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Columbia Region 2017 – 2018 Fish & Wildlife Project List

Our Columbia Region Board approved $5.5 million for 48 fish and wildlife projects to be implemented April 1, 2017 – March 31, 2018. First Nations, stewardship groups, consultants, and agencies are leading the 17 fish and 31 wildlife projects that will help conserve and enhance fish and wildlife impacted by existing BC Hydro dams.

Caribou, Bull Trout, Kokanee, Gerrard Rainbow Trout, Grizzly Bears, wetland species, at-risk reptiles, waterfowl, and other species will benefit from these 48 projects. Thirteen of the approved projects will be delivered through the Upper Kootenay Ecosystem Enhancement Plan (UKEEP).

About our 2017 – 2018 project list

This is a final list of projects conditionally-approved by the FWCP Columbia Region Board as of April 1, 2017. 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 2017 – 2018 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 2017 – 2018 grant application.

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

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.

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

Provincial fish & wildlife projects

Our three regional boards – Coastal, Columbia and Peace – approved funding for 102 fish and wildlife projects valued at $9.4 million for 2017 - 2018. Each project went through a three-stage review and evaluation process prior to a final decision by our local Board. Each project addresses one or more conservation priorities in our action plans.

Contact us

Contact Crystal Klym Columbia Region Manager at 250-365-4591 or crystal.klym@bchydro.com to learn more about these projects, 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
2017 - 2018 Project List

	Project ID	2017 - 2018 Grant-Based Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
1	COL-F18-F-2261	**Suporting Bull Trout in Sheep Creek** *Sheep Cr Fertilization:The Food for Fish Enhancement Project* The Sheep Creek Fertilization Project (SCFP) uses liquid agricultural phosphate/nitrate to provide a nutrient base for food-web enhancement. The SCFP originated as a BC Hydro compensatory project for 7 Mile Unit 4 upgrades. Shaped by a before-after-control-impact experiment (Sheep Cr/S. Salmo R.), SCFP successfully creates larger/more fish, especially project target Bull Trout (Decker, 2010). The SCFP is a state-of-the-art, solar-driven, precise injection system. The fertilizer promotes periphyton growth that 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.	Salmo Watershed Streamkeepers Society	$ 30,000	Habitat-based Actions	Streams Action Plan	West Kootenay
2	COL-F18-F-2282	**Supporting trout in Sheep Creek** *Qua/Curtis Crystal Green Nutrient Restoration Preparation* The Qua/Curtis Creeks Nutrient Restoration Preparation project aims to assess baseline productivity (water quality, fish size/weight, invertebrate diversity, temperature, periphyton) to evaluate these systems as candidates for nutrient restoration. The intent is to use Ostara's Crystal Green slow-release pellet fertilizer to enhance the food web to augment fish growth/abundance. Fertilization enhances these by providing "food for fish" by increasing the stream's algal and invertebrate communities. This is the third year of a proposed three-year monitoring program. Baseline data will support a before-after-control-impact experiment on potential food-source restoration for improving Bull Trout and Rainbow Trout populations using this new technique in stream fertilization.	Salmo Watershed Streamkeepers Society	$ 40,298	Research and Information Acquisition	Streams Action Plan	West Kootenay
3	COL-F18-F-2372	**Improving knowledge of Bull Trout in Whatshan Reservoir** *Whatshan Reservoir Bull Trout Risk Assessment* This project is aimed at tracking the number of spawning piscivorous Bull Trout that inhabit Whatshan Reservoir and spawn in Fife Creek—the primary tributary of the Upper Whatshan River. Results from Year 1 (2016) of this project revealed the spawning numbers are relatively low, with their distribution limited by fish passage barriers located low on Fife Creek. Tentative information on the distribution of spawners has been determined, and surveys of redd numbers will be completed by mid-October. Three years of redd surveys are recommended to provide a reasonable assessment of "base case" spawner numbers. A more detailed assessment of the barriers is recommended during 2017.	Redfish Consulting Ltd.	$ 8,496	Species-based Actions	Large Lakes	West Kootenay

FWCP Columbia Region
2017 - 2018 Project List

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4	COL-F18-F-2373	**Restoring fish populations in Whatshan Reservoir** *Whatshan Reservoir Nutrient Restoration* These funds are to support the development of an Action Plan to restore and enhance the fish populations on Whatshan Reservoir. Long term objectives include: restoring and replacing carbon loss to an impacted reservoir; providing off-site compensation for Arrow Lakes Reservoir compensation targets; providing an alternative viable (genetically similar) source of Kokanee production for the recovery of Kootenay Lake; and improving the recreational fishery by increasing the size of Kokanee on Whatshan Reservoir.	Redfish Consulting Ltd.	$ 5,000	Species-based Actions	Large Lakes	West Kootenay
5	COL-F18-F-2376	**Supporting Gerrard Rainbow Trout in Lardeau River** *Gerrard Rainbow Trout Stock Productivity at Low Abundance* The project will obtain recruitment information at low-stock abundance, that is critical in defining important biological reference points for the 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 1 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 1 juvenile Gerrard Rainbow Trout.	Ministry of Forests Lands and Natural Resource Operations	$ 12,778	Research and Information Acquisition	Large Lakes	West Kootenay
6	COL-F18-F-2443	**Responding to invasive aquatic species in West Kootenay** *Protecting Our Waters from Aquatic Invasive Species, Phase 4* This project aims to ensure productive and biologically diverse aquatic ecosystems within the Central/West Kootenay region. This will be achieved through surveying and monitoring for new incursions of highly invasive aquatic invasive species; collaborating with partners to engage in Early Detection and Rapid Response Plans should certain high-priority species be detected; monitoring changes in composition, density, and distribution of existing infestations of aquatic invasive plants and undertaking management activities where feasible; and increasing education and awareness about aquatic invasive species, and providing solutions on how to prevent their introduction and spread.	Central Kootenay Invasive Species Society	$ 23,500	Research and Information Acquisition	Large Lakes	West Kootenay
			Fish Project total:	**$ 120,072**			

FWCP Columbia Region
2017 - 2018 Project List

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7	COL-F18-W-2456	**Protecting Grizzlies by learning about huckleberries** *Predicting grizzly bear food - Huckleberries, Columbia Basin* This project will expand our previous project, which accurately predicted Grizzly Bears' most important regional food resource—huckleberries—across most of the Columbia Basin. In the previous two years, an accurate predictive model for huckleberry patches important to Grizzly Bears in the south Selkirk and Purcell mountains was developed. This project will expand that model into the East Kootenay and North Columbia, the Central Purcells, Selkirks, the Valhalla and Granby ranges. The huckleberry patch model is already being used by resource managers to plan timber harvests and protect important berry patches through access controls. There is a strong demand for this model to be expanded regionally for these same purposes.	Birchdale Ecological	$ 26,090	Habitat-based Actions	Species of Interest	Basin-wide
8	COL-F18-W-2458	**Preparing for Whitenose Syndrome in Columbia Region** *Establishing and monitoring bat abundance and diversity* Whitenose Syndrome (WNS), the fungal disease that is devastating eastern bat populations, is now on the West Coast. The cascade of ecological fallout from mass bat die-offs as WNS spreads across the west is not yet known, but changes in insect densities could have far-reaching ecological implications. This will employ the standardized protocol of the North American Bat Monitoring Program to establish baseline diversity and relative abundance of bats, and monitor trends pre- (and possibly post-) WNS outbreak—identified as a high-priority action item in the FWCP-sponsored "BCBAT Action Plan." Also of a high priority, we will continue to locate and monitor bat hibernacula, because WNS kills bats while they hibernate.	Wildlife Conservation Society Canada	$ 54,219	Research and Information Acquisition	Species of Interest	Basin-wide
9	COL-F18-W-2501	**Studying declining bird species in Columbia Region** *Aerial Insectivorous Birds Inventory & Research - Kootenays* This Seed project will scope, plan, and prepare a research strategy and large grant application for the 2018 breeding bird field season. A literature search will be conducted of current information on the decline of aerial insectivorous bird species throughout North America, and specifically, in the Columbia Basin. The scoping aspect will identify gaps in knowledge about habitat requirements and inventory needs for aerial insectivorous bird species in the Columbia Basin, and will examine the feasibility and/or scope of specific project components that could be included in the large grant application submitted in 2017.	Nupqu Development Corporation	$ 5,000	Species-based Actions	Species of Interest	Basin-wide

FWCP Columbia Region
2017 - 2018 Project List

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10	COL-F18-W-2379	**Restoring riparian and wetland habitat in East Kootenay** *Elk Valley Wetland Creation and Restoration - Hosmer* In 2015, the Nature Conservancy of Canada (NCC) worked with wetland specialists to design wetland restoration projects at the Wilson Lake gravel site near Hosmer, British Columbia. The NCC would like to move forward with the project to restore portions of the existing gravel pit and adjoining Wilson Lake that are not being actively mined. These areas may be restored to provide riparian and wetland ecosystems that would support a diversity of waterfowl, wetland birds, reptiles, and amphibians. Restoration techniques would improve habitat for a variety of other upland species, including badgers and Grizzly Bears. A component of the project is to work with partners to implement an educational stewardship and interpretive program on the importance of riparian and wetland ecosystems in the Elk Valley.	The Nature Conservancy of Canada	$ 58,734	Habitat-based Actions	Riparian and Wetlands	East Kootenay
11	COL-F18-W-2399	**Surveying birds in Columbia Wetlands** *Columbia Wetlands Marsh Bird Monitoring Project (CWMBMP)* Elusive, inconspicuous marsh birds are difficult to detect; population status and habitat use for these birds are not well known. This project addresses information deficiencies by using a well-developed protocol to collect baseline data for 38 Priority 1 FWCP inventory species. This project conducts repeated marsh bird surveys at 50 survey stations in the Columbia Wetlands (within the Canadian Intermountain Joint Venture region) over three years, to estimate abundance and distribution, and identify significant habitat units used for breeding. Data from the CWMBMP is needed before making management recommendations and prior to implementing compensation actions (e.g., enhanced bird nesting opportunities), thus increasing the carrying capacity of the wetlands for species of conservation concern.	Goldeneye Ecological Services	$ 5,000	Research and Information Acquisition	Riparian and Wetlands	East Kootenay
12	COL-F18-W-2449	**Supporting wetlands in Columbia Region** *Advancing Wetland Stewardship & Restoration* The BC Wildlife Federation (BCWF) will build the capacity of Kootenay residents (including local stewardship groups, volunteers, educators, First Nations, government employees, and environmental professionals) to protect, enhance, and construct wetlands through the delivery of a Wetlands Institute Workshop in 2017. The workshop will provide hands-on training to participants through the restoration of wetlands in the Columbia Region. Sites include wetlands at Turtle Lake (Crownland- Mt. Findlay Region) and Gyppo Logging Basin (Crown land -Mt. Findlay Region). The BCWF will also enhance a wetland that was created in Salmo as part of a 2013 Wetlands Institute project (W-F14-19), by planting a diversity of native species, and creating 2 ha of shallow-water habitat on private land in Meadow Creek.	British Columbia Wildlife Federation	$ 116,900	Habitat-based Actions	Riparian and Wetlands	Basin Wide

FWCP Columbia Region
2017 - 2018 Project List

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13	COL-F18-W-2493	**Studying Grizzly mortality in Elk Valley** *Rates & mechanisms of grizzly bear mortality in Elk Valley* Radiotelemetry will be used to identify the rates and causes of Grizzly Bear mortality in a population of bears that declined by 40% in the last eight years. The study is focused on the lower Elk, Kootenay, and Bull River drainages, where human settlement, resource extraction, and hydroelectric reservoirs occur in Grizzly Bear habitat, impacting connectivity and contributing to high mortality. Currently, the degree of mortality under-reporting is unknown and suspected to be high, and these uncertainties compromise the science-based conservation of Grizzly Bears locally and provincially. This project builds on a large body of research and previously collected data to provide recommendations for pressing conservation concerns and to engage the community in Grizzly Bear conservation.	Ministry of Forests, Lands and Natural Resource Operations	$ 25,750	Monitoring and Evaluation	Species of Interest	East Kootenay
14	COL-F18-W-2378	**Testing floating habitat for loons in Kinbasket Reservoir** *Monitoring loon nest platforms in Staubert Lake and Bush Arm* Common Loon (Gavia immer) populations have likely been impacted in the Columbia Region, and across BC, due to reservoir creation and habitat loss. As loons face increasing threats to population stability, enhancing loon habitat through providing floating nest platforms may help compensate for past habitat losses, and lead to increased nesting success. Artificial nest platforms are known to improve nesting success in small lakes in eastern North America. In 2016, we installed three artificial floating nest platforms, one in each of three small lakes—Staubert (Hwy 31), and 2 lakes in Bush Arm north of Donald by Kinbasket Lake—and monitored the nesting success of loons before the platforms were available. Monitoring in 2017 will assess the use of platforms and the nesting success of loons in small lakes.	Kingbird Biological Consultants Ltd.	$ 8,090	Monitoring and Evaluation	Species of Interest	North Columbia
15	COL-F18-W-2381	**Supporting caribou recovery in North Columbia** *Revelstoke Caribou Maternity Pen* Mountain Caribou are listed as endangered by the Province of BC and threatened by the federal Species at Risk Act. Several caribou sub-populations are declining at a rate that will likely result in extirpation in the near future (Wittmer et al., 2010), largely because of excessive predation (Wittmer et al., 2005b) due to altered predator-prey dynamics resulting from habitat change. This five-year year pilot project will determine if maternal penning can improve the survival of calves and adults in the Columbia Mountains ecosystem by protecting them in a secure enclosure for four months until calves are larger and more capable of avoiding predation. If successful, this tool will be used to increase the size of the Columbia North Caribou sub-population.	Revelstoke Caribou Rearing in the Wild Society	$ 77,807	Species-based Actions	Species of Interest	North Columbia

FWCP Columbia Region
2017 - 2018 Project List

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16	COL-F18-W-2475	**Supporting recovery of Northern Leopard Frog near Golden** *Moberly Marsh Restoration Plan* Moberly Marsh (11 kms northwest of Golden) provides important habitat for birds, furbearers, bears, ungulates, and rare plants, and is a proposed reintroduction site for the Northern Leopard Frog. Jurisdiction includes private land, a portion of Burgess James Gadsden Provincial Park, and the Columbia Wetlands Wildlife Management Area. In 2016, a preliminary habitat assessment was conducted using LIDAR imagery, field reconnaissance, and stakeholder engagement. In 2017, site-specific hydrological and habitat information will be collected at potential restoration sites. Deliverables include a restoration plan describing the objectives, site conditions, proposed methods, costs, and ecological benefits for several sites in Moberly Marsh.	LGL Limited Environmental Research Associates Ltd.	$ 17,597	Habitat-based Actions	Riparian and Wetlands	North Columbia
17	COL-F18-W-2494	**Supporting high-elevation beaver habitat** *Beaver Influenced Wetlands on the Columbia West Bench* This seed project will develop a study to collect and analyze the data necessary to identify potential conservation and restoration opportunities for higher elevation beaver-influenced wetlands on the west bench of the Upper Columbia River in the Golden region. The beaver (Castor canadensis) is a keystone species that can create and maintain extensive series of ponds, marshes, and meadows in areas where there may otherwise be an incised mountain stream. The ponds trap significant quantities of sediment over time, regulate water flow downstream, and increase surrounding water tables. These habitats are complex wetlands that host many other species and contribute immensely to local biodiversity. Their importance may increase in the future with predicted warming, drying trends in the Columbia Valley.	A.L.Ecologic	$ 5,000	Riparian and Wetlands	Riparian and Wetlands	North Columbia
18	COL-F18-W-2405	**Assessing wetland species in West Kootenay** *Evaluating wetland restoration: Invertebrate Assessment Tool* The goal of this project is to track restoration recovery of FWCP-funded sites using quantitative measures of wetland stress and biological health as indicators. The Wetland Invertebrate Assessment Tool (W-F16-10) is an innovative technique using Canadian Aquatic Biomonitoring Methods (CABIN) for wetlands. The benefits of the project include a biologically based technique that will monitor restoration recovery in a multiyear context at two FWCP-funded restoration sites: Crooked Horn Farm (COL-F17W-1438) and Meadow Creek (The Nature Trust lands). A secondary goal is to strengthen the environmental restoration work at the FWCP-funded Crooked Horn Farm with small enhancements and community involvement on nearby private land.	Slocan Solutions Society	$ 20,000	Monitoring and Evaluation	Riparian and Wetlands	West Kootenay

FWCP Columbia Region
2017 - 2018 Project List

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19	COL-F18-W-2442	**Responding to invasive American Bullfrogs** *Northern Leopard Frog Preservation American Bullfrog Control* The American Bullfrog (Rana catesbeiana) is an aggressive invasive species. It is a voracious predator that has the ability to out-compete native species and upset the ecological balance of our native ecosystems. The Central Kootenay Invasive Species Society (CKISS), the Northern Leopard Frog Recovery Team, and the Province of B.C., are very concerned about this species, as there are confirmed infestations within the Kootenay Boundary region. These populations are a direct threat to the survival of a variety of species at risk, such as Northern Leopard Frog and the Western Painted Turtle. The CKISS and its partners are working to reduce the threat of this species through eradication efforts and continued surveillance throughout the region.	Central Kootenay Invasive Species Society	$ 20,000	Habitat-based Actions	Riparian and Wetlands	West Kootenay
20	COL-F18-W-2470	**Conserving at-risk reptiles near Trail** *Lower Columbia Reptile at Risk Conservation Project* This is the fifth year of a project that targets a snake species at risk, the North American Racer, in the Lower Columbia. The project will document summer and winter habitat use in order to conserve racers and other reptiles at risk in the area. Last season, an outdoor education event - Critter Day - was held at Beaver Creek Provincial Park. This successful event highlighted the importance of the local ecosystem and the unique species that live there. This season, Critter Day wwill be held once again, and also a one-day educational symposium for local land managers. Similarly, this symposium will highlight the importance of the local ecosystem and the unique species that live there.	Jakob Dulisse Consulting	$ 15,350	Research and Information Acquisition	Upland and Dryland	West Kootenay
21	COL-F18-W-2491	**Enhancing wetlands in West Kootenay** *Holmberg Wetland Enhancement* This Seed project will explore the feasibility of enhancing existing wetlands in a 0.81-ha section of the Holmberg property. The area is currently part of a working farm and is used by cattle for shade and water. Future potential work may involve fencing the area to exclude cattle, then enhancing the degraded wetlands. The primary objective of the project, if feasible, is to improve the existing wetlands and incorporate three constructed ponds to increase habitat types and complexity.	Misty Ridges Contracting Ltd	$ 5,000	Habitat-based Actions	Riparian and Wetlands	West Kootenay
			Wildlife Project total:	**$ 460,537**			

FWCP Columbia Region
2017 - 2018 Project List

	Project ID	2017 - 2018 Annual and Ongoing Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
22	--	**Enhancing non-game habitats** *Non Game Enhancement* 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 and Natural Resource Operations	$ 173,716	Habitat-based Actions	Upland and Dryland Areas Action Plan	Basin-wide
23	--	**Conservation land stewardship activiites** *FWCP Land Management Operations* This project focuses on the coordination, oversight, and implementation of land stewardship activities associated with conservation-held lands.	Ministry of Forests, Lands and Natural Resource Operations	$ 314,128	Habitat-based Actions	Species of Interest	Basin-wide
24	--	**Supporting Caribou recovery** *Caribou Recovery* A multi-agency effort led by the Ministry of Forests, Lands and Natural Resource Operations (FLNRO)/Ministry of Environment (MOE) 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 and Natural Resource Operations	$ 105,199	Species-based Actions	Species of Interest	Basin-wide
25	--	**Restoring and enhancing wetlands** *Wetland* 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 and Natural Resource Operations	$ 221,070	Habitat-based Actions	Riparian and Wetlands Action Plan	Basin-wide
26	--	**Securing high priority lands for conservation purposes** *Land Acquistion (Details TBC)* 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.	Fish & Wildlife Compensation Program	$ 545,285	Habitat-based Actions	Species of Interest	Basin-wide
27	--	**Supporting Northern Leopard Frog recovery** *Northern Leopard Frog Recovery* This project involves the inventory monitoring and stewardship of the Northern Leopard Frog population at the Creston Valley Wildlife Management Area (CVWMA). 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 and Natural Resource Operations	$ 195,384	Species-based Actions	Species of Interest	East and West Kootenay

FWCP Columbia Region
2017 - 2018 Project List

	Project ID	2017 - 2018 Annual and Ongoing Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
28	--	**Enhancing East Kootenay ecosystems** *East Kootenay Enhancement* 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 and Natural Resource Operations	$ 388,400	Habitat-based Actions	Upland and Dryland Areas Action Plan	East Kootenay
29	--	**Enhancing West Kootenay ecosystems** *West Kootenay Enhancement* 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 and Natural Resource Operations	$ 204,264	Habitat-based Actions	Upland and Dryland Areas Action Plan	West Kootenay
			Annual and Ongoing Wildlife Projects Total:	**$2,147,446**			

FWCP Columbia Region
2017 - 2018 Project List

	Project ID	2017 -2018 Annual and Ongoing Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
30	--	**Restoring nutrients in Arrow Lakes Reservoir** *Arrow Lake Reservoir Nutrient Restoration* 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 and Natural Resource Operations	$ 806,740	Habitat-based Actions	Large Lakes Action Plan	West Kootenay
31	--	**Restoring nutrients in Kootenay Lake** *Kootenay Lake Nutrient Restoration* 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 and Natural Resource Operations	$ 878,664	Habitat-based Actions	Large Lakes Action Plan	West Kootenay
32	--	**Supporting Hill Creek spawning channel** *Hill Creek Spawning Channel* 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 and Natural Resource Operations	$ 183,827	Species-based Actions	Large Lakes Action Plan	West Kootenay
33	--	**Supporting Meadow Creek spawning channel** *Meadow Creek Spawning Channel* 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 and Natural Resource Operations	$ 193,216	Species-based Actions	Large Lakes Action Plan	West Kootenay
34	--	**Supporting Upper Columbia River Sturgeon recovery** *Upper Columbia Sturgeon* 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 of BC	$ 120,000	Species-based Actions	Species of Interest	West Kootenay
				Annual and Ongoing Fish Projects Total: $ 2,182,448			

	Project ID	2017 -2018 Grant-Based Directed Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
35	--	**Placeholder for priority Board directed fish projects** *Placeholder - details TBC* 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.	To be determined	$ 50,000	To be determined	To be determined	Basin-wide
				Directed Fish Projects Total: $ 50,000			
				2017 - 2018 Directed and Ongoing Fish Projects Total: $2,232,448			

FWCP Columbia Region
2017 - 2018 Project List

	Project ID	2017 - 2018 UKEEP Grant-Based Fish Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
36	UKE-F18-F-2440	**Conserving spawning habitat for at-risk salmonids** *Conservation of trout habitat in the East Kootenay region* This project aims to conserve and improve the quality of critical spawning sites and early juvenile rearing habitat for two at-risk salmonid species (Westslope Cutthroat Trout and Bull Trout) in the Upper Kootenay and Flathead watersheds. This project will prioritize key trout habitat that has been impacted by anthropogenic activities, and will inventory and assess habitat quality in newly proposed/established Wildlife Habitat Areas (WHAs). Furthermore, a subset of proposed/established WHAs will receive enhancement/restoration treatments. Annual monitoring/assessments of protected areas and restoration/enhancement treatments will indicate the level of success in improving habitat quality/resilience and allow for ongoing evaluation and progress.	Ministry of Forests, Lands and Natural Resource Operations	$ 19,800	Research and Information Acquisition	UKEEP Streams	Upper Kootenay River Watershed
37	UKE-F18-F-2461	**Studying Westslope Cutthroat Trout hybridization** *Westslope Cutthroat Trout Hybridization Evaluation* This is year three of a five-year project aimed at determining the extent of Westslope Cutthroat Trout (WCT) hybridization with Rainbow Trout in the Upper Kootenay drainage. Tissue samples will be collected and genetically analyzed at the University of Montana. Results will identify hybridization in individuals and populations and guide actions to conserve WCT. This project has four broad 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 a 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 and Natural Resource Operations	$ 90,500	Species-based Actions	UKEEP Streams	Upper Kootenay River Watershed
38	UKE-F18-F-2480	**Supporting Bull Trout in the Wildhorse River** *Wildhorse River Bull Trout Population Inventory and Recovery* The Wildhorse River is a 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 Wildhorse River Bull Trout; identify critical spawning and rearing habitats; estimate limiting factors to population recovery; directly mitigate recreational impacts by implementing an education plan; work with government agencies to deal with in-stream works; initiate a multistakeholder stewardship model for the Wildhorse River; and conduct a preliminary restoration prescription to inform future projects aimed at re-establishing natural morphology and channel connectivity.	Ministry of Forests, Lands and Natural Resource Operations	$ 50,685	Research and Information Acquisition	UKEEP Streams	Upper Kootenay River Watershed
			UKEEP Fish Projects Total:	**$ 160,985**			

FWCP Columbia Region
2017 - 2018 Project List

	Project ID	2017 - 2018 UKEEP Grant-Based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
39	UKE-F18-W-2404	**Managing invasive plants in East Kootenay grasslands** *Tobacco Plains Grassland and Open Forest Restoration* Invasive plant control on grassland and open forest habitat 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 participation and awareness. This is year three 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. Year two involved treating and monitoring 5 ha of infested land, and year three will continue treatment and monitoring to restore grassland and open forest habitat.	Keefer Ecological Services Ltd	$ 53,972	Species-based Actions	UKEEP Upland and Dryland	Upper Kootenay River Watershed
40	UKE-F18-W-2416	**Supporting East Kootenay Mule Deer** *Kootenay Mule Deer Survival Monitoring* The Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) 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 the restoration of Mule Deer habitat in the Upper Kootenay area, where the FWCP has invested substantial funding in Ecosystem Restoration (ER). GPS collar data will be used to identify Mule Deer migration routes, assess use of ER sites, and identify important habitats for ER planning, which will occur in year five.	Ministry of Forests, Lands and Natural Resource Operations	$ 14,300	Species-based Actions	UKEEP Upland and Dryland	Upper Kootenay River Watershed
41	UKE-F18-W-2417	**Restoring East Kootenay ecosystems** *Waldo North Ecosystem Restoration Maintenance & Assessment* The purpose of the project is to undertake a retrospective assessment and to develop a maintenance plan for ecosystem restoration on the Waldo North project area, based on a reconnaissance that was undertaken in 2016 and a detailed proposal that was prepared for the Trench Society and will guide the project (Allen, J. and G. Tipper, March 21, 2016). The project will answer the numerous questions posed in the proposal by gathering information and by conducting field surveys, utilizing accepted field methodologies. The project's final report will provide a path forward for ecosystem restoration on the Waldo North area, including prescriptions for priority areas to be treated in the first two years, and will have broader application to ecosystem restoration throughout the Rocky Mountain Trench.	Rocky Mountain Trench Natural Resource Society	$ 25,147	Habitat-based Actions	UKEEP Upland and Dryland	Upper Kootenay River Watershed

FWCP Columbia Region
2017 - 2018 Project List

	Project ID	2017 - 2018 UKEEP Grant-Based Wildlife Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
42	UKE-F18-W-2425	**Managing East Kootenay invasive plants to support Bighorn Sheep** *Invasive plant management on bighorn sheep winter ranges* Invasive plants are compromising the quality of low-elevation Bighorn Sheep winter ranges, particularly in Wigwam Flats and Bull River. Approximately 350 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.	Ministry of Forests, Lands and Natural Resource Operations	$ 20,000	Habitat-based Actions	UKEEP Upland and Dryland	Upper Kootenay River Watershed
43	UKE-F18-W-2479	**Assessing wetland health in East Kootenay** *Upper Kootenay Wetlands at Risk Restoration Project* This project will test a rapid wetland health assessment field technique in range areas of the East Kootenay. These rapid assessment methods (Hansen et al., 2000) have been developed through decades of field research in Montana and are achievable with minimal training. Rapid wetland health assessments are the first step toward simple restoration efforts, such as exclusion fencing, off-site watering, treatment of invasive plants, and the restoration of water levels through mechanical methods. Smaller, more isolated wetlands in the driest habitat are likely the most critical for species and ecosystem health (and for cattle watering), and so these will be emphasized.	Jakob Dulisse Consulting	$ 50,149	Habitat-based Actions	UKEEP Wetland	Upper Kootenay River Watershed
44	UKE-F18-W-2490	**Restoring habitat for at-risk East Kootenay badgers** *Ta Ta Creek Badger Habitat Enhancement* This project aims to restore and enhance critical habitat for the Yellow Badger in the East Kootenay. Yellow Badger (Taxidea taxus jeffersoni) is red-listed provincially and is endangered under the federal Species At Risk Act. The project units are in the middle of a major badger population centre in the east Kootenays. Yellow Badgers face many threats, including grassland loss and degradation, urbanization, destruction of denning habitat, invasive species, human disturbance, and road mortality. The project ultimately aims to implement a habitat improvement/restoration program benefiting the Yellow Badger. Our objective is to restore grasslands and open forests to conserve the quality and resilience of important habitat for the Yellow Badger in the Rocky Mountain Trench of British Columbia.	Rocky Mountain Trench Natural Resource Society	$ 72,105	Habitat-based Actions	UKEEP Upland and Dryland	Upper Kootenay River Watershed
			UKEEP Wildlife Projects Total:	**$ 235,673**			

FWCP Columbia Region
2017 - 2018 Project List

	Project ID	2017 - 2018 UKEEP Fish and Wildlife Directed Projects	Project Lead	FWCP Funding	Project Type	Action Plan Alignment	Sub-Region
45	UKE-F18-F-2534-DCA	**Studying Kokanee spawners in East Kootenay** *Aerial Enumeration of Kokanee Spawners* Aerial enumeration of spawning Kokanee will be conducted in the fall of 2017 using similar methods as the 2012-16 study. Age data will be collected as part of the study to determine age-at-maturity in the population. The project will provide a yearly estimate of population abundance and age-at-maturity, and the results will help inform requirements for new management actions, and measure the success of conservation/restoration/enhancement efforts.	VAST Resource Solutions Ltd	$ 39,380.30	Monitoring and Evaluation	Stream Action Plan	Upper Kootenay River Watershed
46	TBD	**Planning for future fish projects** *Fish directed project placeholder* These funds have been set aside by the UKEEP sub-committee to support work that is a prioriry within the UKEEP Action Plan. Details have yet to be determined.	TBD	$ 55,000.00	TBD	TBD	Upper Kootenay River Watershed
47	UKE-F18-F-2535-DCA	**Monitoring East Kootenay wildlife with a remote camera** *Kootenay Remote Camera Wildlife Monitoring* FLNRO will use a remote camera wildlife for this 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 and Natural Resource Operations	$ 32,000.00	Species-based Actions	UKEEP - Upland and Dryland Action Plan	Upper Kootenay River Watershed
48	TBD	**Placeholder for priority UKEEP Subcommittee directed wildlife projects** *Wildlife directed project placeholder* These funds have been set aside by the UKEEP Subcommittee to support work that is a prioriry within the UKEEP Action Plan. Details have yet to be determined.	TBD	$ 63,000.00	TBD	TBD	Upper Kootenay River Watershed
			UKEEP Directed Project Total:	**$ 189,380**			
			2017-2018 PROJECT SPEND TOTAL:	**$5,546,541**			