

Photos: Townsend's big-eared bat (C. Lausen); Hill Creek spawning channel (A. Glass); Swallow with Motus tag (R. Darvill); northern leopard frog tadpole (Barb Houston); sign installation at Hoodoos conservation property (NTBC); Nutrient Restoration Program (All Too Close); western painted turtle (M. Glass); bighorn sheep (A. Glass)

FWCP fish and wildlife projects 2023-2024

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

Read our story.

Columbia Region projects 2023-2024

In our Columbia Region, 37 projects were approved by our board for ~\$6.43 million in 2023–2024.

Approximately 56% of approved funding went to projects in the West Kootenay sub-region; 37% were for basin-wide projects; 6% to the East Kootenay; and 1% in the North Columbia. See Figure 1 for a breakdown of funding by sub-region.

This year, approximately 85% of approved funding went toward habitat-based actions (74%) or species-based actions (11%). See Figure 2 for a breakdown of funding by project type.

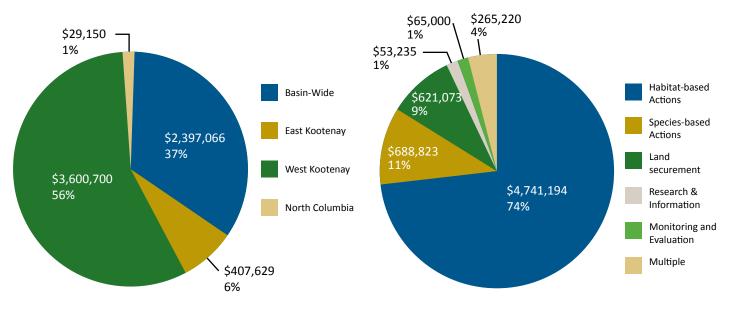


Figure 1: Columbia F24 approved funding by sub-region

Figure 2: Breakdown of approved funding by action type

Project outcomes

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

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

Learn more about our projects

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Fish & Wildlife Compensation Program



Project outcomes and annual reports are also available for our Coastal

and Peace regions at

Fish Projects

Exploring habitat restoration for shore-spawning kokanee in Kootenay Lake

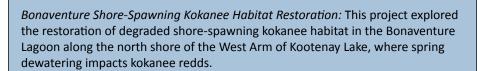
COL-F24-F-3856

Friends of Kootenay Lake Stewardship Society

\$5,000

West Kootenay

Habitat-Based Action



Design completed for kokanee habitat restoration site

A habitat restoration plan for Bonaventure Lagoon was prepared to support shore-spawning kokanee habitat in the West Arm of Kootenay Lake. Shore-spawning redds are de-watered each spring at low water, leaving the fry stranded at this West Arm site.

Planning for restoration of a Kootenay Lake tributary

COL-F24-F-3878

Living Lakes Canada

\$5,000

West Kootenay

Habitat-Based Action



Developing a Cottonwood Creek Enhancement Strategy: This project studied the feasibility of restoring Cottonwood Creek near Nelson—which has been impacted by development and industrial activity—into a healthy, functioning ecosystem through riparian enhancement and habitat improvement.

Data helps plan future conservation and enhancement of **Cottonwood Creek Watershed**

This Seed Grant laid the groundwork for subsequent conservation and enhancement of the Cottonwood Creek Watershed near Nelson.

An aquatic habitat inventory and baseline data collection were completed. The local community was engaged through a public meeting and many discussions.

Current habitat values, threats, and opportunities within the watershed were assessed, and next steps for future work were identified.

Learn more

Fish Projects

Ensuring sustainability of the Murphy Creek spawning channel

COL-F24-F-3949-DCA

Okanagan Nation Alliance

\$21,000

West Kootenay

Habitat-Based Action



F24 Murphy Creek Spawning Channel Monitoring and Maintenance Year 2 of 3: The spawning channel supports the rainbow trout population in Murphy Creek, which feeds the resident Columbia River population.

Murphy Creek spawning channel monitored and maintained

Ongoing monitoring and maintenance of this spawning channel is critical. This year, 21 spawner surveys were completed and rainbow trout escapement was estimated at 75, which is similar to the previous year's total of 78.

Volunteers completed regular maintenance of the channel—raking and gravel additions—and helped manage invasive plants and a PIT tag antenna system. The volunteers also built footbridges and a storage shed and monitored duck and owl nest boxes.

Adding nutrients to the North Arm of Kootenay Lake

COL-F24-F-3797-DCA

Province of B.C.

\$1,410,860

West Kootenay

Habitat-Based Action



F24 Kootenay Lake Nutrient Restoration Program - North Arm: This ongoing restoration program addresses nutrient losses in Kootenay Lake resulting from the construction of Duncan Dam.

Nutrients added to Kootenay Lake

Between April and September 2023, this project added nutrients to the North Arm of Kootenay Lake to improve the food web impacted by reservoir creation. Field work monitored the effects of nutrient additions on the food web.

Monitoring showed that kokanee spawner escapement—at nearly 154,000—was still low from a historical perspective, but the highest since 2013.

There has been an increase of in-lake survival of kokanee, resulting in a substantial improvement in kokanee biomass, again the highest since 2013.

Learn more

Adding nutrients to Arrow Lakes Reservoir

COL-F24-F-3793-DCA

Province of B.C.

\$1,232,364

West Kootenay

Habitat-Based Action



F24 Arrow Lakes Reservoir Nutrient Restoration Program: This ongoing restoration program addresses nutrient losses in Arrow Lakes Reservoir resulting from the construction of Hugh L. Keenleyside, Mica, and Revelstoke dams.

Nutrients added to Arrow Lakes Reservoir

Between April and September 2023, this project added nutrients to Arrow Lakes Reservoir to improve the food web impacted by reservoir creation. Field work monitored the effects of nutrient additions on the food web.

Monitoring showed that 320,000 kokanee returned to the reservoir's tributaries in 2023, which is near the average since nutrient additions began.

Supporting the Hill Creek spawning channel on **Arrow Lakes Reservoir**

COL-F24-F-3984-DCA

Province of B.C.

\$236,340

West Kootenay

Habitat-Based Action



F24 Hill Creek Spawning Channel: This project supports ongoing operations, maintenance, and monitoring at the Hill Creek spawning channel. The spawning channel provides additional spawning habitat for kokanee and rainbow trout from Arrow Lakes Reservoir.

More than 84% of kokanee eggs survive to fry in Hill **Creek Spawning Channel**

Monitoring of kokanee fry outmigration between April and June 2023 estimated 6.97 million fry—well above the fry target of 3.8 million. This was due to an egg-to-fry survival rate of 84.4%. An estimated 90,988 adult kokanee returned to the Hill Creek Spawning Channel in fall 2023, of which nearly one-third spawned in the channel and deposited an estimated 5.6 million eggs.

The Freshwater Fisheries Society of BC collected an additional 3.2 million eggs from 41,000 adult fish for its hatchery operations.

Eighty-two rainbow trout redds were counted in the spawning channel.

Learn more

Fish Projects

Supporting Meadow Creek spawning channel at Kootenay Lake

COL-F24-F-3985-DCA Province of B.C. \$291,603 West Kootenay Habitat-Based Action



F24 Meadow Creek Spawning Channel: This project supports ongoing operations, maintenance, and monitoring at Meadow Creek spawning channel. The channel provides spawning habitat for Kootenay Lake kokanee.

Kokanee returning to Meadow Creek spawning channel at highest level in a decade

Monitoring of kokanee fry outmigration between April and June 2023 counted an estimated 4.84 million fry. In the fall, a total of 71,423 kokanee spawners returned to Meadow Creek, which was the highest return in the past decade.

Improving habitat for at-risk swallows

COL-F24-W-3807 Wildsight Golden \$28,246 East Kootenay Habitat-Based Action



Upper Columbia Swallow Habitat Enhancement Project: This multi-year project aims to conserve and enhance habitat for at-risk bank and barn swallows in the North Columbia and East Kootenay.

Hundreds of hectares enhanced for at-risk swallows

Seven artificial nesting structures were installed and 525 hectares of barn swallow habitat were enhanced.

Two sites were enhanced for bank swallows, for a total of 150 hectares of enhanced habitat for at-risk swallows.

Nest cups were built, and future enhancements are being planned with help from 125 volunteers who are monitoring the swallows.

Restoring wetland habitat in our Columbia Region

COL-F24-W-3822 British Columbia Wildlife Federation \$210,509 Basin-Wide



Advancing Wetland Stewardship & Restoration in the Kootenays: The project aimed to restore at least three hectares of wetland and floodplain habitat on Koocanusa Reservoir near Newgate, restore a minimum of five hectares of wetland habitat near Canal Flats, and prepare for future restoration work in Winlaw.

Report pending

Habitat-Based Action

Project completion date is now 2025 due to schedule change.

Learn more

Filling data gaps about bat abundance and diversity

COL-F24-W-3832 Wildlife Conservation Society Canada \$82,159

Basin-Wide

Species-Based Action



NABat, BatCaver and Beyond: Protecting Columbia Basin Bats: This multi-year project uses the North American Bat Monitoring (NABat) protocol to establish baseline diversity and relative abundance of bats and guide implementation of mitigation efforts for threats such as White Nose Syndrome.

Sixty-two artificial roost structures created for bats

The project team followed the North American Bat Monitoring Protocol to sample at 18 grid cells in 2023. Bat detectors were deployed underground at Cody Caves in the West Kootenay.

Bat guano was sampled across the Columbia Region, including at 48 bridges. Monitoring five sentinel roosts provided data about population health and diseases.

Sixty-two artificial roost structures were created—46 with artificial bark—and the remaining roosts were created by making chainsaw cuts on wildlife trees. At least one of these structures could be used by bats or at-risk swallows.

Improving riparian function by removing invasives

COL-F24-W-3840 Central Kootenay Invasive Species Society \$35,767

West Kootenay

Habitat-Based Action



Kootenay Riparian Invasive Plant Control: This multi-year project supports the development and implementation of a plan for removing invasive yellow flag iris and purple loosestrife. This will improve riparian ecosystem function and protect high-value conservation areas.

3,400 kilograms of invasive plants removed

Invasive yellow flag iris and purple loosestrife was removed from 35 sites along the West Arm of Kootenay Lake and the Kootenay River downstream of the Brilliant Dam near Castlegar. More than 3,400 kilograms of invasive plant material was removed.

An ecological restoration expert assessed eight treated sites for restoration potential and one site was deemed suitable for restoration.

Five sites treated previously were re-planted with 173 native plants. Surveys confirmed the presence of black-margined loosestrife beetle at two of 23 sites, meaning the beetle—a biological control—is at work and helping reduce the presence of purple loosestrife.

Learn more

Reducing invasive species spread in the East Kootenay

COL-F24-W-3852

East Kootenay Invasive Species Council

\$29,018

East Kootenay

Habitat-Based Action



Galton Range Invasive Plant Management: Following on from a successful Seed Grant project last year, this management project aimed to slow down the introduction and spread of invasive species in the Galton Range, which is highvalue habitat for ungulates.

Forty-six hectares of invasive plant sites treated

Thirty-four sites were treated for invasive plants in the Galton Range, east of Grasmere.

More than 46 hectares were treated for invasives (i.e., invasives were removed or managed) along 55.4 kilometres of roads and trails. Thirty kilograms of seed were planted in critical areas susceptible to invasive plants.

Invasive plant inventories were conducted in the Red Canyon and Maguire areas, which assists Yaqit ?a.knuqti'it with ecosystem enhancement projects.

Additional treatments occurred in controlled burn areas, carried out in partnership with the Province of B.C.

Improving ungulate habitat by addressing invasives in the Elk Valley

COL-F24-W-3853

East Kootenay Invasive Species Council

\$20,796

East Kootenay

Habitat-Based Action



Elk Valley Invasive Plant Management Year 4: This multi-year project will provide a framework to minimize and contain invasive plant species in the upper Elk Valley, with an emphasis on areas of high-value range for ungulate species including bighorn sheep, elk, moose, grizzly bear, and white-tailed deer.

Fifty-four hectares of invasive plant sites treated

In the Elk Valley, 206 sites, covering 53.98 hectares and 151.9 kilometres of roads, were treated for invasives.

Data from 11 vegetation plots was collected and photo monitoring was completed.

Restoration grass seed was applied at previously treated sites to outcompete invasive plants and in new areas to prevent invasive plants from establishing. Twenty-five kilograms of seed was spread on disturbed and treated areas in the Chauncey-Todhunter Access Management Area.

Outreach and education efforts this year included a video, newsletters, social media, and sharing information at farmers' markets.

Reducing grizzly bear conflicts

COL-F24-W-3854

Sanders Environmental Services

\$25,000

Basin-Wide

Species-Based Action



Grizzly Bear Coexistence Solutions: This multi-year project will promote coexistence between grizzly bears and rural residents through education, collaboration, and the use of practical tools, such as correctly installed electric fencing.

Thirty-six electric fences installed

Ongoing partnerships and new collaborations helped establish an electricfencing program for the East Kootenay.

As a result, 36 fences were constructed to prevent conflicts between grizzly bears and humans.

Eleven workshops were held on fencing and grizzly bear safety, and a video was posted online.

Stewarding conservation lands in the Columbia Region

COL-F24-W-3867

The Nature Trust of British Columbia

\$37,400 Basin-Wide

Habitat-Based Action



NTBC-Land Stewardship Activities F24: This project supported conservation fieldcrew work on operations and stewardship projects that maintain and enhance biodiversity and wildlife values on conservation properties.

Conservations crews steward 31 properties

Stewardship of conservation lands is essential to maintain ecological values. This year, field crews worked on 31 conservation properties in the Columbia Region.

Three hectares were treated mechanically by hand-pulling, bagging, and disposing of plants in a properly specified manner at a local transfer station or landfill.

More than 150 kilograms of native grass seed was planted.

More than 85 signs were installed, 45.6 kilometres of fencing was inspected or repaired, four new access gates were installed, and 10 wildlife cameras were installed or monitored.

Learn more

Enhancing ungulate habitat on Yaqit ?a.knuqti 'it Reserve

COL-F24-W-3902

Yaqit ?a.knuqii 'it

\$96,800

East Kootenay

Habitat-Based Action



Yagit ?a.knugii 'it Open Forest and Grassland Enhancement: This five-year ecosystem management plan will restore ungulate habitat and improve critical habitat for at-risk Lewis's woodpecker and American badger.

Twenty-one hectares of forest thinned for habitat restoration

Thinning of 21.42 hectares of open forest was completed and a prescription was developed for 12.5 hectares of wetland habitat on the Yaqit ?a.knuqti 'it Reserve.

Invasive plants were treated on more than four hectares near the community. A research trial was developed for 2025 to test methods to treat invasives on grasslands and three sites were selected.

Testing grass seed to control invasive plants

COL-F24-W-3930

East Kootenay Invasive Species Council

\$5,000

East Kootenay

Research & Information Acquisition



Expanding the Toolkit of Invasive Plant Management: This project's goal was to trial new methods of invasive plant control in the East Kootenay to determine if grass seed application could control the spread of invasive species.

Seed grass trial paused after feasibility assessment

This Seed Grant developed a study design to trial grass seeding alone as an invasive plant treatment method.

Results of this initial assessment confirmed that the barriers to implementation, including partner support, would be too large to overcome.

Learn more

Improving Rocky Mountain ungulate habitat

COL-F24-W-3934 Golden District Rod and Gun Club \$29,150

North Columbia Habitat-Based Action



Kicking Horse Canyon Habitat Enhancement Project: This project maintained previously treated ungulate winter range for Rocky Mountain elk and supported habitat connectivity on a landscape scale near the Yoho National Park boundary.

Twenty-one hectares of habitat thinned

Brushing work was carried out in approximately 21 hectares of habitat along the southeastern portion of the Kicking Horse Canyon near Golden to benefit elk.

The total area treated is now 36 hectares.

Creating nesting platforms for common loons

COL-F24-W-3972-DCA

Yucwmenlúcwu (Caretakers of the Land) 2007 LLP

\$35.322

West Kootenay

Habitat-Based Action



Whatshan Loon Platform Replacement: This project replaced four aging nesting platforms for common loons on Whatshan Reservoir. Replacing the platforms would ensure nest sites remain stable and meet conservation and productivity goals for loons on Whatshan Reservoir.

Four loon nesting platforms replaced

Four floating nesting platforms on Whatshan Lake were replaced with new and improved structures. Two of the old structures were removed.

Logistical issues prevented removal of the remaining two platforms which were anchored close to shore. Plans to remove these are being developed.

Learn more

Harvesting native seeds to restore riparian ecosystems

COL-F24-W-3952-DCA Okanagan Nation Alliance

\$38,002

West Kootenay

Habitat-Based Action



Native Seed Propagation Project: This project aimed to build a holistic native seed collection strategy with a syilx framework led by the knowledge and values of the syilx Okanagan Nation.

Report pending

Learn more

Recovering Selkirk caribou

COL-F24-W-3951-DCA

Ktunaxa Nation Council Society \$50,000

Basin-Wide

Species-Based Action



Selkirk Caribou Maternity Pen: To increase survival of the Central Selkirk caribou population, a maternity pen was created to protect caribou from predators and improve the calf recruitment level.

Eight caribou cows born in maternity pen

The Central Selkirk caribou maternity pen has completed two seasons.

In March 2023, 10 collared caribou cows were put into the secure pen, including the last remaining cow from the South Columbia herd.

Eight calves were born in the maternity pen. After 114 days, all but one were released into the traditional range of the Central Selkirk herd. The weakest calf that was not released was transferred to the BC Wildlife Park in Kamloops.

Monitoring confirms the cows' movements after release from the pen was consistent with past years, prior to being penned.

FWCP funding went toward the shepherding of the maternity pen by Ktunaxa citizens. This was a critical component of pen operations and required a minimum of two staff to be on site at all times to ensure the health and safety of the caribou.

Managing invasive bullfrogs

COL-F24-W-3947-DCA Okanagan Nation Alliance \$26.957

West Kootenay **Species-Based Action**



Invasive American Bullfrog Management, South Salmo-Nelway: This project monitored and managed invasive American bullfrogs in the South Salmo/Nelway area, tracking their population and movement, and assessed nearby habitat that could support the bullfrog population.

More than 500 bullfrogs captured in Pend d'Oreille River Watershed

A monitoring survey confirmed the presence of invasive American bullfrog in the Pend d'Oreille River Watershed. Six bullfrogs were captured from this site, and 3.5 kilometres of shoreline was surveyed for bullfrogs.

A total of 513 bullfrogs were captured and removed from a wetland near Nelway and the Pend d'Oreille River.

An estimated 494 people received stewardship information about bullfrogs at schools, meetings, displays, and conferences.

Stewardship of conservation lands

COL-F24-W-3794-DCA Province of B.C. \$293,365 Basin-Wide

Habitat-Based Action



F24 Land Management Operations: This annual and ongoing project focuses on the coordination, oversight, and implementation of land stewardship activities associated with conservation lands.

Restoration and maintenance completed on conservation lands

This year's land management operations included habitat restoration, monitoring and maintenance by Guardian patrols, treatment of invasive species in the Duncan/Lardeau, Lower Columbia, and Lower Arrow conservation areas, and slashing treatment in the Mardsen conservation area. First Nations were engaged in conservation land planning.

Enhancing West Kootenay ecosystems

COL-F24-W-3799-DCA Province of B.C. \$199,252

Habitat-Based Action

West Kootenay



F24 West Kootenay Ecosystem Enhancement: This project focuses on the oversight, coordination, and implementation of restoration activities in West Kootenay upland and dryland ecosystems.

Upland and dryland ecosystems enhanced

Penticton Indian Band completed a cultural heritage resource assessment for two areas, and a prescribed burn was partially completed at Deer Park Mountain.

Approximately 160 hectares were enhanced through prescribed burns. Invasive plants were treated in preparation for future prescribed burns.

Nearly 16 hectares were restored to open forest conditions, which also reduced surface and ladder fuels by removing tall grasses, shrubs, and tree branches that allow a fire to climb up from the forest floor into the tree canopy.

Enhancing East Kootenay ecosystems

COL-F24-W-3800-DCA Province of B.C. \$227,769 East Kootenay Habitat-Based Action



F24 East Kootenay Ecosystem Enhancement: This project focuses on the oversight, coordination, and implementation of restoration activities in East Kootenay upland and dryland ecosystems.

Planning, pre-treatment and monitoring completed

Invasive weed pre-treatment, post-treatment, and vegetation monitoring were completed at multiple East Kootenay sites.

An ecosystem restoration plan was prepared in partnership with Yaqit ?a.knuqŧi 'it.

A planned prescribed burn of 300 hectares was rescheduled for spring or fall 2024.

Learn more

Supporting caribou recovery

COL-F24-W-3801-DCA Province of B.C.

\$155,149

Basin-Wide

Species-Based Action



F24 Caribou Recovery: This annual and ongoing project supports a multi-agency effort led by the Province of B.C. to recover threatened caribou sub-populations.

10 caribou transported to the Selkirk maternity pen

Caribou censuses occurred for the Central Selkirk and North Columbia areas; the results will be shared in the near future. Predator track surveys and monitoring determined that there were between six-to-ten wolves in five separate packs. Assistance was provided to capture ten caribou, including one calf, in the Central Selkirks and transport them safely to the maternity pen near Nakusp.

Learn more

Supporting northern leopard frog recovery

COL-F24-W-3979-DCA Province of B.C.

\$349,558

Basin-Wide

Species-Based Action



F24 Northern Leopard Frog Recovery: This annual and ongoing project involves conducting inventory, monitoring, and stewardship of the Endangered northern leopard frog population at the Creston Valley Wildlife Management Area (CVWMA).

Two egg masses documented and 108 frogs tagged

The Rocky Mountain population of endangered northern leopard frogs was inventoried and monitored. Breeding effort and success were low in 2023, with a total of two egg masses documented. More adults, however, were detected compared to the previous year. A total of 108 northern leopard frogs were PIT-tagged for mark-recapture population estimates. Two-hundred tadpoles were translocated from CVWMA to a reintroduction site and captive assurance populations.

This was the second year that invasive American bullfrog monitoring and control efforts fell under the umbrella of this project. Although bullfrog range did not expand, this year marked the highest bullfrog detections todate in the Creston Valley, highlighting the need for continued control.

Enhancing habitat for non-game species

COL-F24-W-3977-DCA

Province of B.C.

\$215,681

Basin-Wide

Habitat-Based Action



F24 Non-Game Enhancement: This annual and ongoing project focuses on nongame species. It includes a variety of activities that maintain and enhance critical habitat, such as the roosting, denning, and nesting features important for the reproduction and survival of species impacted by reservoir footprint habitat losses.

Bat, badger, swift, loon, toad, and turtle habitat monitored and maintained

Six different projects were completed on non-game species.

In the East Kootenay, eight maternity roost sites for Townsend's bigeared bats were monitored and maintained. Fencing was maintained at a highway underpass to reduce badger mortality. At Elizabeth Lake in Cranbrook, western painted turtle nesting areas were monitored and maintained; 69 nests with eggs were identified and 57 (83%) produced at least one hatchling.

In the West Kootenay, loon platforms at Whatshan Lake were monitored. All five were used for breeding. At Summit Lake, western toad habitat was monitored and maintained. Close to 680 adult toads were captured and 262 were tagged. Vaux's swift nest boxes were monitored and one nest box contained at least two chicks.

Learn more

Restoring and enhancing wetlands

COL-F24-W-3980-DCA

Province of B.C.

\$41,952

Basin-Wide

Habitat-Based Action



F24 Wetland and Riparian Enhancement: The goal of this annual and ongoing project is to deliver wetland restoration work, continue to develop new projects, and monitor completed projects.

Seventeen restored wetlands monitored

In 2023, 17 wetlands restored previously were monitored. In two instances, wetland hydrology was monitored. Three beavers were relocated, and the team hopes they will help retain water on the land.

Informing land securement decisions

COL-F24-W-3981-DCA **Kootenay Conservation Program** \$53,735

Basin-Wide

Land Securement



Kootenay Conservation Program Land Acquisition & Base Support F24: The Kootenay Conservation Program supports our Columbia Region board when it considers land securement options for lands with high conservation values.

Land securement supported

This year the Kootenay Conservation Program (KCP) continued to provide vital support related to identifying and securing important habitats for protection.

KCP coordinated activities to support the FWCP board, and other funders, in making decisions about the acquisition of three conservation properties: Larsen Lake, Skookumchuck Prairie, and Wycliffe Prairie. The new land securements total more than 587 hectares of critical habitats in the Columbia Region.

KCP also coordinated on-the-ground activities for 60 projects focused on 34 species of concern and 40 species of local concern.