

Environment and Climate Change Canada
Canada Nature Fund: Community-Nominated Priority Places for
Species at Risk



Trans-Border Grizzly Bear Project



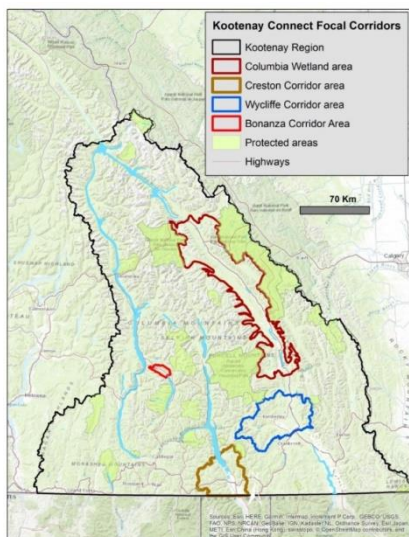
Kootenay Connect: KCP and Science Advisor

Contract 2021/22 Birchdale 01

Projects:

1234GL KCP (MP)

2021-2022 FINAL ANNUAL REPORT March 2022



Kootenay Connect is a project facilitated by the Kootenay Conservation
Program and funded by Environment and Climate Change Canada



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada



1234GL KCP & Science Expertise

Deliverables accomplished by M Proctor

I. Project Management Support

M. Proctor has worked with Marcy Mahr (Kootenay Connect Manager) and Juliet Craig (KCP Program Director) to develop and submit an acceptable Year 2 Kootenay Connect Annual Report and Financial Statements to Environment and Climate Change Canada. Also, work was done to develop an acceptable balanced Year 3 budget, work plan, and contracts for all contractors. M. Proctor also worked with project leaders in our several focal areas to develop science and project strategies for Year 3 that fit within our original vision and project goals. This included several field visits to focal areas (Creston Valley and Columbia Wetlands) for onsite visits and planning meetings. M. Proctor participated in discussions and decisions for how to best allocate additional ECCC funds among Kootenay Connect partners and projects.

II. Global Science Subprojects and Mapping

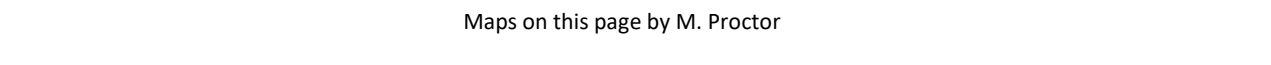
Results and deliverables are reported below relative to contract line items

- Refine Year 2 analysis that identified the best valley bottom–upland habitat connectivity areas for wildlife and ecological processes based on the accumulated data from Years 1 and 2 within the Columbia Wetlands area.

To support mapping and discussions with partners, M. Proctor two multi-day meetings with the Columbia Wetlands Science Team in Brisco, BC, one in June and another in September 2021. Our main objectives included finalizing our cross-valley upland corridors and Biodiversity Conservation Opportunities with a team consensus, and deciding on a process for how to proceed with conservation actions in these two realms. We also discussed science plans for the Columbia Wetlands for Years 3 and 4. Figure 1 (left panel) shows the four upland corridors that CWSP is going to focus its energy on.

- Advise strategies for conserving individual, and clusters of, potential private land properties with high conservation value to be prioritized for restoration, purchase by land trusts, inclusion in the CWWMA, and/or inclusion in RDEK/RDCK planning and development permitting procedures for each of the 4 Focal Areas (Columbia Wetlands, Wycliffe, Creston Valley and Bonanza) of Kootenay Connect. Results will be incorporated into the Kootenay Conservation Program's Securement Committee processes for identifying opportunities land securement, while providing new information to local land trusts so they can integrate results into securement plans.

At the two in-person meetings with the Columbia Wetlands Stewardship Partners (CWSP) team, we improved the criteria and metrics for prioritizing private lands within the Columbia Valley. Figure 1 (right panel) is a broad overview of those lands. CWSP has submitted the details of the Biodiversity Conservation Opportunities to KCP for including in the ECCC Year 3 annual



M. Proctor also delved deeper into 3 of these Columbia Wetland corridors to prepare for potentially implementing conservation within these corridors. This work also informed an effort

The opportunity with the Parks Canada funding has been to focus on connectivity with appropriate federal, provincial and First Nation interests within the 95% of crown land in the Columbia Valley. The intention is that this cross-jurisdictional government and First Nations collaboration will lead to some level of official 'connectivity' status.

In the process of refining our analysis of corridors in the Columbia we generated maps of several corridors within the Columbia Valley with available scientific information. Credits for the following map information are as follows:

Climate corridor, Utzig et al. 2020

Grizzly bear habitat and connectivity, Proctor et al. 2015

Wolverine density, Mowat et al. 2020

Elk habitat, Mulligan 2019

Badger habitat, Kinley et al. 2014

Mt Goat winter habitat, Ross and Vander Vennen 2021

Big Horn Sheep winter and summer ranges, Poole & Ayotte, 2020

Old growth, Utzig et al. 2020

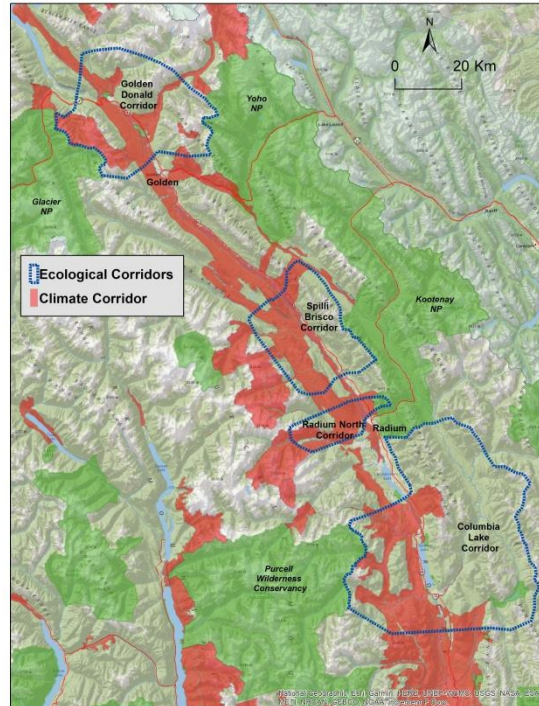
Species at risk, Darvil 2022

Rare Ecological Communities, Durand 2021

Overview of Columbia
Valley corridors

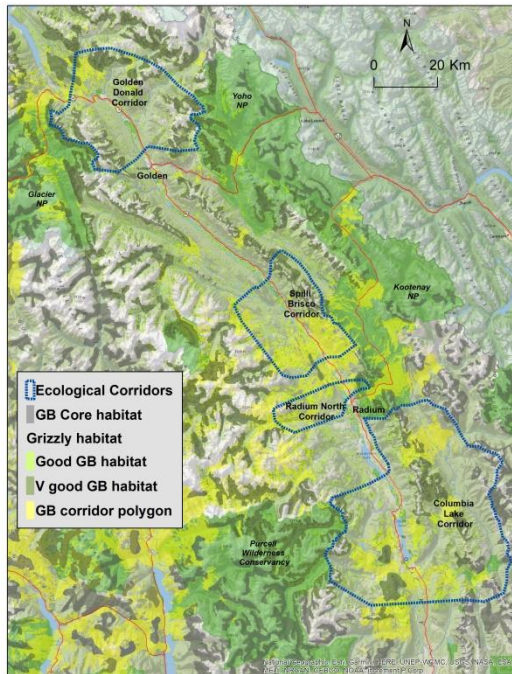


Climate corridor in the
Columbia Valley corridors

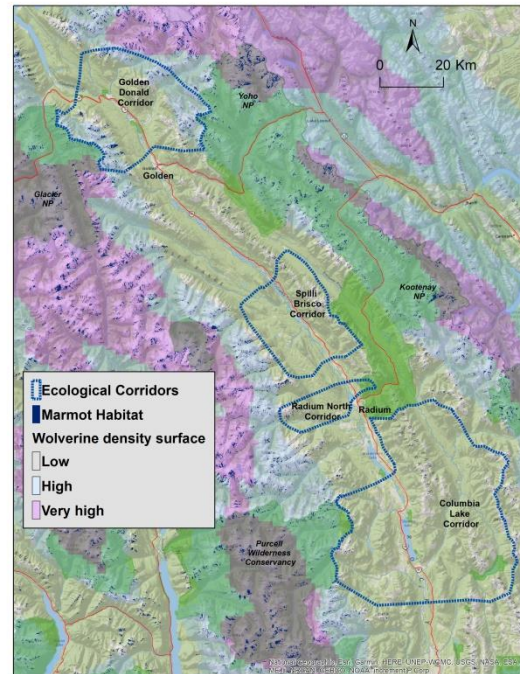


Maps on this page by M Proctor

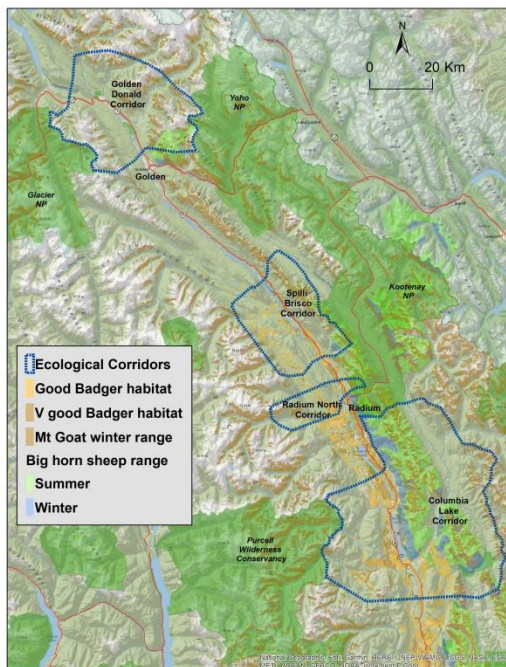
Grizzly bear habitat & connectivity



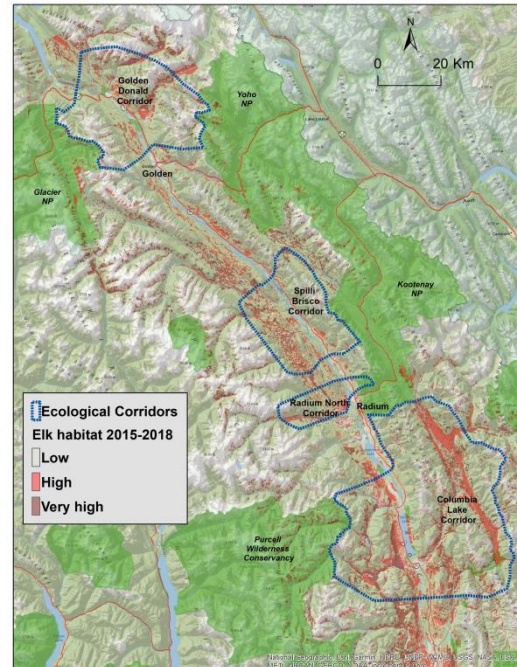
Wolverine density



Badger, Mt Goat habitat and Big Horn Sheep winter & summer range

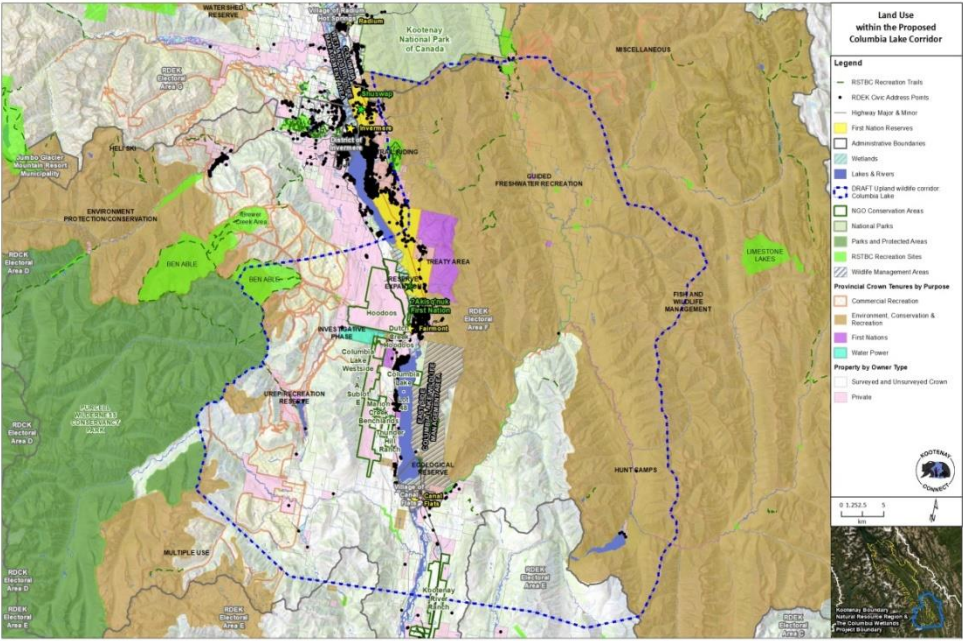


Elk habitat

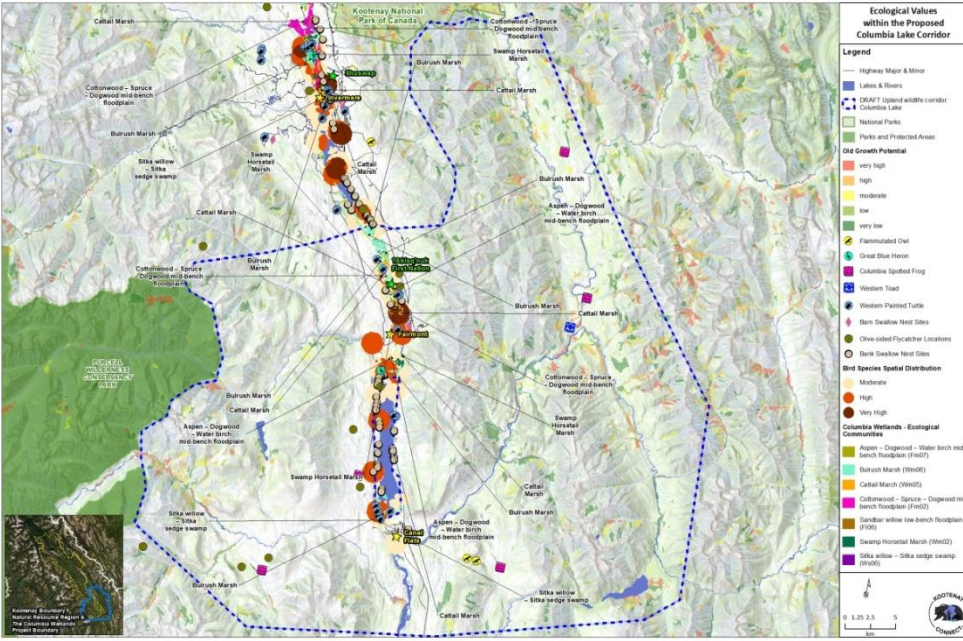


Maps on this page by M Proctor

Land use in the Columbia Lake Corridor

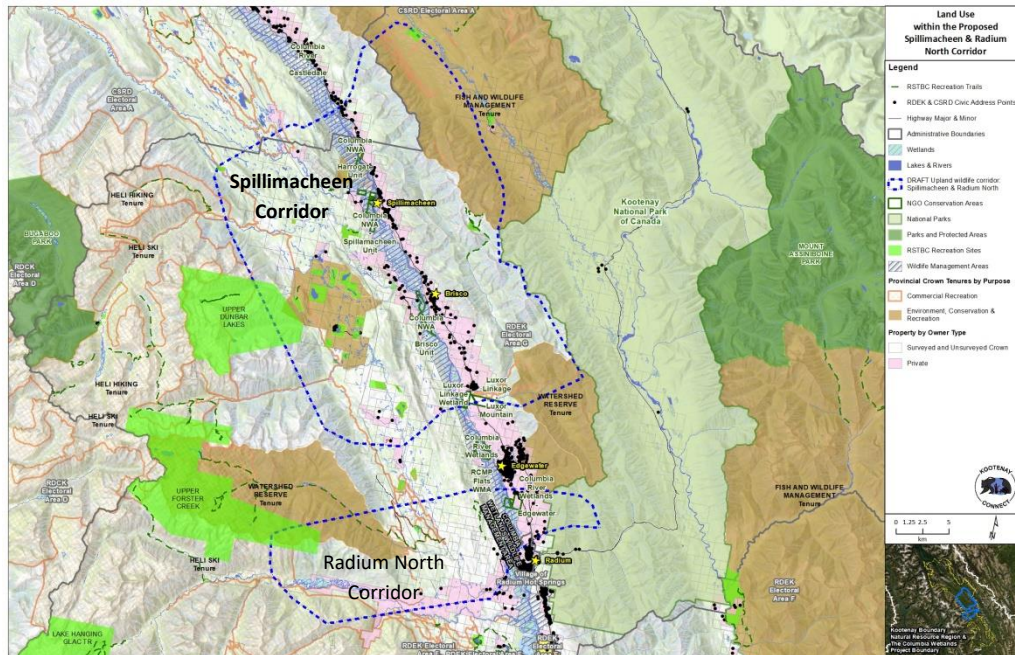


Species at risk in the Columbia Lake Corridor

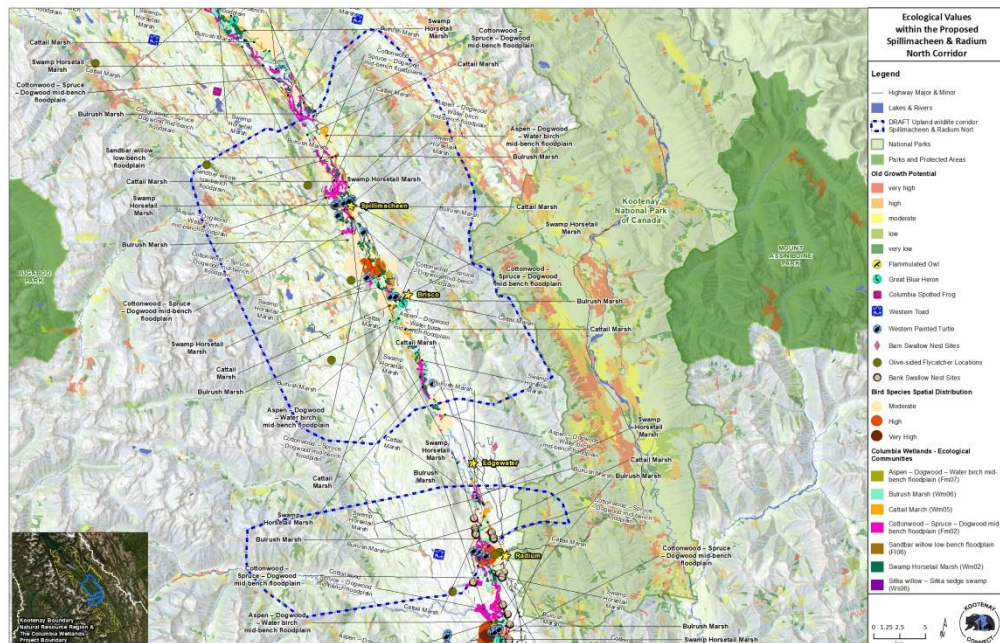


Maps on this page by Marie-Ange Fournier-Beck

Land use in the Spilli-Brisco & Radium North Corridors

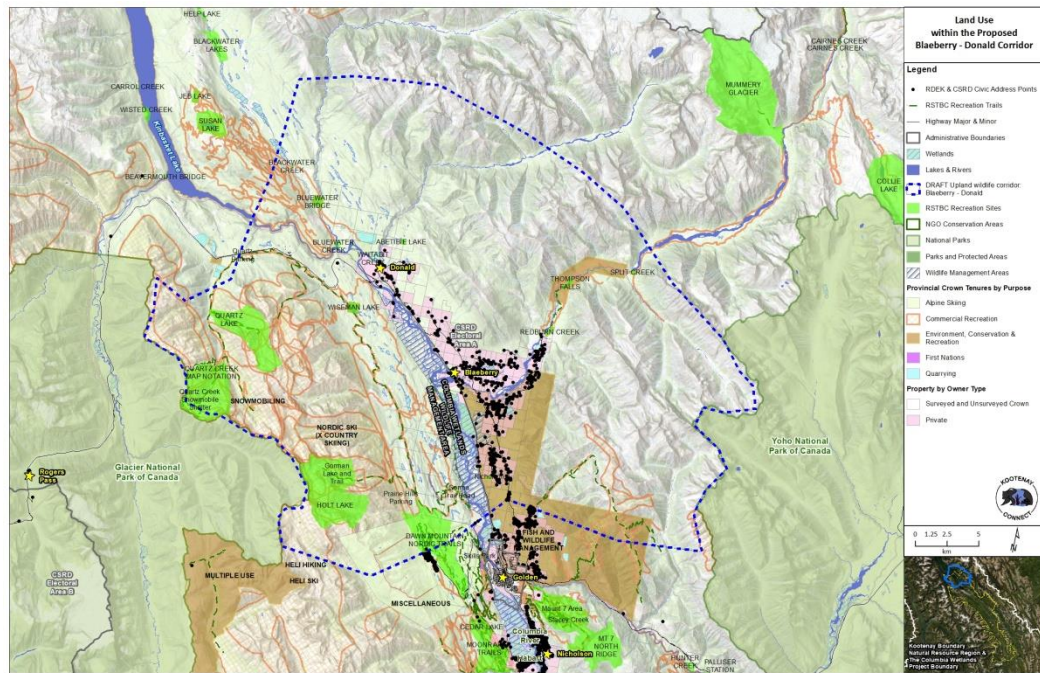


Species at risk in the Spilli-Brisco & Radium North Corridor

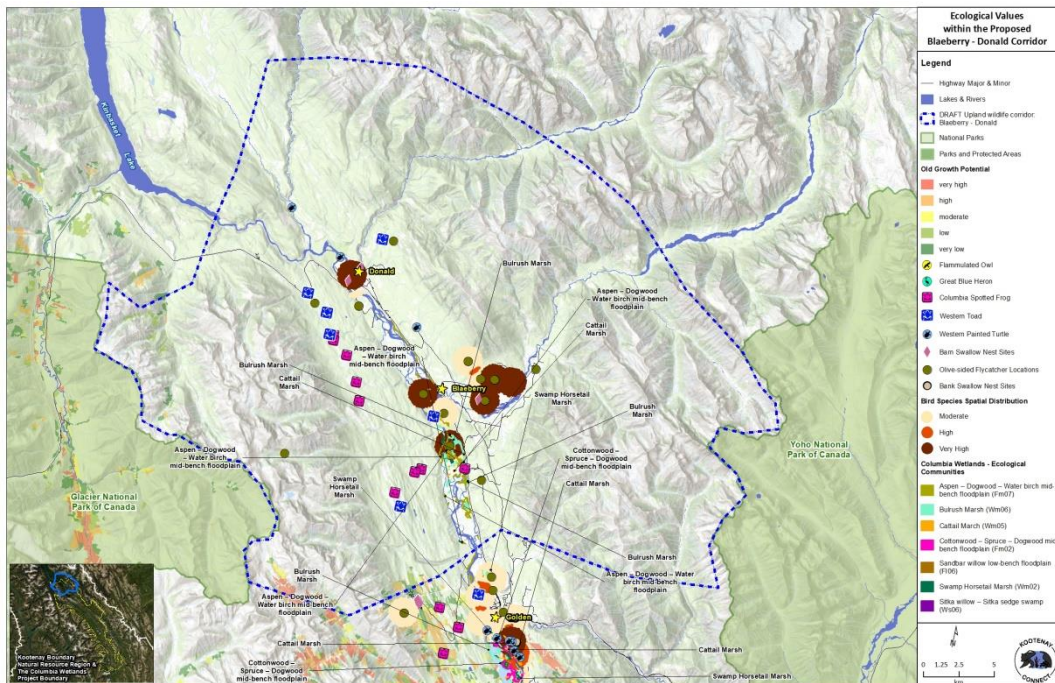


Maps on this page by Marie-Ange Fournier-Beck

Land use in the Golden-Donald Corridor



Species at risk in the Golden-Donald Corridor

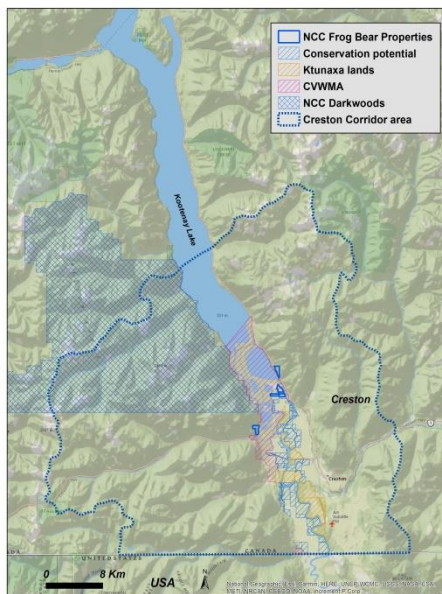


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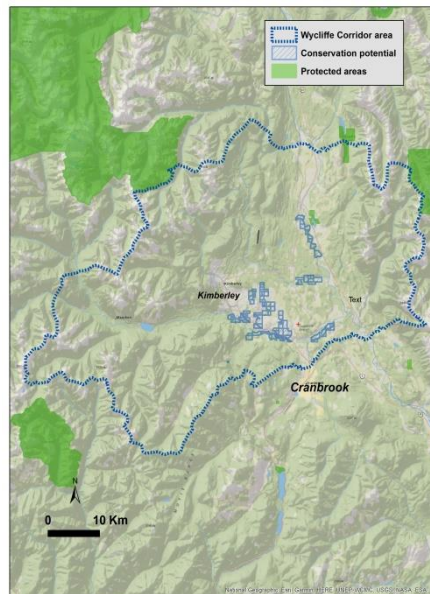
For the Creston Valley corridor, we had a series of multi-hour virtual discussions centered on identifying specific private properties for potential conservation activities. The 2nd meeting was a “virtual tour” in GIS with the private land organizations, including Nature Conservancy Canada (NCC, involved in direct land purchases), Farmland Advantage (involved in delivering private land stewardship through biodiversity plans to improve land use activities in conservation friendly ways), Kootenay-Boundary Farm Advisors, Creston Valley Wildlife Management Area, Lower Kootenay Band, and KCP. This virtual tour was led by M. Proctor who gathered the information within GIS on specific properties of interest relative to species at risk, potential riparian and wetland protection, restoration or improved land stewardship.

M. Proctor also then independently applied this same exercise to the Bonanza and Wycliffe corridors. In the Bonanza Corridor adjacency to riparian-wetland was the primary consideration and in the Wycliffe Corridor M. Proctor in consultation with NCC used open forested or grassland areas in addition to riparian habitats. For privacy reasons these maps are shown at a broad scale to inhibit individual property identification. All information is being provided to NCC, Nature Trust of BC, Farmland Advantage, and KCP for internal use in pursuing conservation opportunities.

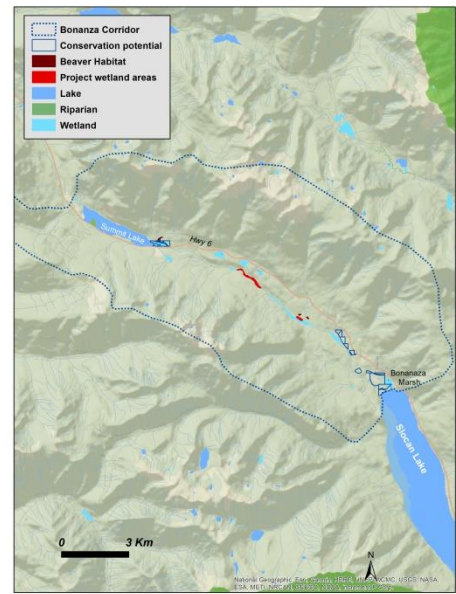
Private land conservation
potential in the Creston Valley



Private land conservation
potential in the Wycliffe corridor



Private land conservation
potential in the Bonanza corridor

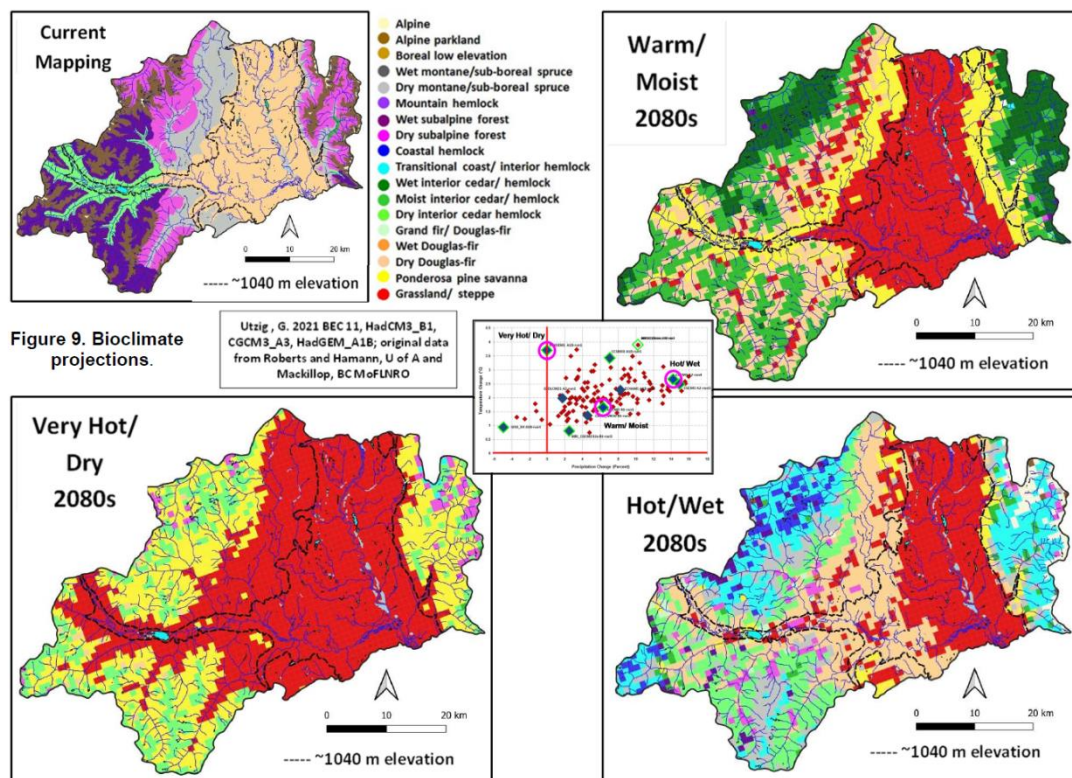


Maps on this page by M. Proctor

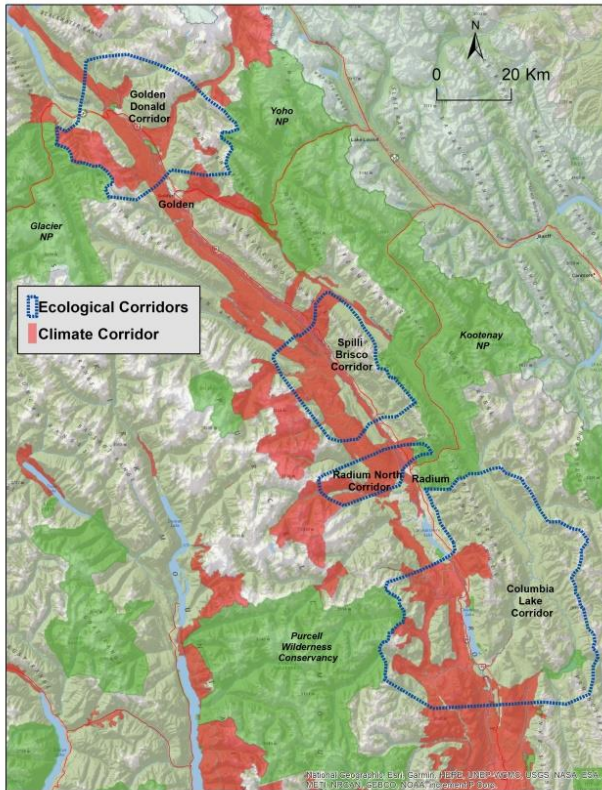
- Advise climate change analyses and strategic conservation planning recommendations for all 4 Focal Areas as well as maps to illustrate potential climate change corridors.

Kootenay Connect commissioned Greg Utzig to complete two reports, one for the Wycliffe Corridor (Utzig 2022a) and another for the Columbia Wetlands corridors (Utzig 2021). These reports round out his contribution of climate change thinking across our four corridors. The Wycliffe Corridor report summarizes the predictions of coming climate shifts for this area over a range of climate scenarios. All scenarios end in some degree of grassland/steppe ecosystems, the extent of which depends on the intensity of climate change the area experiences. The report details a series of recommendations on activities to minimize the impacts on ecosystems and species at risk. These suggestions have been shared with our partners working in the area to protect and restore habitat to integrate a climate lens into their on-the-ground management and restoration activities.

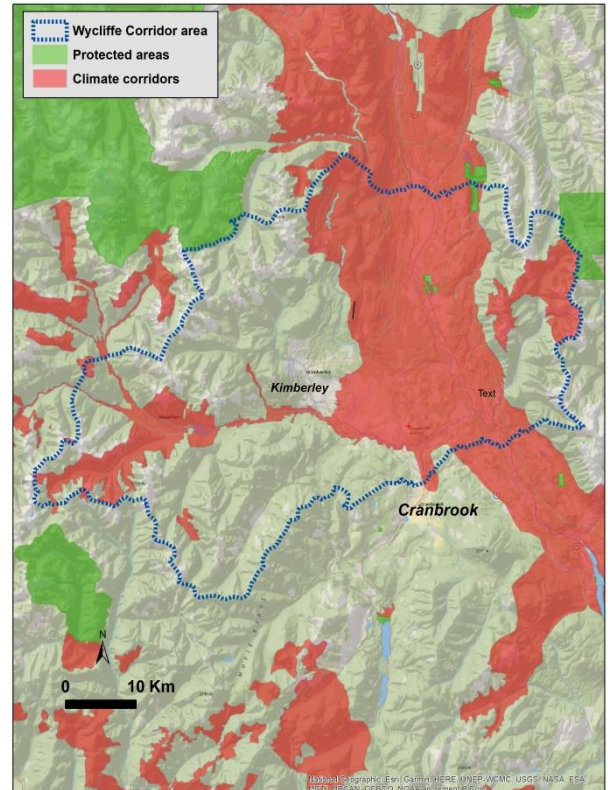
Climate change predictions for 3 scenarios in the Wycliffe Corridor



Climate corridors in the Columbia Valley corridors



Climate corridors in the Wycliffe Corridors



Data provided by G Utzig,
Maps on this page by M Proctor

Utzig (2021) approaches the upper Columbia River from the perspective of the major drainages feeding this important river and bottomland wetlands complexes and their potential for changes in water flow and volume as a result of climate change. G. Utzig addresses the complex and cumulative forces ranging from the rate of glacier melt, to seasonal temperature and precipitation patterns, to variability in adjacent mountain range elevations, and their combined effect on groundwater and stream and rivers flows, to predict the influence on the hydrology of the system and thus it's ecology.

Partitioned drainages feeding the upper Columbia River svstem

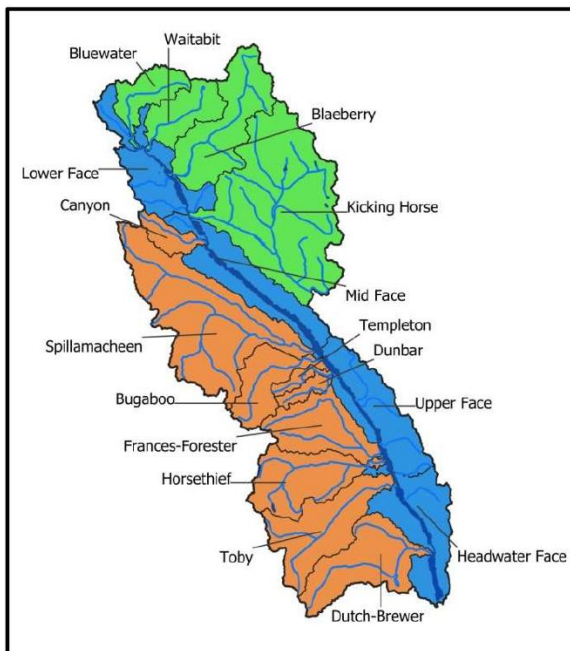


Figure 3. Columbia Wetlands watershed face units (blue), Purcell tributaries (brown) and Rocky Mountain tributaries (green).

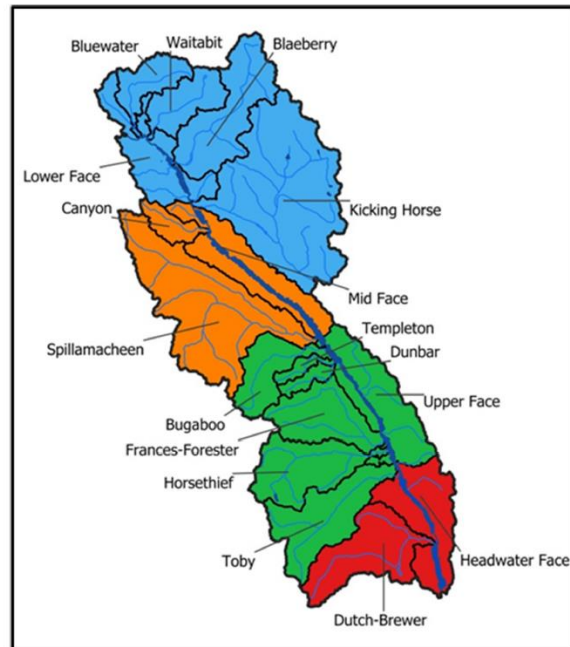


Figure 4. Columbia Wetlands watershed segments: Headwaters (red), Upper (green), Mid (orange) and Lower (blue).

Data & Maps on this page by Greg Utzig

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