWCP supports the delivery of fish and wildlife projects in a variety of ways, including grant applications, long-term agreements, and directed projects. Forty-three projects were approved this year, for approximately \$5.67 million in funding from our Columbia Region board.

Grant-based projects

The FWCP's annual grant intake opens each summer and closes in late fall. All grant applications go through a three-stage review process. For more details, visit our FAQs.

Grant applicants are required to develop a project idea that aligns with one or more priority action(s) in any action plan(s) and will achieve the intended outcome(s). Each priority action in our action plans is identified as Open, Open/Directed, or Directed. The proposed project must be aligned to an Open priority action to be eligible for a grant.

This year, 58 grant applications were received, and our Columbia Region board approved 28 of them for a total funding contribution of nearly \$1.3 million. First Nations, stewardship groups, consultants, and agencies are leading the 23 wildlife projects (approximately \$998,000) and five fish projects (approximately \$286,000) that will help conserve and enhance fish and wildlife in watersheds impacted by BC Hydro dams.

Annual and ongoing projects

Our Columbia Region board approved nearly \$4.48 million to support 13 annual and ongoing fish and wildlife projects. These projects are typically comprised of multiple sub-projects and activities and are delivered with support from the Province of B.C. through a letter of agreement, and other regional partners through contracts and contribution agreements.

This year, there were five fish projects approved for approximately \$2.27 million. These projects included adding nutrients to both Kootenay Lake North and Arrow Lakes Reservoir, recovering Columbia River white sturgeon, and operating and maintaining both the Hill Creek and Meadow Creek spawning channels.

Eight wildlife projects were also approved for more than \$1.66 million. These projects included stewardship of conservation lands, enhancing upland and dryland species in the East and West Kootenay, enhancing non-game habitat, recovering caribou and northern leopard frog populations, restoring and enhancing wetlands, and securing conservation lands in partnership with local and regional land trusts and the [Kootenay Conservation Program's](#) Land Securement Committee.

Directed projects

Our Columbia Region board may choose to direct projects and approve funding to address regional priorities. Actions identified as Directed are not eligible for a grant.

This year, the board approved an overall funding amount to be put towards Indigenous-led directed and projects by Ktunaxa, Secwepemc and Okanagan Nation Alliance. The FWCP Columbia Region board is committed to strengthening First Nations engagement in decision-making, leadership, and project planning and delivery.

Indigenous-led directed projects align with action plan priorities and the priorities and interests of the Nations. Directed projects advanced this year include managing invasive bullfrogs, identifying Springer Creek environmental and cultural values, assessing cervid (deer) abundance, silver-haired bat studies, Syilx traditional ecological knowledge review of Arrow Lakes and Kootenay Lake NRPs, and building our knowledge of how recreation affects wildlife.

Approved projects by proponent type

Our Columbia Region board approved 43 projects, including 28 grant-application projects, 13 annual and ongoing projects, and two directed projects. The majority were led by government agencies, and non-government organizations such as stewardship groups or non-profit environmental groups. Figure 4.1 below shows the split of approved projects by lead proponent type.

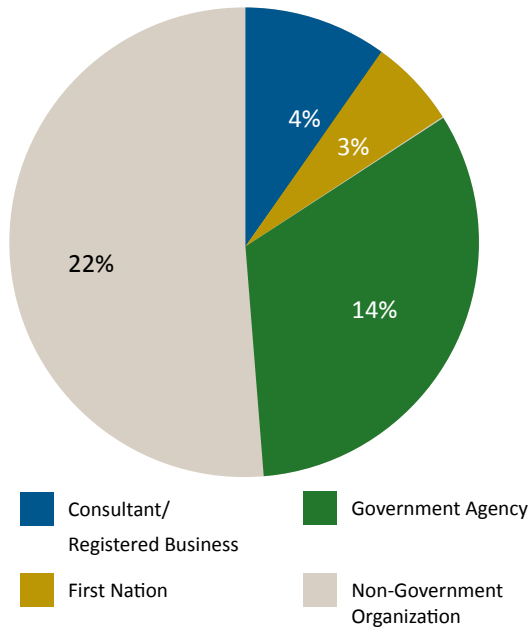


Figure 4.1: F22 approved projects by lead proponent type

Approved projects by action type

Priority actions in our Columbia Region action plans are grouped into five broad action types: 1) habitat-based; 2) species-based; 3) land securement; 4) research & information acquisition; and 5) monitoring and evaluation.

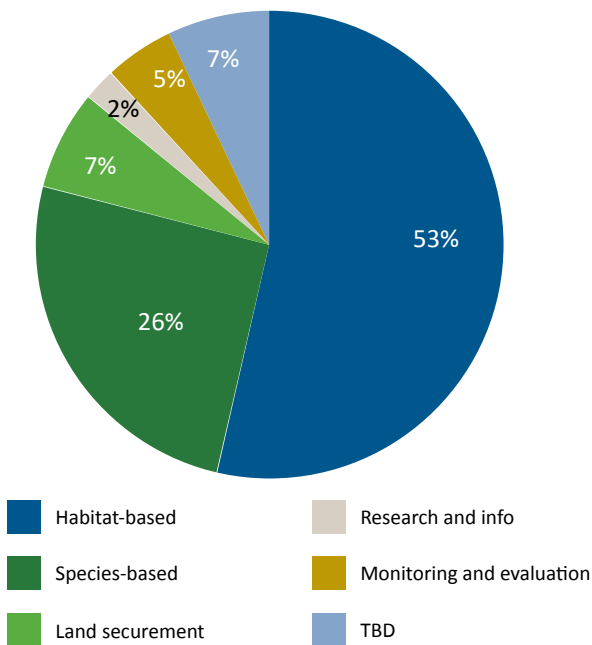


Figure 4.2: F22 approved projects by action type

Approved projects by sub-region

The Columbia Region is made up of three sub-regions: North Columbia, East Kootenay, and West Kootenay. Basin-wide projects are delivered across multiple sub-regions. Figure 4.3 shows the split of projects approved by sub-region this year.

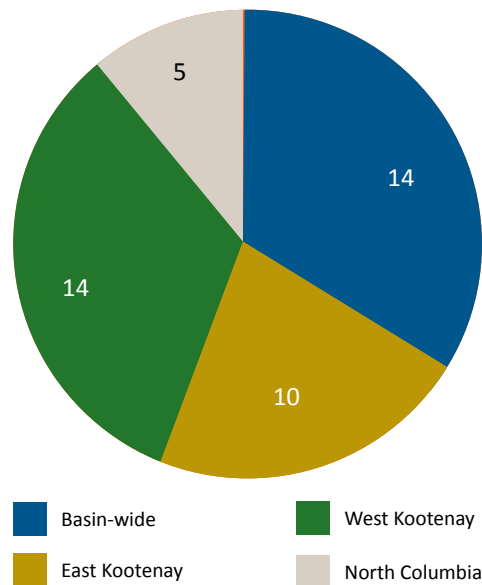


Figure 4.3: F22 approved projects by sub-region



Okanagan Nation Alliance tmix[™] (all creature of the land) technicians Caroline Lafond (front) and Carley Dolman search for invasive American bullfrogs. Photo: Okanagan Nation Alliance

Community Engagement Grant

The goal of the Community Engagement Grant (CEG) is to provide an opportunity for stakeholders and First Nations to apply for a small grant to support conservation and enhancement work that aligns with our action plans. Our Columbia Region received 11 CEG applications, and 10 were approved which fully allocated the available budget of \$7,500 (Table 4.1).

Table 4.1: Community Engagement Grants approved in the Columbia Region for F22

Applicant	Project title	FWCP funding (\$)
Central Kootenay Invasive Species Society	Kootenay Gallery Restoration	\$1,000
Nelson and District Rod & Gun Club	Grizzly Bear Coexistence Solutions	\$225
Wildsight Invermere	Stewarding a Future for Lake Enid	\$1,000
Valhalla Foundation for Ecology	Habitat-protection signs for Snk'mip Marsh Sanctuary	\$1,000
The Nature Trust of B.C.	Bird Habitat Enhancement at Columbia River Edgewater Conservation Property	\$1,000
Rossland Society for Environmental Action	WaterWalk Event	\$500
Friends of Kootenay Lake Stewardship Society	Osprey and Bald Eagle Nest Monitoring	\$500
North Bench (Golden) Dog and Pony Club	Recreation Trail Planning Process	\$500
Native Bee Society of BC	Wild bees in Camas Meadows	\$1,000
Rocky Mountain Naturalists	Elizabeth Lake Ecosystem Enhancement	\$775



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: Valerie Huff

5.0 Columbia Region financial report

5.1 APPROVED BUDGET AND EXPENDITURES

Annual funding is allocated by our Columbia Region board toward fish and wildlife projects, administration, and communications. These allocations form the annual operating plan. Any unallocated funds are carried forward as uncommitted available funds and are available for future spending.

Our Columbia Region board approved a budget of approximately \$6.28 million. The annual funding provided from BC Hydro to the region this year was \$5,152,351.

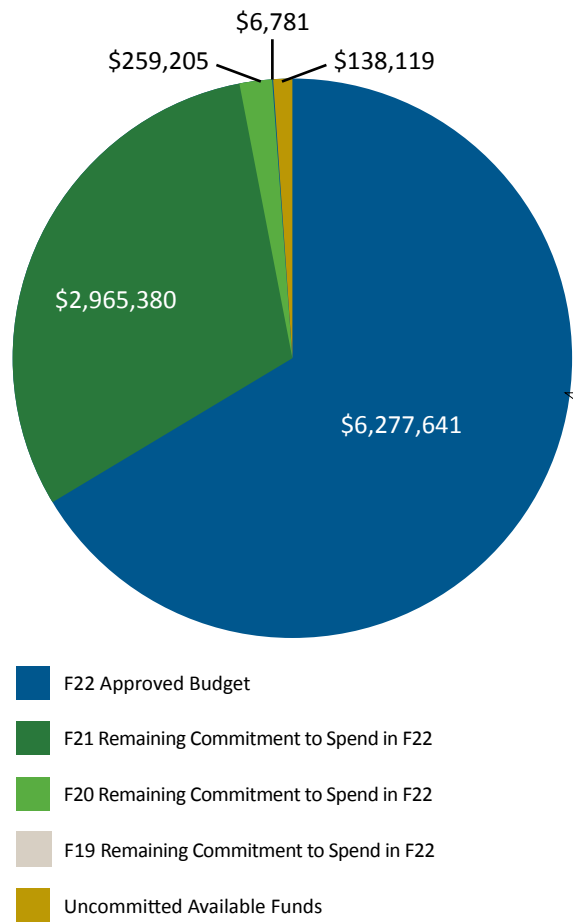


Figure 5.1: FWCP Columbia Region financial summary as of April 1, 2021

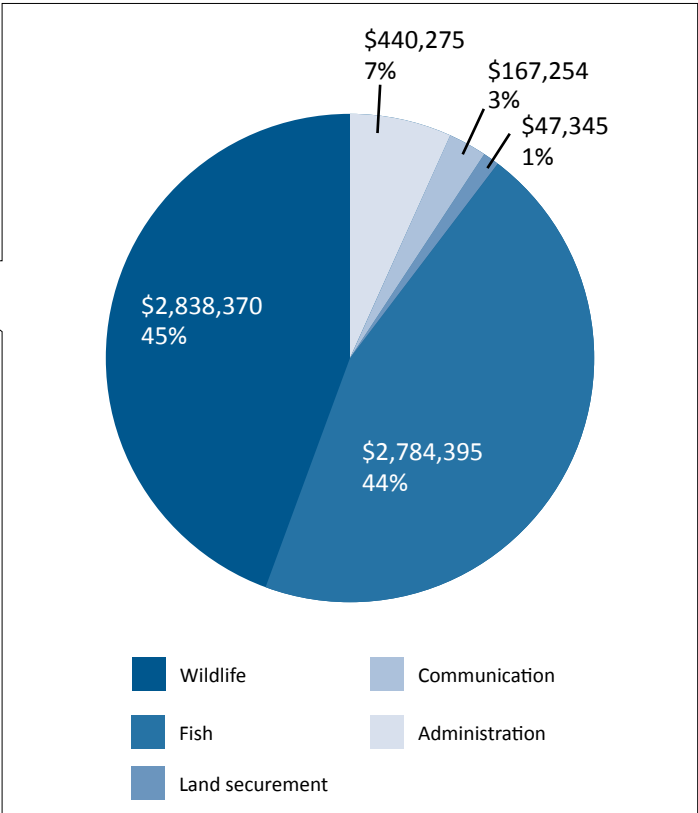


Figure 5.2: Breakdown of approved Columbia Region budget as of April 1, 2021

The FWCP encourages grant applicants to seek additional funding sources (e.g., other funding agencies and in-kind contributions) to leverage FWCP funding contributions. Demonstration that funds have been leveraged for a project is a consideration for the board’s decision-making. This year, the FWCP funding allocation for grant-based projects was nearly \$1.28 million. As a result of financial partnerships and in-kind contributions, the total value of the projects was just over \$3.67 million. In other words, for every dollar invested by the FWCP, others contributed nearly \$2.4, increasing the value of the FWCP’s investment overall.

Columbia Region expenditures up to March 31, 2022 are shown in Table 5.1 on the next page. This reflects a snapshot of actual and planned payments made related to F22 projects. As of March 31, 2022, approximately \$3.06 million of the F22 budget had been spent; nearly \$2.74 million remained as an F22 commitment to spend in F23; and just over \$480,000 is uncommitted available funds.

Table 5.1: Program expenditures to March 31, 2022

Fund category	F22 approved budget	Paid up to March 31, 2022	Planned payments ¹	Uncommitted available funds ²
Administration	\$440,275	\$255,709	\$150,317	\$34,249
Communications	\$167,254	\$101,626	\$40,628	\$25,000
Land Securement	\$47,345	\$21,876	\$24,607	\$862
Fish	\$2,784,396	\$1,471,104	\$1,166,315	\$146,977
Wildlife	\$2,838,371	\$1,209,877	\$1,354,850	\$273,644
TOTAL	\$6,277,641	\$3,060,192	\$2,736,717	\$480,732

Note 1: Planned payments represent expected invoices for approved ongoing projects that have not yet submitted final reports by March 31, 2022.

Note 2: Uncommitted available funds are carried forward and made available for future spending.

In addition, the balance of prior-year funding commitments anticipated to be spent in F23 was approximately \$150,000 from F21 and \$21,000 from F20, resulting in approximately \$1.88 million in uncommitted available funds. (Figure 5.4).

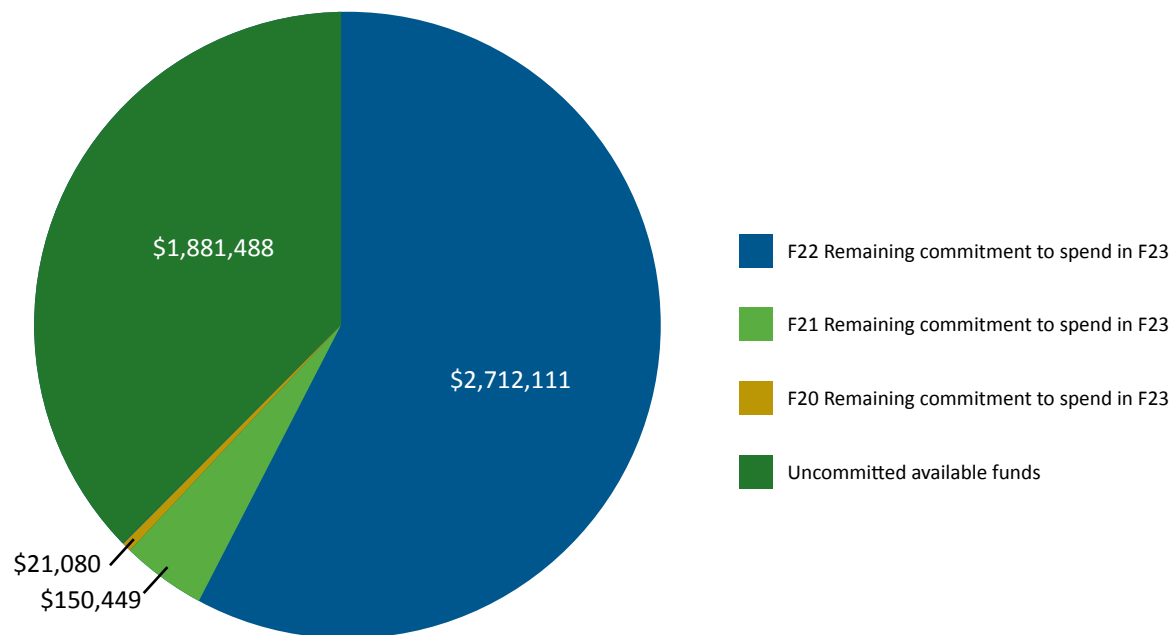


Figure 5.4: Financial summary of the FWCP's Columbia Region as of March 31, 2022 (end of fiscal year)

6.0 Columbia Region projects

Table 6.1 provides a listing of 2021–2022 fish and wildlife projects approved for funding. Funding identified in the following tables may vary from the approved budget, as of April 1, 2021, due to project budget increases or decreases as projects progressed throughout the fiscal year. Final reports for all projects are posted to the provincial databases once available. Visit fwcp.ca/results for an updated list of all available final reports.

Table 6.1: 2021–2022 approved projects

Project ID	2021 - 2022 Grant-based Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 F-3438	Improving habitat and connectivity for bull trout <i>Salmo River Instream Enhancement Program: Phase 2</i> This project will enhance habitat connectivity within the Salmo River by improving passage between stream sections and providing high- and low-water habitat and refugia to benefit bull trout and rainbow trout. Eroding banks will be stabilized using fish-friendly structures. Habitat will be created by restoring a 245-metre side channel, including wetland habitat, planting native shrubs, and adding nutrient-rich soil to the riparian area.	Salmo Watershed Streamkeepers Society	\$ 184,238	Habitat-based Actions	Rivers & Riparian	West Kootenay
COL-F22 F-3482	Restoring habitat for shore-spawning kokanee in Kootenay Lake <i>Shore Spawning Kokanee Restoration & Research Project: Year 2</i> This multi-year project focuses on collecting data and restoring habitat for declining shore-spawning kokanee in the West Arm of Kootenay Lake. In 2020, spawning substrate was added below the low-water mark to encourage spawning in areas not affected by the fluctuating hydrograph. This year, the project will include comprehensive monitoring of the shore-spawning kokanee as well as data collection.	Friends of Kootenay Lake Stewardship Society	\$ 15,850	Monitoring & Evaluation	Reservoirs & Large Lakes	West Kootenay
COL-F22 F-3544	Monitoring bull trout in the North Columbia <i>North Columbia Bull Trout Population Monitoring</i> This feasibility study will identify methods for sampling bull trout populations and determine ideal locations for conducting population surveys in Bluewater Creek, Waitabit Creek, and the Blaeberry River. This project also aims to build working relationships with local First Nations and stakeholders to support the monitoring of bull trout populations.	Trout Unlimited - Golden Chapter	\$ 5,000	Species-based Actions	Rivers & Riparian	North Columbia
COL-F22 F-3553	Improving rainbow trout habitat at the Murphy Creek spawning channel <i>Murphy Creek Spawning Channel Maintenance and Monitoring: Year 1</i> This multi-year project, delivered in partnership with the Trail Wildlife Association, will continue monitoring rainbow trout and maintaining the spawning channel at Murphy Creek. The continued maintenance of the spawning channel is imperative to its efficacy in providing spawning habitat for rainbow trout at this important habitat enhancement site on the lower Columbia River.	Okanagan Nation Alliance	\$ 17,086	Monitoring & Evaluation	Rivers & Riparian	West Kootenay

Project ID	2021 - 2022 Grant-based Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 F-3561	Improving fish passage in the Elk River Watershed <i>Elk River Watershed: Fish Passage Restoration Initiative</i> This project will plan, prioritize, and implement fish passage improvement and restoration projects throughout the Elk River Watershed. Barriers to fish connectivity limit the productivity of aquatic species at risk, including westslope cutthroat trout and bull trout, and decrease the sustainability of B.C.'s fisheries by preventing access to spawning and rearing habitat.	Canadian Wildlife Federation	\$ 63,372	Habitat-based Actions	Rivers & Riparian	East Kootenay

Fish Project Total: \$ 442,891

Project ID	2021–2022 Annual and Ongoing ¹ Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22-F-3496-DCA	<p>Adding nutrients to Arrow Lakes Reservoir</p> <p><i>F22 Arrow Lakes Reservoir Nutrient Restoration Program</i> This ongoing restoration program addresses nutrient losses in Arrow Lakes Reservoir as a result of the construction of the Hugh Keenleyside, Mica, and Revelstoke dams.</p> <p>In this bottom-up approach, the addition of nutrients—nitrogen and phosphorus in the form of liquid agricultural-grade fertilizer—supports phytoplankton populations that are suitable for the production of zooplankton such as daphnia, a main food source for kokanee. Weekly additions of nutrients mimic pre-dam inputs (from the end of April to mid-September).</p>	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 906,365	Habitat-based Actions	Reservoirs & Large Lakes	West Kootenay
COL-F22-F-3498-DCA	<p>Adding nutrients to the North Arm of Kootenay Lake</p> <p><i>F22 Kootenay Lake Nutrient Restoration Program: North Arm</i> This ongoing restoration program addresses nutrient losses in Kootenay Lake as a result of the construction of the Duncan and Libby dams.</p> <p>In this bottom-up approach, the addition of nutrients—nitrogen and phosphorus in the form of liquid agricultural-grade fertilizer—from April to September supports phytoplankton populations that are suitable for the production of daphnia, a main food source for kokanee.</p> <p>This project also includes the coordination and technical and operational oversight of monitoring several trophic levels, as well as data analysis and reporting.</p>	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 868,357	Habitat-based Actions	Reservoirs & Large Lakes	West Kootenay
COL-F22-F-3504-DCA	<p>Supporting Meadow Creek spawning channel at Kootenay Lake</p> <p><i>F22 Meadow Creek Spawning Channel</i> This project supports ongoing operations, maintenance, and monitoring at the Meadow Creek spawning channel. The channel provides spawning habitat for a large proportion of Kootenay Lake kokanee, which are the primary prey species for both bull trout and Gerrard rainbow trout.</p> <p>BC Hydro built the spawning channel in 1967 to compensate for natural kokanee habitat lost due to the construction of the Duncan Dam.</p>	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 230,153	Habitat-based Actions	Reservoirs & Large Lakes	West Kootenay
COL-F22-F-3505-DCA	<p>Supporting Hill Creek spawning channel on Arrow Lakes Reservoir</p> <p><i>F22 Hill Creek Spawning Channel</i> This project supports ongoing operations, maintenance, and monitoring at the Hill Creek spawning channel. Monitoring includes kokanee fry emigration, rainbow trout redd counts and fry emergence, overwintering egg survival, water quality at the spawning channel, and adult kokanee size, fecundity, and escapement.</p> <p>The spawning channel was built by BC Hydro to compensate for spawning habitat lost due to the construction of the Revelstoke Dam, and it now provides additional spawning habitat for kokanee and rainbow trout from the Arrow Lakes Reservoir.</p>	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 193,975	Habitat-based Actions	Reservoirs & Large Lakes	West Kootenay
COL-F22-F-3569-DCA	<p>Supporting white sturgeon recovery in the Columbia River</p> <p><i>F22 Upper Columbia Sturgeon</i> This ongoing project, implemented through BC Hydro's White Sturgeon Management Plan under the Columbia River Water Use Plan, is contributing to the White Sturgeon Conservation Aquaculture Program in the Canadian portion of the Columbia River Basin.</p>	Freshwater Fisheries Society of BC	\$ 75,000	Species-based Actions	Rivers & Riparian	West Kootenay

Annual and Ongoing Fish Project Total: \$2,273,850

1 Annual and ongoing fish and wildlife projects are long-term operational projects that have been identified as high-priority by the FWCP's Columbia Region board for continued investment. The FWCP is committed to strengthening First Nations engagement in the operations and delivery of the program, including the delivery of annual and ongoing projects.

Project ID	2021-2022 Grant-based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 W-3439	Improving bighorn sheep movement and forage <i>Hatchery Ridge Bighorn Sheep Ecosystem Enhancement Project</i> The goal of this project is to improve bighorn sheep sightlines for predator detection, to ease sheep movement, and to increase habitat connectivity through a treatment of manual slashing, piling, and burning. This project builds on, and links with, existing efforts to improve bighorn sheep habitat, such as invasive plant control and seeding. It should lead to lower predation and improved forage across a broader area.	Rocky Mountain Trench Natural Resource Society	\$ 60,000	Habitat-based Actions	Small Lakes	East Kootenay
COL-F22 W-3442	Assessing rare wetland importance <i>Connectivity Value of a Wetland Ecosystem to Columbia River</i> This project will provide a preliminary assessment of the importance of a relatively rare wetland ecosystem that provides connectivity between upland habitats and the Columbia River near Castlegar. Field data on wildlife and plant species will support future potential protection for this wetland ecosystem.	Evan McKenzie Ecological Research	\$ 5,000	Land Securement	Wetland & Riparian	West Kootenay
COL-F22 W-3451	Restoring wetland habitat <i>Advancing Wetland Stewardship & Restoration in the Kootenays: Year 4</i> This project will support the restoration of wetland habitat at three sites in our Columbia Region: 1) Creston: A minimum 2.8 ha of wetlands will be restored and a minimum of 100 ha of floodplain habitat on Yaqan Nukiy lands will be reconnected. 2) Trail: Two ha of streams and wetlands habitat will be restored. 3) Newgate: A minimum of three ha of wetlands will be restored as part of the Earl Ranch Wetland Restoration Project.	British Columbia Wildlife Federat	\$ 250,840	Habitat-based Actions	Wetland & Riparian	Basin-wide
COL-F22 W-3466	Addressing invasives in the East Kootenay <i>Invasive Plant Management on Bighorn Sheep Winter Ranges: Year 5</i> This multi-year project will provide a multi-stakeholder framework to minimize and contain invasive plant species and maintain biodiversity and ecological function in the upper Elk Valley. It will have an emphasis on areas of high habitat value (such as bighorn sheep habitat and conservation properties). With an effective plan in place, multi-stakeholder groups will work collaboratively to coordinate and implement a management plan designed to prevent, educate, inventory, contain, reduce, and monitor invasive plant species in identified priority areas.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 20,000	Habitat-based Actions	Upland & Dryland	East Kootenay
COL-F22 W-3467	Supporting white-tailed deer in the Columbia Mountains <i>Monitoring White-tailed Deer in the Columbia Mountains: Year 4</i> This multi-year project will evaluate factors influencing white-tailed deer populations in the Columbia Mountains to support mountain caribou management decisions in a high-stakes socio-economic landscape. This project will also collect baseline data to evaluate the efficacy of white-tailed deer reductions via increased hunter harvest. Understanding and monitoring additional limiting factors that may be preventing caribou population growth is critical for effective adaptive management and recovery.	Robert Serrouya	\$ 38,910	Species-based Actions	Upland & Dryland	North Columbia

Project ID	2021-2022 Grant-based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 W-3479	Improving habitat for at-risk swallows <i>Upper Columbia Swallow Habitat Enhancement Project: Year 1</i> This multi-year project aims to conserve and enhance habitat for at-risk bank and barn swallows in the North Columbia. Specific site plans will be developed to restore bank swallow breeding habitat that has been lost. Increasing the connectivity of breeding habitat and enhancing breeding sites will allow for increased abundance of at-risk swallows, which are facing a significantly sharp population decline.	Wildsight Golden	\$ 21,950	Habitat-based Actions	Wetland & Riparian	North Columbia
COL-F22 W-3481	Addressing invasives in the East Kootenay <i>Elk Valley Invasive Plant Management: Year 2</i> This multi-year project will provide a multi-stakeholder framework to minimize and contain invasive plant species and maintain biodiversity and ecological function in the upper Elk Valley with an emphasis on areas of high habitat value (such as bighorn sheep habitat and conservation properties). With an effective plan in place, multi-stakeholder groups will work collaboratively to coordinate and implement a management plan designed to prevent, educate, inventory, contain, reduce, and monitor invasive plant species in identified priority areas. This project will benefit bighorn sheep, elk, moose, white-tailed deer, mule deer, and grizzly bears.	East Kootenay Invasive Species Council	\$ 26,934	Habitat-based Actions	Upland & Dryland	East Kootenay
COL-F22 W-3483	Conserving at-risk turtles in the East Kootenay <i>Using Western Painted Turtle Ecology to Inform Mitigations: Year 1</i> This multi-year project builds on the outcomes from an FWCP Seed Grant that incorporated citizen science to collect information on western painted turtles crossing the Jaffray Baynes Lake Road. This new project will collect additional data to address gaps in research, advance baseline knowledge of the turtle populations, and inform effective mitigation measures to support the continued presence of turtles in Baynes Lake.	Baynes Lake Community Society	\$ 39,835	Species-based Actions	Small Lakes	East Kootenay
COL-F22 W-3485	Filling information gaps about pollinators in the West Kootenay <i>Floral Relations of Native Bees in Camas Meadows: Year 2</i> This multi-year project will document native bee abundance, diversity, and habitat use in wet camas meadows in the West Kootenay. Camas is a vital food plant for First Nations, and Indigenous cultivation likely supported high pollinator diversity in the past. Pollination sustains native ecosystem health and function, but little is known about the identity, status, and habitat use of native bees, and pollinator-plant relationships in these ecosystems. Eco-cultural restoration of these meadows requires good baseline data to inform conservation efforts and measure the recovery of bio-cultural diversity.	Kootenay Native Plant Society	\$ 34,014	Research & Information Acquisition	Wetland & Riparian	West Kootenay
COL-F22 W-3487	Supporting endangered East Kootenay whitebark pine <i>Whitebark Pine Planting in East Kootenay Wildfire Areas: Year 4</i> This multi-year project will support whitebark pine recovery by planting an estimated 25,000 seedlings at a density of 500-800/ha, improving growing conditions for naturally regenerating trees, and working with industry to improve management approaches. Whitebark pine is a keystone species of high-elevation ecosystems. It provides important food for wildlife. Due to the introduced white pine blister rust, mountain pine beetle, changes to fire regimes, and climate change, numbers of whitebark pine have dramatically decreased, leading to its designation as Endangered under the Species at Risk Act.	Moody Tree	\$ 64,783	Species-based Actions	Upland & Dryland	Basin-wide

Project ID	2021-2022 Grant-based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 W-3488	<p>Improving habitat and connectivity in the East Kootenay <i>Kootenay River Ranch Land Stewardship Activities</i> This project will support forest restoration and invasive plant management to improve the viability of biodiversity on the Kootenay River Ranch Conservation Area near Canal Flats.</p> <p>The project will help build resilience in a regionally important ecosystem susceptible to the impacts of climate change. It will benefit grizzly bear, mule deer, elk, Lewis's woodpecker, flammulated owl, American badger, and other species.</p>	Nature Conservancy of Canada	\$ 26,000	Habitat-based Actions	Upland & Dryland	East Kootenay
COL-F22 W-3492	<p>Creating pollinator habitat <i>Bummers Flats Pollinator Meadow Restoration: Year 1</i> This multi-year project aims to create a biologically diverse and functioning herbaceous plant community to attract a wide range of native pollinators and discourage invasive species.</p> <p>Approximately one ha of a levee, formerly sprayed with herbicides, will be planted, monitored, and adaptively managed over the next five years—following a rigorous experimental design that can inform future pollination restoration projects.</p>	KinSeed Ecologies	\$ 28,960	Habitat-based Actions	Upland & Dryland	East Kootenay
COL-F22 W-3494	<p>Youth crews steward conservation lands <i>NTBC-Land Stewardship Activities F22: CYC Program: Year 3</i> This multi-year project will focus youth crew work on operations and stewardship projects that maintain and enhance biodiversity and wildlife values on conservation properties.</p> <p>This project also has the added benefit of providing crew members with important work-related experience in a field they are interested in pursuing as a career.</p>	The Nature Trust of British Columbia	\$ 27,500	Habitat-based Actions	Upland & Dryland	Basin-wide
COL-F22 W-3507	<p>Improving riparian function by removing invasives <i>Kootenay Riparian Invasive Plant Removal: Year 1</i> This multi-year project will support the development and implementation of a multi-year plan for removing invasive yellow flag iris and purple loosestrife along the West Arm of Kootenay Lake and the Kootenay River downstream to the Brilliant Dam.</p> <p>This will improve riparian ecosystem function, protect high-value conservation areas, and increase awareness and long-term stewardship among local residents.</p>	Central Kootenay Invasive Species Society	\$ 34,334	Habitat-based Actions	Rivers & Riparian	West Kootenay
COL-F22 W-3510	<p>Reducing wildlife highway mortalities in the East Kootenay <i>Safe Passages for Wildlife in the Southern Canadian Rockies: Year 2</i> This multi-year project is working to improve wildlife connectivity and human safety along Highway 3 in the southern Canadian Rockies by identifying hotspots for wildlife collisions and crossings that would benefit from highway mitigation.</p> <p>This year, there we will be a focus on improving the movement of wildlife under the Alexander Bridge, fencing from Carbon Bridge to Alexander Bridge, and finalizing a concept report and strategic funding plan for the Alexander Michel Overpass.</p>	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 50,000	Habitat-based Actions	Upland & Dryland	East Kootenay

Project ID	2021-2022 Grant-based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 W-3511	<p>Reducing grizzly bear conflicts</p> <p><i>Grizzly Bear Coexistence Solutions: Year 2</i> This multi-year project will promote coexistence between grizzly bears and rural residents through education, collaboration, and the use of practical tools, such as correctly installed electric fencing. This will help prevent bear conflicts and associated grizzly bear mortalities in the low-elevation linkage habitats that often overlap with agricultural lands. As conflicts are reduced, there will be improved grizzly bear conservation status in the region, including enhanced connectivity between core grizzly bear populations.</p>	Sanders Environmental Services	\$ 25,000	Species-based Actions	Upland & Dryland	Basin-wide
COL-F22 W-3516	<p>Conserving bighorn sheep in the North Columbia</p> <p><i>Golden Rocky Mountain Bighorn Sheep Project: Year 2</i> This multi-year project will document the movements of bighorn sheep in the Golden-Kicking Horse River area and collect baseline health data. Movement data will be used to minimize negative impacts on this herd during spring 2021 highway construction work. Data will be used to adapt highway crossing structures and determine the appropriate population size of this herd. Important habitat features (such as lambing areas) will also be identified, and the habitat analyses will inform future habitat-enhancement projects. DNA samples will be used to explore questions of genetic inbreeding in this isolated mountain herd.</p>	Golden District Rod and Gun Club	\$ 7,500	Species-based Actions	Upland & Dryland	North Columbia
COL-F22 W-3518	<p>Establishing and monitoring bat abundance and diversity</p> <p><i>Establishing and Monitoring Bat Abundance and Diversity: Year 5</i> This multi-year project will employ the North American Bat Monitoring protocol to establish baseline diversity and relative abundance of bats and to monitor provincial trends. In earlier years of this project, sentinel monitoring sites were established, new roosts located, and important aspects of bat ecology identified. This monitoring is well-timed to provide a benchmark against which to measure future declines, spatial changes in diversity, and the effectiveness of mitigation/recovery strategies in preparation for the arrival of white-nose syndrome.</p>	Wildlife Conservation Society Canada	\$ 64,176	Species-based Actions	Upland & Dryland	Basin-wide
COL-F22 W-3530	<p>Restoring wetland and riparian habitat for waterfowl, fish, and wildlife</p> <p><i>Ducks Unlimited Canada FWCP Columbia Region Partnership: Year 2</i> This multi-year project, delivered in partnership with the Northern Leopard Frog Recovery Team and Indigenous communities such as the Lower Kootenay Band, aims to restore wetland and riparian habitat for waterfowl, fish, and wildlife. The project will restore high-priority habitats to maximize conservation benefits beyond waterfowl in the Columbia Region.</p>	Ducks Unlimited Canada	\$ 75,000	Habitat-based Actions	Wetland & Riparian	East Kootenay
COL-F22 W-3532	<p>Protecting endangered northern leopard frogs from invasive bullfrogs</p> <p><i>Northern Leopard Frog Preservation and American Bullfrog Control: Year 5</i> This multi-year project aims to conduct a comprehensive and targeted surveillance and eradication program on American bullfrogs. The intent of this project is to protect the productivity of the wetland ecosystem and habitats required by endangered northern leopard frogs from the highly invasive American bullfrog. Controlling bullfrogs will enhance potential habitat for northern leopard frogs—as well as many other native species throughout the wetlands of the Creston Valley—and support ongoing efforts to ensure their long-term survival.</p>	Central Kootenay Invasive Species Society	\$ 56,299	Species-based Actions	Wetland & Riparian	West Kootenay

Project ID	2021-2022 Grant-based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 W-3541	<p>Enhancing habitat for bighorn sheep and ungulates</p> <p><i>Kicking Horse Canyon Habitat Enhancement Project: Year 1</i> This multi-year project will support enhancing ungulate habitats in two locations near the Town of Golden:</p> <p>1) The south-facing winter range habitat at Vacation Creek.</p> <p>2) The Douglas fir ecosystems adjacent to the TransCanada Highway at the town boundary.</p> <p>The goals of this project are to maintain previously treated ungulate winter range for Rocky Mountain elk, create a connectivity corridor between seasonal habitats, and increase forage availability for Blue-listed bighorn sheep.</p>	Golden District Rod and Gun Club	\$ 33,345	Habitat-based Actions	Upland & Dryland	North Columbia
COL-F22 W-3557	<p>Conserving Cottonwood Lake</p> <p><i>Land Securement for Conservation Purposes at Cottonwood Lake</i> In 2018, the residents of Nelson and area learned that 121+ acres of forested slope around Cottonwood Lake were scheduled to be clear-cut.</p> <p>Cottonwood Lake is a beloved gathering place for the community and an important area for conservation. It provides habitat for endangered, at-risk species.</p> <p>The lake feeds two watersheds that, in turn, support between 110–160 km² of land. Critically, Cottonwood Lake is home to the region's best corridor for the Endangered South Selkirk grizzly bear. The goal of the project is to conserve and protect Cottonwood Lake.</p>	Cottonwood Lake Preservation Society on behalf of the Regional District of Central Kootenay	\$ 75,000 for this project will be paid from land securement funds set aside in previous years.	Land Securement	Upland & Dryland	West Kootenay
-	<p>Supporting community-based projects</p> <p><i>F22 Community Engagement Grant</i> Our Columbia Region board approved funding for Community Engagement Grants. These grants of up to \$1,000 support multiple projects led by stewardship groups, First Nations, and others to benefit fish and wildlife throughout the year.</p>	TBD	\$ 7,500	-	-	Basin-wide

Wildlife Project Total: \$997,880

Project ID	2021–2022 Annual and Ongoing ² Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 W-3495-DCA	Restoring and enhancing wetlands <i>F22 Wetland and Riparian Enhancement</i> The goal of this annual and ongoing project is to deliver wetland restoration work, continue to develop new projects, and monitor completed projects. Developing new projects includes identifying candidate restoration sites, compiling background information, conducting a pre-treatment inventory of sites, working with a wetland specialist to complete restoration plans, and developing the partnerships, permits, and budgets necessary to implement restoration projects. An effectiveness evaluation of FWCP-funded wetland conservation efforts—including creation, enhancement, and restoration—is currently underway. Results of this evaluation will inform future FWCP wetland conservation efforts.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 205,282	Habitat-based Actions	Wetland & Riparian	Basin-wide
COL-F22 W-3497-DCA	Enhancing habitat for non-game species <i>F22 Non-game Enhancement</i> This annual and ongoing project focuses on non-game species and includes a variety of activities that maintain and enhance critical habitat, such as the roosting, denning, and nesting features important for the reproduction and survival of species impacted by reservoir footprint habitat losses.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 202,295	Habitat-based Actions	Small Lakes	Basin-wide
COL-F22 W-3499-DCA	Supporting northern leopard frog recovery <i>F22 Northern Leopard Frog Recovery</i> This annual and ongoing project involves conducting inventory, monitoring, and stewardship of the endangered northern leopard frog population at the Creston Valley Wildlife Management Area. This population hosts the majority of the remaining northern leopard frogs in B.C. It serves as the source population for re-introductions to the Upper Kootenay and Brisco areas, and for captive assurance populations at the Vancouver Aquarium and Calgary Zoo.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 209,363	Species-based Actions	Wetland & Riparian	Basin-wide
COL-F22 W-3500-DCA	Supporting caribou recovery <i>F22 Caribou Recovery</i> This annual and ongoing project is a multi-agency effort led by the Province of B.C. to recover threatened caribou sub-populations. To date the FWCP has supported caribou recovery by assisting with population monitoring, transplants, providing information on predator-prey dynamics, and identifying potential habitat-restoration activities.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 111,088	Species-based Actions	Upland & Dryland	Basin-wide
COL-F22 W-3501-DCA	Enhancing East Kootenay ecosystems <i>F22 East Kootenay Ecosystem Enhancement</i> This annual and ongoing project will focus on the oversight, coordination, and implementation of restoration activities in East Kootenay upland and dryland ecosystems, including prescription development, slashing, piling, pile burning, masticating, burn-planning, prescribed burning, post-burn monitoring, and reporting.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 336,834	Habitat-based Actions	Upland & Dryland	East Kootenay
COL-F22 W-3502-DCA	Stewardship of conservation lands <i>F22 Land Management Operations</i> This annual and ongoing project focuses on the coordination, oversight, and implementation of land stewardship activities associated with conservation lands.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 300,734	Habitat-based Actions	Upland & Dryland	Basin-wide

² Annual and ongoing fish and wildlife projects are long-term operational projects that have been identified as high-priority by the FWCP's Columbia Region board for continued investment. The FWCP is committed to strengthening First Nations engagement in the operations and delivery of the program, including the delivery of annual and ongoing projects

Project ID	2021–2022 Annual and Ongoing ² Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
COL-F22 W-3503-DCA	Enhancing West Kootenay ecosystems This project focuses on the oversight, coordination, and implementation of restoration activities in West Kootenay upland and dryland ecosystems, including prescription development, slashing, piling, prescribed burn-planning, burning, post-burn monitoring, and reporting.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 249,895	Habitat-based Actions	Upland & Dryland	West Kootenay
COL-F22 W-3506-DCA	Land securement in our Columbia Region <i>F22 Land Securement</i> Annual funding is set aside by the FWCP's Columbia Region board to support priority land acquisition projects that strongly align with Columbia Region action plan priorities and support participation on land securement committees. Land securement is a priority action for all ecosystems in the FWCP's Columbia Region.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 47,345	Land Securement	Upland & Dryland	Basin-wide

Annual and Ongoing Wildlife Project Total: \$1,662,836

Project ID	2021–2022 Fish Directed Projects	Proponent	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
-	Supporting First Nations delivery of FWCP-directed fish projects <i>First Nations-led Directed Fish Projects</i> First Nations are identifying directed fish projects to lead and deliver in F22. Work will include the prioritization of projects, development of work scope, and project implementation. All projects delivered will align with the FWCP's Columbia Region action plans.	Ktunaxa Nation, Okanagan Nation Alliance, and Secwepemc Nation	\$ 225,000	-	-	Basin-wide
Project ID	2021–2022 Wildlife Directed Projects	Proponent	FWCP Funding	Project Type	Action Plan Alignment	Sub-region
-	Supporting First Nations delivery of FWCP-directed wildlife projects <i>First Nations-led Directed Wildlife Projects</i> First Nations are identifying directed wildlife projects to lead and deliver in F22. Work will include the prioritization of projects, development of work scope, and project implementation. All projects delivered will align with the FWCP's Columbia Region action plans.	Ktunaxa Nation, Okanagan Nation Alliance, and Secwepemc Nation	\$ 225,000	-	-	Basin-wide

Direct Project Total: \$450,000

2021 - 2022 Project Funding Approved Total: \$ 5,670,112