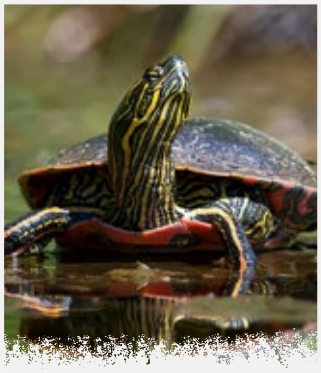
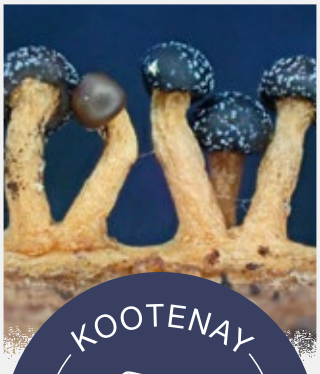
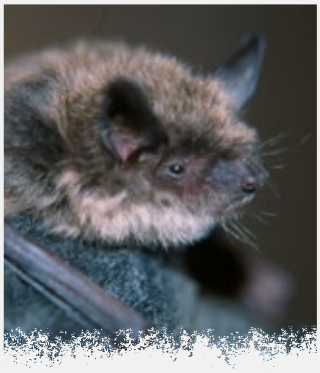
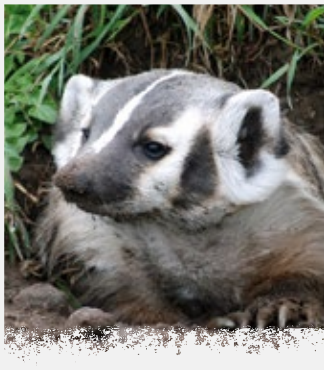
Kootenay Conservation Program
KCP

Kootenay Connect Priority Places

IMPACT

2019-2026

KOOTENAY CONNECT

Environment and Climate Change Canada
Environnement et Changement climatique Canada

About Us

Kootenay Conservation Program is a broad partnership of over 95 organizations, First Nations, and other levels of government who work together to conserve the biological diversity and naturally-functioning ecosystems of the Kootenay region.

Community-Nominated Priority Places

Kootenay Connect Priority Places was funded by Community-Nominated Priority Places (CNPP) for Species at Risk, a program of the Canada Nature Fund, administered by Environment and Climate Change Canada.

CNPP supports multi-partner initiatives where there are opportunities to protect and recover multiple species at risk and their habitat by implementing coordinated and collaborative conservation action in distinct geographic areas of high biodiversity, identified by the people that live, work, and recreate within them—the community-nominated priority places.

Kootenay Connect Priority Places was selected as a CNPP in 2019 and subsequently received seven years of funding. Its goal is to sustain exceptional places for native biodiversity, species at risk, and ecosystems by conserving biodiversity hotspots, enhancing habitats, maintaining ecological connectivity, and planning for resilience to climate change in the Kootenay region of southeastern British Columbia.

With Gratitude

Kootenay Conservation Program respectfully acknowledges that this work occurs throughout the traditional, ancestral, and unceded territories of the Ktunaxa, Secwépemc, Sinixt, and Syilx Okanagan peoples, whose values and cultures continue to inspire and guide the stewardship of this region.

Cover page: Marcy Mahr, Marc-André Beaucher, Monte Comeau, Tyson Ehlers, Cori Lausen, Richard Klafki

In This Report

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Background

Kootenay Connect Priority Places

Connecting & sustaining exceptional places of biodiversity

$12.6 million
invested into

60+ projects
led by

40+
local partners and specialists
directly benefitting

34
species at risk

40
species of conservation concern

> Kootenay Connect Priority Places demonstrates the power of bringing partners together to reduce threats to species at risk and other species of conservation concern, ensuring our federal funding was leveraged to benefit thousands of hectares of important habitat.
>
> — **Ivy Whitehorne**, Conservation Coordinator, Canadian Wildlife Service / Environment and Climate Change Canada

Nearly ten years ago, new research envisioned a landscape-level framework for conservation work in the region.

Rather than focusing on a single species or ecosystem, a dozen ecological corridors were mapped across the Kootenays. This network of corridors called “Kootenay Connect” represented biodiversity hotspots, linked by a variety of habitat types, with potential climate change refugia.

Kootenay Conservation Program built on this science-based framework and catalyzed a new initiative—Kootenay Connect Priority Places.

Kootenay Connect Priority Places has been addressing the dual crises of decreasing biodiversity and intensified climate disruption in the Kootenay region, for seven years, across seven landscapes.

Applying leading-edge practices, this initiative has supported a team of over 40 local partners and specialists with habitat-based projects in priority ecological corridors across the Kootenays.

Species recovery depends on habitat recovery: these efforts have improved the overall capacity of wetlands, riparian areas, grasslands, and forests to withstand, recover and bounce back from stressors and major disturbances.

This report shares the impact of Kootenay Connect Priority Places. It celebrates the remarkable work of local champions and partners—working together for the place we all call home, now and for the future.

2018

Framework

A network of ecological corridors is identified across the Kootenay region. This framework[1] becomes the catalyst for Kootenay Connect Priority Places.

2019

Funding

Kootenay Connect Priority Places is approved as a Community Nominated Priority Places project, and receives seven years of funding from Canada Nature Fund.

2019 to 2026

Projects

Coordinated by Kootenay Conservation Program, local partners and specialists actively restore and enhance local habitats.

1. Proctor, M.F. and M.H. Mahr. 2019. Kootenay Connect: Riparian Wildlife Corridors for Climate Change - A Preliminary Report. Kootenay Connect, Kaslo, BC. 68pp

Everything is connected

Connectivity increases nature's resilience

> If we want to conserve biodiversity, species at risk, and healthy ecosystems, we're going to have to connect existing protected areas with ecological corridors.
>
> — **Michael Proctor**, Grizzly bear biologist and Kootenay Connect Science Advisor

To be resilient, nature relies on ecological connectivity.

With climate disruptions already impacting the Kootenays, maintaining ecological corridors is more important than ever before. Kootenay Connect Priority Places was built on this premise, to sustain and connect exceptional places of biodiversity across the region.

Reimagining resilience

Kootenay Connect Priority Places began with two scientists finding connections between bears, mountains, and movement. In 2018, grizzly bear biologist Dr. Michael Proctor and ecologist Marcy Mahr pored over grizzly bear telemetry data and habitat modelling, looking for places where grizzly bear corridors overlapped with large wetlands and riparian complexes, which also connected to upland habitats.

Broadening their view beyond bears to biodiversity, they pieced together a regional picture of habitat linkages essential to keeping the Kootenays connected. Of the 12 total corridors identified, Kootenay Connect Priority Places focuses on seven.

Corridors across the Kootenays need to stretch from valley bottoms to mountain tops, and run both north-south and east-west. When species and ecosystems have more room to roam, they're better equipped to adapt to changing landscapes.

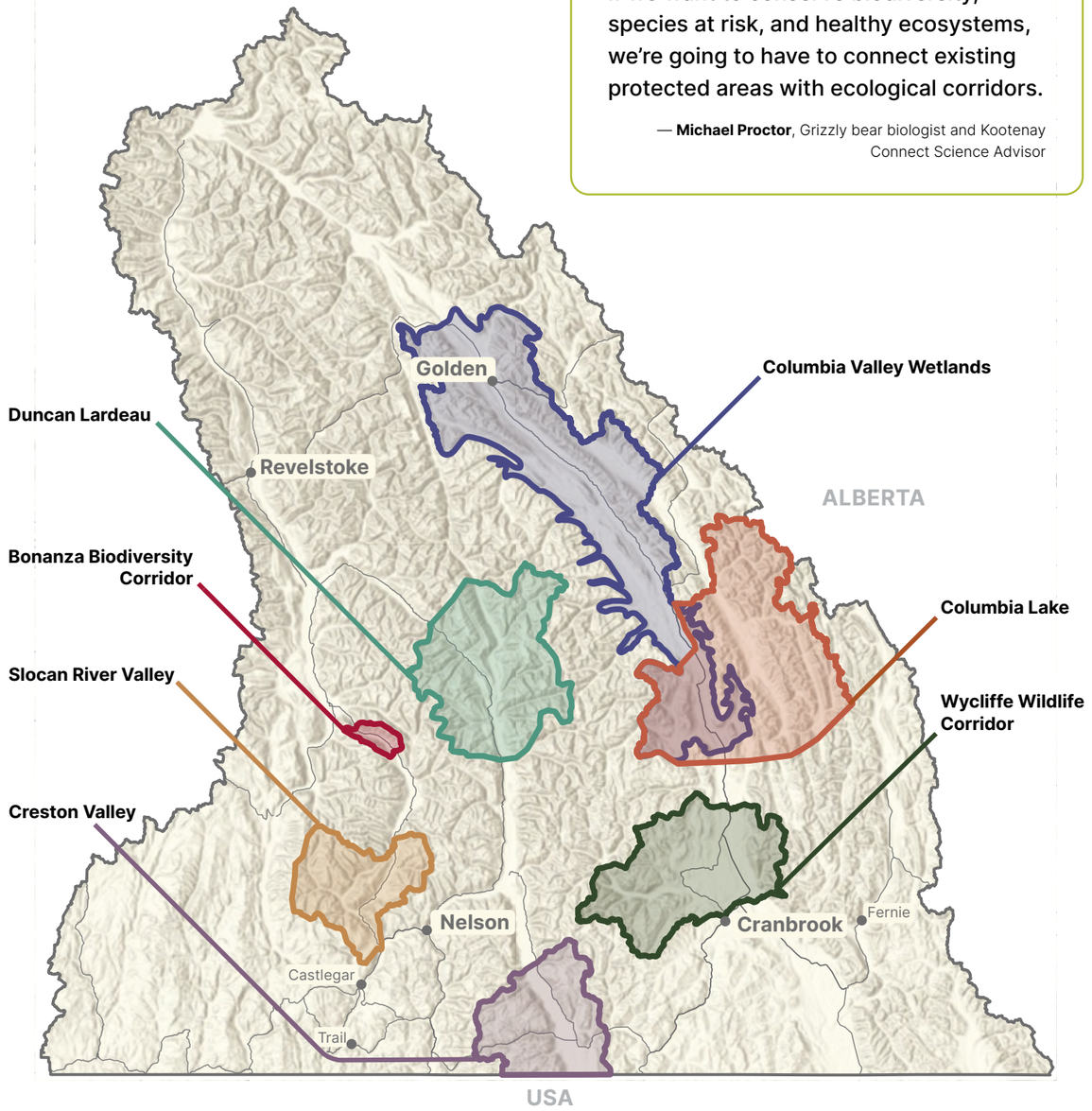
Why are connected landscapes important?

Basic needs. More space means more access to food, mates, and safe habitats.

Room to roam. Large carnivores and ungulates require large, secure landscapes and the ability to safely move across them.

Ecological processes. Connected landscapes support ecological processes associated with floodplains, nutrient cycling, pollination, migration, and fire.

Climate refugia. Species may need to migrate north or shift up in elevation to find refuge from a warming climate.



Kootenay Connect Priority Places has supported biodiversity and ecosystem resilience in

7
Priority Areas
which encompass

16,600 km²
(1.6 million hectares)
comprising 20% of the Kootenay region

Riparian & wetland floodplains

Hydrology & connectivity in the Columbia Wetlands

Seeking solutions to secure water storage, wildlife habitat and floodplain function

In the Upper Columbia River Valley, approximately 26,000 hectares of internationally significant wetlands depend on seasonal snowmelt from Columbia River tributaries.

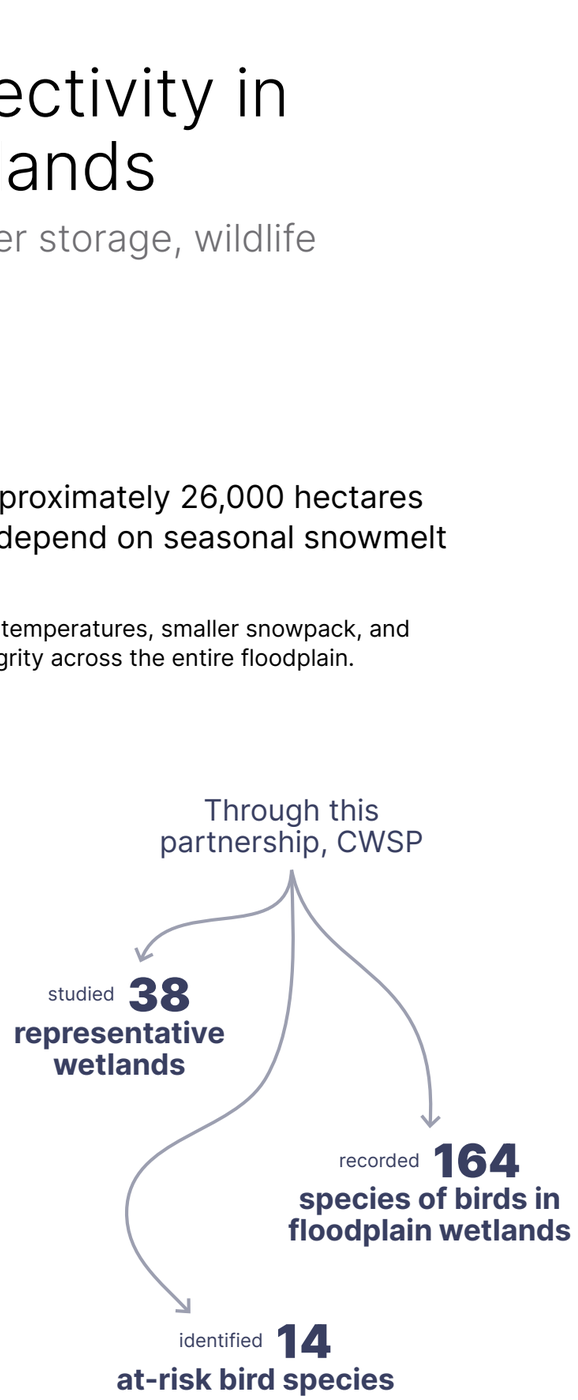
But important water sources are diminishing—rising temperatures, smaller snowpack, and earlier spring melt are all threatening ecological integrity across the entire floodplain.

Taking action with research

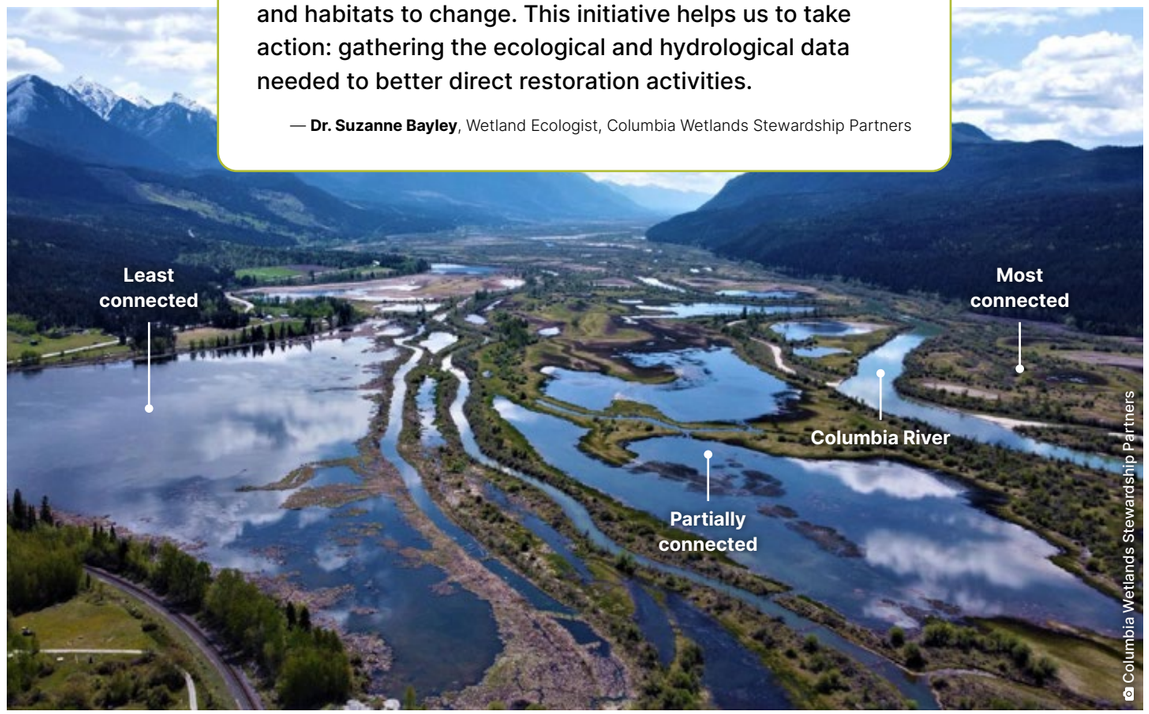
For the past six years, the Columbia Wetlands Stewardship Partners (CWSP) have been studying 38 representative wetlands. These wetlands are shaped by natural features, including levees and beaver dams, that regulate connectivity to the river and ultimately determine the wetlands' hydrology and habitat conditions. Recognizing the region's shifting hydrological patterns due to climate change, the research team set out to assess the wetlands' vulnerability and prioritize restoration to maintain water storage.

On-the-ground impacts

As river flows become less predictable, the ability for isolated wetlands to retain water is vital for spring migratory birds and ecosystem resilience. This research has provided partners with essential data needed to direct restoration activities, informing which wetlands should be prioritized for restoration and would benefit from beaver dams.



> Over the last ten years, we've watched parts of the Columbia Wetlands become drier, causing communities and habitats to change. This initiative helps us to take action: gathering the ecological and hydrological data needed to better direct restoration activities.
>
> — **Dr. Suzanne Bayley**, Wetland Ecologist, Columbia Wetlands Stewardship Partners



By combining field investigations with hydrologic modelling, CWSP researchers identified three different wetland types, classified by their connectivity to the Columbia River: from most to least connected.

Most connected
Wetlands most connected to the Columbia River have natural gaps in their levees and are directly influenced by river flood pulses, resulting in highly variable water levels. This wetland type accounts for about 74% of the floodplain's wetlands.

Partially connected
Wetlands partially connected to the Columbia River are strongly influenced by the integrity of levees and the height of beaver dams, which both enable water to pulse in and out of wetlands during the spring freshet and also retain water year-round, resulting in less variation in water levels.

Least connected
Wetlands least connected to the Columbia River are more isolated due to intact levees and beaver dams, but are still affected by the spring freshet in high water years. Least and partially connected wetlands account for 26% of wetlands found in the floodplain. These isolated wetlands play a critical role in supporting spring migratory birds and other wildlife that depend on persistent early and late season open water habitat and consistent water levels.

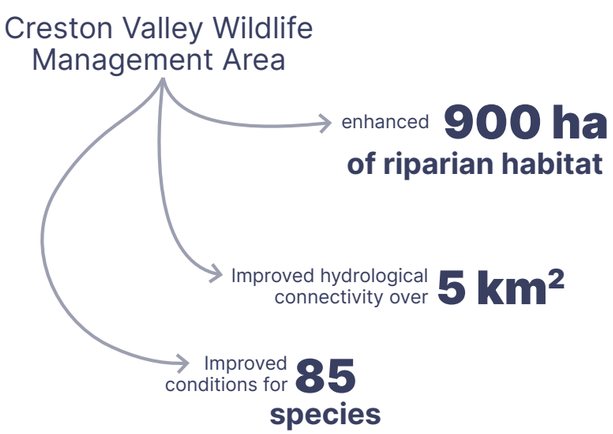
All wetland types contribute to biodiversity. However, because the partially and least connected wetlands are less common on the landscape, species that use these wetland types have less available habitat.

Improving floodplain connectivity in the Creston Valley

Strengthening hydrology, habitat function and species recovery across the Creston Valley Wildlife Management Area


© Steve Ogle


© CVWMA



The Creston Valley provides ecological connectivity between the South Selkirk and South Purcell mountains.

With the Creston Valley Wildlife Management Area (CVWMA) as its centrepiece, this corridor holds a globally-significant watery world: a riparian wetland complex that provides flood attenuation, water filtration, and habitat for numerous species at risk, including the federally endangered northern leopard frog.

Reconnecting habitat

Since 2019, CVWMA has prioritised restoration activities that improve habitat features for northern leopard frogs, such as reconnecting overwintering and breeding areas, and enhancing safe migration pathways. Other at-risk species that benefit include the western painted turtle, barn swallow, bobolink, common nighthawk, western skink and rubber boa.

Restoring natural hydrology

To restore natural hydrology and improve breeding and movement opportunities for amphibians and other wildlife, CVWMA worked in partnership with the Nature Conservancy of Canada (NCC) and others on NCC's Frog Bear property—a conservation area adjacent to the CVWMA. As part of this project, over a kilometre of agricultural drainage was cleared and recontoured into a sinuous wetland channel, and a network of three new wetland ponds was created.

Modernizing water management

The CVWMA is managed through a system of dikes, control structures, and pumps, all operating to mimic cycles that would have naturally occurred prior to dam installations on the Columbia River system. However, with infrastructure over a half-century old, updates were overdue.

Enhancements took place at two ecologically-significant areas:

- Duck Lake Nesting Area. 1970s-era water control infrastructure was replaced. This upgrade improved hydrologic flows and enhanced ecological function across 300 hectares.
- Six Mile Slough. Derelict sluice gates were removed, two internal dikes were breached, and new water controls were installed. These changes restored wetland–upland connectivity and enabled more effective water level management across 600 hectares.

Together, these actions and investments collectively improved wildlife breeding, foraging, and refuge habitat, with particular benefits for northern leopard frog recovery.

> By constructing new wetlands, modifying existing channels, and upgrading water control infrastructure, we've been able to support the recovery of the federally endangered northern leopard frog.
>
> — **Marc-André Beaucher**, Head of Conservation Programs, Creston Valley Wildlife Management Area


© CVWMA

Wetland enhancement

A chorus of watery worlds sing resilience

Enhancing connectivity through wetland restoration in the West Kootenay

© Kendal Benesh/KCP

© Marcy Mahr/KCP

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In a region ribbed by multiple mountain ranges, healthy wetlands and riparian areas at valley bottoms keep biodiversity and human communities healthy.

That's why Kootenay Connect Priority Places prioritized multiple wetland enhancement projects. These three initiatives illustrate how, by restoring ecological processes, we can also improve hydrology, advance species-at-risk recovery, and increase climate resilience.

> **Nature needs to move. Plants, painted turtles, grizzly bears, mountain goats—as the climate changes, everything will need a place to go.**
>
> — **Marcy Mahr**, Kootenay Connect Manager, Kootenay Conservation Program

Slocan River Valley

The Slocan River's biodiverse floodplain of riparian habitat and wetlands, as well as its many tributaries, support sensitive ecosystems and many species of conservation concern. Slocan Lake Stewardship Society and Slocan River Streamkeepers teamed up to stabilize and revegetate riparian habitat along the Slocan River. Through this collaboration, nearly 3,500 native trees and shrubs were planted to reduce erosion and improve habitat complexity.

In addition to the restoration work, a comprehensive inventory of rare and at-risk species and sensitive habitats within the Slocan River watershed was undertaken. This work identified high-value conservation and connectivity priorities to guide future conservation investments.

Bonanza Biodiversity Corridor

The Slocan Lake Stewardship Society led restoration efforts at several high-priority sites in the Bonanza Biodiversity Corridor to re-establish connectivity in an area historically impacted by logging, drainage ditching, and a century-old railway.

At one site, natural groundwater flow was restored to mimic 2.3 hectares of cedar swamp conditions that support breeding western toads. At another site, nearly 13 hectares of wetland and riparian habitat were restored to slow flows, reduce channelization, and encourage the return of beavers. At the final site, hydrologic connectivity of the lake marsh was restored on 2 hectares by rebuilding sections of the rail bed with permeable swales and installing pedestrian crossings.

Duncan Lardeau Floodplain

At the north end of Kootenay Lake in the Duncan-Lardeau River floodplain, rare wetlands, productive riparian communities and cottonwood forests support a diversity of species and important connectivity for wide-ranging wildlife. To mitigate combined impacts of a drying climate and a dam-regulated river, North Kootenay Consulting enhanced riparian habitat by planting over 6,700 willow stakes and re-establishing beavers. The beaver dams have roughly doubled the wetland area and have kept levels constant during periods of low inflow.

This project highlights the important role beavers play in increasing water storage, moderating seasonal flows, and creating drought refugia. These nature-based processes also improve habitat for other species, including western painted turtles – a record 32 turtles were observed basking on logs in Argenta Slough!

Biodiversity conservation spotlights

Together, we made the numbers count

A pride of success stories, from place to place

Field inventories find new species

Kootenay Connect Priority Places supported an extensive inventory of biodiversity and species at risk in the Bonanza Biodiversity Corridor and Slocan River Valley.

Over 4,000 taxa were identified, including 145 species at risk, and over 20 species new to British Columbia. A species of slime mould new to science, *Spiromyxa slocanensis*, was also discovered in the southern Slocan Valley and named after this valley.

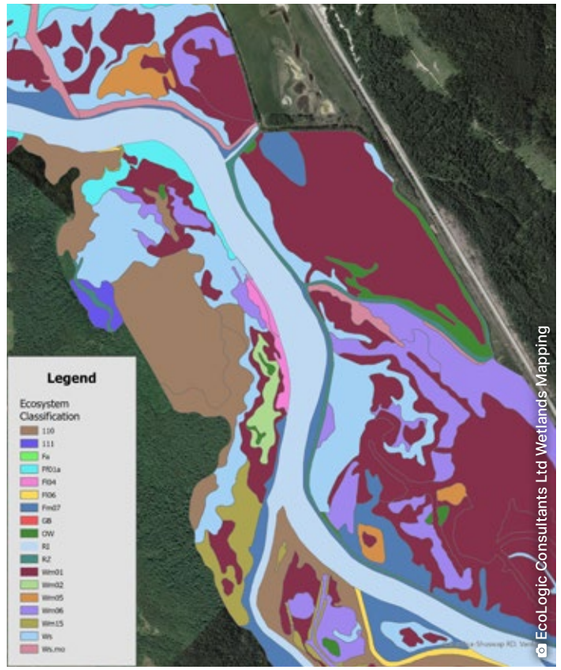
Data collected through this partnership will guide future field surveys to focus on specific habitat types and understudied taxonomic groups, such as lichens and slime moulds.

Long-term monitoring builds resiliency for bats

Wildlife Conservation Society Canada (WCSC) sought to understand the status of bat populations within Kootenay Connect Priority Places' focal areas. Through the North American Bat Monitoring Program, they deployed bat detectors to record echolocation calls at 21 sites, in 7 grid cells.

Stationary detectors and mobile transects recorded just over 163,500 recordings of bats, and identified 13 bat species (including the endangered little brown myotis and hoary, silver-haired and eastern red bats).

Using this long-term acoustic monitoring data, WCSC is better able to fill knowledge gaps and inform effective conservation strategies, ultimately building resiliency into bat populations through habitat recovery and enhancement.



© EcoLogic Consultants Ltd Wetlands Mapping

Wetland communities get a place on the map

Columbia Wetlands Stewardship Partners (CWSP) has completed detailed ecosystem mapping across 14,144 hectares of the Columbia Valley. Using a mix of provincial and private data sources, the vegetation mapping paints a picture of wetland communities along the 180 km valley. Six sensitive ecosystems and 17 different plant communities were mapped.

With this new information, conservation partners are better equipped to identify which vegetative communities are most vulnerable to climate change and which are most important for wildlife. This knowledge helps prioritize areas needing protection or restoration, and highlights opportunities to enhance wetland communities for migrating and breeding birds.

These map layers are now publicly available at DataBC.


© Columbia Wetlands Stewardship Partners

Wetland habitat gets a boost for beavers

Beaver Dam Analogues (BDAs) are a low-tech tool that mimics natural beaver dams, but only when installed in suitable wetlands. CWSP wanted to know which wetlands in the Columbia Valley's western benchlands would respond best to this method.

Using the BC Freshwater Atlas as a guide, CWSP identified 828 wetland or lake polygons on west side benchlands, and assessed 371 by drone or in-person for vegetation and wetness. More than 50% of these showed evidence of long-term drought.

Guided by this information, CWSP constructed 25 BDAs, retaining roughly 54,300 m^3 of water and restoring over 35 hectares of wetland habitat. As climate change intensifies seasonal water loss across the region, these BDAs offer a practical, nature-based solution to conserve and enhance the drought-vulnerable wetland basins.

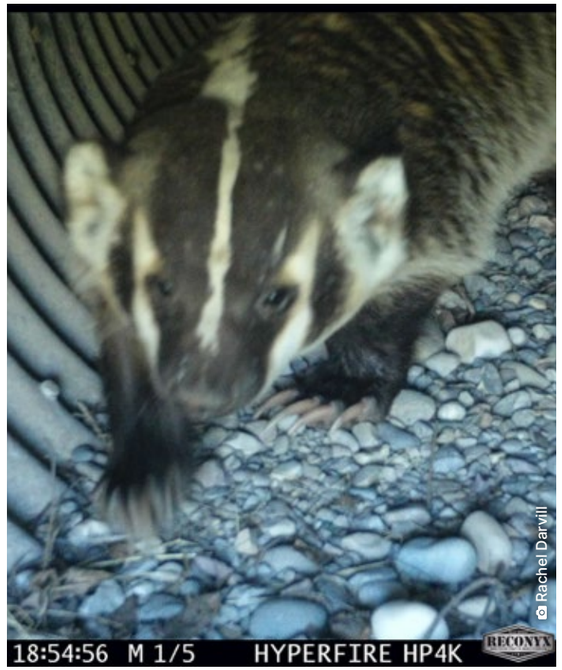
© The Nature Trust of BC

New fencing allows safe passage for wildlife

Trespassing cattle and unmanaged recreational access were impacting sensitive habitat in the Wycliffe Conservation Complex. To remedy these impacts, The Nature Trust of BC implemented numerous fencing projects: removing old barbed wire and unnecessary fences, and repairing or replacing aging fences with new, wildlife-friendly designs.

Nearly 12 km of newly constructed or repaired fences incorporated wildlife-friendly designs. Barbed wire was replaced with smooth, high-tensile top and bottom wires to allow wildlife to safely travel over or under the fence. Another 11 km of old fencing was removed to enhance habitat connectivity, where possible.

In total, 792 hectares of grassland-open forest habitat have benefited from better fencing, enabling safe passage for wildlife and the area's biologically-rich mosaic of plant communities to thrive, untrampled.



© Rachel Darvill

Badger recovery forges ahead

In the Columbia Valley, CWSP field biologists led a combination of projects focused on conserving endangered American badgers. They documented 6,178 burrows, including 4,593 functional sites, proposing new Wildlife Habitat Feature designations and Wildlife Habitat Areas. These protection measures significantly expand formally recognized habitat for species at risk on provincial land.

The team also assessed road mortality risk and culvert use for safe passage. Over 50 culverts were prioritized and evaluated with nearly half identified as priority crossings. Wildlife cameras confirmed badger activity at 60% of monitored sites, informing targeted improvements to increase highway permeability and reduce vehicle mortality. This work contributes to an increasingly clearer picture of American badger connectivity in the Upper Columbia Valley.

Grassland enhancement

Conserving critical grasslands in the East Kootenay

Collaborative stewardship improves habitat for species at risk


© Graham Osborne/NTBC

Grasslands cover less than one percent of British Columbia, yet support a disproportionately high number of species at risk, deliver essential ecosystem services and contribute to local food security and community resilience.

In the East Kootenay, two ecological corridors with diverse partnerships are leaning into stewardship solutions to collectively restore this sensitive ecosystem.

Wycliffe Wildlife Corridor

At the heart of the Wycliffe Wildlife Corridor is the Wycliffe Conservation Area Complex. Managed in partnership between the Nature Conservancy of Canada (NCC), The Nature Trust of BC (NTBC), and the provincial government, this area conserves over 1,400 rolling hectares of ecologically-significant habitat.

Across the complex, the mosaic of native grassland, open forest, and closed forest supports a wide range of wildlife, including several species at risk. To enhance and restore habitat biodiversity values, Kootenay Connect Priority Places partners worked on multiple projects:

196 hectares of habitat restored
Restoration activities reduced conifer canopy cover, lowered stand density, lessened forest encroachment, and added coarse woody debris to improve habitat for Williamson's sapsucker, American badger and Lewis's woodpecker.

143 hectares of invasive plants treated
To enhance native plant biodiversity, an Invasive Plant Management Plan was put into action, guiding treatment of nine priority invasive species. Annual monitoring evaluated post-treatment effectiveness and adapted future actions. A remarkable result of targeted control: one species was eradicated.

> These ecosystems can't be managed in isolation if we want healthy and resilient landscapes in the future. We need a collaborative approach using strategic partnerships that prioritise ecosystem recovery, cultural values, and climate resilience.
>
> — **Richard Klafki**, Director, Canadian Rockies Program, Nature Conservancy of Canada


© Marcy Mahr

Columbia Lake Corridor

The foothills around Columbia Lake are home to numerous species at risk, including badger, bank swallow, Lewis's woodpecker, bighorn sheep and three endangered migratory bat species. Recognizing these values and more, an assemblage of parks, protected areas, and conservation lands has been incrementally established over the past several decades.

Known as kinʔuʔanki in the Ktunaxa language, this area also holds significant value for First Nations. However, past land use and wildfire suppression have degraded ecosystems and upped invasive species and catastrophic wildfire risk. Efforts to restore and protect the area have been essential for maintaining Indigenous cultural values and the long-term ecological resilience of the land.

Building on previous restoration work, the Nature Conservancy of Canada (NCC), The Nature Trust of BC (NTBC), the provincial government, First Nations, and others worked together to improve habitat for at-risk species and help restore this sensitive ecosystem.

84 hectares of habitat restored
To support restoration of grassland habitat, forest in-growth was thinned and slash piles were burned in preparation for a prescribed burn fire.

57 linear km of roads and lake shore inventoried
for invasive plants to prioritize future treatments

2.7 km of fencing removed
To support movement of Rocky Mountain bighorn sheep and other wildlife.

A win-win for ranchers and wildlife

At the north end of Columbia Lake, wildlife not only have to navigate natural barriers, but also development, such as a highway, railway, golf course, airport, and eight-foot-high livestock fencing. Here, Farmland Advantage and the Windermere District Farmers Institute worked with local ranchers to improve 5 hectares of grasslands, open forest, and riparian habitat. Thinning forests, installing fencing, and managing invasive species all support wildlife through this critical passage between the Purcell and Rocky Mountains.

Habitat features for species at risk

Home is where the habitat is

Enhancing habitat for rare and endangered species

© Columbia Wetlands Stewardship Partners

© Cori Lausen/WCSC

© Wildlife Conservation Society Canada

British Columbia is the most biodiverse province in Canada, yet almost a third of assessed species are now at risk: many vulnerable species simply lack essential habitat.

Kootenay Connect Priority Places partners took action by adding missing habitat features to the landscape. From basking logs to roosting structures, these additions are specially designed to help fill gaps required for species survival.

Species at risk (SAR) include those designated federally under the Species at Risk Act as Endangered or Threatened and those listed provincially by the BC Conservation Data Centre as red- or blue-listed.

Western Painted Turtles
bask in new habitat

Nothing beats lying on a log in the spring sun—it's how turtles warm themselves, using thermoregulation. But basking logs have become increasingly rare. Thanks to the Columbia Wetlands Stewardship Partners, western painted turtles in the Columbia Wetlands now have 36 new logs. In the Slocan Valley, Slocan River Streamkeepers added five. In the Duncan Lardeau, North Kootenay Consulting created one new basking log and a turtle nesting site, and maintained two existing popular nesting beds with fresh gravel and weeding. In the Columbia Valley, three new nesting sites were created, and one existing site was fenced and enhanced to attract nesting and support hatchling emergence.

Williamson's Sapsucker
find forests fit better

This migratory woodpecker calls old-growth coniferous and mixed forests home. With fewer than 1,000 individuals breeding in two Canadian subpopulations, their habitat needs a boost. As part of the Nature Conservancy of Canada's habitat assessment of the Wycliffe Conservation Complex, enhancements for Williamson's sapsucker took place. Work included reducing tree density through thinning, maintaining large western larch trees for nesting, and retaining large woody debris and other features that attract ants—one of their favourite foods.

Swallows
go for glamp

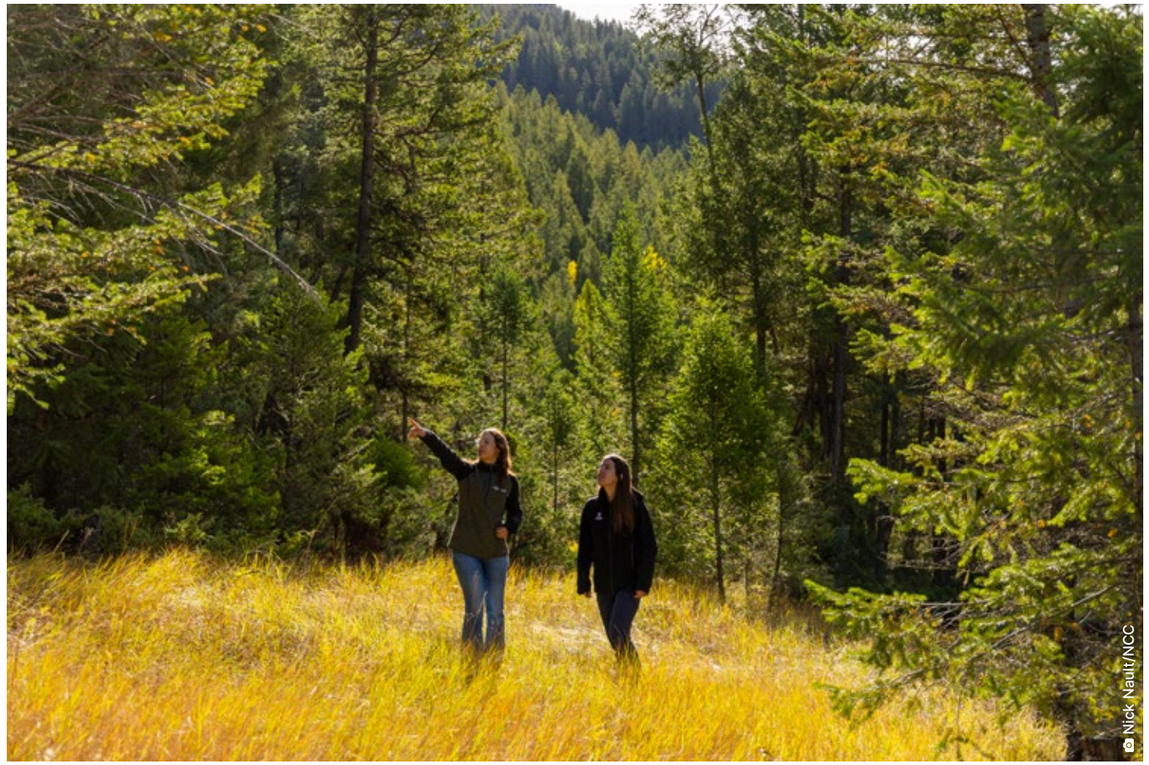
Populations of bank and barn swallows are rapidly declining, largely due to habitat loss and climate-related impacts. To address this loss, two new habitat buildings in the Kootenays now highlight the power of habitat through partnership. In the Columbia Valley, Wildlife Conservation Society Canada partnered with Wildsight Golden and Lake Windermere District Rod & Gun Club to build the Parson AirBnB (wittily named for housing bats & birds). In Creston, a "Swallow Resort" was built and outfitted with 72 wooden nest cups, all to support the aerial insectivorous species, locally.

Bats
thrive in faux bark

If the roost fits, let them share it. Wildlife Conservation Society Canada created 157 new bat roosts within Kootenay Connect Priority Places corridors. These roosts consist of wildlife trees—young trees modified with chainsaws to create bat-friendly crevices—as well as trees and poles wrapped in a polymer-based artificial bark. Nine bat species were confirmed at the roosts, with the endangered little brown myotis being the most frequent. Plus, when a colony of little brown myotis were excluded from a nearby attic in the Columbia Valley, they found a new BnB to roost in—see our update on swallows.

The right tools for the job

New designations protect wildlife and habitat



Canada and British Columbia are striving to protect 30% of land by 2030.

Many Kootenay Connect Priority Places projects feed into this goal: over the past seven years, the total size of conservation areas in the Kootenays grew significantly through new provincial designations and land conservation.

These recent activities are an important piece of the conservation puzzle. Among many benefits, they help protect important habitat for wildlife species, conserve ecological connectivity, and help to maintain ecological and cultural values that may otherwise be lost.

Wildlife Habitat Areas (WHA)

WHAs conserve habitat for specific wildlife species by restricting activities that could negatively impact those areas. Partners used this provincial habitat protection designation to recommend habitat protection for two at-risk wildlife species and one plant community.

- **62-hectare WHA** was designated in Parson, protecting a great blue heron rookery from timber harvesting.
- **234 hectares of at-risk habitat** will be protected by three new WHA applications, protecting alkali saltgrass - foxtail barley ecological communities near Canal Flats.
- **238 hectares of core badger habitat** will be protected through applications for American badger WHAs, providing an opportunity to mitigate ongoing threats in the Columbia Valley.

Wildlife Habitat Features (WHF)

WHFs are protected habitat elements vital to certain species survival. In the Columbia Valley, two wildlife species will now benefit from new designations, thanks to hard work by the Columbia Wetlands Stewardship Partners, provincial government, and others.

- **1,351 WHFs** will be protected based on fieldwork documenting 4,593 functional American badger burrows clustered at 1,351 locations.
- **3 WHF's for mineral licks** were designated, protecting a total of 983 hectares and securing long-term access for goats and other ungulates.

Land Conservation

Land conservation, or securement, is the long-term protection of private lands to safeguard ecological and other values for the benefit of both humans and nature, now and for future generations. With the support of Kootenay Connect Priority Places and other partners over the last seven years, parts of the region's diminishing valley bottom wetlands and grasslands were strategically protected.

- **11 properties** were secured within Kootenay Connect Priority Places corridors by land trusts: the Nature Conservancy of Canada and The Nature Trust of BC.
- **4,412 hectares of land** is newly protected within these 11 properties.

How to embrace uncertainty

Enhancing climate refugia and habitat resilience for climate change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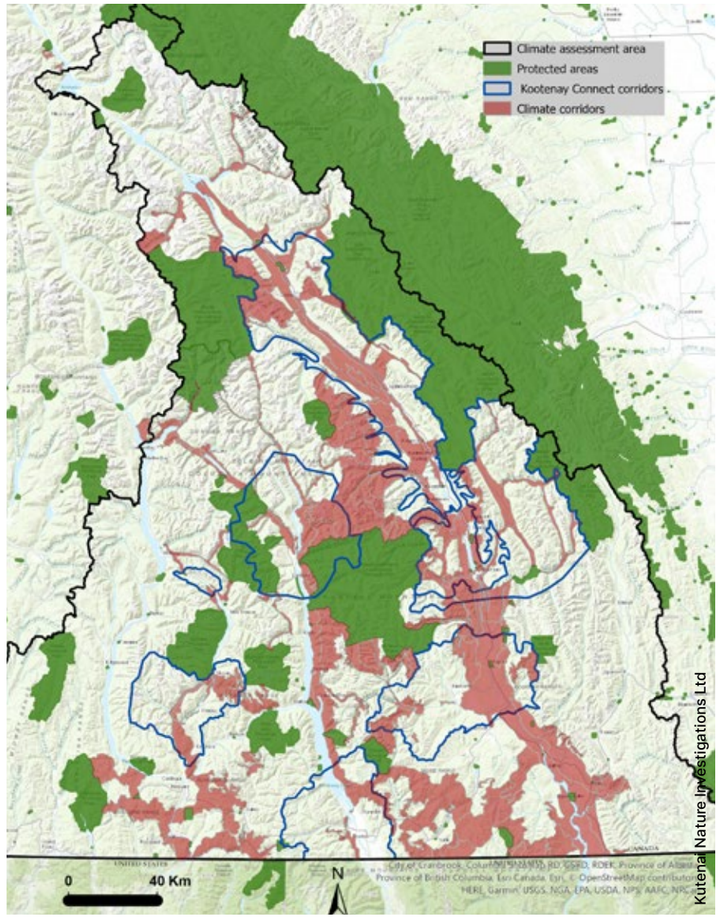


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Climate change is influencing how we make decisions, assess ecological threats, and plan for the future.

To get a better picture of how rapidly changing conditions will reshape the Kootenay region, Kutenai Nature Investigations completed climate change assessments for all seven Kootenay Connect Priority Places focal areas.

Climate research, from corridor to corridor

In the coming decades, average temperatures are expected to rise by 2°C to 4°C, shifting many ecological patterns. These changes are already driving increased drought, reduced snowpack, and more frequent and intense wildfire. Some parts of the Kootenays may transition into grassland-steppe ecosystems, similar to those found much farther south, such as southern Idaho or Utah. To survive, plants and animals will need the ability to shift their ranges—either northward or to higher elevations, and find refuge in diverse and suitable habitats along the way.

Ecological corridors play a crucial role in this process by connecting habitats and giving species the space and flexibility to adapt. Across the Kootenays, riparian areas, wetlands, and headwater streams are particularly important. Loss of water sources limits connectivity and reduces many species' ability to adapt to changing conditions.

A call for collective action

These analyses identified increasing climate risks and potential management interventions that could reduce risk and increase resiliency. For every ecological corridor assessed, the same top action is prescribed: embrace uncertainty.

Not only do these assessments support the work of Kootenay Connect Priority Places partners, they are also a resource for all Kootenay communities who want to understand how to effectively build large-landscape climate resilience. This direction includes protecting wetlands for water storage, retaining riparian habitat and groves of deciduous trees for moisture, shade, and fire breaks, and where appropriate, treating forests to enable re-introduction of fire.

> **Riparian areas, wetlands, and headwater streams help to keep connectivity within a corridor. If these ecosystems are damaged or dry out, species lose the opportunity to move.**
>
> — **Greg Utzig**, Conservation Ecologist, Kutenai Nature Investigations Ltd.

Key insights

A blueprint for lasting impact

Conditions for collaborative conservation success

At the end of every field season, we have rolled up our partners' results to measure collective impacts for conservation.

Through this collaboration, we have clearly seen how local conservation priorities align with national and global biodiversity targets.

Quantifying the ecological impacts of this initiative has been enlightening. These stories reflect the scale of our collective success in both words and numbers. Together, we have achieved so much, and habitats across the region are healthier and more resilient because of it.

But not everything can be measured. We want to take a moment to reflect on key elements that made Kootenay Connect Priority Places capable of achieving so much: the behind-the-scenes work that could serve as a blueprint for future conservation success.

Ecological connectivity
between valley bottoms and mountain ranges brought a whole landscape approach

Multi-species approach
recognizing interconnectedness of at-risk species and their ecosystems

Key coordination role
to facilitate activities across multiple landscapes as a unified effort

Collective impacts
where local activities nest into a larger landscape-level strategy

Local knowledge + leading-edge science
to inform a science-based, data-driven approach rooted in local context

Strong, diverse partnerships
built by Kootenay Conservation Program for almost 25 years

Stable multi-year funding
providing long-term predictability and investment by regional funders

Collective effort, lasting results

A snapshot of seven years

280 hectares
of forest thinning & grassland enhancement
→ improved habitat for **species at risk**

4,412 hectares
of new land
→ **secured for conservation**

11,790
live stakes & native trees
planted in riparian areas
→ **enhance habitat for wildlife**

1,011 hectares
of wetland & riparian habitat
→ **enhanced for climate resilience**

534 hectares
of land designated as
→ **Wildlife Habitat Areas**
to protect at-risk species & habitats

> By fostering strong collaborations, applying leading-edge science and local knowledge, and cooperatively working together – we can achieve so much more.
>
> — **Juliet Craig**, Program Director, Kootenay Conservation Program

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KOOTENAY CONNECT

Environment and Climate Change Canada
Environnement et Changement climatique Canada

Many organizations and individuals made this work possible. We would especially like to acknowledge science advisor Dr. Michael Proctor of the Trans-Border Grizzly Bear Project and our fiscal sponsor, the Kootenay Centre for Forestry Alternatives, for their guidance and commitment.

We are also grateful to the many organizations, biologists and other consultants who contributed their knowledge, as well as the following lead partners of focal areas: Columbia Wetlands Stewardship Partners, Creston Valley Wildlife Management Area, Nature Conservancy of Canada, North Kootenay Consulting Services Ltd., Slocan Lake Stewardship Society, Slocan River Streamkeepers, The Nature Trust of BC, and Wildlife Conservation Society Canada.

Kootenay Connect Priority Places was a Community-Nominated Priority Places project funded by a federal Canada Nature Fund grant issued by Environment and Climate Change Canada. We also received significant local partner funding.