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## Kootenay Connect: Bonanza Biodiversity Corridor

# YR 4 Annual Progress Report

April 2022 – Mar 2023

Kootenay Connect is a project facilitated by Kootenay Conservation Program

**PRESENTED TO:**

Kootenay Connect  
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Alternatives

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# 1 Bonanza Projects Summary

## 1.1 Project Management Considerations

This closing year wraps a series of Bonanza biodiversity, habitat and restoration projects supported through the Kootenay Connect Priority Places since 2019. The scope of this project focusses on the next steps for conservation management and the delivery of post implementation restoration site monitoring programs in the Bonanza Biodiversity Corridor (BBC). Overall, it was a difficult year with the return from the COVID pandemic adding pressure to resource availability, scheduling and the extent of stakeholder engagement we could deliver. With major BC ministry re-organizations, watershed, biodiversity and forestry initiatives taken on by the BC government, limited opportunities were available to engage Indigenous communities in discussion and knowledge sharing surrounding policy level topics in the Fall of 2022. Resource capacity constraints were felt in all sectors. We were able to have all field resources and skill levels available for the restoration site monitoring. As an ongoing partner in all of these Bonanza projects, Okanagan Nation Alliance resources were also constrained but continued to be available to provide guidance to the core project team.

Although the majority of the above-noted constraints were beyond the control of the project team, there were impacts on our ability to foster strategic collaborations and ratify any landscape-level policies with First Nations, stewards, regulatory authorities, forestry tenure holders and other stakeholders. With those constraints in mind, we were able to develop a BBC Conservation Plan that will provides and provides the basis of stewardship functions for the BBC, forming the foundation for those land use, policy, roles and responsibilities discussions to occur. Adjustments to the original work plan and specific deliverables are noted under project accomplishments.

## 1.2 Project Milestones

**Restoration Site Monitoring:** All three restoration sites are now fully established as long-term reference sites for continued wetland monitoring in the BBC. This baseline is now established for monitoring change through time. BBC Site monitoring is an established annual process with the Slocan Lake Stewardship Society.

**BBC Conservation Plan (BBC CP):** The BBC Conservation Plan is an integrated view and pragmatic roadmap for moving forward with conservation measures tailored to the BBC. The Plan takes into account known climate vulnerabilities and identifies key resilience activities needed in the near term to mitigate wildfire exposure and drought impacts in the BBC.

## 2 Accomplishments by Project

### 2.1 Restoration Site Monitoring

The monitoring programs developed for each restoration site were completed in the summer 2022 field season. All three sites were assessed twice in the season, once after freshet and later in the fall. Complete details are contained in the Restoration Site Effectiveness Monitoring report. Any identification of additional species at risk from monitoring and maintenance activities were added to the BBC SARS inventory. Results by site are summarized as follows:

- **Hunter Siding Wetlands** – Continued high survivability of all vegetative plantings. The average survivability rate between for all test plots was 82%. Despite having unprecedented heat and drought, this high success in survivability was partially due to high moisture content in the soil at the site, healthy plant stock and installing tree protectors on a high percentage of the plants.
- **Upper Bonanza Marsh** – The instream habitat structures are functioning extremely well and in less than one-year favourable results have already been documented. 2022 was the first freshet since the restoration work was complete and it was an unusually mild freshet without a large peak flow. If the freshet in 2023 has a normal peak flow and the water effectively flows over the swales then this element of the restoration is successful. If a normal peak flow occurs and no water flows over the swales then the elevation of the bottom of the swale would need to be re-evaluated to determine the proper elevation required to facilitate the flow of water between Bonanza Creek and the isolated water on the other side of the rail trail.
- **Summit Lake Marsh** - The swales and ditches implemented are effectively controlling the flow of water through the rail bed reducing flooding and erosion. The two sides of the marsh bisected by the rail trail are now more hydraulically connected as water can move freely from one side to another to permit enhanced fish and toadlet movement. Recreational users can now use the pedestrian walk ways to prevent impacts to the wetland and reduce sediment from entering the downstream aquatic environment. Western toad migration was observed on site, although small numbers of migration were observed at the site last year.

**Site Maintenance:** Invasives plants were noted at both the Upper Bonanza and Hunter Siding sites. Summit Lake showed no evidence of invasives and limited maintenance was required. The nature of restoration disturbance at the Upper Bonanza site and its proximity to recent logging resulted in pervasive growth of Canadian Thistle in and around the site. Although not considered an alien invasive, given the pristine nature of these sites, they can impact the functioning of the wetland. For the Hunter Siding site, the invasive removal was coordinated with CKISS and BCWF Wetlands Institute providing resources on site.

**Wildlife Monitoring:** A decision was made late in the fall of 2022 to remove existing wildlife cameras due to lack of resources available to retrieve data in the winter season. All observations to date from the cameras were analyzed and all new wildlife sightings updated as needed. Several on-site observations are contained in the monitoring report. These wildlife cameras will now be deployed to the Slocan Valley and used for wildlife monitoring for the upcoming Kootenay Connect projects at the south end of the Slocan Watershed.

## 2.2 BBC Conservation Plan

The BBC Conservation Plan was crafted from the range of data, information and assessments accumulated over the years, guided by the BBC Conservation Framework developed in Year 3. It is the accumulation of knowledge for the BBC from a Stewardship perspective and identifies many compelling reasons to seek legislated conservancy status for the entire corridor. The Plan includes an overview of the regional importance of the BBC as a connectivity corridor and a climate refugia. Climate impacts are described in terms of by broad ecosystem types (i.e. Biogeoclimatic classes, water & forests, biodiversity & habitats) rather than species specific sensitivities. The BBC Conservation Plan is organized under the following topical headings:

- Conservancy Lands
- Watershed Knowledge
- Traditional Ecosystem Knowledge
- Forest Management
- Climate Resiliency
- Fish Habitat
- Wetland Monitoring
- Biodiversity Assessments

### Scope Clarifications:

- *Climate Sensitivity/Vulnerability Analysis:* The wide range of biodiversity and the hydrologic richness of the Bonanza Watershed dictated the need to examine climate sensitivities at a landscape level rather than a species-specific Impacts. Given this recognition, high-value conservation opportunities that support landscape resiliency over time relate landscape rather than specific actions to protect a particular species or habitat.
- *Map of High-Value Protection Zones:* The Conservation Value Assessment map delivered in Year 3 has all the sensitive and potential protection zones identified, including white bark pine zones. Due to continuing availability of resources into 2023, the layering of climate resiliency zones, refugia and wetland niches needs more detailed consideration and hydrology input to finalize. The Conservation Value assessment map developed in Year 3 was revisited in Year 4 will be updated with climate resiliency zones in Year 5.

## 2.3 Year 4 Deliverables

Project deliverables for Year 4 are as follows:

- BBC Conservation Plan
- Restoration Site Effectiveness Monitoring
- Year 4 Annual Progress Report

## 3 Post Project Plans

SLSS remains committed to taking the initiative, within their level of authority and funding capacity, to deliver on the components of the BBC Conservation Plans and continue with on-the-ground stewardship work in the corridor. Site monitoring funding for the 2023 field season have been secured and plans for hydrometric station on Bonanza Creek are in place. The national, provincial and regional recognition of the intrinsic values of the BBC has been well received and placed the ecological value of the Slocan Watershed on the province's conservation radar.