



Columbia Region
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Columbia Region fish and wildlife project list 2018 - 2019

Conserving and enhancing fish and wildlife in watersheds impacted by BC Hydro dams

The Fish & Wildlife Compensation Program (FWCP) conserves and enhances fish and wildlife in watersheds impacted by BC Hydro dams. The FWCP is funded annually by BC Hydro. The FWCP funds projects in the Coastal, Columbia and Peace Regions, which fulfills BC Hydro's water license obligations and voluntary commitments to compensate for fish and wildlife impacts. The FWCP is a partnership between BC Hydro, the Province of B.C., Fisheries and Oceans Canada, First Nations and Public Stakeholders.

Our three regional boards – Coastal, Columbia, and Peace – approved funding for 118 fish and wildlife projects valued at approximately \$10 million for 2018 - 2019. Each project went through a three-stage review and evaluation process prior to a final decision by our local Boards. Each project addresses one or more conservation priorities in our Action Plans.

In our Columbia Region, the Board approved \$6.1 million for 55 fish and wildlife projects to be implemented April 1, 2018 - March 31, 2019. First Nations, stewardship groups, consultants, and agencies are leading the 19 fish and 36 wildlife projects that will help conserve and enhance fish and wildlife in watersheds impacted by BC Hydro dams. Eighteen of the approved projects will be delivered through the Upper Kootenay Ecosystem Enhancement Plan.

About our 2018 - 2019 project list

This is a final list of projects conditionally-approved by the FWCP Columbia Region Board as of April 1, 2018. Read our annual reports for a final list of projects implemented in 2018 - 2019 and project outcomes.

These approved budgets are to support the delivery of fish and wildlife projects, and do not include the FWCP administration or communications budget. The total number of projects approved for 2018 - 2019 includes budgets approved for future work this fiscal year to be further defined by the regional Boards (i.e. directed projects).

Grant-based fish and wildlife project descriptions are based on information provided in the lead proponent's 2018 - 2019 grant application.

Directed projects reflect regional conservation priorities and have been identified by our regional Boards for implementation through a request for proposals (RFP) process.

The Upper Kootenay Ecosystem Enhancement Plan (UKEEP) was jointly announced by the FWCP and Columbia Basin Trust in May 2013, along with \$3 million from the Trust. Projects starting after April 1, 2018 will mark the fifth year of the five-year funding agreement with the Trust.

Annual and ongoing fish and wildlife projects are delivered with support from the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRO) through a long-term agreement.

Contact us

Contact Crystal Klym, Columbia Region Manager at 250-365-4591 or crystal.klym@bchydro.com to learn more about our work in the Columbia Region. [Subscribe](#) and stay informed about the projects we fund and how you can apply for a grant.

Learn more at fwcp.ca

FWCP Columbia Region 2018 - 2019 Project List

Final

#	Project ID	2018 - 2019 Grant-Based Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
1	COL-F19-F-2684	<p>Enhancing food for fish in Sheep Creek</p> <p><i>Sheep Creek fertilization: the food for fish enhancement project</i> The Sheep Creek fertilization project uses liquid agricultural phosphate/nitrate to provide a nutrient base for food web enhancement. This project originated as a BC Hydro compensatory project for Seven Mile Dam Unit four upgrades. This project successfully creates larger/more fish, especially project target Bull Trout (Decker 2010). The project is a state-of-the-art, solar-driven, precise injection system. The fertilizer promotes periphyton growth, which feeds invertebrates, which feed fish. Long-term Bull Trout redd monitoring in the Salmo River shows consistent Bull Trout spawning in Sheep Creek and decline in previously strong unfertilized spawning areas.</p>	Salmo Watershed Streamkeepers Society	\$ 53,063	Habitat-Based Actions	Streams Action Plan	West Kootenay
2	COL-F19-F-2703	<p>Studying Gerrard Rainbow Trout stocks</p> <p><i>Gerrard Rainbow Trout stock productivity at low abundance</i> This project will obtain recruitment information at low stock abundance, critical in defining important biological reference points for conservation and management of Gerrard Rainbow Trout on Kootenay Lake. Data will provide important information on the maximum reproductive rate, which can only be obtained when stock abundance is low. As in previous years, a six-person crew will conduct nighttime snorkel surveys on the Duncan River, as part of this funding, to estimate the abundance of age one juvenile Gerrard Rainbow Trout in the Duncan River. The data will be combined with information obtained from the Lardeau River to provide whole river estimates and annual production of age one juvenile Gerrard Rainbow Trout.</p>	Ministry of Forests Lands, Natural Resource Operations and Rural Development	\$ 12,778	Research & Information Acquisition	Large Lakes Action Plan	West Kootenay
3	COL-F19-F-2706	<p>Documenting Bull Trout abundance in Whatshan Reservoir</p> <p><i>Whatshan Reservoir Bull Trout risk assessment</i> This project is aimed at tracking the abundance and distribution of spawning Bull Trout that inhabit Whatshan Reservoir. Spawning occurs in tributaries of the Upper Whatshan River, including Fife and North Fife creeks. Results from year one (2016) and year two (2017) of this project revealed the spawning numbers are relatively low (10 years), it is recommended that a minimum of three years of surveys be conducted to provide a reasonable assessment of base case spawner numbers for Whatshan Reservoir.</p>	Ministry of Forests Lands, Natural Resource Operations and Rural Development	\$ 6,568	Species-Based Actions	Large Lakes Action Plan	West Kootenay
4	COL-F19-F-2733	<p>Assessing Bull Trout spawning habitat in Slocan Lake watershed</p> <p><i>Slocan River Bull Trout spawning assessment 2018</i> This project will conduct 2018 Bull Trout redd count surveys in selected streams of Slocan River and Slocan Lake, as well as a pilot project to assess and identify key Bull Trout spawning sites in the Slocan River tributaries, which have not been surveyed in the past. The Bull Trout assessment will be conducted in conjunction with redd counts of index sites, which have already been identified in tributaries of Slocan Lake. The assumption has been that Bull Trout can move freely between Slocan River and Slocan Lake, therefore additional spawning areas for the Slocan watershed population may exist in tributaries of the Slocan River itself. This project will conduct spawning assessments in the Slocan River tributaries, to obtain more accurate population size estimates for the overall Slocan Lake watershed Bull Trout population.</p>	Mountain Water Research	\$ 26,180	Species-Based Actions	Streams Action Plan	West Kootenay
5	COL-F19-F-2768	<p>Improving Rainbow Trout spawning habitat at Murphy Creek</p> <p><i>Murphy Creek spawning channel maintenance and monitoring</i> Murphy Creek spawning channel has been an important Rainbow Trout enhancement project on the Lower Columbia River for many years. Initially developed and run by volunteers of the Trail Wildlife Association (TWA), this group is now looking for expertise and human resources from the Okanagan Nation Alliance to be able to continue the project into the future.</p>	Okanagan Nation Alliance	\$ 19,658	Habitat-Based Actions	Streams Action Plan	West Kootenay

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#	Project ID	2018 - 2019 Grant-Based Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
6	COL-F19-F-2769	Improving fish habitat in Pass Creek <i>Pass Creek instream and off-channel habitat restoration</i> This project will identify new and current instream habitat restoration structures, and maintenance activities for juvenile fish cover and adult deep overwinter holding areas within the Pass Creek Park boundaries. The project will also identify the restoration of a historic off-channel that has had water diverted, been ingrown with vegetation, and sediment compaction.	Okanagan Nation Alliance	\$ 5,000	Habitat-Based Actions	Streams Action Plan	West Kootenay
7	COL-F19-F-2811	Monitoring Bull Trout populations in West Kootenay <i>The Salmo River watershed Bull Trout spawner escapement 2018</i> This project will carry out Bull Trout redd counts in known spawning areas, adding to long-term trend monitoring. Bull Trout are blue-listed, C1 high-risk conservation status species in the Salmo River and a focal species in FWCP's Species of Interest Action Plan. Two outcomes are: repeat this low cost, efficient way to monitor Bull Trout, and use Bull Trout population as a key indicator species for ecosystem health. In 2014, this multi-stakeholder, trans-boundary, collaborative watershed planning team directed continued monitoring of this population. Conservation biology guidelines for Bull Trout require 50-100 individuals to minimize inbreeding effects. Since 2010, the spawning population has been below 100. As such, it is critical to continue monitoring Bull Trout populations.	Salmo Watershed Streamkeepers Society	\$ 11,124	Monitoring & Evaluation	Species of Interest Action Plan	West Kootenay
Fish Projects Total:				\$ 134,371			

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#	Project ID	2018 - 2019 Grant-Based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
8	COL-F19-W-2677	<p>Filling information gaps about marsh birds in the Columbia Wetlands</p> <p><i>Columbia Wetlands marsh bird monitoring project (CWMBMP)</i> Inconspicuous marsh birds are difficult to detect; population status and habitat use for these birds are not well-known. The Columbia Wetlands marsh bird monitoring project (CWMBMP) addresses information deficiencies by collecting baseline data for 42 FWCP Inventory Species and four FWCP Focal Species. This project conducts repeated marsh bird surveys at 62 survey stations in the Columbia Wetlands (within the Canadian Intermountain Joint Venture region) over three years, to estimate bird population numbers, and identify significant habitat units used for breeding. Data from the CWMBMP is needed before making management recommendations and prior to implementing compensation actions. In 2018, this project will include a landowner outreach component, focused on educating those who have the greatest ability to affect wetland and waterfowl values on the landscape.</p>	Goldeneye Ecological Services	\$ 12,529	Habitat-Based Actions	Riparian and Wetlands Action Plan	North Columbia
9	COL-F19-W-2688	<p>Protecting West Kootenay conservation sites from invasive species</p> <p><i>West Kootenay conservation sites: invasion to restoration</i> The goal of this project is to improve and protect important conservation sites within the West Kootenay region. Specifically, this goal will be achieved by engaging in early detection and rapid response plans; mapping changes in composition and distribution of existing and new aquatic/riparian invasive plant infestations; undertaking management activities (mechanical) where feasible; and conducting assessments for site-specific restoration suitability. To further support the primary goal of this project, education campaigns (focused on invasive plant awareness) will be provided to a broad spectrum of audiences, and a terrestrial restoration component will improve Summit Lake Provincial Park biodiversity and recreation, as well as present another platform for hands-on invasive species education.</p>	Central Kootenay Invasive Species Society	\$ 26,975	Monitoring & Evaluation	Small Lakes Action Plan	West Kootenay
10	COL-F19-W-2692	<p>Protecting East Kootenay conservation sites from invasive species</p> <p><i>Invasive plant management and restoration of protected areas</i> This program aims to retain functional and sustainable ecosystems in protected areas of the Upper Columbia Valley by mitigating the impacts of invasive species. Benefits include reducing pressure from neighbouring invasive species populations, wildlife habitat conservation, long-term cost-savings through collaborative invasive species management action, and restoration of degraded areas with native plant species.</p>	East Kootenay Invasive Species Council	\$ 15,000	Habitat-Based Actions	Upland and Dryland Action Plan	East Kootenay
11	COL-F19-W-2696	<p>Restoring riparian and wetland habitat at Indian Creek</p> <p><i>Indian Creek riparian restoration: phase three</i> This project's long-term goal is to restore functional riparian and wetland habitat along Indian Creek. The project is located within traditional hunting, fishing, and gathering areas utilized by the Lower Kootenay Band, which have been heavily impacted by agriculture, grazing, and flood-control activities. Phase three will build on the work completed during phases one and two, and includes planting an area of 0.48 hectares with over 2000 riparian tree and shrub cuttings. Ongoing monitoring of phase one plantings, and new observations of phase three plantings will be conducted, in order to direct future maintenance and treatments, as part of an ongoing adaptive management program.</p>	Masse Environmental Consultants Ltd.	\$ 15,619	Habitat-Based Actions	Riparian and Wetlands Action Plan	West Kootenay
12	COL-F19-W-2704	<p>Protecting endangered Northern Leopard Frogs from invasive bullfrogs</p> <p><i>Northern Leopard Frog preservation: American Bullfrog control</i> This 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 on which the Northern Leopard Frog (NLF) is directly dependent, from the specific threat that is being generated by the arrival of the highly invasive American Bullfrog. Eradicating bullfrogs will enhance potential pond habitat for Northern Leopard Frogs, as bullfrogs are an obligate aquatic species known to occupy a wide range of habitats including lakes, ponds, swamps, bogs, backwaters, reservoirs, marshes, streams, irrigation ponds, and ditches. In addition, bullfrog tadpoles are considered to be "ecosystem engineers", altering the biomass, structure, and composition of algal communities.</p>	Central Kootenay Invasive Species Society	\$ 27,302	Habitat-Based Actions	Riparian and Wetlands Action Plan	West Kootenay

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13	COL-F19-W-2707	<p>Restoring wetland habitat in our Columbia Region</p> <p><i>Advancing wetland stewardship and restoration in the Kootenays</i> The BC Wildlife Federation will work with partners to restore 6.43 hectares of wetland habitat at various sites. Additional works will develop a wetland restoration design for King George VI Provincial Park (Rossland); deliver a Map-our-Marshes Workshop (Salmo) to build capacity among ATV-users to become environmental ambassadors; provide hands-on training to workshop participants at a restoration workshop; and training for Lower Kootenay Band (Yaqan Nukiy) resource technicians to implement additional wetland projects in their traditional territory.</p>	BCWF	\$ 209,220	Habitat-Based Actions	Riparian and Wetlands Action Plan	Basin-Wide
14	COL-F19-W-2710	<p>Monitoring riparian and wetland restoration in the West Kootenay</p> <p><i>Assessing and enhancing wetland species</i> This project's goals are to: 1) track restoration recovery of FWCP-funded sites using quantitative measures of wetland stress and biological health; and 2) strengthen restoration work at FWCP-funded sites through enhancement. The Wetland Invertebrate Assessment Tool (W-F16-10) will be used to monitor restoration recovery in a multi-year context at Crooked Horn Farm (COL-F17W-1438) and Meadow Creek (The Nature Trust lands). An expanded goal in 2018 is to enhance restoration and conservation lands in Meadow Creek, Bonanza-Box Lake corridor and the Slocan Valley by increasing knowledge, engagement, testing new enhancement design and promoting stewardship.</p>	Slocan Solutions Society	\$ 29,876	Monitoring & Evaluation	Riparian and Wetlands Action Plan	West Kootenay
15	COL-F19-W-2739	<p>Restoring ungulate habitat in the East Kootenay</p> <p><i>Akisqnuq slashing, piling and burning 2018-2019</i> This project will undertake fire-maintained ecosystem restoration on the Akisqnuq First Nation Reserve, as part of the efforts to compensate for habitat losses. Activities may include the development of Ecosystem Restoration Plans, site-specific prescriptions, burn plans, pre-burn slashing, slash pile burning, prescribed burning and mastication.</p>	Akisqnuq First Nation	\$ 50,000	Habitat-Based Actions	Upland and Dryland Action Plan	East Kootenay
16	COL-F19-W-2763	<p>Supporting caribou by monitoring deer in North Columbia</p> <p><i>Monitoring White-tailed Deer in the Columbia Mountains</i> The vast majority of caribou herds in western Canada are declining. Intense human intervention has been successful in stabilizing three herds, yet only one has shown growth. Understanding and monitoring additional limiting factors that may be preventing population growth is critical for effective adaptive management and recovery. This project will evaluate factors influencing White-tailed Deer populations in the Columbia Mountains, to support management decisions in a high-stakes socio-economic landscape while simultaneously collecting baseline data in which to evaluate the efficacy of White-tailed Deer reductions, via increased hunter harvest.</p>	Robert Serrouya	\$ 40,160	Research & Information Acquisition	Species of Interest Action Plan	North Columbia
17	COL-F19-W-2780	<p>Conserving at-risk reptiles near Trail</p> <p><i>Lower Columbia reptile at risk conservation project</i> This is the final year of a project which targets a snake species at risk, the North American Racer, in the Lower Columbia. This project is documenting summer and winter habitat use, in order to conserve racers and other reptiles at risk in the area. The past two seasons, this project has partnered with the Kootenay Conservation Program, BC Parks, FLNRO and Teck to create an outdoor education event to be held at Beaver Creek Provincial Park. This successful event highlighted the importance of the local ecosystem and unique species that live there. This season, this project would like to hold this event again and also host a one-day educational symposium for local land managers. Similarly, this symposium will highlight the importance of the local ecosystem and unique species that live there.</p>	Jakob Dulisse Consulting	\$ 17,400	Research & Information Acquisition	Upland and Dryland Action Plan	West Kootenay

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18	COL-F19-W-2787	<p>Improving wetland habitat in Slocan Valley <i>Goulden-Thurston wetland restoration project</i> This is a wetland restoration project that aims to enhance wetland and riparian biodiversity, and further create wildlife habitat for a diversity of native species. This project will be excavating wetlands, which will be planted with native species and enhanced with logs and other natural features, which will be put in the wetland to create habitat for amphibians and invertebrates. Further enhancements will include bird and bat houses that will be placed around the wetlands to provide nesting sites for song birds, migratory birds and bats. The project is also creating a nesting area for Painted Turtles. Monitoring and public outreach are also part of the project. The project completed a similar successful wetland restoration project nearby, at Crooked Horn Farm in Winlaw (COL-F17-W-1438), in June 2017.</p>	Slocan River Streamkeepers	\$ 18,435	Habitat-Based Actions	Riparian and Wetlands Action Plan	West Kootenay
19	COL-F19-W-2791	<p>Collecting baseline bat data before Whitenose Syndrome arrives in B.C. <i>Establishing and monitoring bat abundance and diversity</i> Bats play important roles in the ecosystem and economy. Bats reduce the need for pesticides and are important for human health. The ecological fall-out from mass bat die-offs due to white-nose syndrome (WNS) is not yet known, but changes in insect communities could have far-reaching implications. Identified as high priority in the FWCP-sponsored BC Bat Action Plan, this project will employ the standardized North American bat monitoring protocol to establish baseline diversity and relative abundance of bats, and monitor trends. Also high priority, the project will continue to locate and monitor bat hibernacula, because WNS kills bats while they hibernate. This project uses acoustics and mark-recapture techniques, and engages citizens through collaborations with local stewardship groups, and cavers (BatCaver.org).</p>	Wildlife Conservation Society Canada	\$ 54,186	Research & Information Acquisition	Species of Interest Action Plan	Basin-Wide
20	COL-F19-W-2797	<p>Restoring wetland on East Kootenay conservation property <i>Silvertip Ranch wetland restoration project</i> At 341 acres, The Nature Trust of British Columbia's (TNTBC) Silvertip Ranch is a conservation property located within the Bull River drainage that provides a key wildlife linkage and possesses significant ecological values. The ranch's 2011 acquisition was linked to a life estate agreement, in which the Logan family continues to live and ranch on the property. The project seeks to restore a naturally appearing and functioning wet meadow and ephemeral wetland along the historic location of Douglas Creek, which is currently used as a hayfield. The project will restore a natural sub-irrigation regime, including the construction of up to 14 ephemeral wetlands alongside the floodplain of the restored Douglas Creek. A wide diversity of plants and animals will be enhanced by the proposed works.</p>	The Nature Trust of British Columbia	\$ 32,175	Habitat-Based Actions	Riparian and Wetlands Action Plan	East Kootenay
21	COL-F19-W-2804	<p>Connecting transboundary wolverine habitat <i>Conserving wolverine connectivity in the Columbia Basin</i> Wolverines are a species of management focus for the B.C. government in the Kootenay-Boundary region. The southern extent of North American wolverine range, including the Columbia Basin, is the most critical landscape given current and expanding landscape stressors. This project will capitalize on six years of non-invasive genetic sampling of wolverines across ~78,000 km² from the central Columbia Basin to the US-Canadian border, and genotyping of 170 individuals. Genetic datasets from the Columbia and Rocky Mountains will be merged and standardized, in order to identify critical linkages given future ex-urban and traffic demand projections. This project's work is timely, given the pressing need to use best science practices to manage habitats and mitigate fragmentation effects at the southern extent of wolverine range.</p>	Montana State University	\$ 33,905	Research & Information Acquisition	Species of Interest Action Plan	Basin-Wide

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22	COL-F19-W-2805	<p>Protecting grizzlies by learning more about huckleberries</p> <p><i>Predicting Grizzly Bear foods, huckleberries in the Columbia Basin</i> This project will expand on a previous project that accurately predicted Grizzly Bears most important regional food resource (huckleberries) across most of the Columbia Basin. During 2013-2016, an accurate predictive model was developed for huckleberry patches important to Grizzly Bears in the south Selkirk and Purcell Mountains. This project will expand that model into the East Kootenay and North Columbia, the Central Purcell and Selkirks, and the Valhalla and Granby regions. This project's huckleberry patch model is already being used by resource managers to plan timber harvest and protect important berry patches through access controls. There is a strong demand for this model to be expanded regionally for these same purposes.</p>	Birchdale Ecological	\$ 33,560	Research & Information Acquisition	Species of Interest Action Plan	Basin-Wide
Wildlife Projects Total				\$ 616,342			

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#	Project ID	2018 - 2019 Annual and Ongoing Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
23		Adding nutrients to Arrow Lakes Reservoir <i>F19 Arrow Lake Reservoir nutrient restoration</i> To address the nutrient losses in Arrow Lakes Reservoir as a result of the construction of the Hugh Keenleyside, Mica, and Revelstoke dams. A bottom-up approach is taken with the addition of nutrients (nitrogen and phosphorus in the form of liquid agricultural grade fertilizer), to support phytoplankton populations that are suitable for the production of Daphnia, a main food source for Kokanee.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 821,386	Habitat-Based Actions	Large Lakes Action Plan	West Kootenay
24		Adding nutrients to Kootenay Lake <i>F19 Kootenay Lake nutrient restoration</i> This project includes the coordination, oversight, and implementation of nutrient additions to the North Arm of Kootenay Lake, and the associated monitoring and reporting. Nutrient additions (nitrogen and phosphorus in the form of liquid agricultural grade fertilizer) support phytoplankton populations that are suitable for the production of Daphnia, a main food source for Kokanee.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 835,177	Habitat-Based Actions	Large Lakes Action Plan	West Kootenay
25		Funding Hill Creek spawning channel on Arrow Lakes Reservoir <i>F19 Hill Creek spawning channel</i> The Hill Creek spawning channel was built as compensation for the construction of Revelstoke Dam. It provides spawning habitat for Kokanee and Rainbow Trout from Arrow Lakes Reservoir. This project supports ongoing operations, maintenance, and monitoring at the channel, including Kokanee fry emigration, Rainbow Trout redd counts and fry emergence, adult Kokanee size, fecundity and escapement, overwinter egg survival, and water quality.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 161,326	Species-Based Actions	Large Lakes Action Plan	West Kootenay
26		Funding Meadow Creek spawning channel on Kootenay Lake <i>F19 Meadow Creek spawning channel</i> BC Hydro built the Meadow Creek spawning channel in 1967 to compensate for lost natural Kokanee habitat due to the construction of Duncan Dam. The facility sustains Kootenay Lake Kokanee, which are the primary prey species for both Bull Trout and Gerrard Rainbow Trout.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 197,274	Species-Based Actions	Large Lakes Action Plan	West Kootenay
27		Supporting sturgeon recovery in Upper Columbia River <i>F19 Upper Columbia Sturgeon</i> The objectives of this conservation aquaculture program are to: 1) prevent extirpation, and 2) retain the genetic diversity of the existing wild stock in supplemental progeny.	Freshwater Fisheries Society	\$ 120,000	Species-Based Actions	Species of Interest Action Plan	West Kootenay
Annual and Ongoing Fish Projects Total:				\$ 2,135,163			

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#	Project ID	2018 - 2019 Annual and Ongoing Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
28		Enhancing habitat for species in the West Kootenay <i>F19 West Kootenay enhancement</i> This project focuses on the oversight, coordination, and implementation of restoration activities in the West Kootenay, including prescription development; slashing, piling, and burning; masticating; burn-planning and burning; and post-burn monitoring and reporting.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 209,263	Habitat-Based Actions	Upland and Dryland Action Plan	West Kootenay
29		Enhancing habitat for species in the East Kootenay <i>F19 East Kootenay enhancement</i> This project focuses on the oversight, coordination, and implementation of restoration activities in the East Kootenay, including prescription development; slashing, piling, and burning; masticating; burn-planning and burning; and post-burn monitoring and reporting.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 398,944	Habitat-Based Actions	Upland and Dryland Action Plan	East Kootenay
30		Enhancing non-game habitat in the Columbia Region <i>F19 Non-game enhancement</i> Non-game enhancement projects focus on critical habitat features that are important for species reproduction and survival, such as roosting, denning, and nesting habitat.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 182,014	Habitat-Based Actions	Upland and Dryland Action Plan	Basin-Wide
31		Conservation land stewardship activities <i>FWCP Land Management Operations</i> This project focuses on the coordination, oversight, and implementation of land stewardship activities associated with conservation-held lands.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 283,719	Habitat-Based Actions	Species of Interest Action Plan	Basin-Wide
32		Securing high priority lands for conservation purposes <i>Land Acquisition (Details TBC)</i> The construction of BC Hydro dams resulted in the loss of important valley bottom wildlife habitat. Land securement is one of the FWCP's primary compensation actions. Funding is designated for high-priority securements that are developed through the FWCP's involvement with the Kootenay Conservation Program, the Nature Trust of BC, and the Nature Conservancy of Canada.	FWCP	\$ 546,101	Habitat-Based Actions	Species of Interest Action Plan	Basin-Wide
33		Supporting Caribou recovery <i>Caribou Recovery</i> A multi-agency effort led by the Ministry of Forests, Lands and Natural Resource Operations /Ministry of Environment to recover threatened caribou sub-populations is underway. Actions funded by the FWCP this year include: South Selkirk and South Purcell caribou/cougar/wolf mortality investigations and wolf pack size determinations; participation in caribou census and collaring; predator track survey in South Selkirks or Central Selkirks; and a survey of moose in the Revelstoke sub-unit.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 105,199	Species-Based Actions	Species of Interest Action Plan	Basin-Wide
34		Supporting Northern Leopard Frog recovery <i>F19 Northern Leopard Frog Recovery</i> This project involves the inventory monitoring and stewardship of the Northern Leopard Frog population at the Creston Valley Wildlife Management Area. This population hosts the majority of the remaining Leopard Frogs in BC, and serves as the source population for re-introductions and a captive assurance population.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 195,384	Species-Based Actions	Species of Interest Action Plan	East and West Kootenay
35		Restoring and enhancing wetlands <i>F19 Wetland</i> The goal of this project is to deliver wetland restoration work, continue to develop new projects, and monitor completed projects. This involves work to identify candidate restoration sites, compile background information, pre-treatment inventory of sites, complete restoration plans working with a wetland specialist, and develop the partnerships, permits, and budgets for the implementation of the restoration projects.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 231,643	Habitat-Based Actions	Riparian and Wetlands Action Plan	Basin-Wide
Annual and Ongoing Wildlife Projects Total:				\$ 2,152,267			

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#	Project ID	2018 - 2019 Directed Fish and Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
36		Placeholder for priority Board directed fish projects <i>Placeholder - details TBC</i> These funds have been set aside by the Board to support work that is a priority within the FWCP Columbia Actions Plans. Details have yet to be determined.	-	\$ 100,000	To be determined	To be determined	To be determined
37		Placeholder for priority Board directed wildlife projects <i>Placeholder - details TBC</i> These funds have been set aside by the Board to support work that is a priority within the FWCP Columbia Actions Plans. Details have yet to be determined.	-	\$ 100,000	To be determined	To be determined	To be determined
Directed Fish and Wildlife Projects Total:				\$ 200,000			

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#	Project ID	2018 - 2019 UKEEP Grant-Based Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
1	UKE-F19-F-2682	Studying Westslope Cutthroat Trout hybridization in Upper Kootenay River Watershed <i>Westslope Cutthroat Trout hybridization evaluation</i> This is year four of a five-year project aimed at determining the extent of Westslope Cutthroat Trout (WCT) hybridization with Rainbow Trout (RB) in the Upper Kootenay drainage. Tissue samples will be collected and genetically analysed at the University of Montana. Results will identify hybridization in individuals and populations, and guide actions to conserve WCT. This project has four objectives: 1) fill data gaps on current levels of hybridization in the Upper Kootenay watershed, which is this species' largest remaining stronghold, 2) identify WCT populations that are pure strain for high priority conservation, 3) compare hybridization over time, and 4) monitor hybridization prior to, and after, actions are taken to remove sources of hybridization.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 93,000	Species-Based Actions	UKEEP: Streams Action Plan	East Kootenay
2	UKE-F19-F-2734	Developing a Burbot conservation strategy in Upper Kootenay River Watershed <i>Upper Kootenay burbot conservation strategy</i> This project will develop a conservation strategy for burbot in the Upper Kootenay watershed. Objectives will include reviewing and summarizing past research, monitoring, and local knowledge on burbot populations, as well as recommending options for population recovery.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 26,980	Species-Based Actions	UKEEP: Lakes Action Plan	East Kootenay
3	UKE-F19-F-2746	Working towards rehabilitating Joseph Creek in Upper Kootenay River Watershed <i>Rehabilitating Joseph Creek: a community initiative</i> The objective of this project is to compile and summarize historical fish and fish habitat data collected in Joseph Creek. This information will be used to inform long-term planning decisions proposed under the Joseph Creek Management Framework project, led by Columbia Outdoor School. The end goal of this seed project is to establish a baseline understanding of the current state of aquatic resources in the creek, for example, locating fish barriers that are limiting fish distribution in the drainage and identifying significant gaps in knowledge (e.g. infrastructure changes). This project will support prescriptive rehabilitation and monitoring measures (i.e. to rehabilitate the indigenous species in the creek, primarily Cutthroat and Bull Trout).	Vast Resource Solutions	\$ 4,977	Research & Information Acquisition	UKEEP: Streams Action Plan	East Kootenay
4	UKE-F19-F-2760	Studying Bull Trout in the Wild Horse River in Upper Kootenay River Watershed <i>Wildhorse River Bull Trout population inventory and recovery</i> The Wild Horse River is an historically important system for Upper Kootenay River Bull Trout, which has been adversely impacted by hydraulic mining, timber harvest, and intensive recreational use, particularly in the lower reaches. This project will estimate use, abundance, migration timing, and biological data of Wild Horse River Bull Trout; identify critical spawning and rearing habitats; estimate limiting factors to population recovery; directly mitigate recreational impacts by implementing an education plan and working with government agencies to deal with in-stream works; initiate a multi-stakeholder stewardship model for the Wild Horse River; and conduct a preliminary restoration prescription to inform future projects aimed at re-establishing natural morphology and channel connectivity.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 49,455	Research & Information Acquisition	UKEEP: Streams Action Plan	East Kootenay
UKEEP Fish Projects Total:				\$ 174,412			

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#	Project ID	2018 - 2019 UKEEP Grant-Based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
5	UKE-F19-W-2679	<p>Restoring habitats impacted by recreation use in the Upper Kootenay River Watershed</p> <p><i>Koocanusa habitat restoration: cumulative recreation impacts</i> The purpose of this project is to restore and enhance important wildlife habitat degraded through intensive recreation use in the Koocanusa area. The project goal is to rehabilitate damaged grasslands and other important wildlife habitat features by decommissioning and restoring recreation trails and high-use recreation areas (e.g. camping areas) that are clearly unsustainable and/or unacceptable for recreation use. The focus will be on recreation trails that are highly visible to recreation users, as a means of educating recreation users and promoting stewardship. Project objectives align particularly with objective three of the UKEEP Upland and Dryland Action Plan (i.e. improvement of opportunities for sustainable use), however, they are consistent with all objectives.</p>	Koocanusa Recreation Steering Committee	\$ 88,807	Habitat-Based Actions	UKEEP: Upland and Dryland Areas Action Plan	East Kootenay
6	UKE-F19-W-2693	<p>Protecting ecological function from invasive plants in the Upper Kootenay River Watershed</p> <p><i>Invasive plant management and restoration of protected areas</i> This project aims to retain functional and sustainable ecosystems in protected areas of the Upper Kootenay ecosystem by mitigating the impacts of invasive species. Benefits include the reduction of propagule pressure from neighbouring invasive species populations, wildlife habitat conservation, long-term cost-savings through collaborative invasive species management action, and restoration of degraded areas with native plant species.</p>	East Kootenay Invasive Species Council	\$ 30,000	Species-Based Actions	UKEEP: Upland and Dryland Areas Action Plan	East Kootenay
7	UKE-F19-W-2709	<p>Restoring wetlands in the Upper Kootenay River Watershed</p> <p><i>Wetland restoration projects</i> This project will restore wetlands within the region of the Upper Kootenay Ecosystem Enhancement Plan (UKEEP) where there are significant opportunities to achieve wildlife enhancement objectives through habitat restoration on historical wetlands that were drained for hay production. Project activities will involve disabling ditches and restoring the areas to support habitat for ungulates, waterfowl, bats, and amphibians.</p>	British Columbia Wildlife Federation	\$ 150,000	Habitat-Based Actions	UKEEP: Wetland Action Plan	East Kootenay
8	UKE-F19-W-2717	<p>Controlling invasive plants in the Upper Kootenay River Watershed</p> <p><i>Tobacco Plains grassland and open forest restoration</i> Invasive plant control on grasslands and open forests on Tobacco Plains Indian Reserve (TPIR) will improve habitat for multiple species, including ungulates; support rare and threatened species recovery; improve habitat connectivity with surrounding Provincial Crown land; and engage First Nations and community members in land stewardship. This is year four of a proposed five-year project collaboration between Keefer Ecological Services Ltd. (KES) and Tobacco Plains Indian Band (TPIB). Year one identified distribution and density of invasive plant infestations on TPIR and steps for invasive plant management. Years two and three involved treating and monitoring infested areas, and year four will continue treatment and monitoring to restore grassland and open forest habitat.</p>	Keefer Ecological Services Ltd.	\$ 57,028	Species-Based Actions	UKEEP: Upland and Dryland Areas Action Plan	East Kootenay
9	UKE-F19-W-2719	<p>Supporting Mule Deer in the Upper Kootenay River Watershed</p> <p><i>Kootenay Mule Deer survival monitoring</i> The Ministry of Forests, Lands and Natural Resource Operations initiated a five-year Mule Deer monitoring project to assess factors limiting population growth and recommend actions to increase abundance. Project spin-offs will support restoration of Mule Deer habitat in the Upper Kootenay area, where FWCP has invested substantial funding in ecosystem restoration. GPS collar data will be used to identify Mule Deer migration routes, assess use of ecosystem restoration sites, and identify important habitats for ecosystem restoration planning, which will occur in Year five.</p>	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 22,250	Species-Based Actions	UKEEP: Upland and Dryland Areas Action Plan	East Kootenay

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#	Project ID	2018 - 2019 UKEEP Grant-Based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
10	UKE-F19-W-2730	<p>Protecting Bighorn Sheep habitat from invasive plants in the Upper Kootenay River Watershed</p> <p><i>Invasive plant management on bighorn sheep winter ranges</i> Invasive plants are compromising the quality of low elevation bighorn sheep winter ranges, particularly in Wigwam Flats and Bull River. Approximately 300 Bighorn Sheep utilize Wigwam Flats and Bull River grassland ecosystems during the late fall, winter and early spring. These grasslands are becoming inundated with invasive plants such as Yellow Hawkweed, St. John's Wort, and Sulphur Cinquefoil. Without a comprehensive invasive plant management program, the continued rapid loss of forage quality and quantity will ultimately result in bighorn sheep population decline. This project will implement a cooperative management/treatment strategy to improve the existing compromised quality of these ranges and reduce invasive plant coverage.</p>	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 40,100	Habitat-Based Actions	UKEEP: Upland and Dryland Areas Action Plan	East Kootenay
11	UKE-F19-W-2737	<p>Improving and increasing wetland and riparian habitats in the Upper Kootenay River Watershed</p> <p><i>Elk Valley Wilson Lake wetlands enhancement</i> In 2004, the Nature Conservancy of Canada (NCC) acquired 2,999 acres (1,213.7 hectares) of lands for permanent conservation in the Elk Valley, near Hosmer, BC. Existing on the property, were two gravel pit operations with one area having a reclaimed man-made lake. In 2015, NCC undertook design consultation and initial planning to convert defunct gravel sites into an engineered wetland complex that would greatly increase the area of shallow-water wetlands, improving habitat for waterfowl, shorebirds, rare species and other wildlife. In 2017, this work began on the Fiorentino site with funding from FWCP (COL-F18-W-2370). This project sets out to achieve similar wetland restoration results for the Lake Wilson Gravel Pit by creating a naturally appearing and functioning wetland, located across the road from the Fiorentino site.</p>	Nature Conservancy of Canada	\$ 27,873	Habitat-Based Actions	UKEEP: Wetland Action Plan	East Kootenay
12	UKE-F19-W-2753	<p>Supporting endangered Whitebark Pine in the Upper Kootenay River Watershed</p> <p><i>Whitebark Pine restoration in the Kootenay-Columbia</i> Whitebark Pine is an endangered keystone species of high elevation ecosystems. It is an important food source of many species of wildlife, most notably the Grizzly Bear and Clark's Nutcracker. It is endangered due to the introduced White Pine Blister Rust, Mountain Pine Beetle, fire, and climate change; rust levels are especially high in southeast B.C. The most effective means for Whitebark Pine recovery is through promoting the regeneration of Blister Rust-resistant seedlings via planting or natural means, retaining healthy trees on the landscape, and ensuring the perpetuation of natural recruitment. This project will directly aid in recovery by collecting seeds from potentially rust-resistant parents, planting seedlings, and identifying local issues and opportunities through outreach.</p>	Randy Moody	\$ 27,120	Habitat-Based Actions	UKEEP: Upland and Dryland Areas Action Plan	East Kootenay
13	UKE-F19-W-2759	<p>Monitoring endangered Northern Leopard Frog populations in Upper Kootenay River Watershed</p> <p><i>Monitoring a reintroduced population of Northern Leopard Frogs</i> The endangered Northern Leopard Frog was reintroduced to the Upper Kootenay Floodplain, at Bummers Flats. The IUCN has identified ongoing monitoring as a crucial and necessary feature of reintroduction programs for endangered species. Nocturnal calling surveys (NCS) of Leopard Frogs will allow this project to determine whether they are still present and provide information on population trends. Visual encounter surveys in summer and fall will inform the project if reproduction is successful. Measuring frogs, weighing them, photographing spot patterns and PIT-tagging individuals (where appropriate) will indicate growth rates, movements, survivorship, and general health, and provide direction for future analysis of population size. Monitoring will allow the project to assess the value of reintroduction for future recovery.</p>	Isabel Ohanjanian Consulting Biologist	\$ 26,392	Monitoring & Evaluation	UKEEP: Wetland Action Plan	East Kootenay
UKEEP Wildlife Projects Total: \$ 469,570							

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#	Project ID	2018 - 2019 UKEEP Directed Fish and Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Watershed
14		Monitoring Kokanee populations in Koocanusa Reservoir in Upper Kootenay River Watershed <i>Koocanusa Kokanee enumeration (2018-2019)</i> The Koocanusa Kokanee population enumeration study has been conducted since 2012, under funding by the Columbia Basin Trust (the Trust) and the FWCP. Spawning Kokanee are enumerated from a helicopter in seven index streams, upstream of Koocanusa Reservoir. Results from the study are summarized in a yearly report, distributed to fisheries managers across the region, to advise on current trends in the population.	Vast Resource Solutions	\$ 45,000	Monitoring & Evaluation	UKEEP: Streams Action Plan	East Kootenay
15		Studying elk migration in the Upper Kootenay River Watershed <i>Sparwood Elk Valley elk project (2018-19)</i> Elk in the Elk Valley appear to have changed migration patterns in recent years, resulting in a redistribution of elk during the summer and fall. Productivity and survival of non-migratory and migratory elk may differ, contributing to differences in the abundance of individuals following these differing migration strategies. Non-migratory elk tend to be more readily involved in agricultural conflicts and may contribute to overgrazing on some ranges. In response, the Sparwood Fish and Wildlife Association obtained funding to initiate a five- to six-year study examining elk movements and survival in the Elk Valley. The results of this study will provide information to help make informed wildlife management decisions.	Sparwood and District Fish and Wildlife Association	\$ 32,850	Species-Based Actions	UKEEP: Upland and Dryland Action Plan	East Kootenay
16		Using trail cameras to monitor wildlife in the Upper Kootenay River Watershed <i>Kootenay remote camera wildlife monitoring (Year Two)</i> B.C. Fish and Wildlife, Kootenay Region, is proposing a remote camera wildlife monitoring project in the Southeast part of the region, covering wildlife management units (MU) 4-01 (Flathead), 4-02 (Wigwam), 4-23 (Elk Valley), and 4-22 (Bull River). The purpose is to monitor trends for multiple ungulate and large carnivore species using a relatively cost-effective method, and by involving the public in citizen science.	Ministry of Forests, Lands, Natural Resource Operations and Rural Development	\$ 25,000	Species-Based Actions	UKEEP: Upland and Dryland Action Plan	East Kootenay
17		Placeholder for priority Board directed fish projects <i>Directed project placeholder</i> These funds have been set aside by the Board to support work that is a priority within the UKEEP.	To be determined	\$ 39,086	To be determined	To be determined	East Kootenay
18		Placeholder for priority Board directed wildlife projects <i>Directed project placeholder</i> These funds have been set aside by the Board to support work that is a priority within the UKEEP.	To be determined	\$ 39,086	To be determined	To be determined	East Kootenay
UKEEP Directed Projects Total:				\$ 181,022			
2018 - 2019 Project Spend Total:				\$ 6,063,149			