

Summary of project accomplishments
Healthy Watersheds Initiative
January 28, 2022

Project recipient: Fraser Basin Council

Project name: Watershed Restoration in the Nicola Watershed

Funding acknowledgement: This project was supported through the Healthy Watersheds Initiative, which is delivered by the Real Estate Foundation of BC and Watersheds BC, with financial support from the Province of British Columbia as part of its \$10-billion COVID-19 response.



Activities Completed

1. Beaver Dam Analogues

The concept for building beaver dam analogues was generated locally at multi-party tables. Everyone bought into exploring this as a way to regulate water flows and provide storage for low-season flows. Local expertise, notably Tom Willms, investigated the literature of what was done in other jurisdictions and led the building of 10 of these on Howarth Creek, using all on-site materials.

Building on a [conceptual design](#) completed in March 2021, project lead Tom Willms, RPBio coordinated the installation of 10 beaver dam analogues in Howarth Creek, a tributary of Voght Creek which flows into the Coldwater River.

Buck Machine Contracting Ltd., an Indigenous owned and operated company in the Merritt area, was hired to do the work. Tom Willms, also an instructor in Natural Resources Technology at the Nicola Valley Institute of Technology, engaged his students in the work as well.

Lessons learned

- Everyone involved agreed that using these "natural" techniques could solve the challenges of water storage, if many of these small BDAs are built in many places, rather than large, complex, "artificial" dams or water storage structures using off-site materials such as concrete that come with liability.
- It was felt that with economies of scale (i.e., building multiple BDAs in a stream reach to minimize equipment mobilization/demobilization costs), these cost about \$5000 each to construct including labour and equipment
- Groundwater upwelling at sites following filling of ponds was observed within days
- Monitoring key metrics (i.e. storage, stream temperature and hyporheic exchange) starting in 2022 will be key to see how effective these will be
- See [video](#) of the completed BDAs using drone technology

Photos – credit Tom Willms, Mike Simpson, taken in late September 2021











2. Riparian Planting

Paul Mozin of Scwexmx Tribal Council and David Lawrence of Nooaitch helped identify this site as a potential for riparian planting. Impacted by 2017 and 2018 flooding, the site had been previous rip-rapped, and riparian planting was conducted just up stream in fall 2020.

Buck Machine Contracting Ltd. did the work in late October 2021. Top soil was added to the sites in between the rip rap, and a stinger attachment to a mini-excavator was used to create planting sites for 3000 rose, willow and alder.

Unfortunately the completed works were destroyed by the atmospheric river flooding event of mid-November, 2021 (last photos are hydrograph and news photos of the damage in the area).

Photos – credit Mike Simpson, take on October 26, 2021









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