

Final Report:

NTBC Land Stewardship Activities for 2019-20

COL-F20-W-3147-DCA (Conservation Youth Crew)



Prepared for: Fish and Wildlife Compensation Program

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## 1.0 Executive Summary

In 2019, The Fish and Wildlife Compensation Program (FWCP) Columbia Board approved \$15,000 to support The Nature Trust of British Columbia's (NTBC) Conservation Youth Crew, which employs post-secondary students on an annual basis to implement important 'on-the-ground' operations and maintenance work. FWCP funding was leveraged and combined with other funders to make the project a success. The Conservation Youth Crew addressed specific actions of the FWCP's Upland and Dryland Action Plan (habitat-based).

NTBC employed a conservation youth crew from May until November, comprised of post-secondary students or recent graduates. Of the crew members employed, one was returning from the previous year, which provided many benefits, and one was new to the organization. The returning crew member served as the "Lead Hand" for the crew, and newly hired crew member served as a Conservation Crew Technician, and helped complete land management and restoration activities until the middle of November 2019.

While employed, crew members participated in several important training and professional development opportunities and undertook a variety of work activities, all with a focus on conservation. Some of the crew work activities included: fence maintenance and repair, invasive species removal/inventory, kiosk and signage installation, hand seeding, litter removal, vegetation plot monitoring, riparian area planting (live-staking) and other basic inventories. These activities were carried out on twenty five (25) NTBC and BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) conservation complexes/properties throughout the Kootenay Region. The crew also spent several days assisting local biologists and experts with different projects, serving as on-the-job training for the crew. The following report compiled by NTBC staff provides more details on the conservation youth crew program.

The Nature Trust of British Columbia gratefully acknowledges the financial support of the Fish and Wildlife Compensation Program for its contribution to NTBC Conservation Youth Crew program. NTBC would also like to thank all of the other funders, partners, stakeholders, consultants, contractors and staff that made this project possible.

## Part One – Conservation Youth Crew Report

### 2.0 Introduction:

In 2019 NTBC continued its tradition of employing post-secondary students to establish a crew of 2 conservation crew members, supervised by the NTBC Kootenay Conservation Land Coordinator in the Kootenay region. Although the Kootenay Conservation Crew's primary responsibility is to fulfill the objectives specified in the annual Kootenay Conservation Land Operation and Maintenance Plan, there were also other opportunities built into the work schedule. These opportunities enabled the crew members to work with several professional biologists to learn techniques which enabled them to engage in wetland restoration activities, invasive weed identification and management, wildlife tree creation (inoculation), wildlife camera trapping, and waterfowl identification and monitoring. This aspect of the program is a very important component of NTBC's provincial mentoring initiative.

The 2019 Conservation Crew was engaged in a variety of projects on NTBC and Ministry of Forests, Lands and Natural Resource Operations and Rural Development (FLNRORD) conservation properties in the East and West Kootenays. Work activities that took place on these properties are outlined below and contributed to important 'on the ground' conservation efforts that address specific actions within the FWCP Uplands and Drylands Action Plan.

The crew's 2019 field season began on May 7th and finished on November 15th, 2019. The crew Lead Hand began a week early for planning and preparation purposes. The Lead Hand was a returning staff member, which provided the benefit of the crew being able to mobilize quickly into a new season.

The projects completed by the Kootenay Conservation Crew were conducted efficiently and addressed work related objectives expressed in NTBC's work plan as well as, those in the FWCP Upland and Dryland Action Plan.

### 3.0 Goals and Objectives:

The following list provides the goals/objectives for the Conservation Youth Crew:

- a) NTBC, FLNRORD and funding partners enable a crew that assists with important operation and maintenance works on conservation properties in the region, thereby maintaining or enhancing wildlife and biodiversity values;
- b) Provide crew members (students or recent graduates of an environmental discipline) with important, related work experience to build their career from;
- c) Address actions within FWCP's Upland and Dryland Action Plan including: i) prevent and manage invasive species on, or adjacent to, conservation properties, restoration sites, and other ecologically sensitive areas; ii) contribute to NDT4 restoration planning and treatments on crown land, conservation lands and within Parks and Protected areas (understory slashing), through the NDT4 Ecosystem Restoration Committees, and; iii) protect upland grasslands and open forests in the Columbia Valley.

## 4.0 Work Area:

The NTBC Kootenay Conservation Crew work area was the East and West Kootenay Region, as shown in Figure 1 - Kootenay region Overview Map. This included work locations that ranged from the Columbia Valley in the north to as far south as Lake Koocanusa and the South Rocky Mountain Trench. Work stretched in the east from the Elk Valley to the Slocan Valley in the West. The below map shows NTBC conservation properties in the region but, does not depict FLNRORD conservation properties which are widely scattered throughout the region also.

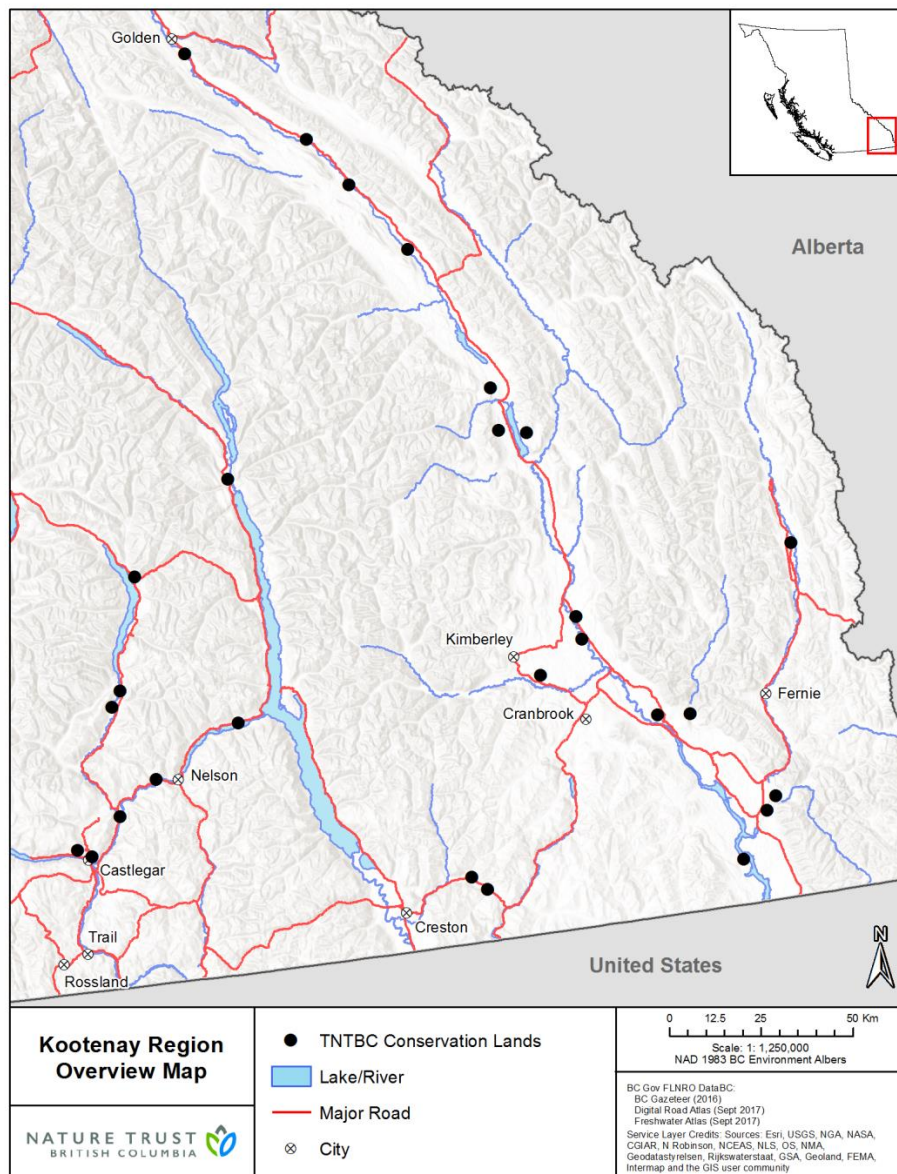


Figure 1: Kootenay Region Overview Map depicting the work area of the NTBC Conservation Youth Crew

## 5.0 Methods:

The project was delivered through a 3 person crew, inclusive of a Lead Hand, a Conservation Crew Technician, and the NTBC Kootenay Conservation Land Coordinator. The Kootenay Conservation Land Coordinator was responsible for supervising, managing and overseeing the crew's daily activities. The annual work plan was established in advance of the crew's employment start. Since annual work activities took place over a wide geographic area, a focus on efficient project delivery was important. NTBC also makes every effort to ensure that a culture of safety is bestowed upon the all crew members, some of whom have limited, previous work experience.

Work activities varied greatly but, there were best practices and methods employed by the crew to ensure both efficiency and effectiveness in their work.

For example, mechanical invasive plant treatments were typically conducted in sensitive areas (i.e. riparian zones) where chemical treatments could not be undertaken. Mechanical treatments included hand pulling and bagging the plants and disposing of them in the properly specified manner at local transfer stations and landfills. Hand pulling was done primarily prior to seed set, to reduce the threat of future spread and establishment. In some cases, gas powered weed whips or brush saws were used to cut plants to prevent their growth and seed set.

Whenever possible, invasive plant inventories were undertaken in a methodical manner. This typically meant that a focus was placed on spread vectors and pathways (i.e. roads, game trails, riparian areas). The crew recorded infestations through NTBC's *Collector* App which was then later transferred into the Provincial Invasive Alien Plant Program (IAPP), thereby assisting with future treatment planning.

Other restoration work conducted by the crew, including hand thinning of forest in-growth, re-seeding, and riparian planting were completed according to prescriptions developed by professionals or, in concert with pre-existing property management plans with specific, identifiable goals and objectives. Every effort is made to re-vegetate soil disturbances with native species, using clean seed.

For data collection, NTBC continues to use its geo-referenced *Collector* App which allows for collection and storage of nearly all of NTBC's field data and monitoring in a single, easy to access space. These data are easily revisited for monitoring and updating in the field on subsequent visits. We are currently working with FLNRORD to try to establish an agreement which would allow NTBC to use the *Collector* app for data collection and sharing on both NTBC and FLNRORD conservation properties.

Finally, for infrastructure construction, modifications and repair – basic carpentry and fence building best practices are employed that will ensure longevity in harsh, outdoor conditions. Fences are built and repaired to be wildlife friendly, using design and construction techniques and materials that do not serve as impenetrable barriers, yet, ensure that conservation properties are protected from cattle trespass and unauthorized motor vehicle access.

## 6.0 Results, Outcomes & Discussion:

Results, outcomes and discussion have been combined within this section and specifically cover training and professional development, as well as, work activities.

### Training & Professional Development

The 2019 Conservation Land Operation and Maintenance Program was designed, in part, to provide crew members with the training and certifications required to work safely. Professional development opportunities also allow for the crew to be exposed to a variety of conservation disciplines, with the intent of cultivating interest and potentially increasing their employability within the environmental sector.

Training and professional development in 2019 included;

**Occupational First Aid – Level One:**

- The course was instructed at Strategic Fire Control LTD. The course was provided in a one day session in May. Crew members were provided with all of the basic first aid training including CPR and the use of an AED.

**Basic Fire Suppression & Safety/ Fire Entrapment Avoidance & Safety (\$100/\$185)**

- These courses were instructed at Strategic Fire Control LTD. The courses took two days, inclusive of both classroom and field components. Courses took place in May. The course is designed to give employees the knowledge and experience to take the proper steps in the event of a forest fire. These are province wide standard courses designed by the BC Ministry of FLNRORD.

**Basic Chainsaw Operation and Maintenance Safety Training.**

- This course was put on by Timberwolf Training and Consulting Inc. The course took place over two days, inclusive of both a classroom and field component. The course took place in May at The College of The Rockies in Cranbrook. The course provided NTBC crew members with the knowledge and experience to operate and maintain chainsaws in a way that works within WorkSafeBC and the Forest Safety Council of BC guidelines.

**All Terrain Vehicle Safe Operation Certification:**

- The NTBC crew took part in a 1 day course, where they learned how to safely operate, transport, and maintain all-terrain vehicles. The course was conducted in Revelstoke BC, and consisted of both a classroom and field component. The Natural Resource Officers in the Kootenay Region graciously allowed NTBC crew members to join in on their course, free of charge, aside from course manual and accommodation costs.

**Columbia Wetlands Waterbird Survey (CWWS) & Training:**

- The Conservation Crew Technician took part in the last year of the Columbia Wetlands Waterbird Survey this year. They attended a waterfowl identification training session, and participated in 3 survey dates. The NTBC Brisco property was surveyed each session.

## Work Activities

NTBC and FLNRORD Conservation Properties in the Kootenay Region were acquired for their outstanding wildlife habitat and biodiversity values. However, to ensure that these values are sustained and enhanced over time, it is essential that property infrastructure is maintained and habitat enhancement and restoration activities are implemented on an annual basis. Consequently, NTBC has been engaged,

for many years, in employing post-secondary students, interested in conservation, to conduct maintenance and restoration projects on NTBC and FLNRORD properties throughout BC. This seasonal operation and maintenance program also provides permanent NTBC staff with an opportunity to establish a mentorship platform, enabling them to engage crew members in a number of special projects and to work with conservation specialists and professionals in the field. In 2019, the crew was able to work on twenty five different conservation properties/complexes within the Kootenay region.

Operation and maintenance work related activities are outlined below, with land ownership indicated:

#### **Redfish Creek Conservation Property (NTBC)**

1. A property inspection was conducted of illegal waste disposal.
2. The crew conducted a danger tree assessment along the walking trails. Results included trees recommended to be further assessed by a professional danger tree assessor, as well as mapping wildlife trees on the property. It should be noted that NTBC assesses trees for both wildlife value, as well as risk to the public. Every effort is made to preserve trees with high wildlife value.

#### **Marsden Face (NTBC)**

1. A property inspection was conducted.
2. Invasive plant infestations were investigated, recorded, and mapped. Information was entered into the Collector App, and into IAPP.
3. Litter was collected from several parts of the property.
4. Trails were mapped and recorded in the *Collector App*.
5. All infrastructure (i.e. signage, kiosks, outbuildings) was inventoried, assessed and recorded in the *Collector App*.
6. Crew members had a chance to meet with West Kootenay FWCP Section staff on site, and investigate illegal camping concerns on the property.

#### **Shore Acres Beach (NTBC)**

7. A property inspection was conducted.
8. Invasive plant infestations were investigated, recorded, and mapped. Information was entered into the Collector App, and into IAPP.
9. Spotted Knapweed (~0.1ha) and Rush Skeletonweed (~0.02ha) infestations were hand-pulled. Bagged, and disposed of.
10. Litter was collected from several parts of the property.
11. Disturbed areas were hand seeded with a native seed mix.

#### **Bummers Flats/Cherry Creek Conservation Complex (NTBC & FLNRORD)**

1. Inspections and repairs on the property boundary fences were conducted (~6km).
2. Infestations of Spotted Knapweed (~1.5ha) were hand pulled and bagged. Common burdock infestations (~0.2ha) were slashed with brush saws and pruning shears, bagged and disposed of at transfer station.
3. New invasive plant infestations were GPS'd and inputted into the *Collector App*.
4. Signage was installed on the recently installed signage kiosk near a wetland restoration site.
5. Native riparian vegetation exclosure fences were repaired as needed.
6. Hand-pulling of Purple Loosestrife infestation in the wetlands (10 bags from ~ 39ha of wetland).

7. Assessment and verification of the invasive Pumpkinseed fish was completed in George's Pond at the property. Results have been shared with the Leopard Frog Recovery Team to help coordinate efforts.
8. Property boundary signage was updated and installed (5 signs)

#### **The Big Ranch Conservation Complex (NTBC)**

1. Inspection and repair of boundary fences was conducted (4.5km).
2. Existing elk proof enclosure fencing around 7 aspen restoration sites was inspected and repaired as required.
3. Hosted work party with Elkford club to pile and burn slash piles.
4. Photo monitoring plots for 28 sites within aspen enclosures was updated and protocol was completed. The Conservation Crew Technician updated the protocol, to allow for more detailed insight into growth measurements on the plots.
5. Trimmed grass around public information kiosks and parking areas at property entrance.
6. Enclosure fencing around riparian vegetation were repaired and competing grasses were removed.
7. Wildlife camera installation and monitoring

#### **Hoodooos Conservation Property (NTBC)**

1. Shrubs and grasses around the information kiosk sites and parking lot areas were trimmed.
2. Litter pick-up around two main parking lots
3. New fence construction – layout and measurements
4. Extensive fence repair was conducted in the North East corner of the property (~2.6km) where unauthorized motor vehicle access in an ongoing issue.
5. Damaged or removed chain and locks on gated road were replaced or repaired.

#### **Lardeau - Duncan Flats Conservation Complex (NTBC)**

1. Mechanically removed thistle (Canada and Bull) seed heads at lot 570 and 881 (~0.5ha).
2. GPS'd treated sites and collected IAPP information.
3. Live-staked approximately 750 cuttings from local riparian dogwood and willow plants.
4. Hand planted alder 100 alder plugs on mounds adjacent to wetlands to create a visual buffer between a wildlife corridor and the highway.
5. Wildfire interface thinning around outbuildings and homesteads on conservation properties.

#### **Sheep Mountain Ranch Conservation Property (NTBC)**

1. Continued the removal of old fence posts (~1.0km of fenceline), where wire had been removed in the previous season.
2. Repaired boundary fenceline (~800m).
3. Lowered the top wire of the recently installed fenceline, as it was proving to be a barrier to wildlife movement (~2km).

#### **Bull River Conservation Complex (Lower Norbury, Armstrong, Bull River Grassland Corridor (BRGC), Red Barn – NTBC and FLNRORD)**

1. Inspections and repairs on the property boundary fences were conducted (~3km).
2. Kiosk repair and signage replacement (Red Barn)
3. Piled and burned piles from work event thinning efforts.
4. Re-seeding following building removal at BRGC.
5. Layout and reseeding after new fenceline installation at BRGC.
6. Bluebird box installation at Lower Norbury (4 bird boxes).

#### **Wasa Slough Conservation Complex (NTBC and FLNRORD)**

1. Knapweed infestations were hand pulled (10 bags of smaller plants from 0.8ha) along Cameron Lake and Wasa Slough dike, in cooperation with staff from the East Kootenay Invasive Species Council.
2. Invasive plant inventory completed on NTBC and FLNRORD parcels.
3. Wildlife tree inventory completed along the upper bench of the property
4. New property boundary signage installed on both NTBC and FLNRORD parcels.

#### **Kidd Creek Conservation Property (NTBC)**

1. Vegetation that was obscuring the kiosk was removed.
2. Property was inspected for trash, illegal dumping etc.

#### **Carroll Creek Conservation Property (NTBC)**

1. 5 trees were removed from the new fenceline.
2. Newly installed fenceline was reseeded in the spring.
3. Danger tree assessment and removal was completed with the assistance of a Certified Danger Tree Faller

#### **Wolfbush/Premier/Pommier/Three Sons Conservation Properties (FLNRORD)**

1. New boundary signage was installed (5 signs)
2. Spotted knapweed (3 bags from ~0.1ha) along the Wolf creek dyke and riparian areas were pulled, bagged, and disposed of at transfer station.
3. The crew assisted FLNRORD staff in electrofishing efforts in the wetland before a dredging project was completed.

#### **Wycliffe Wildlife Corridor Conservation Complex (NTBC/ FLNRORD)**

1. Fencelines were inventoried and recorded in the *Collector* app
2. The crew assisted a FWCP funded wildlife tree creation project on NTBC and Nature Conservancy of Canada lands in the complex.
3. Boundary fencelines were assessed and repaired (~1.2km).

#### **Columbia Lake Eastside Conservation Complex (NTBC)**

1. Dismantling and piling of old abandoned water tower for future burning.
2. Removal/disposal of all non-combustible material from the water tower.

### **Columbia Lake Westside Conservation Complex (NTBC)**

1. Spur Lake “No Camping” signs were installed.
2. Rangeland Health Assessments were conducted.
3. Detailed access road inventory was completed on the property.

### **Gold Creek Game Reserve (Strauss Road) Conservation Property (NTBC)**

1. Newly installed southern boundary fenceline was seeded with a native seed blend.
2. Fenceline ROW was cleared of down trees and vegetation left by the contractor.

### **Newgate/Bar 40 Conservation Property (FLNRORD)**

1. Installation of 3 large riparian vegetation exclosures around the newly created wetlands was led by the NTBC crew, with help from some FLNRORD staff.
2. Riparian vegetation was planted within exclosure fencing blocks.
3. Live-staking of local riparian vegetation was completed around newly created wetlands and stream network.

### **Grand Forks / Gilpin Conservation Property (NTBC)**

1. Boundary signage was updated (4 signs).
2. Wetland range exclosure fencing was assessed and repaired.
3. Recently planted trees were assessed for survival, and browse protectors were re-installed around many.

### **Silvertip Ranch (NTBC)**

1. Re-seeded disturbed areas with organic native seed mix, following machinery work required to repair wetland.
2. Live-staked riparian vegetation (~100 stakes) adjacent to stream channel in the fall of 2019.

### **Elizabeth Lake (FLNRORD)**

1. Property infrastructure was inventoried and recorded in the *Collector* App
2. Property boundary signage was installed (2 signs).

### **Slocan Lake Conservation Property (NTBC)**

1. An assessment of trespass and illegal firewood harvest was conducted.
2. Wildlife tree inventory was initiated.
3. Opportunistic engagement with local residents was completed. This led to a wealth of information related to the values of the property being collected and recorded.

### **Waldie Island (NTBC)**

1. Invasive plant inventory was complete, and a biocontrol option was recommended for future treatment.
2. Property inspection was completed, and boundary signs were updated (2 signs)

### **Columbia River Wetlands - Edgewater (NTBC)**

1. Initial property infrastructure (i.e. signage, kiosks, outbuildings, waterlines, fence lines) was inventoried, assessed and recorded in the *Collector App*.
2. Fenceline along the highway was repaired, and top wire was lowered to allow for wildlife crossing.
3. A parking area, rail fence, and kiosk were created to allow for a safe public access site.
4. 4 Bluebird boxes were installed.
5. 10 Property boundary signs were installed.

### **Columbia River Wetlands – Brisco Unit (NTBC)**

- The Conservation Crew Technician took part in the last year of the Columbia Wetlands Waterbird Survey this year. They attended a waterfowl Identification training session, and participated in 3 survey dates. The NTBC Brisco property was surveyed each session.

## **7.0 Recommendations:**

While the 2019 field season was a successful one for the Conservation Youth Crew, there are always things that can be improved upon. Recommendations for 2019 include:

- A) Consider supplying the crew with Wilderness First Aid Training.
- B) It is recommended that the crew get certified as Assistant Pesticide Applicators, in order to chemically treat smaller invasive plant infestations under the supervision of the Kootenay Conservation Land Coordinator.
- C) Continue to train crew with S100 and S185 due to hot, dry summers the Kootenays are experiencing.
- D) Continue training the crew with ATV training, if required.
- E) Continue to integrate the crew with FLNRORD staff and their projects, as the crew had highlighted that as one of the best parts of their employment.
- F) Make a concerted effort to visit west Kootenay properties at least twice annually with the crew.
- G) Continue to upgrade some of the tools and supplies to help to efficiently and safely deliver our work plan.
- H) Continue to hire a longer term technician to allow for field work to continue well into the fall.
- I) Investigate the need and feasibility of hiring a full time technician to help support the Kootenay Conservation Land Manager and Land Coordinator

## **8.0 Acknowledgements:**

The Nature Trust of British Columbia gratefully acknowledges the financial support of the Fish and Wildlife Compensation Program for its contribution to this component of the project.

NTBC also wishes to acknowledge the other funders for the 2019 Conservation Youth Crew in the Kootenay Region. They include: The Habitat Conservation Trust Foundation and Employment Skills and Development Canada.

## 9.0 Appendices – Conservation Youth Crew Photos:



*Photo 1: Crew member surveying the Columbia Wetlands – Brisco Unit for waterfowl counts*



*Photo 2: NTBC Chainsaw Operation and Maintenance Training – College of The Rockies*



*Photo 3: NTBC ATV Training Course in 2019 - Revelstoke*



*Photo 4: Kiosk repair and signage replacement – Bull River Conservation Complex.*



*Photo 5: Pumpkinseed assessment and verification at Bummers Flats Conservation Complex*



*Photo 6: Installation of riparian vegetation exclosure fences at the Earl Ranch Conservation Property.*



*Photo 7: Water tower removal – Columbia Lake East*

*Photo 8: Canada Thistle treatment – Duncan-Lardeau Conservation Properties*

*Photo 9: Wetland training and assessment - Hoodoos*