

4CW Project Report for CWSP and Kootenay Connect 2022-2023

Conservation of Cottonwood Trees in Columbia Wetlands: saving important wildlife trees

By

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Summary

The cottonwood conservation project promotes retention of mature wildlife trees in the Columbia Wetland by protecting trees from beaver herbivory. Wetland mapping and surveys in Year 1 identified critical stands of cottonwoods within the project areas.

Building on the work completed in Year 3, the work in Year 4 was aimed at targeting high value cottonwood trees. Mature cottonwoods that had existing nest structures were prioritized, as well as stands with multiple mature trees and younger recruitment trees. Almost all of these stands were near significant evidence of beaver activity.

In total, 79 new trees were wrapped in Fall/Winter 2022. Trees closer to Nicholson were accessed by boat. Trees south of Spillimacheen were identified by car and accessed on foot after the wetland was frozen. Trees that were wrapped in the previous years were revisited to assess effectiveness as a part of this year's work.

Work Plan

1. Assess status of previously wrapped cottonwoods.

Trees wrapped in 2021 were visited and assessed in the summer/fall of 2022. Most wraps were still solid with no lift or degradation. Some had loosened around the base, so sticks were used to anchor these. No evidence of beaver chew through the wire wrapping was observed. This method appears to be successful in preserving mature cottonwood trees despite local beaver activity. One tree in the Radium location was found to have fallen as a result of stem rot.

2. Locate healthy cottonwood stands with mature trees, as well as stands with both mature and younger recruitment trees.

Many new stands were identified meeting these criteria, most notably the stands near the CP Rail Yard containing 46 candidate trees. The stands near Golden are in a location known to previously have housed a large heron rookery. In total, 79 new cottonwoods were wrapped in 2022. This is an exciting addition to the 45 trees wrapped in 2021 and will likely make a significant impact on the ecology of the wetland in the future.

3. Locate mature cottonwoods with existing nests. These are easily identified from the road in winter.

Trees of this size with existing nests were more common north of Spillimacheen than to the south. South of Spillimacheen, very few stands containing multiple mature cottonwoods were identified and accessible, and due to this lower density of large trees there were also fewer nests constructed. This is likely due to soil differences and fluvial behaviour between the

southern areas and the sites further north. In total, 10 trees were wrapped that had contained large stick nests.

4. Prioritize stands that are close to water and have evidence of beaver activity. All stands that were visited had evidence of beaver activity. Many had significant and recent activity, but some had older signs. A remote camera was set out at one site in the East Kootenay Regional District area that recorded beavers actively using the area (see photos in appendix 2).

Methods

Materials: Stucco wire (16 gauge) was used to wrap trees. Wire was 4' tall, and 4" was left between wire and tree to allow for growth. Wire was anchored with branches and deadwood found on site.

Installation Crew: Wire was installed by a field crew from Cirque Environmental Consulting. Trees were accessed by boat in the fall, and on foot after the wetland ice up. Access on frozen ground proved to be the most effective and efficient way to access trees.

Table 1: Tree protection sites visited in 2022.

Site	Notes	Date Wrapped
SB Property	<ul style="list-style-type: none">6 previously wrapped trees were assessed	August 4 2022
Parson South	<ul style="list-style-type: none">Scouting access for trees to wrapRiver too high for safe access	August 5 2022
Golden to Nicholson	<ul style="list-style-type: none">Assess area for candidate trees7 trees wrapped – 1 with large stick nestBeaver activity (Photos in appendix)	September 7, 2022
CP Rail Yard South	<ul style="list-style-type: none">12 trees wrappedtrees between 20 and 48 cm	October 25 2022
CP Rail Yard North	<ul style="list-style-type: none">33 trees wrappedtrees between 27 and 99 cmbeaver chew on 11 trees	October 25 & 27 2022

Radium/Spilli/Brisco	<ul style="list-style-type: none"> • All previously installed wire inspected for effectiveness • Tree 0491 fell over – stem rotten • Some guards adjusted or anchored better – no major issues. 	November 22, 2022
North side Parson Bridge	<ul style="list-style-type: none"> • 15 trees wrapped • trees between 21 and 70 cm 	November 23 2022
East Kootenay Regional District Boundary	<ul style="list-style-type: none"> • 7 trees wrapped • trees between 48 and 85 cm • 6/7 trees had nests 	December 14 & 19 2022
North of Brisco Bridges – Past 2021 trees	<ul style="list-style-type: none"> • 6 trees wrapped • trees between 43 and 70 cm • 4/6 trees with nests 	December 15 & 19 2022

Measurable Outcomes

1. Assessment from previously wrapped trees in 2021.

All trees assessed from 2021 appeared to be successfully defending the trees against beaver chew. Some wiring had come a bit loose over the base of the trees and were re-anchored.

2. Map all new wire wrapped cottonwoods between Golden and Radium.

See appendix 1.

3. Install wire guards to at least 3 stands of cottonwoods, and at least 40 individual trees in the Columbia wetland in 2022.

In total 10 stands were visited to install wire guards, and 79 trees were protected in 2022. This is nearly double the objective. The frozen winter conditions and emphasis on nested trees made identifying trees from the road efficient and facilitated direct access to stands without dealing with a boat. There can be access and safety issues in every season, depending on the target stands. Splitting fieldwork into fall and winter can help improve efficiency if all risks and access issues are taken into account.

Appendix 1: Maps

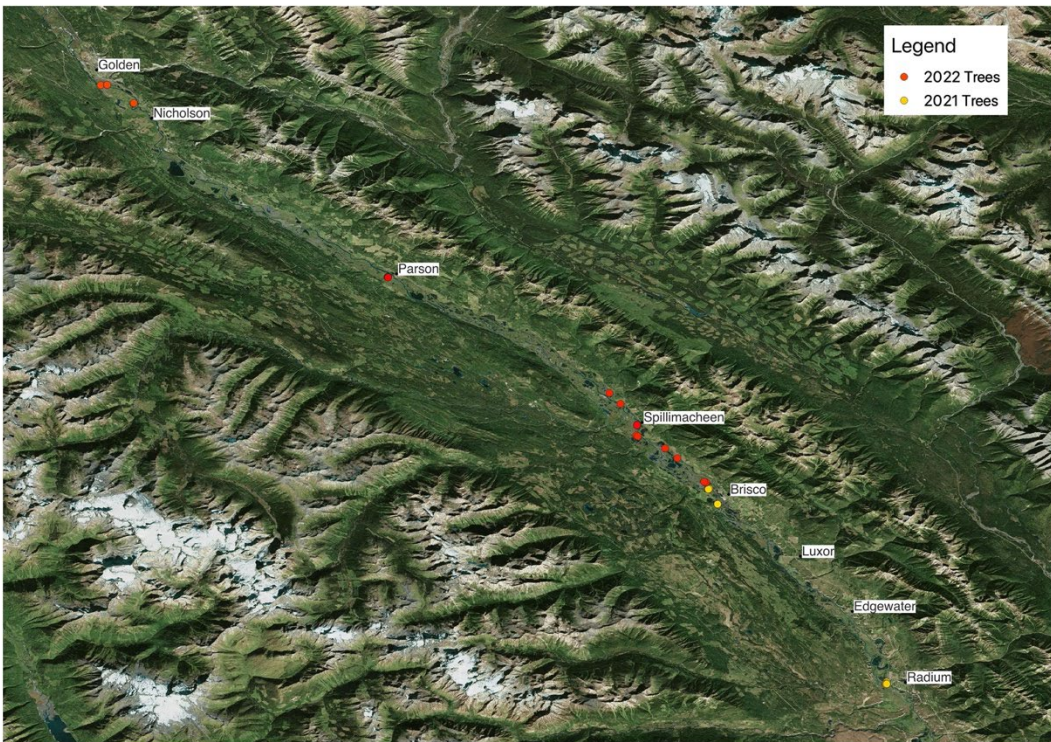


Figure 1: Overview of the project area with wrapped tree locations from 2021 and 2022.

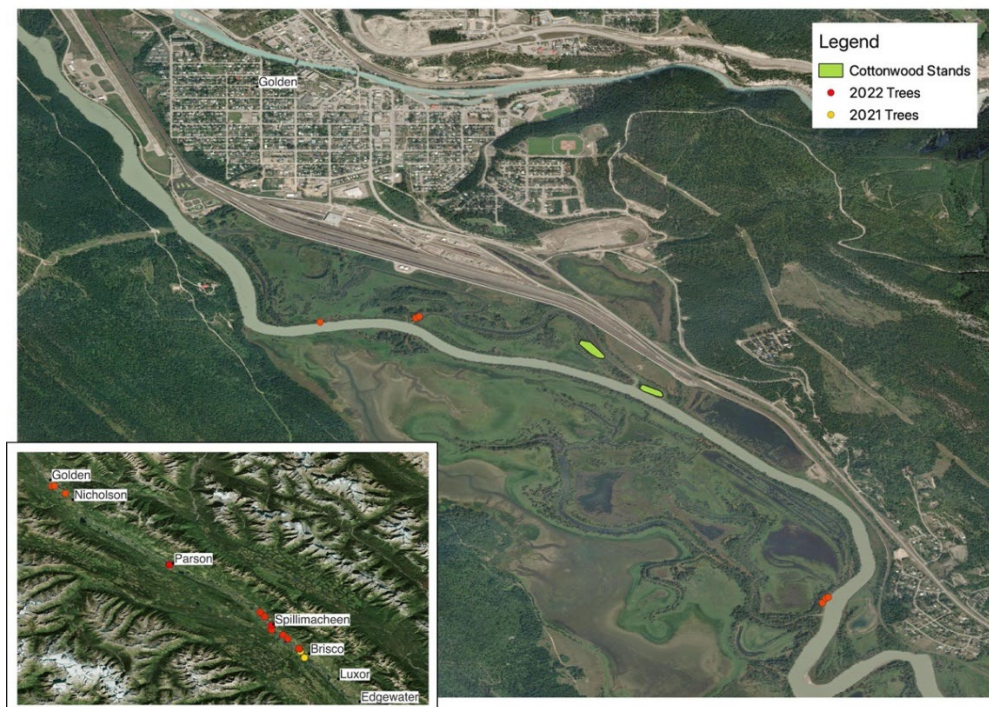


Figure 2: The Golden area wrapped trees. Green cottonwood stands indicate stands heavily treated with multiple trees. 33 trees were protected in the northern polygon and 12 trees were protected in the southern polygon.



Figure 3: Parson area trees wrapped.



Figure 4: Spillimacheen area wrapped trees.

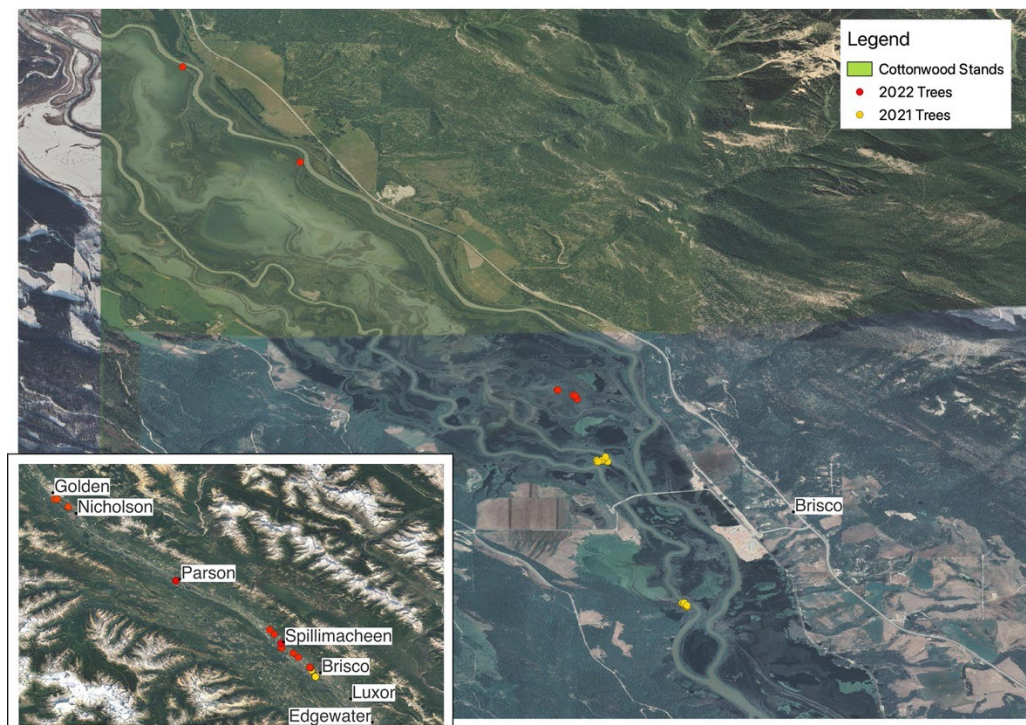






Figure 5: Brisco area wrapped trees.

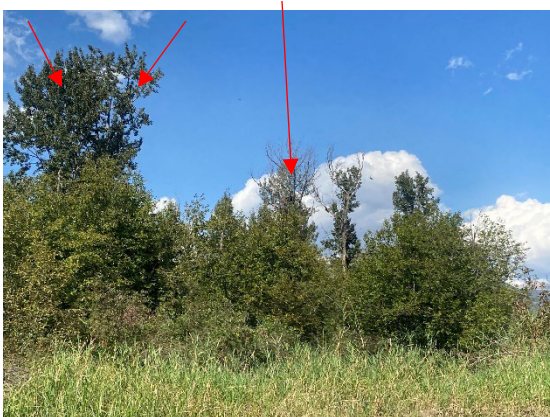


Figure 6: Radium area wrapped trees.

Appendix 2: Photos

Table 2: Cottonwood Wire Install – From North to South

<p>Tree 1 – Single Cottonwood, all mature cotton wood around have been felled by beaver in the past. Single tree, eagle observed perching, 78 cm diam.</p>	
	
<p>Trees 2, 3, 4 – 32, 34 and 78 cm Diam. Two smaller trees as recruitment- Larger tree has old stick nest. Beaver sign all around the area, fresh damming in side channel. Mapped mature stand (Durrand).</p>	
	
Tree 2 & 3 – beaver marks on lower stems	Tree 4 – Older, larger stem with stick nest in canopy.



Overview of fenced CW



Beaver activity close to cottonwood stand

Tree 5, 6 & 7-
78, 87 and 43 cm

Looked at single tree across the river. Stem rot present – tree not likely to last long, not worth protection. Lots of recent beaver activity around this stand, Largest tree had beaver damage. Some stem rot in the area, trees selected that do not have stem rot. One smaller tree selected (fenced) for recruitment.





Trees in CP Rail Yard North site



Recent Beaver activity in the East Kootenay Boundary zone



East Kootenay Boundary site. Trees in this area containing nests were not as common as further north, and in most stands only one tree was wrapped.



Dead cottonwood with nest next to living cottonwood without a nest. The living tree was wrapped.



Single nested trees among a mature cottonwood stands in the Kootenay Boundary area.



Evidence of Beaver activity in the Brisco Bridges stand



Nests in important wildlife trees north of the Brisco Bridges



Brisco Bridges wrapping site. Several nests as well as beaver activity.



Photos taken during fieldwork throughout the Columbia Wetland sites



Beaver activity in the East Kootenay Boundary area during the winter field season



17-12-2022 08:12 AM 2°C SPYPOINT



17-12-2022 08:46 AM 2°C SPYPOINT