Golden Conservation Action Forum Check-In Meeting Summary Report

Prepared by:

Kootenay Conservation Program[1]

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[1] For more information: Juliet Craig, KCP Program Director, juliet@kootenayconservation.ca
https://kootenayconservation.ca/conservation-action-forums/

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BACKGROUND INFORMATION

In January 2025, Shuswap Band, Wildsight Golden, and Kootenay Conservation Program (KCP) co-hosted a check-in meeting to review the progress on the priority actions from the 2020 Golden Conservation Action Forum. The Conservation Action Forum (CAF) was a collaborative event that involved participants with diverse backgrounds and perspectives, including scientists, resource managers, conservationists, First Nations, governments, and educational institutions. In 2020, CAF participants worked together to identify five priority actions that would contribute to maintaining healthy fish and wildlife populations and ecological functions in the Golden Conservation Neighbourhood (Figure 1) over the subsequent five years and were encouraged to pursue these actions as they were able[2]. Five years after the 2020 event, it was timely to check-in on these actions and their progress.

The five key actions identified in 2020 (not ranked) were:

1. Combine Science and Indigenous Knowledge to Protect Habitat for Species at Risk and Biodiversity
2. Identify and Prioritize Conservation of Multi-Species Wildlife Corridors
3. Reduce Intensity of Human Disturbance in Backcountry, Sensitive Areas and Wildlife Corridors
4. Mitigate Recreational Impacts by Incorporating Recreation and Ecological Data to Inform Land Use Decision-Making
5. Build Climate Disruption, Adaptation and Mitigation Thinking into All Conservation Activities

The January 2025 Conservation Action Forum Check-in meeting was structured in two parts. The morning provided an opportunity to review progress on the priority actions identified at the 2020 Forum and explore recommendations for next steps. A series of 19 concise presentations were delivered to address priority actions. In the afternoon, participants formed five breakout groups to assess the ongoing relevancy of the priority actions and adjust as needed to better reflect current situations and issues. The breakout groups also identified next steps for moving forward on the key priority actions and discussed potential collaborative efforts to support this work. The meeting concluded with a summary of the day's discussions and closing remarks.

[2] Kootenay Conservation Program. (2020). Golden Conservation Action Forum Summary Report. https://kootenayconservation.ca/wp-content/uploads/2021/03/Golden-CAF-Summary-Report_FINAL-18Dec2020-rev.pdf

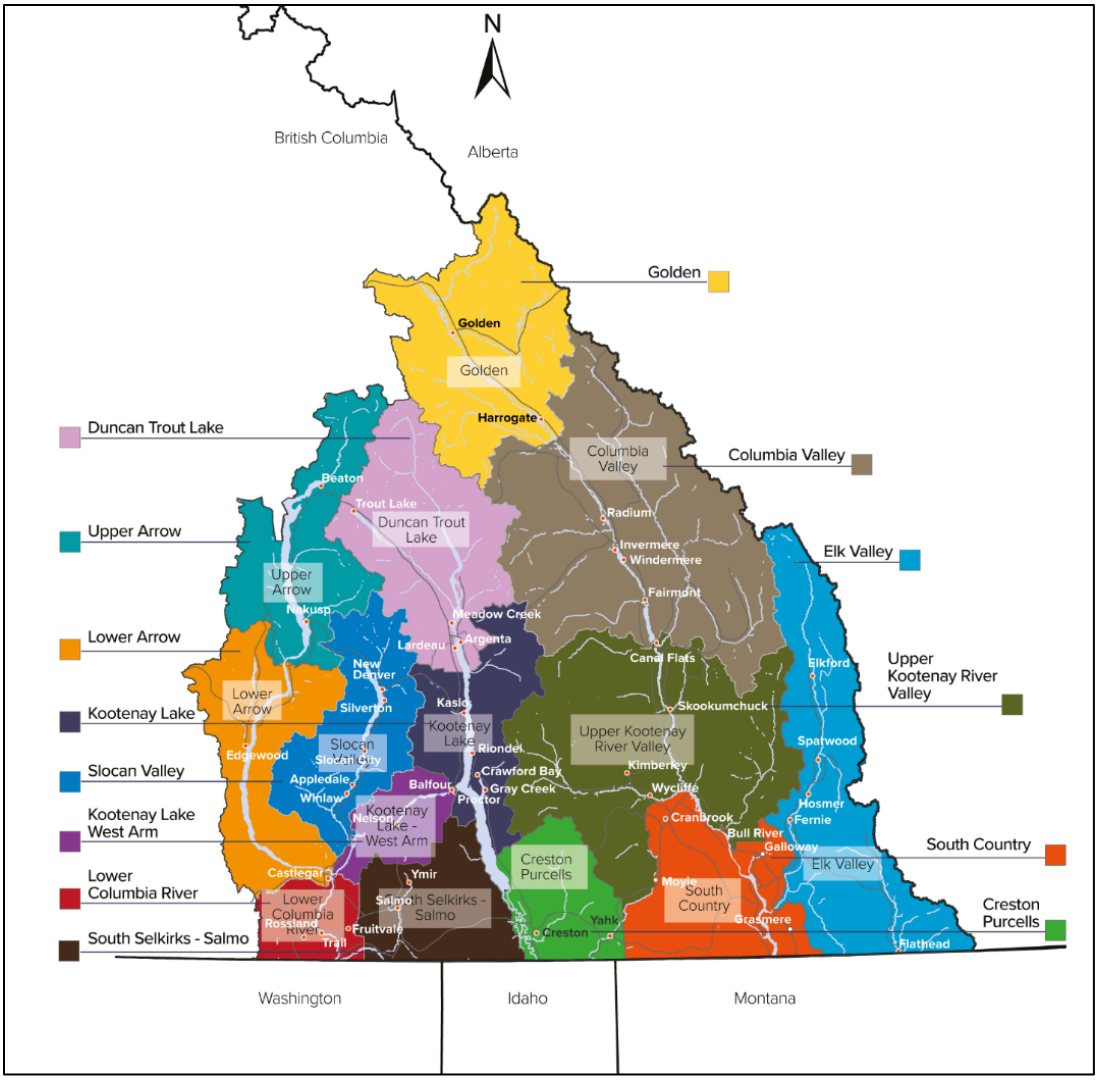

Figure 1: The Golden Conservation Neighbourhood (shown in yellow) is one of 14 Conservation Neighbourhoods identified by Kootenay Conservation Program to frame subregions of the Kootenays based on social, ecological, and conservation-driven communities.

SUMMARY OF PROGRESS ON GOLDEN CONSERVATION ACTION FORUM PRIORITY ACTIONS

The Golden region boasts unique ecological values and significant biodiversity. The town of Golden is situated at the confluence of two major rivers, the Columbia and Kicking Horse, and is nestled between the Rocky and Purcell mountains. Significant ecological features in the area include alpine environments, the internationally recognized Columbia Wetlands, higher elevation wetlands, the Spillimacheen River and other water bodies. The valley bottom has very high levels of biodiversity, with the Columbia Wetlands providing critical habitats for migrating birds, amphibians, invertebrates, and fish. In the Columbia Valley from Canal Flats to Donald,

for example, 65 species at risk have been documented as well as 21 at-risk ecological communities[3].

This Conservation Action Forum Check-in meeting created an opportunity for local stewardship groups, First Nations, scientists, governments, industry, and others to identify concrete actions to conserve and protect the incredibly biodiverse and ecologically rich landscape of this region. The following is a summary of the status of each of the five original priority actions based on a combination of formal presentations given by project leads as well as participant updates.

The day began by setting the stage with 19 presentations delivered by presenters representing 16 different organizations. Presentations were themed to report the results of conservation and stewardship projects of each of the five priority actions. Presenters shared information on local research and stewardship projects benefiting wetlands, native fish habitats, bats, swallows, wolverine, bighorn sheep, grizzly bears, fire restoration, recreational impacts, and cultural values to name a few.

PRIORITY ACTION 1: COMBINE SCIENCE AND INDIGENOUS KNOWLEDGE TO PROTECT HABITAT FOR SPECIES AT RISK AND BIODIVERSITY

Presenters shared updates on this priority action, illustrating how conservation efforts have focused on habitat monitoring, stewardship and restoration for bighorn sheep, native fish species, and swallows, and integrating scientific research with Indigenous knowledge. Conservation projects that have either been led by, or are partnering with, First Nations include the following:

Brian Gustafson with **Golden District Rod & Gun Club** has been working with **Ktunaxa Nation Council** to monitor and enhance habitat for the Kicking Horse Canyon bighorn sheep herd. Monitoring has included collaring of sheep, regular site observations, mortality investigations, collaborations with the Ministry of Transportation and Infrastructure, and the management of an array of 17 motion activated cameras. The project has also worked to improve sheep survival and reduce highway mortality through removing forest ingrowth and modifying highway exclusion fencing. Looking forward, this project aims to ensure a future for a self-sustaining bighorn herd in the Kicking Horse Canyon.

Joshua Martin has been leading the **Shuswap Guardian Program** which aims to preserve and manage traditional lands through active stewardship and monitoring. Shuswap Guardians act as the “eyes and ears” of the territory and focus on maintaining cultural values and establishing a constant presence on the land. Program objectives include monitoring lands, waters, and cultural sites, integrating Indigenous laws and knowledge, and supporting ecological restoration. This work ultimately promotes cultural continuity, the protection of natural resources, and the exercise of Indigenous authority over stewardship practices.

[3] Darvill, R. (2020). Kootenay Connect: Columbia Wetlands Literature Review of Species at Risk in the Columbia Valley. http://parkscanadahistory.com/publications/kootenay/sar-literature-review.pdf

Shuswap Band (presented by Scott Cope) has been leading a project to conserve and restore native fish species habitat to preserve population resiliency on the Upper Columbia River. The project involves fish population assessment and monitoring for numerous species, life-history telemetry studies, and population monitoring for introduced and invasive species. These initiatives will provide the scientific basis for developing species-specific fish population objectives, reviewing fish management objectives and regulations, while also identifying critical habitats and migration corridors for protection and restoration.

Shuswap Band (presented by Jon Bisset) has also been leading the collaborative Columbia Headwaters Aquatic Restoration Strategy (CHARS) project, targeting at-risk westslope cutthroat trout, as well as bull trout, burbot and salmon, with an aim to collect baseline, science, and traditional knowledge-based fisheries data between Canal Flats and Golden. Work conducted from 2019-2023 includes air photos, drone imagery, habitat assessments, collecting temperature and hydrometric data, fish species presence/absence, fish tagging and DNA sampling, population estimates, and community outreach and knowledge transfer. This project provides an important reference point for future planning, and management and assessment programs led by Shuswap Band, partners, and others in the Upper Columbia River.

Rachel Darvill with **Wildsight Golden** has been conducting the Upper Columbia Swallow Habitat Enhancement Project (UCSHEP) to conserve and enhance habitat for endangered bank and barn swallows. The project has located 128 active bank swallow colonies and barn swallow nests on 127 structures at 64 locations from Canal Flats to the Kinbasket Reservoir and has conducted countless habitat enhancement measures. The project is working to combine science and Indigenous knowledge through actions such as involving **Shuswap** community members in monitoring colonies, leading a field trip for kids in an **ʔakisq̓nuk** summer camp, and having community members interview **Ktunaxa** and **Secwépemc** elders to understand their stories regarding swallows.

Figure 2. Bank swallow habitat enhancement work completed as part of Wildsight Golden's Upper Columbia Swallow Habitat Enhancement Project at Moberly Marsh (Rachel Darvill photo).

PRIORITY ACTION 2: IDENTIFY AND PRIORITIZE CONSERVATION OF MULTI-SPECIES WILDLIFE CORRIDORS

Progress towards identifying and prioritizing conservation of multi-species wildlife corridors was discussed, with presentations on the identification of landscape-level wildlife corridors, and activities to protect species at risk and enhance their habitats.

An overview of the process of identifying landscape level wildlife corridors across the Columbia Valley was shared by Michael Proctor. These corridors, identified as part of **Kootenay Connect**, were primarily cross-valley, connecting upland habitats to the east and west of the Columbia River. Species considered were grizzly bear, wolverine, elk, American badger, bighorn sheep, and mountain goats, as well as species at risk data. This process resulted in four corridors from south to north: Columbia Lake, Radium, Spilli-Brisco, and Golden-Donald. Additionally, three focal areas were identified that might serve as wildlife movement corridors that included less human-developed areas to the north and south of the Blaeberry River, and the Blaeberry River Valley itself.

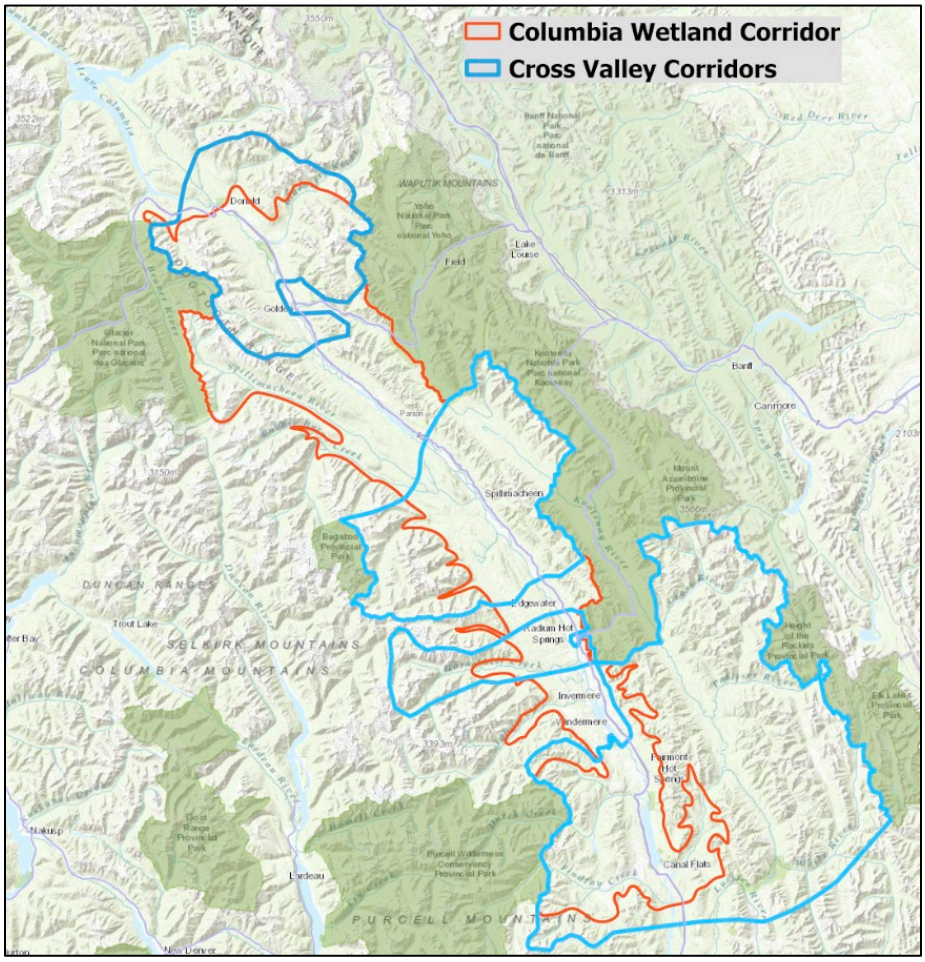

Figure 3. Four cross valley wildlife corridors identified by Kootenay Connect in the Columbia Valley between Canal Flats and Donald (map provided by Michael Proctor).

As part of the **Kootenay Connect Priority Places Project**, Rachel Darvill presented work on species at risk. In 2019/2020, a literature review documented 65 species at risk and 21 at-risk ecological communities in the Columbia Valley from Canal Flats to Donald. The review identified numerous priority actions that could be taken to help conserve some identified at risk species and their habitat, but actions taken in subsequent years were focused in the area south of Golden. In January 2025, a species at risk map was completed that focused on the Golden area, illustrating two patterns: 1) high levels of biodiversity in the valley bottom and 2) that data is clustered where people are most concentrated thus influencing what's recorded where, and data gaps in more remote areas. Recommended next steps include adding ecosystem services and Indigenous values to the map, filling data gaps, development of an Official Community Plan by the Columbia Shuswap Regional District, and the formation of a multi-stakeholder committee to develop management strategies for sensitive ecosystems and species. In the valley bottom, recommendations include mitigating the growing light pollution problem, education of landowners with species at risk habitat, and expansion of the Columbia Wetlands Wildlife Management Area boundary.

The **Columbia Wetland Stewardship Partners** (presented by Catriona Leven), has been studying 38 wetlands between Invermere and Parson since 2020, looking at the hydrology and ecology of these different wetlands to classify them into three groups based on their connectivity to the Columbia River, on a gradient from most to least connected. The Columbia Wetlands Stewardship Partners has determined that levee gaps and beaver dams are responsible for approximately 60% of hydrologic variation between wetlands, and that around 75% of the Columbia Wetlands in total are most connected wetlands. They are interested in maintaining less connected wetlands on the landscape, particularly in the face of less water and increased drying in the system due to climate change. Beaver dam analogues are a low tech and low impact way of doing this.

Figure 4. Different wetlands provide different habitat types. Image illustrating different levels of wetland connectivity to the Columbia River (Columbia Wetland Stewardship Partners photo).

Figure 5. Levee gaps and beaver dams explain 60% of variation in hydrology in the Columbia Wetlands. Image showing a natural beaver dam (Columbia Wetland Stewardship Partners photo).

Laura Kaupas discussed her work with **Wildlife Conservation Society Canada** on northern myotis use of remnant old growth. Preliminary telemetry work in the inland temperate rainforest suggests that reproductive female northern myotis are dependent on western redcedar and western hemlock in remnant patches of old growth. In 2024, research identified and acoustically monitored possible roosting habitat in remnant patches of mature forest and old growth along the Kinbasket Reservoir, and in 2025, radiotelemetry will be used to better

characterize the old growth trees and forest patches required for northern myotis to successfully reproduce, with the aim to better mitigate the impacts of habitat loss and prevent further habitat degradation and fragmentation.

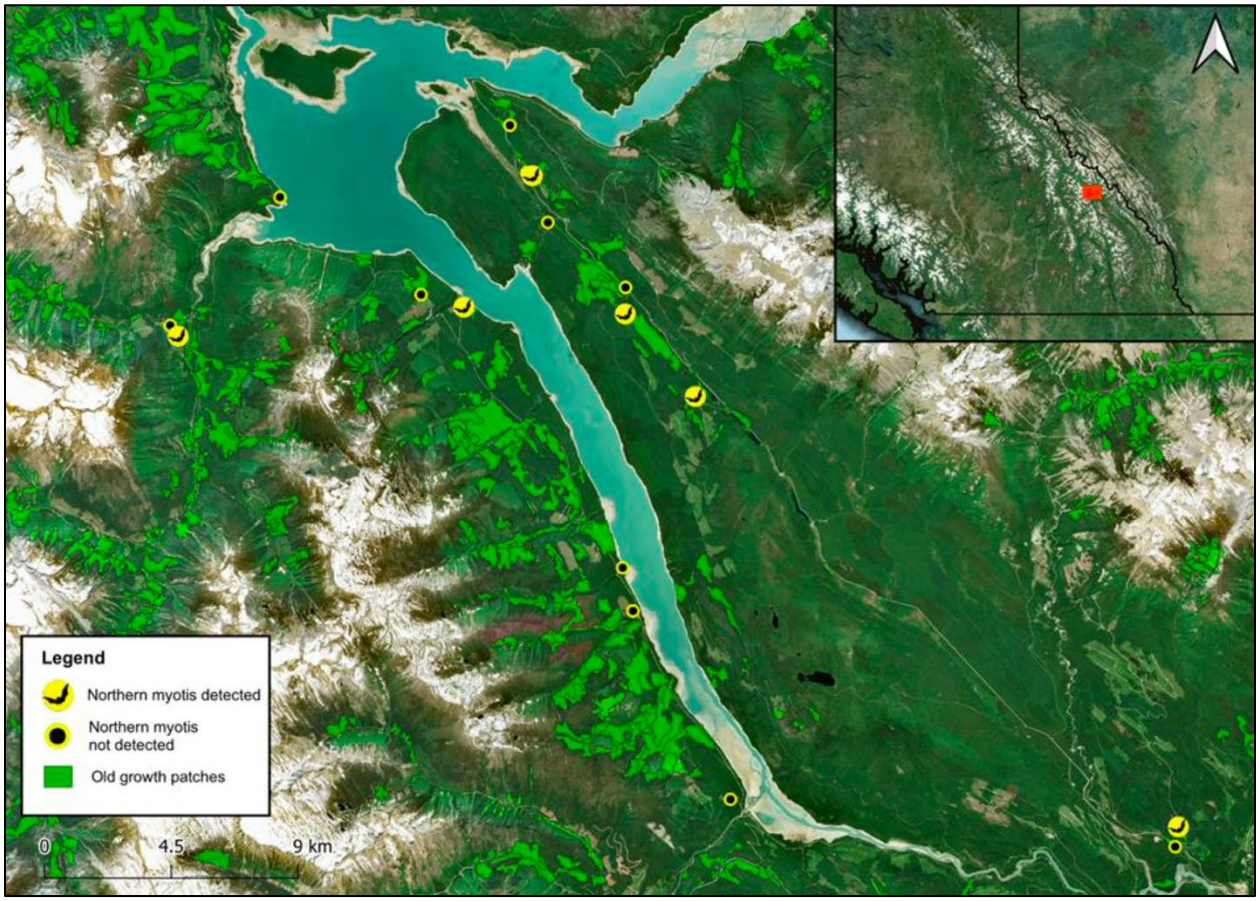

Figure 6. Northern myotis detections relative to old growth patches in the upper Columbia Valley (map provided by Lark Wildlife Research).

Heather Gates with **Wildlife Conservation Society Canada** discussed tree enhancement and roost mitigation for bats in the northern Columbia River valley. Wildlife Conservation Society Canada has utilized BrandenBark™ and chainsaw modifications to replicate old "snags" to create habitat for numerous species of bats. To date in the north Columbia Valley, these features have been used by at least six species of bat, including federally endangered little brown myotis and yuma myotis, which is a range expansion for this species. Next steps include identifying priority locations in the Kinbasket area for roost enhancement work, installation of pole roosts at Wilbur Lake, and tree modifications at Cleland Lake. They will continue to monitor the existing tree roost structures in partnership with **Shuswap Band**.

Priority Action 3: Reduce Intensity of Human Disturbance in Backcountry, Sensitive Areas and Wildlife Corridors

Research taken place in BC and Alberta highlighted the impacts of human disturbance in backcountry and sensitive areas on sensitive species like wolverines, grizzlies, and caribou, emphasizing the need for informed land-use and recreation planning. Meanwhile, studies in Golden revealed community concerns about environmental threats and the need for better public awareness. There has also been additional work on conservation efforts to reduce highway wildlife mortality, with a focus on bighorn sheep.

Brynn McLellan (**Yellowstone to Yukon Conservation Initiative**) presented on a five-year long recreation ecology research project that took place in the Upper Columbia of BC and Kananaskis-Ghost of Alberta, in partnership with the **University of Northern British Columbia**. They used conventional and innovative technologies to better understand when, where and how people recreate and impacts on three sensitive species – wolverine, grizzly bear, and southern mountain caribou. Substantial variation in recreation intensity within and across seasons and seasonal overlap of recreation with high quality wildlife habitats was found, and they discussed how this framework for analyzing complex and different types of recreation datasets can be applied in the context of land-use and recreation planning, and wildlife conservation, specifically for sensitive species.

PhD Candidate Gemma Cobb at **Griffith University, Australia**, presented on work with **Wildsight Golden** to understand how local land use decisions, community values and perspectives, and climate change impacts may influence the environment in the Golden area. An online community questionnaire revealed a high level of engagement from women and recreationalists, with significant concerns about changes to rivers, old growth forests, and mountain goats, and threats such as logging, off-roading, and urbanization. The study highlighted the need for better public awareness of land use regulations and conflict resolution mechanisms.

Meg Langley with **Wildsight Golden** presented on improvements along the TransCanada Highway (such as alterations made to exit structures) that have been made to the Kicking Horse Canyon area to make it safer for bighorn sheep and other wildlife. The lessons learned are being applied in the Golden area and elsewhere to try and reduce highway mortality for all species.

Priority Action 4: Mitigate Recreational Impacts by Incorporating Recreation and Ecological Data to Inform Land Use Decision-Making

Research highlighted the negative impacts of recreation on wildlife, particularly wolverines, and recommendations include mitigation strategies like protecting reproductive dens and concentrating activities in already disturbed areas. Organizations like Wildsight and Columbia

Wetland Stewardship Partners are working to educate recreation users, engage communities, and advocate for responsible recreation planning to minimize ecological disruption.

Mirjam Barrueto **(University of Calgary)** presented on research findings on the negative impacts of recreation on wolverine habitat use and density. Recommendations for mitigation efforts include prioritizing the protection of a 5-km radius around confirmed reproductive dens from unpredictable recreational activities between January and mid-May. New recreational activities should be concentrated in areas that already experience moderate to high levels of recreational intensity.

Allison Banting presented on **Wildsight Regional's** 2024 series of in-person presentations focused on interactions between wildlife and recreation users. The series addressed trends in the Golden region and in the recreation sector that challenge the well-being of wildlife, provided outdoor recreation users with the current science on different animals, and provided a space to discuss in a casual environment. Next steps include continuing to connect with recreation communities on opportunities and challenges, beginning engagement on more specific topics of concern such as road densities and recreation planning, and developing guidelines to recreate responsibly around wildlife working with Tourism Golden and other tourism agencies.

On behalf of **Columbia Wetland Stewardship Partners**, Brian Gustafson shared their experience using ecological data for recreational planning and submitting 13 proposals for amendments to Access Management Areas in the region. Using local knowledge and employing a suite of accumulated ecological data, they presented a case for limiting motorized access. Areas of concern included cross valley wildlife corridors, undeveloped valleys, areas of growing motorized recreation in alpine habitats and areas of significant ecological value.

PRIORITY ACTION 5: BUILD CLIMATE DISRUPTION, ADAPTATION AND MITIGATION THINKING INTO ALL CONSERVATION ACTIVITIES

In response to the priority action of building climate disruption, adaptation and mitigation thinking into all conservation activities, First Nations and organizations are implementing wildfire risk reduction and habitat restoration through timber harvest and cultural practices, floodplain habitat to enhance biodiversity, and collaborating with other organizations to accomplish this work. The worsening impacts of climate change were also highlighted, emphasizing the need for Greenhouse Gas (GHG) emission reductions and adaptation strategies to mitigate intensifying wildfires and ecological disruptions.

ʔakisq̓nuk First Nation (presented by Chris Joseph) has initiated a timber harvest combined with hand treatments to reduce the risk of wildfire in the surrounding area while restoring

wildlife habitat. Future work will include ecosystem enhancement activities, introduction of Ktunaxa cultural practices such as broadcast burning and berry production, integration of new technologies, and building on collaborative partnerships.

Figure 7. Wildfire risk reduction work conducted by ʔakisq̓nuk First Nation included a combination of timber harvest and hand treatments (ʔakisq̓nuk First Nation photo).

Ducks Unlimited Canada (presented by Matthew Wilson) is working with **BC Parks** on a five-year restoration project at Moberly Marsh, a large wetland complex north of Golden, with support from **ʔakisq̓nuk First Nation** and **Shuswap Band**, among others. The project aims to re-active the natural floodplain of a 290-hectare area that is currently impacted by dikes, pumps and control structures, returning the lands to a natural state, and enhancing biodiversity and ecosystem values.

Greg Utzig (**Kutenai Nature Investigations**) provided an update on how climate disruption has changed over the past 5 years. Changes include the continued release of GHGs and a rise in global surface temperatures. This has provoked an increase in BC average area burned by wildfires to almost 1 million hectares per year. In 2024 alone, 42 km of the Jasper Valley was incinerated, and the Dogtooth fire burned over 5,000 ha just south of Golden. Increasing temperatures are resulting in increasing fire intensity, decreased forest productivity and climate volatility, through linkages with vapour pressure variables. Eliminating GHG emissions is the only real solution to these ever-increasing problems, but adaptation measures such as wildfire fuel treatments and climate change connectivity corridors can offer some short-term reduction in impacts.

Discussion of Next Steps for Priority Conservation Actions and Potential Collaborations

Following presentations, participants moved into five breakout groups to discuss the next steps for key priority conservation actions and to identify potential collaborations.

The five priority actions focused on in breakout groups were:

1. Consider Science and Indigenous Knowledge to Protect Habitat for Species at Risk and Biodiversity (terrestrial)
2. Establish and Recognize Conservation of Multi-Species Wildlife Corridors
3. Protect and Enhance Watersheds, Wetlands and Aquatic Habitats
4. Mitigate Recreational Impacts by Incorporating Recreation and Ecological Data to Inform Land Use Decision-Making
5. Increase Climate Resilience Through Wildfire Risk Reduction and Mitigation

The first step for each group was to determine whether to update the original priority conservation action based on work that has taken place over the last five years, and new available information (Table 1).

Table 1: Priority Actions discussed at the 2025 KCP Golden Conservation Action Forum Check-in.

2020 Priority Action	2025 Priority Action
Combine Science and Indigenous Knowledge to Protect Habitat for Species at Risk and Biodiversity	**Consider Science and Indigenous Knowledge to Protect Habitat for Species at Risk and Biodiversity (terrestrial)**
Identify and Prioritize Conservation of Multi-Species Wildlife Corridors	**Establish and Recognize Multi-Species Wildlife Corridors**
	Protect and Enhance Watersheds, Wetlands and Aquatic Habitats
Reduce Intensity of Human Disturbance in Backcountry, Sensitive Areas and Wildlife Corridors	**Mitigate Recreational Impacts by Incorporating Recreation and Ecological Data to Inform Land Use Decision-Making**
Mitigate Recreational Impacts by Incorporating Recreation and Ecological Data to Inform Land Use Decision-Making	
Build Climate Disruption, Adaptation and Mitigation Thinking into All Conservation Activities	**Increase Climate Resilience Through Wildfire Risk Reduction and Mitigation**

The following provides a summary of discussion points made during smaller group discussions on priority actions.

Priority Action 1: Consider Science and Indigenous Knowledge to Protect Habitat for Species at Risk and Biodiversity (Terrestrial)

Group members: Colin Bergeron, Jon Bisset, Jess Booth, Juliet Craig, Heather Gates, Meg Langley, Shelley MacGregor

1. What is being planned already?
    - Learnings from First Nations approach
        - Grounding into place
        - Multigenerational approach
        - Place and species names are significant to ecological knowledge – all living things programs
        - Biologists tend to be at computers, but Guardians are on the land all the time
        - Listen, don't tell, meaningful and long-term relationships
    - Shuswap Band
        - Guardians Program is working on the landscape, listening to the land, and letting it inform actions
        - Fish in Schools Program
    - Wildsight Golden
        - Designed and installed native plant signs with Indigenous names and photos around the community, areas used by schools, and could do this with other species
    - Parks Canada is developing a guiding document for species at risk developed in partnership with First Nations
        - Multi-species action plan
        - Approach is to co-develop with Indigenous partners
        - Legally binding document to guide recovery for next 10 years
        - Government to government approach
        - Guiding document for other organizations
        - Promotes an on-the-ground connection to land
    - Columbia Shuswap Invasive Species Society
        - Working with Skwlāx Guardians on invasive plant management and removal
        - Applied for grants for whirling disease work to build connections and community
        - Invasive species stewardship program to promote interest from youth
    - Resources:
        - First Voices is a great tool to learn local Indigenous languages
        - Truth and Reconciliation Calls to Action

- Four Seasons of Indigenous Learning course through Columbia Basin Environmental Education Network

2. What are the next steps to advance this action?
    - Connect with First Nations teachings and guidance (all organizations and individuals)
        - Think at a landscape level (e.g., corridors, functions)
        - Listen to the land (e.g., Guardians Program), grounding into place and walking the land
        - Learning language and learning from stories and history
        - Learn about land and history in places where work is taking place
        - Build Indigenous learning into all aspects of organizations and programs
        - Multigenerational approach
        - First Nations know what they need to do; listen to First Nations and learn how to support their work
        - Guardians and technical experts working together
        - Takes time to build programs and understanding (e.g., Guardians have been involved in bat monitoring at Burgess James Provincial Park, hired Nupqu Natural Resources for work and installations)
        - Enhance Indigenous capacity to lead conservation programs
        - Building relationships, trust and communications: build Indigenous engagement into budgets to support relationship building, provide funding for Guardian Programs, and other Indigenous-led programs
    - Non-Indigenous organizations to share and connect with Guardian Programs (or similar) where invited/needed to share knowledge on the ground (e.g., Columbia Shuswap Invasive Species Society, Wildlife Conservation Society Canada, Parks Canada, and others)
        - Scientists there to ask questions, not there to provide answers
        - How to build capacity and resilience into programs
        - Learning when to step up and when to step back
    - Build Indigenous content into Get Wild Camp (Wildsight Golden, Metis Nation Columbia River Society)
    - Continue to work with Skwlāx Guardians on invasive species monitoring, management and removal (Columbia Shuswap Invasive Species Society)
    - Conduct wetland grid mapping prior to spill event (e.g., training, grid mapping with fauna, mapping, and topography); mapping and species info for Columbia Wetlands, and work through Kootenay Connect, Shuswap Band, industry, and Metis Nation Columbia River Society
    - Seek Indigenous-led recovery initiatives and build support into that (e.g., co-develop resources, government to government, learning as staff from knowledge keepers) (Parks Canada)
    - Ensure research results and information gets into the hands of people who make decisions, share knowledge/data (e.g., maps of species at risk, territories, and

share through First Nations, connecting with communities and knowledge keepers [anyone collecting data])
- Consider changing legislation and enforcement of law
- Consider landowner outreach for private landowners (include education and engagement piece)

PRIORITY ACTION 2: ESTABLISH AND RECOGNIZE MULTI-SPECIES WILDLIFE CORRIDORS

Group members: Doug Adama, Aita Bezzola, Rachel Darvill, Denise English, Chris Joseph, Marcy Mahr, Michael Proctor, Kellie Sych, Krista Watts, Matthew Zaleski

1. What is being planned already?
    - Important focal corridors in Golden area:
        1. Columbia River & Wetlands: N-S/E-W (most at risk based on human pressure)
        2. Blaeberry: E-W (at risk based on human pressure)
        3. Kicking Horse Canyon: E-W
        4. Parson to Spillimacheen: N-S/E-W
        5. West Bench: N-S/E-W (at risk based on human pressure)
        6. Canyon Creek to Glacier: E-W
        7. Beaverfoot: N-S/E-W
    - Decisions stand on landscape migration of certain species
    - 12 target species that are indicators representative suites of species: grizzly bear*, elk*, mountain goat*, wolverine*, bighorn sheep*, bank swallow*, little brown myotis, trumpeter swan, beaver*, western painted turtle*, western toad, Columbia spotted frog
      (*indicates that Kootenay Connect projects are contributing habitat modeling or field data to inform knowledge of wildlife distribution in the Golden area)
    - Future for north of here is caribou (ʔakisq̓nuk priority) and lynx (Clayton Apps)
    - CHARS project adds to this species list: burbot, westslope cutthroat trout
    - Five Big Threats:
        1. TransCanada Highway: needs crossing structures – both overpasses and underpasses and reliable diversion fencing
        2. Human settlement along Hwy 93/95: converts and fragments habitat and creates a barrier to wildlife movement
        3. Recreation and backcountry access: different recreation from hikers/dogs to snowmobilers in Columbia Wetlands, backcountry skiers in wolverine habitat
        4. Railway: direct mortality (e.g., western painted turtle, American badger)
        5. Forestry: fragmentation, edge effects, road density
    - Clearing in Wildland Urban Interface: planning to create fire breaks, how can we ensure this action also benefits and serves an ecological purpose (e.g., retain deciduous trees and use more as fire breaks)

- Existing projects:
    1. Forest core matrix habitat based on old growth forest (ʔakisq̓nuk First Nation – Chris Joseph)
    2. Continue Wildsight's Wild Spaces Recreational Dialogues series and outreach on recreation-wildlife issues
    3. Old growth deferral: Old Growth Management Area, re-deployment, forest research, Timber Supply Review
    4. Wildlife Conservation Society Canada using bats to find old growth
- Developed projects (to be implemented):
    1. Reducing light pollution for sensitive species (Rachel Darvill)
    2. Tree swallow nesting box project supported by Columbia Shuswap Regional District in an effort to increase natural predators and which could lead to a reduction of chemical treatments in the Columbia Wetlands for mosquito (Rachel Darvill)

2. What are the next steps to advance this priority action?
    - Mapping and rationale for seven focal corridors in the Golden-Donald area → Kootenay Connect to initiate and share with ʔakisq̓nuk First Nation for response to Timber Supply Review
    - Opening site lines / escape for bighorn sheep in Kicking Horse Canyon → Golden Rod and Gun Club to take the lead
    - Get more inventory data on West Bench, Spillimacheen drainage → Wildsight Golden to take the lead

PRIORITY ACTION 3: PROTECT AND ENHANCE WATERSHEDS, WETLANDS AND AQUATIC HABITATS

Group members: Scott Cope, Joan Dolinsky, Cory Legebokow, Catriona Leven, Annette Lutterman, Nathan Medinski, Matthew Wilson

1. What is being planned already?
    - Areas to be included in the Columbia Wetlands Wildlife Management Area have been identified such as the north section of the confluence of the Kicking Horse and Columbia Rivers – this area is subject to extensive motorized vehicle use and yearly degradation of vegetation and habitat disturbance (official designation is necessary to proceed with management and protection)
    - Some work is being planned to conduct more habitat condition assessments in other wetland areas
    - Advocate for formally enacting the Riparian Areas Protection Regulation (Columbia Shuswap Regional District [CSRD] Electoral Area A)

2. What are the next steps to advance this action?
    - Increased effort to prevent overdevelopment and excessive use of aquatic habitat (political action)

        - Resources needed: funding, more human capacity
        - Collaborators: co-management with Shuswap Band, 7 generations
        - Past work: Interior Watershed Assessment, Forest Renewal BC fish inventory
    - Protect existing habitat (e.g., beaver habitat assessments to better understand where enhancement work may be useful)
        - Resources needed: funding and capacity
    - Engage the CSRD to discuss how and when Riparian Areas Protection Regulation (RAPR) might be enacted within CSRD Electoral Area A
        - Resources needed: funding, human capacity and expertise, research on the current state of riparian areas on private lands
        - Collaborators: CSRD, Wildsight Golden (lead), Town of Golden, Ministry of Water, Land, and Resource Stewardship RAPR staff based in Victoria (RiparianAreas@Victoria1.gov.bc.ca)
    - Avoid any conversion of existing habitats
        - Resources needed: funding, human capacity
        - Collaborators: co-management with Shuswap Band and Ktunaxa Nation
    - Enforce existing protection of the Columbia Wetlands Wildlife Management Area
    - Research removal of the Spillimacheen Dam
        - Resources needed: research on sediment, water quality, funding, structure
        - Collaborators: Ministry of Environment, Shuswap Guardians, Columbia Wetlands Stewardship Partners, Shuswap Band, The Nature Trust of BC and Ducks Unlimited Canada (leads)
    - Purchase land for conservation (land trusts)

PRIORITY ACTION 4: MITIGATE RECREATIONAL IMPACTS BY INCORPORATING RECREATION AND ECOLOGICAL DATA TO INFORM LAND USE DECISION-MAKING

Group members: Allison Banting, Mirriam Barrueto, Brian Gustafson, Ryan Harvey, Laura Kaupas, Joshua Martin, Anna MacIndoe, Darcy Monchak, Derek Petersen, Monica Taylor

1. What is being planned already?
    - Golden Trails Alliance
    - Golden Backcountry Recreation Access Plan
    - Kootenay Connect Cross Valley Corridor project
    - Many activities occurring with little to no guidance or adherence to Golden Backcountry Recreation Access Plan (GBRAP) – GBRAP needs modernization

2. What are the next steps to advance this action?
    - Review old land use plans and maps from Golden Backcountry Recreation Advisory Committee (GBRAC)

        - Resources needed: new land use planning mandate (e.g., concentrate visitors in one place, provide access to certain places with similar experience, restrict access to other areas)
        - Need data, bring ideas to the table, funding (Columbia Basin Trust?), adaptive management
        - Last amendment was 2007
        - Collaborators: Jason Jones (Chair of GBRAC and Golden Trail Alliance), stakeholders, Columbia Basin Trust, First Nations, other governments (real partnerships from staff), GBRAC members (sector representatives)
        - Meet with Ministry staff to determine if there is capacity or a willingness to accept and implement amendments to GBRAP; need to include legally designated access management area and non-motorized areas as previously identified in GBRAP or proposed by Columbia Wetland Stewardship Partners
        - Find funding to support an update to GBRAP
        - Integrate best modern science into GBRAP (e.g., Resource Selection Function)
        - Consider modern recreation technology into GBRAP – equipment is much more capable than it was 20 years ago
    - Designate more conservation lands – create objectives for Section 17 lands
    - Signage in recreation areas
    - Anticipate wildlife spillover as National Parks reach capacity
    - Share data with each other (e.g., Golden Cycling Club to share trail use data with Golden District Rod & Gun Club for elk overlapping)
        - Mobile apps for collecting data?
        - Collaborators: Golden Cycling Club, Golden District Rod & Gun Club
    - Brian Gustafson noted that he has connected with the Ministry of Water, Land and Resource Stewardship, and without solid Ministry support there may not be uptake in the legal designation of an updated GBRAP land use plan
        - This highlights the need to work as a community and encourage the province to jump on board
        - Recent government mandate letters do not include anything to do with land use planning

PRIORITY ACTION 5: INCREASE CLIMATE RESILIENCE THROUGH WILDFIRE RISK REDUCTION AND MITIGATION

Group members: Karen Cathcart, Rick Pullen, Kari Stewart-Smith

1. What is being planned already?
    - Canfor is currently harvesting some of the burnt forest (salvage logging) from the 2024 Dogtooth fire

        - They are working closely with residents, addressing residents' questions on specific such as: riparian concerns and debris/terrain assessments
        - Canfor is using the best management practices for wildfire salvage
    - Discussed the value of FireSmarting and that other incentives like tax breaks and lower insurance costs could support greater participation from the residents to FireSmart their properties
    - There is a Wildfire Risk Reduction Plan (from Donald to Harrowgate) that is currently being worked on
        - It was started by foresters and consultants Denise English and Brian Amies and the group includes folks from government and First Nations
        - Apparently the group is not moving particularly fast, but seems to be the obvious choice for organizing Wildfire Risk Reduction work if it is functional

2. What are the next steps to advance this action?
    - Canfor's approach to support communities, was to ask: "How can we help" which was refreshing to Columbia Shuswap Regional District/local government
    - The Columbia Shuswap Regional District has invited Canfor (Kari Stuart-Smith) to participate in Golden's Wildfire Resiliency Roundtable discussions
    - Canfor has completed several wildfire interface treatments adjacent to communities such as Kimberly, Cranbrook and Yahk
    - There is good evidence that forest thinning followed by either prescribed burning or piling and burning fine fuels will significantly reduce the risk of severe fire behaviour and help protect a community (in all but extreme conditions)
    - Canfor is thinking about how they can help reduce the overall 'flammability' of the landscape through harvesting treatments in specific locations – they are waiting for risk mapping from fire scientists to help them prioritize where to place these treatments on the landscape (expected within the year)
    - They are also participating in a provincial team with the goal of increasing the amount of broadleaf trees in harvested areas, for both public safety and biodiversity reasons, as this can help reduce the risk of severe wildfire behaviour

MOVING FORWARD

All Golden Conservation Action Forum Check-in participants, as well as those who were invited but could not attend, will be provided with this summary report and encouraged to connect with one another to continue working on the actions discussed during this meeting, investigate ways to integrate Indigenous knowledge and viewpoints into the work they are doing, and identify opportunities to collaborate share information within the conservation community and beyond.

Conservation Action Forum Check-in co-hosts Shuswap Band and Wildsight Golden have indicated that the discussion and connections developed during the Check-in will be used to guide their conservation work in the area. Following the meeting, Shuswap Band shared that the collaborative research and efforts presented during this Conservation Action Forum Check-in will be crucial in ensuring the continued Indigenous stewardship of their ancestral lands and at-risk species. The stewardship community gathered in the Golden area has fostered valuable connections that integrate academic research with cultural knowledge. Moving forward, the work and insights shared will not only preserve the experiences of Shuswap Band's past for future generations, but also guide them in healing and restoring any damage that has already been inflicted on their landscapes and wildlife.

Wildsight has indicated they will use the many discussions and new connections from the Golden Conservation Action Forum Check-in to enhance their on-the-ground conservation efforts, applying the latest scientific findings to guide current projects and shape future initiatives. By identifying new opportunities for collaboration with local and regional stakeholders (e.g., working towards an updated Golden Backcountry Recreation Access Plan), Wildsight Golden hopes to strengthen their network and align with shared conservation priorities. They aim to prioritize local environmental concerns, keeping their work relevant, effective, and responsive to evolving environmental challenges, and will look forward to the next opportunity to connect with others working in the Golden Conservation Neighbourhood.

In a feedback survey completed at the end of the day, participants indicated that attending the meeting was helpful in terms of checking-in on the progress of priority conservation actions identified at the original Golden Conservation Action Forum in 2020 and identifying next steps. They also indicated they would be interested in attending a shorter, more casual Golden Conservation Neighbourhood Check-in meeting in the future for participants to connect and share their work in a more informal setting. This is something KCP could investigate and host in the coming years. Moving forward, KCP will also remain engaged at a strategic level in supporting partners and First Nations in their conservation work in the Golden area and will continue to track the implementation of priority actions.

ACKNOWLEDGEMENTS

The Golden Conservation Action Forum Check-in was held in Golden, BC, and relied upon the collaborative efforts of many people. We are extremely grateful to Shuswap Band and Wildsight Golden for co-hosting this event, and to the organizing committee: Aita Bezzola, Rachel Darvill, Chris Joseph, Manon Moreau, Jenna Schulhof, and Monica Taylor. We appreciate everyone who provided expert input and background information: Mirjam Barrueto, John Bergenske, Jon Bisset, Gemma Cobb, Rachel Darvill, Scott Cope, Heather Gates, Brian Gustafson, Chris Joseph, Laura Kaupas, Meg Langley, Catriona Leven, Joshua Martin, Brynn McLellan, Michael Proctor, Greg Utzig, Matt Wilson, as well as to the many other meeting participants. We also sincerely appreciate the support of funding agencies that supported this workshop including Columbia Basin Trust, Fish and Wildlife Compensation Program, Environment and Climate Change Canada, Habitat Conservation Trust Foundation, the Nature Conservancy of Canada, The Nature Trust of BC, and the Columbia Valley Credit Union.

APPENDIX A: PARTICIPANTS

First Name	Last Name	Affiliation
Douglas	Adama*	LGL Limited
Allison	Banting	Wildsight
Mirjam	Barrueto*	University of Calgary
John	Bergenske	Wildsight
Colin	Bergeron	Parks Canada
Aita	Bezzola	Wildsight Golden
Jon	Bisset	Shuswap Band, CHARS
Jess	Booth	Columbia Shuswap Invasive Species Society
Karen	Cathcart	Columbia Shuswap Regional District (Director)
Gemma	Cobb	Wildsight Golden
Scott	Cope	Shuswap Band
Juliet	Craig*	Kootenay Conservation Program
Rachel	Darvill*	Columbia Wetlands Stewardship Partners/Wildsight Golden
Joan	Dolinsky*	Wildsight Golden
Denise	English*	
Heather	Gates	Wildlife Conservation Society Canada
Brian	Gustafson*	Golden District Rod and Gun Club/Cirque Ecological
Ryan	Harvey	Golden Cycling Club
Jason	Jones*	Golden Trail Alliance + GBRAC
Chris	Joseph	ʔakisq̓nuk First Nation
Laura	Kaupas	Lark Wildlife Research/Wildlife Conservation Society Canada
Richard	Klafki	Nature Conservancy of Canada
Meg	Langley*	Wildsight Golden
Cory	Legebokow	Ministry of Water, Land & Resource Stewardship, Kootenay Region Ecosystems (Aquatics Group)
Catriona	Leven	Columbia Wetlands Stewardship Partners
Annette	Luttermann*	A.L. Ecologic
Shelley	MacGregor	Métis Nation Columbia River Society
Anna	MacIndoe	Ministry of Water, Land & Resource Stewardship
Marcy	Mahr*	Kootenay Conservation Program
Joshua	Martin	Shuswap Band
Brynn	McLellan	Yellowstone to Yukon Conservation Initiative
Nathan	Medinski	Shuswap Band
Darcy	Monchak	
Manon	Moreau	Shuswap Band

Allie	Olson	BC Wildlife Federation
Derek	Petersen*	Kootenay Conservation Program (Board Chair)
Michael	Proctor*	Kootenay Connect
Rick	Pullen	Columbia Shuswap Regional District (Alternate Director)
Kari	Stuart-Smith	Canfor
Kellie	Sych	Cirque Ecological
Monica	Taylor	Wildsight Golden
Greg	Utzig*	Kutenai Nature Investigations
Krista	Watts	Columbia Basin Trust
Matthew	Wilson	Ducks Unlimited Canada
Matthew	Zaleski	Wildsight Golden

* *Attended the 2020 Golden Conservation Action Forum*

APPENDIX B: PRESENTATION ABSTRACTS

Action #1: Combine Science and Indigenous Knowledge to Protect Habitat for Species at Risk and Biodiversity

Bighorn sheep monitoring – Brian Gustafson (Golden District Rod & Gun Club)

The Golden District Rod and Gun Club has been working with the Ktunaxa Nation Council to monitor the Kicking Horse Canyon bighorn sheep herd through the Phase 4 upgrades of the TransCanada Highway. Monitoring has included collaring of sheep, regular site observations, mortality investigations, collaborating with the Ministry of Transportation and Infrastructure and the management of an array of 17 motion activated cameras. Through the monitoring program, they have evolved to improve conditions for sheep to assist survival and mitigate losses through highway mortality. Winter range habitats have been treated to remove forest ingrowth and existing highway exclusion fencing has been modified with long term effectiveness monitoring implemented to inform adaptive management moving forward. Looking forward, this project aims to ensure a future for a self-sustaining herd of bighorns in the Kicking Horse Canyon.

Guardians Program – Joshua Martin (Shuswap Guardian Program)

The Shuswap Band Guardian Program aims to preserve and manage the traditional lands of the Shuswap Band through active stewardship and monitoring. Acting as the "eyes and ears" of the territory, the Guardians focus on maintaining cultural values and establishing a constant presence on the land. The program facilitates collaboration with external partners on archaeology, fisheries, forestry, and wildlife monitoring projects. Guardians engage in capacity-building initiatives, including outreach, education, and training for youth, tourists, and community members. The program encompasses a variety of objectives, such as monitoring lands, waters, and cultural sites, integrating Indigenous laws and knowledge, and supporting ecological restoration. Guardians play a crucial role in fostering relationships, ensuring compliance with laws and regulations, and contributing to land-use planning. Ultimately, the program promotes cultural continuity, the protection of natural resources, and the exercise of Indigenous authority over stewardship practices.

Upper Columbia Swallow Habitat Enhancement Project (UCSHEP) – Rachel Darvill (Wildsight Golden)

Birds provide a number of significant benefits including ecosystem services such as pollination, seed dispersal and pest control, yet 49% of bird species worldwide are experiencing significant population declines. Aerial insectivores are facing especially steep population declines in Canada. For instance, bank swallows have experienced a 93-98% population decline in a recent 40-year period. Similarly, barn swallows have faced a 76% population decline. These alarming trends call for immediate conservation action. In 2021 the multi-faceted, five-year UCSHEP project was initiated whose major goals are: a) identify important breeding locations; b) provide volunteer opportunities, c) enhance barn and bank swallow habitat, c) outreach and

awareness, including Indigenous knowledge on swallows, d) assist with providing unprecedented information on the timing and locations of bank swallow movements using the Motus Wildlife Tracking System.

To date, the UCSHEP has located 128 active bank swallow colonies (additional 58 colonies where bank swallow use is unknown) and barn swallow nests on 127 structures at 64 locations. The UCSHEP completed enhancement work at 27 sites in the Columbia Valley (Canal Flats to Kinbasket Reservoir). This includes 102 nest cups installed for barn swallows, habitat restoration for bank swallows at two colonies, 7 artificial nesting structures erected for barn swallows, habitat creation at three sites for bank swallows, and a structure created to satisfy habitat requirements for bats and swallows. 154 volunteers participated in the UCSHEP between 2021-2024. This project has been working to combine science and Indigenous knowledge to protect habitat for swallows by involving Shuswap community members in monitoring colonies and having Motus stations (and a banding colony) on their land. The UCSHEP biologist led a field trip for kids in an ʔakisq̓nuk summer camp, and she has been communicating with the ʔakisq̓nuk Council about threats to colonies on ʔakisq̓nuk land and nearby. Ktunaxa and Secwépemc elders were interviewed by their community members to understand their stories regarding swallows – those stories were printed on signage in place at various habitat enhancements throughout the study area. Recommendations for next steps include growing collaborations with Shuswap and ʔakisq̓nuk communities for swallow conservation, and effectiveness monitoring at all enhancement sites.

Columbia Headwaters Aquatic Restoration Secwépemc Strategy (CHARS) project – Jon Bisset (Shuswap Band)

The CHARS project was developed and initiated in 2019, through partnership with the Columbia Wetlands Stewardship Partners (CWSP - Dr. Suzanne Bayley), Farmland Advantage (FA - Dave Zehnder), local rod and gun Clubs (Lake Windermere and District Rod and Gun Club [LWDRGC-Rick Hoar]), local communities and landowners. Led by the Shuswap Band (SB), with funding from the Canada Nature Fund for Aquatic Species at Risk (CNFASAR) through the Fisheries and Oceans Canada (DFO), Columbia Basin Trust, Environment Canada, Farmland Advantage, and the Shuswap Band, initial work phases included compilation of local and traditional knowledge, background fish habitat and fish community/distribution, targeted hydrology and water temperature information on small to medium sized creeks between Canal Flats and Golden.

Sampling for selected creeks was completed between 2019 and 2023 for the following parameters:

- Fish species presence/absence (some population estimates on 5 selected creeks);
- Basic fish sampling and DNA collection to begin the process for identifying risks to hybridization (westslope cutthroat trout), and establish a reference condition for future conservation-based aquaculture;
- Water quality (CABIN) and benthic invertebrates for selected creeks (20 sites);
- Establishment of four (4) representative hydrometric stations for small creeks;

- Preliminary creek walks and habitat assessments to identify connectivity barriers (natural and anthropogenic);
- Reference mapping, LiDAR, aerial photography and drone imagery on selected creeks;
- Community outreach and presentations/knowledge transfer; and
- Preliminary identification of low-hanging restoration projects; and development of local champions.

Data collected from 2019-2022 was summarized in a detailed report (CHARS Fish and Fish Habitat Summary Report 2023), and provides an important reference point for future planning, management and assessment programs led by the Shuswap Band, partners and others in the Upper Columbia River.

Upper Columbia River Native Fish Species Population Assessment and Telemetry Project – Scott Cope (Shuswap Band)

The Upper Columbia River Native Fish Species Population Assessment and Telemetry Project (2024 – 2029) builds on work and recommendations previously completed under the Columbia Headwaters Aquatic Restoration Secwépemc Strategy (CHARS 2023). Project goals and objectives target conservation and restoration of native fish species populations and habitat to preserve population resiliency. This work will support population assessment and development of long-term, cost-effective, fish population monitoring indices using electrofishing, burbot and bull trout trapping, fish fences, angling, and angler surveys within the Upper Columbia River mainstem, wetlands, and connected tributary habitat from the headwaters at Canal Flats to Donald Station (including Windermere and Columbia Lakes). These methods will also enable population monitoring for introduced and invasive species through bycatch recording. Life-history telemetric studies coupled with habitat assessment and water temperature monitoring within the study area will address knowledge gaps in species life history traits including migration patterns, habitat connectivity and critical habitats. Species population abundance, genetic differentiation and risks will be evaluated, and development of a conservation aquaculture plan is included. The inclusion of 50 water-temperature loggers arrayed within the diversity of study area habitats not only evaluates habitat conditions and introduced versus native species dynamics but also allows for evaluation of climate change signalling.

These initiatives will provide the scientific basis for developing species specific fish population objectives, reviewing fish management objectives and regulations, while also identifying critical habitats and migration corridors for protection and restoration. This project is an Indigenous led initiative of the Shuswap Band and the Secwépemc Nation that advances reconciliation and capacity building while also providing an opportunity to foster a collaborative approach to protect and restore species at risk, contribute to biodiversity goals and support healthy ecosystems.

Action #2: Identify and Prioritize Conserving Multi-Species Wildlife Corridors

Kootenay Connect corridors – Michael Proctor

I presented an overview of the process of identifying landscape level wildlife corridors across the Columbia Valley between Canal Flats and Donald. These corridors were primarily cross-valley, connecting upland habitats to the east and west of the Columbia River. We primarily considered large mammals that had data either for habitat selection or connectivity. Species considered were grizzly bear, wolverine, elk, American badger, and mountain goats. We also included species at risk data, mostly in the valley bottom where it existed. This process resulted in 4 corridors from south to north: Columbia Lake, Radium, Spilli-Brisco, and Donald. These corridors were not narrow hallway-like but ranged in width from 5-20 km wide in the valley bottom. We then focussed on the cross-valley corridor potential for the above-mentioned species within Donald Corridor north of Golden. There we identified 3 focal areas that might serve as movement centers that included less human developed areas to the north and south of the Blaeberry River, and then the Blaeberry River Valley itself.

Mapping Species at Risk and significant features in the Golden area – Rachel Darvill (Columbia Wetlands Stewardship Partners)

In 2019/2020, a literature review for Species at Risk (SAR) in the Columbia Valley study area (Canal Flats to Donald) documented 65 SAR and 21 at-risk ecological communities (ECs). The literature review assembled all known spatial occurrences for those SAR and ECs and several maps were subsequently created to provide detailed overviews of spatial occurrences. The review also identified a number of priority actions that could be taken to help conserve some identified SAR and their habitat. Some actions taken in subsequent years have included: public engagement undertaken to determine where western painted turtle (WPT) and American badgers occur on the landscape; WPT nesting bed creation and WPT basking logs put in areas where that type of feature was lacking. Inventories for American badger burrows, Lewis's woodpecker nest sites, and at-risk ecological communities were conducted to establish conservation designations including Wildlife Habitat Features (WHFs), Wildlife Habitat Areas (WHAs), Critical Habitat expansion, and to support a Key Biodiversity Area (KBA) nomination.

However, those projects occur from Spillimacheen south and we wanted to know more about the Golden area. Golden is at the confluence of two major rivers (Columbia and Kicking Horse) and nestled between the Rocky and Purcell mountain ranges. Several additional and significant ecological features exist in the area including alpine environments, international significant Columbia Wetlands, higher elevation wetlands, the Spillimacheen River and additional water bodies. The local climate varies significantly with altitude and from summer to winter. Due to the topographical/geological/climatic variation, the area is host to unique ecological values and attributes. In January 2025, we completed a mapping exercise that focused on the Golden area; zooming in and putting all SAR spatial occurrences on a map from 2020 in addition to all data gathered since the 2020 literature review. The resulting map shows some data is clustered where people are concentrated (e.g., eBird data) and there is a lack of data in many places - notably the West Bench, north end, and at higher elevations. The valley bottom has high levels

of biodiversity – the Columbia Wetlands provide critical habitats for migrating birds, amphibians, invertebrates and fish.

Recommendations for next steps include adding ecosystem services and Indigenous values to the map, the Columbia Shuswap Regional District should consider developing regulations to protect the valley bottom (e.g., development permit areas, official community plan). Information gaps should be filled in areas where data is lacking. The formation of a multi-stakeholder committee should develop management strategies for sensitive ecosystems and species. In the valley bottom, immediate steps to protect habitat should include the development and implementation of a project to reduce the growing light pollution problem; light pollution fragments habitats and can have large impacts on some SAR and other sensitive species. Additionally, collaborate with landowners who own SAR habitat - educate on the existence of SAR or sensitive habitat features and develop strategies to maintain or improve those habitats. Also, boundaries of the Columbia Wetlands Wildlife Management Area should be expanded.

Beavers regulate water levels in Columbia River wetlands – Catriona Leven (Columbia Wetlands Stewardship Partners)

Catriona Leven, Suzanne Bayley, Jessica Holden, Rylee Haubrich, CWSP, 2025

The Upper Columbia River Wetlands are a relatively unaltered floodplain wetland system stretching for 180 km from Invermere to Donald; as the Columbia River is undammed in this stretch the wetland complex is still driven by. They are very biodiverse, partly due to the diversity of habitats within the wetland complex, and are an important natural corridor, allowing wildlife to move both north/south along the valley and east/west across the valley. The Columbia Wetland Stewardship Partners (CWSP) has been studying 38 wetlands between Invermere and Parson since 2020, looking at the hydrology and ecology of these different wetlands and working to understand the processes that are creating and maintaining differences. Using hydrology metrics and measurements of levee gaps and beaver dams, we have been able to classify these wetlands into groups defined by their connectivity to the Columbia River, on a gradient from most to least connected. The most connected wetlands have large levee gaps through which the flood pulse enters and leaves easily, and they show a large difference in water depth between low and high water, and do not retain water all year round. The least connected wetlands have no levee gaps or levee gaps dammed by beaver dams, and show less difference between low and high water, retaining water all year round. These hydrologic differences lead to ecological differences, with the different wetland groups supporting different communities, and so retaining them all on the landscape is important for biodiversity and resilience to climate change.

We have determined that levee gaps and beaver dams are responsible for approximately 60% of hydrologic variation between wetlands. We find that approximately 75% of the Columbia Wetlands in total are most connected wetlands, and so we are interested in maintaining less connected wetlands on the landscape, particularly in the face of less water and increased drying in the system due to climate change. Beaver dam analogues (BDAs) are a low tech and

low impact way of doing this. More detailed information can be found in our yearly Kootenay Connect reports, found here: https://kootenayconservation.ca/kootenay-connect-columbia-valley-wetlands/

Northern myotis (*Myotis septentrionalis*) use of remnant old growth – Laura Kaupas (Wildlife Conservation Society Canada/ Lark Wildlife Research)

The majority of bat species in British Columbia, including the federally endangered northern myotis, rely on networks of mature trees for successful reproduction and survival. Preliminary telemetry work in the inland temperate rainforest suggests that reproductive female northern myotis are dependent on western redcedar and western hemlock in remnant patches of old growth. With substantial loss and fragmentation of old growth in the inland temperate rainforest, the habitat requirements and status of northern myotis are poorly understood. In 2024, we identified and acoustically monitored possible roosting habitat in remnant patches of mature forest and old growth along the Kinbasket Reservoir. In 2025, we will use radiotelemetry to better characterize the old growth trees and forest patches required for northern myotis to successfully reproduce, with the aim to better mitigate the impacts of habitat loss and prevent further habitat degradation and fragmentation.

Tree enhancement and roost mitigation for bats in the northern Columbia River Valley – Heather Gates (Wildlife Conservation Society Canada)

We have created roosts for bats by essentially turning young trees into old "snags" in one of two ways: 1) wrapping BrandenBark™ around the tree to simulate sloughing bark of old growth, and 2) using chainsaws to create cracks and crevices in young trees, mimicking lightning strikes and natural checks. In places where trees are limited and/or access is good for an excavator, we wrap BrandenBark™ around large poles. To date, we have constructed 19 tree/tree-like roosts in the north Columbia Region, including 8 in or near Burges James Gadsden Provincial Park, 4 at Marl Creek Provincial Park, 6 at Wilbur Lake, and 1 at Parson. Also at Parson, we partnered with Wildsight Golden's Rachel Darvill to construct a hybrid bat condo and swallow hotel ("AirBnB" for bats and swallows). This structure is outfitted with a PIT-tag reader to detect use by recently evicted PIT-tagged bats from a building in Parson. Our constructed roosts in the North Columbia Valley area have to date been used by at least 6 species of bat, including federally endangered little brown myotis and yuma myotis, which is a range expansion for this species. Based on a capture inventory that we did in this area in 2021 and 2022, this is most of the 9 confirmed species of bats that we detected in the area. From our capture efforts, we also confirmed our first BrandenBark™ pole roost (Burges James Gadsden Provincial Park) was used by little brown myotis to raise young. Next steps include identifying priority areas in the Kinbasket for roost enhancement work, specifically targeting the federally endangered northern myotis. We will also install some pole roosts at Wilbur Lake and modify trees at Cleland Lake. We will continue to monitor the existing tree roost structures in partnership with the Shuswap Band and local contractor Laura Kaupas. For more information, see: https://wcsbats.ca/Our-work-to-save-bats/Tree-Enhancement-and-Roost-Mitigation-Project

Action #3: Reduce Intensity of Human Disturbance in Backcountry, Sensitive Areas and Wildlife Corridors

Impacts of outdoor recreation on sensitive species in the Rocky Mountains of Western Canada: research project summary and implications for planning and management (video) – Brynn McLellan (Yellowstone to Yukon Conservation Initiative)

Brynn McLellan, Yellowstone to Yukon Conservation Initiative, brynn@y2y.net
Nadine Raynolds, Yellowstone to Yukon Conservation Initiative, nadine@y2y.net
Annie Loosen, Yellowstone to Yukon Conservation Initiative, University of Northern British Columbia. Current address: Wildlife Conservation Society Canada.
Angela Brennan, Conservation Science Partners, angela@csp-inc.org
Andy Maguire, Conservation Science Partners, andy@csp-inc.org
Talia Vilalta Capdevila, Yellowstone to Yukon Conservation Initiative. Current address: University of Calgary Faculty of Veterinary Medicine.
Anne Forshner, Parks Canda, Banff, Yoho and Kootenay National Parks, anne.forshner@pc.gc.ca
Kim Heinemeyer, Braided Knowledge Environmental Consulting, kim@braidedknowledge.com
Karine Pigeon, Yellowstone to Yukon Conservation Initiative. Current address: British Columbia Government, Ministry of Water, Lands, and Resource Stewardship, Karine.Pigeon@gov.bc.ca
Aerin Jacob, Yellowstone to Yukon Conservation Initiative. Current address: Nature Conservancy of Canada, Aerin.Jacob@natureconservancy.ca
Pam Wright, University of Northern British Columbia, Pamela.Wright@unbc.ca
Libby Ehlers, Yellowstone to Yukon Conservation Initiative. Current address: California Department of Fish and Wildlife

Outdoor recreation is more popular than ever and is becoming increasingly important for the quality of life and economy for many communities. Despite this recreation boom, infrastructure and monitoring systems are inadequate to track recreation use and its impacts, inside and outside of protected areas. New approaches to planning and managing recreation are required. The Yellowstone to Yukon Conservation Initiative (Y2Y) and the University of Northern British Columbia conducted a five-year long recreation ecology research project in the Upper Columbia of BC and Kananaskis-Ghost of AB. This region is a hub for outdoor recreation and nature-based tourism. We used conventional (camera traps, trail counters, aerial surveys, participatory mapping) and innovative technologies (online recreation and outdoor adventure apps) to better understand when, where and how people recreate and impacts on three sensitive species – wolverine (*Gulo gulo*), grizzly bear (*Ursus arctos horribilis*), and southern mountain caribou (*Rangifer tarandus caribou*). We modeled and mapped seasonal recreation intensity and wildlife habitats. We found substantial variation in recreation intensity within and across seasons for both motorized and non-motorized activities and seasonal overlap of recreation with high quality wildlife habitats. We discuss how this framework for analyzing complex and different types of recreation datasets can be applied in the context of land-use and recreation planning, and wildlife conservation, specifically for sensitive species. We offer tools to inform planning and support-decision making for land and recreation manages. Visit the research project website (www.y2y.net/RecEcology) to find more information on the findings and recommendations and associated journal articles, reports, and data.

West Bench Recreation project (video) – Gemma Cobb (Wildsight Golden)

In collaboration with PhD Candidate Gemma Cobb from Griffith University, Australia, Wildsight Golden has been working to understand how local land use decisions, community values and perspectives, and climate change impacts may influence the environment in the Golden area. This research focuses on balancing long-term landscape health with societal needs, particularly in rapidly changing areas around Golden. To date, we have administered an online questionnaire that engaged the community in discussions about the cumulative impacts of human activities on wildlife in the Columbia Valley. The survey revealed high engagement from women and recreationalists, with significant concerns about changes to rivers, old growth forests, and mountain goats. Logging, off-roading, and urbanization were identified as major threats. The study highlighted the need for better public awareness of land use regulations and conflict resolution mechanisms, recommending enhanced ecological education to align community perceptions with environmental realities and support sustainable landscape conservation. For more information see: https://wildsight.ca/branches/golden/west-bench-recreation-ecology-study/.

Bighorn sheep monitoring – Meg Langley (Wildsight Golden)

Through successful consultations with the Ministry of Transportation and Infrastructure and their contractors, numerous improvements have been made to the Kicking Horse Canyon area to make it safer for all wildlife and bighorn sheep in particular. Most significant in keeping the bighorn sheep off of the highway has been the alterations made to exit structures which were being breached by the bighorn sheep. These structures have been continually monitored to determine their efficacy for various species and recommendations for the province and beyond are forthcoming from the processing of thousands of images. While attractants (minerals, easy travel and winter range) still exist near the highway, the habitat quality for bighorn sheep has been improved away from the highway though well-placed fencing, beneficial plantings along with thinning and burning. The lessons learned here are being applied here and elsewhere to try and reduce highway mortality for all species. For more information, see: Limiting-factors-on-a-small-herd-of-Rocky-Mountain-bighorn-sheep-pages-106-112.pdf

Action #4: Mitigate Recreational Impacts by Incorporating Recreation and Ecological Data to Inform Land Use Decision-Making

Wolverine conservation and recreation – Mirjam Barrueto (University of Calgary)

Recreation negatively impacts wolverine habitat use and density. Mitigation efforts should prioritize protecting a 5-km radius around confirmed reproductive dens from unpredictable recreational activities between January and mid-May. New recreational activities should be concentrated in areas that already experience moderate to high levels of recreational intensity. For more information, visit the following links:
https://hdl.handle.net/1880/120517
https://jem-online.org/index.php/jem/issue/view/69
www.wolverinewatch.org/publications

Wild Spaces: Recreational Dialogues – Allison Banting (Wildsight Regional)

In 2024, Wildsight launched a series of in-person presentations focused on interactions between wildlife and recreation users. Different species were the ambassadors for the various regions across the Wildsight branch communities. The Wild Spaces: Recreation Dialogues addressed the trends we see in our region and in the recreation sector that challenge the well-being of wildlife, provided outdoor recreation users with the current science on different animals, and provided a space to discuss in a casual environment. To watch the recordings check out these links: Elk in Golden, Big Horn Sheep and Mountain Goats in Radium and Recreation Ecology in Fernie.

Ecological data for recreation planning – Brian Gustafson (Columbia Wetland Stewardship Partners)

A call for proposals came out in the summer of 2023 for locations to include in amendments to Access Management Areas in the region. With a quick turnaround, the Columbia Wetlands Stewardship Partners (CWSP) responded by submitting proposals for 13 areas for consideration. Motorized recreation can have widespread impacts on wildlife and access regulations have not kept pace with the technological advancements in recreational vehicles. Using local knowledge and employing a suite of accumulated ecological data, CWSP presented a case for limiting motorized access. Areas of concern included: cross valley wildlife corridors, undeveloped valleys, areas of growing motorized recreation in alpine habitats and areas of significant ecological value.

Action #5: Build Climate Disruption, Adaptation and Mitigation Thinking into All Conservation Activities

ʔakisq̓nuk First Nation/Forest Enhancement Society of BC - Wildfire Risk Reduction and Ecosystem Restoration – Chris Joseph (ʔakisq̓nuk)

A timber harvest combined with hand treatments was prescribed to reduce the risk of wildfire in the surrounding area while restoring wildlife habitat. Learn more at the ʔakisq̓nuk website at akisqnuk.org.

Climate disruption update (video) – Greg Utzig (Kutenai Nature Investigations)

What has changed on the climate disruption front over the past 5 years? Number one is that our release of Greenhouse Gases (GHGs) has relentlessly continued. Between 2020 and 2025 CO2 in the atmosphere has increased by 12.6 ppm to 426.2 ppm, resulting in a global surface temperature increase of 03°C to a record-breaking 1.55°C above pre-industrial temperatures. This has provoked an increase in BC average area burned by wildfires to almost 1 million hectares per year. In 2024 alone, 42 km of the Jasper Valley was incinerated, and the Dogtooth fire burned over 5,000 hectares just south of Golden. Increasing temperatures are resulting in increasing fire intensity, decreased forest productivity and climate volatility, through linkages with vapour pressure variables. Eliminating GHG emissions is the only real solution to these

ever-increasing problems, but adaptation measures such as wildfire fuel treatments and climate change connectivity corridors can offer some short-term reduction in impacts.

Wetland restoration at Burges James Gadsden Provincial Park – Matt Wilson (Ducks Unlimited)

Matthew Wilson, Head of Conservation Programs at Ducks Unlimited Canada (DUC) and Amanda Weber-Roy, Kootenay Conservation Specialist at BC Parks, are leading a five-year restoration project at Moberly Marsh, a large wetland complex north of Golden, BC with support from ʔakisq̓nuk First Nation and Shuswap Band, among others. The lands being restored include 270-ha of wetlands in Burges James Gadsden Provincial Park and 20-ha on an adjacent agricultural parcel acquired by DUC in 2023. The project area is a floodplain of the Columbia River but is currently being impacted by dikes, pumps, control structures and other infrastructure associated with engineered wetlands built in the 1970's and 80's by DUC for waterfowl conservation. This project aims to re-activate the floodplain and return the lands to a natural state, enhancing biodiversity and ecosystem values.

APPENDIX C: FORUM AGENDA

Golden Conservation Action Forum - Check-In Meeting

Thursday, January 23, 2025

9:00 am – 4:00 pm MT

Senior Centre, 1401 9th St. South, Golden

BACKGROUND

In 2020, Kootenay Conservation Program and Wildsight Golden co-hosted the Golden Conservation Action Forum which brought together partners from this conservation neighbourhood to learn about the local landscape and collaboratively develop a set of shared conservation priorities. These forums are an opportunity to share insights from leading scientists and other knowledge keepers on key conservation actions that will make a difference for fish, wildlife, and habitats in the next five years. In 2020, the following five key actions were identified:

1. Combine Science and Indigenous Knowledge to Protect Habitat for Species at Risk and Biodiversity
2. Identify and Prioritize Conservation of Multi-Species Wildlife Corridors
3. Reduce Intensity of Human Disturbance in Backcountry, Sensitive Areas and Wildlife Corridors
4. Mitigate Recreational Impacts by Incorporating Recreation and Ecological Data to Inform Land Use Decision-Making
5. Build Climate Disruption, Adaptation and Mitigation Thinking into All Conservation Activities

The goal of this forum "check-in" is to provide updates on the progress of the key conservation actions identified in 2020, collaboratively identify new shared priorities moving forward, and discuss next steps. Thank you for joining us to contribute your knowledge and expertise, as we work together to advance these conservation priorities.

AGENDA

Purpose: To check in on the progress on the five priority conservation actions identified at the 2020 Golden Conservation Action Forum and to identify next steps and beneficial collaborations moving forward.

8:45 **Grab a coffee and get settled**

9:00 **Welcome**

9:35 **Introductions: Round Table**

- Name, organization, were you at the 2020 virtual forum? What is your connection to Golden? (< 1-minute each)

9:45 **Agenda Review and Overview of 2020 Golden CAF**

9:55 **Updates on the Golden Conservation Actions**

Action #1: Combine Science and Indigenous Knowledge to Protect Habitat for Species at Risk and Biodiversity

- Bighorn sheep monitoring – Brian Gustafson (Golden District Rod & Gun Club)
- Guardians Program – Joshua Martin (Shuswap Guardian Program)
- Upper Columbia Swallow Habitat Enhancement Project – Rachel Darvill (Goldeneye Ecological; Wildsight Golden)
- Columbia Headwaters Aquatic Restoration Strategy (CHARS) project – Jon Bisset (Shuswap Band)
- Upper Columbia River Native Fish Species Population Assessment and Telemetry Project – Scott Cope (Shuswap Band)
- Q&A

10:20 **Bio Break** (15 min)

10: 35 **Updates on the Golden Conservation Actions cont.**

Action #2: Identify and Prioritize Conserving Multi-Species Wildlife Corridors

- Kootenay Connect corridors – Michael Proctor (Kootenay Connect)
- Kootenay Connect SAR – Rachel Darvill (Goldeneye Ecological; Columbia Wetlands Stewardship Partners)
- Beavers regulate water levels in Columbia River Wetlands – Catriona Leven (Columbia Wetlands Stewardship Partners)
- *Northern myotis* use of remnant old growth – Laura Kaupas (Lark Wildlife Research)
- Tree enhancement and roost mitigation for bats in the northern Columbia River Valley – Heather Gates (Wildlife Conservation Society Canada)

- Q&A

Action #3: Reduce Intensity of Human Disturbance in Backcountry, Sensitive Areas and Wildlife Corridors

- Bighorn sheep monitoring – Meg Langley (Wildsight Golden)
- Y2Y Recreational Ecology Project (**video**) – Brynn McLellan (Yellowstone to Yukon Conservation Initiative)
- West Bench Recreation Project (**video**) – Gemma Cobb (Wildsight Golden)
- Q&A

Action #4: Mitigate Recreational Impacts by Incorporating Recreation and Ecological Data to Inform Land Use Decision-Making

- Wolverine conservation and recreation – Mirjam Barrueto (University of Calgary)
- Wild Spaces Recreational Dialogues – John Bergenske (Wildsight Regional)
- Ecological data for recreation planning – Brian Gustafson (Columbia Wetland Stewardship Partners)
- Q&A

12:00 **LUNCH** (45 minutes)

12:45 **Group Photo (outside)**

1:00 **Updates on the Golden Conservation Actions cont.**

Action #5: Build Climate Disruption, Adaptation and Mitigation Thinking into All Conservation Activities

- Wildfire resilience and risk reduction – Chris Joseph (ʔakisq̓nuk)
- Wetland restoration at Burges James Gadsden Provincial Park – Matt Wilson (Ducks Unlimited)
- Climate change update **(video)** – Greg Utzig (Kutenai Nature Investigations)
- Q&A

1:30 **Moving Forward: Next Steps For Key Actions and Discussion of Potential Collaborations**

Breakout groups for each Priority Action (or emerging actions)

- What is being planned already?
- What are the next steps to advance this action?

3:30 **Report Out and Closing Remarks**

4:00 **Adjourn**

Special thanks to KCP Program and Event Supporters

Columbia Basin trust

FWCP Fish & Wildlife Compensation Program

Habitat Conservation Trust Foundation

Nature Conservancy Canada

Nature Trust British Columbia

Columbia Valley Credit Union

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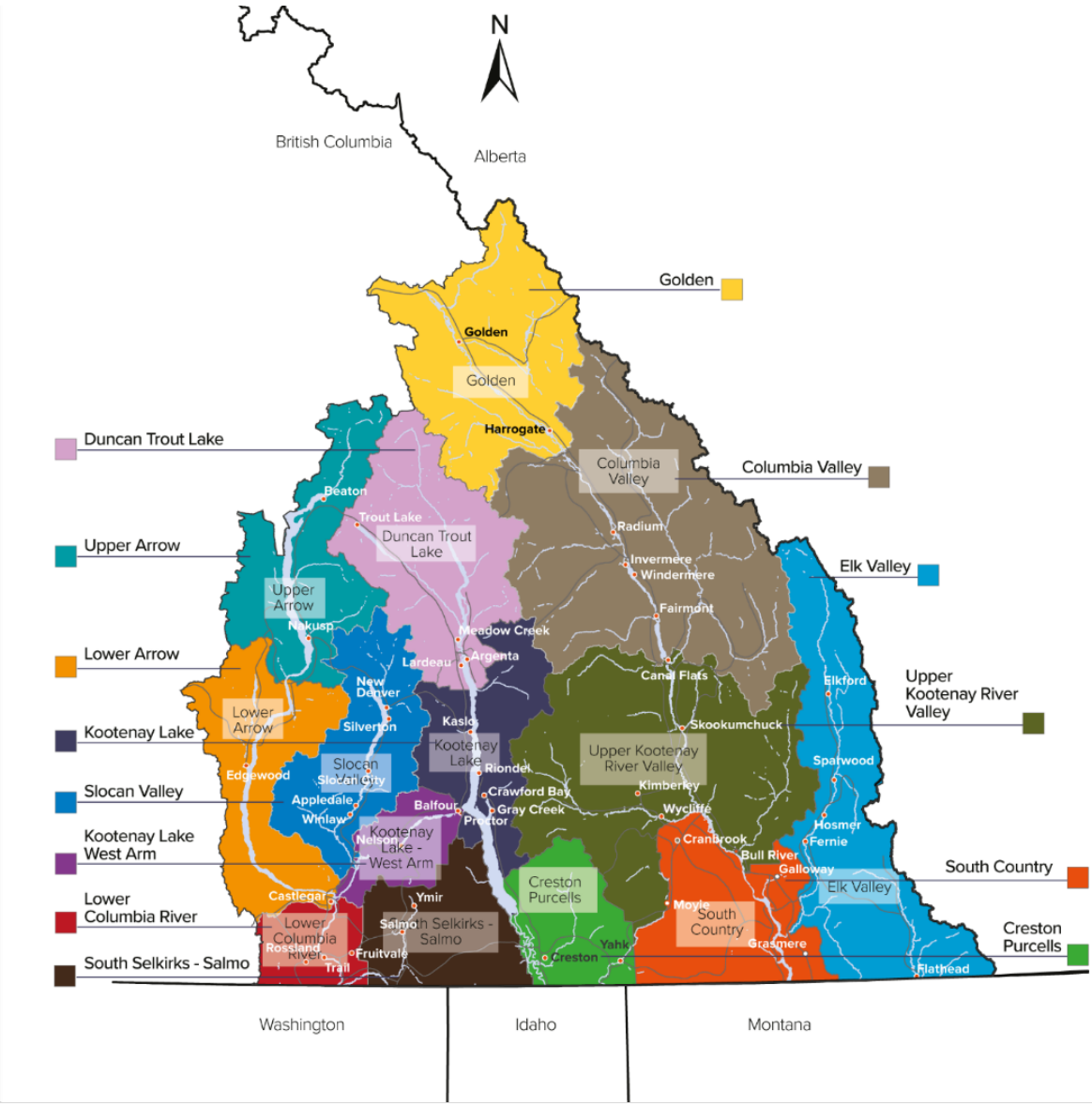
Conservation Neighbourhood Map



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