

**Land Management Operations Project
(COL-F20-W-3011-DCA)
2019-20 (F20) Activity Report
1 April 2019 to 31 March 2020**



Prepared for: Fish & Wildlife Compensation Program

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Executive Summary

The Land Management Operations Project includes the coordination, oversight and implementation of Land Management activities associated with conservation held lands. Delivery methods include in-house participation, contractors on Ministry held properties and contribution agreements with non-governments organizations, such as The Nature Trust and The Nature Conservancy of Canada. The Guardian Watch Program, a partnership between local First Nations, FWCP and FLNRORD, was initiated in 2019. Activities conducted on conservation lands in 2019 consisted largely of invasive species removal efforts. At the Duncan-Lardeau conservation areas this included a survey of invasive plants for comparison with results from 2016. An effectiveness assessment of the burdock control program was also conducted, in addition to on-going burdock control efforts by a local crew. The annual FLNRORD invasive species crew mapped and treated 20 invasive plant species at 13 different sites including conservation areas and ecological restoration units. The Guardian Watch Program members provided monitoring and public education in conservation areas, in addition to surveys and removal of invasive species. Slashing was completed in conservation areas to improve the abundance and vigor of ungulate browse species.

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1. Introduction

Fish & Wildlife Compensation Program (FWCP) projects are delivered through several different mechanisms including contribution agreements, annual grant intakes, directed projects, contracts, partnerships and long-term agreements. All FWCP funded projects must align with Columbia Region Action Plan priorities and go through a three-stage review and evaluation process that ends with a final decision by the FWCP Columbia Board, which includes representation from BC Hydro, the Province of BC, First Nations and Public Stakeholders.

In the Columbia Region, annual and ongoing fish and wildlife projects are delivered with support from the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) through a Letter of Agreement (LoA). The Land Management Operations Project is one such project delivered by FLNRORD staff, contractors and partnerships.

The Land Management Operations Project includes the coordination, oversight and implementation of Land Management activities associated with conservation held lands. Delivery methods include in-house participation, contractors on Ministry held properties and contribution agreements with non-governments organizations, such as The Nature Trust and The Nature Conservancy of Canada. FWCP has partnered with these conservation organizations in the purchase of critical conservation lands and have agreed to continue to support the ongoing management. The Guardian Watch Program, a partnership between local First Nations, FWCP and FLNRORD, was initiated in 2019.

This year's land management operations included:

1. Invasive species crew – Duncan/Lardeau
2. Invasive species crew – Lower Columbia and Lower Arrow
3. Conservation Lands habitat restoration, monitoring and maintenance – Duncan/Lardeau and Lower Arrow
4. Slashing – Limpid Creek and Marsden

In fiscal year 2019-20 (F20), the FWCP Columbia Board approved \$246,824.35 for annual and ongoing Land Management Operations.

2. Goals and Objectives and Linkage of FWCP Action Plans and specific action(s)

The work of the Land Management Operations Project is focused on maintaining productive and diverse ecosystems (Upland/Dryland Action Plan Objective 1). More specifically, in 2019, it focused on Sub Objectives 2 - to reduce threats to priority habitats, 3 - to restore degraded habitats, and 4 - complete management plans for conservation properties and implement. This was achieved by treating invasive plant infestations on, or adjacent to, conservation properties and other ecologically significant areas, monitoring the status of invasive plant infestations and their responses to treatment, contributing to the restoration planning and treatments of NDT4 ecosystems on crown land (i.e. slashing), and addressing access management and other compliance enforcement issues on the FWCP managed properties.

Fiscal 20 proposed activities include:

1. Invasive species inventory and mechanical treatment on 5 Duncan/Lardeau conservation properties. Priority species to include burdock and hawkweed.
2. Treatment and monitoring of priority invasive species on Pend d'Oreille conservation properties and surrounding areas (bullfrog, hoary alyssum, yellow flag iris). Mechanical treatment at Deer Park and Marsden conservation properties.
3. Monitor and maintain restoration works completed at conservation properties.
4. Implement slashing treatments of decadent palatable shrubs for ungulates on approximately 7 ha.

Below are the linkages of the FWCP Action Plans to our specific action(s):

The Columbia Action Plan that this proposed project most closely aligns with is:

Upland and Dryland

Priority Actions:

Prevent and manage invasive species on, or adjacent to, conservation properties, restoration sites, and other ecologically sensitive areas.

Numbers 1 and 2 above apply to this action.

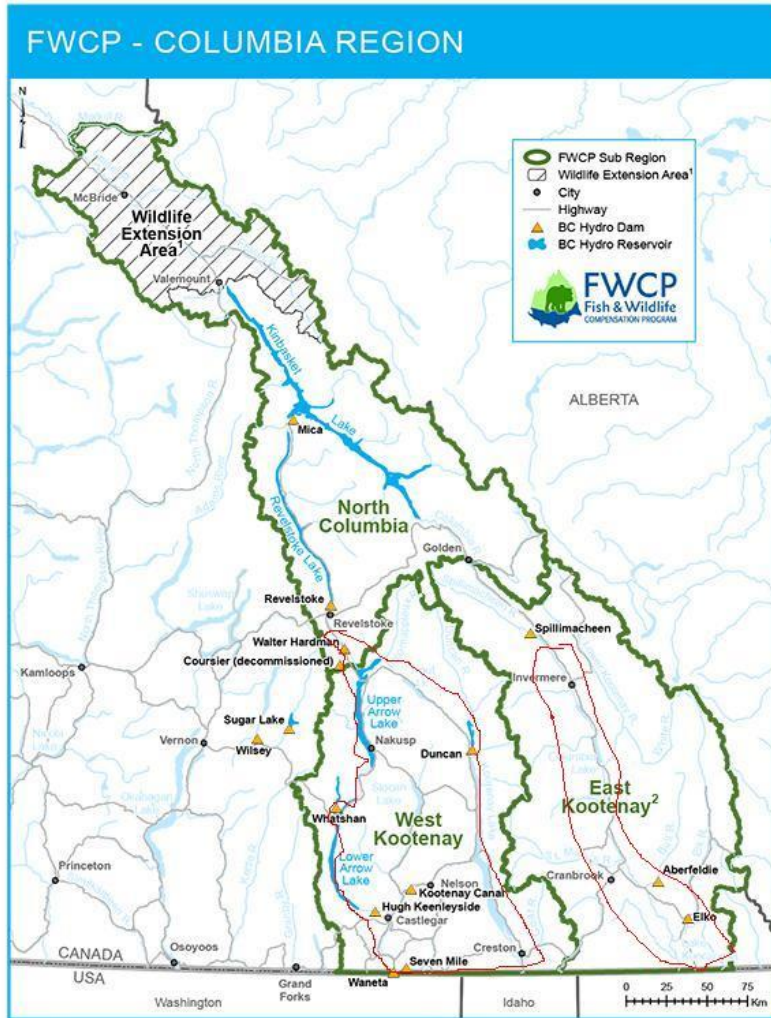
Monitor the status of invasive plant infestation and their response to treatment.

Numbers 3 and 4 above apply to this action.

3. Study Area

Figure 1 outlines the area that encompasses all the activities that are occurring as part of the Land Management Operations Project.

Figure 1: Land Management Operations Project Study Area



¹ Wildlife Extension Area: The Upper Fraser area was added to the Program based on limited opportunities for wildlife compensation projects in the Canoe Reach.
² The Upper Kootenay Ecosystem Enhancement Plan (UKEEP) is within the East Kootenay.

Figure 2 shows the locations of conservation areas and Ecological Restoration units in the West Kootenay that were treated for invasive species in 2019.

Figure 2: Locations treated for invasive species in 2019



4. Methods

The Land Management Operations activities that make up this project involves the following: 1) ongoing treatment of invasive plant species, using a combination of hand (mechanical) treatment and chemical treatment, targeting priority species and priority areas, including the MFLNRORD – FWCP owned conservation areas, ecological restoration sites, and resource roads leading into either of the latter; 2) enforcement patrols of the conservation areas targeting areas of high traffic and non-compliance activities, most notably illegal tree cutting and off-road vehicle use in sensitive habitats. This also includes the installation of signage as part of the signage refresh; 3) the Guardian Watch Program was initiated by getting First Nations Guardians oriented on the conservation properties and performing enforcement patrols, signage installation, and the removal of invasive species, as previously discussed; 4) slashing of tall-growing palatable shrub to increase the vigour of their regrowth and availability of forage for ungulates; and 5) collaboration with NTBC and NCC on projects, including invasive plant inventories and treatments and ecosystem restoration activities, occurring on their properties (reported out on separately by these agencies).

5. Results and Outcomes

1. Invasive Species Crew – Duncan/Lardeau

- a) Conducted invasive plant survey of Duncan/Lardeau conservation area for comparison to 2016 survey results.
- b) Found reduced abundance of all IAPs where shade and competition from taller vegetation had increased.
- c) Abundance of spotted knapweed and reed canary-grass remained the same or greater where these occurred in open areas.
- d) Effectiveness review of Burdock control program that was initiated in 2014.
- e) Found burdock density had decreased but overall distribution remained unchanged.
- f) Total of 123 person days of burdock removal effort conducted by local crew and found to be insufficient to remove all second-year flowering plants.

Deliverable Reference: Herbison, 2020.

2. Invasive Species Crew – Lower Columbia and Lower Arrow

- a) Mapped and treated twenty species of invasive plants in eight conservation areas and four ecological restoration units.
- b) In total, 212 ha were surveyed and 22.5 ha were treated over 60 days.
- c) Conservation areas treated include Duncan-Lardeau, Marsden, Walter Clough, Coleman Ranch, Deer Park, Broadwater, Renata, and Pend d'Oreille, while ER units treated include Greywolf, Tulip, Broadwater, Deer Park Mountain, and Twobit-Sunshine (Figure 2).
- d) More focus on Lower Arrow FSRs, Marsden and Walter Clough conservation areas, and less effort on Deer Park and Pend d'Oreille conservation areas and the Lower Arrow ER units in 2019.
- e) Noted continued reduction in densities of hawkweed, hoary alyssum, Fuller's teasel, Scotch thistle, common tansy, Himalayan blackberry, and burdock.
- f) Data has been uploaded into the provincial Invasive Alien Plant Program database and the report uploaded to EcoCat.

Deliverable Reference: Fox, 2020.

3. Conservation Lands Habitat Restoration, Monitoring and Maintenance – Duncan/Lardeau and Lower Arrow

- a) Introduction of First Nations Guardian Watch Program.
- b) Guardians provided 24 days of monitoring and education in conservation areas, in addition to surveys and removal of invasive species.
- c) Enabled a survey of the rarely visited Renata conservation area, a yellow-flag iris removal project at Walter Clough conservation area, the survey and treatment of invasive of an Interfor staging site in Lower Arrow, the discovery and removal of the first Scotch broom site in Lower Arrow, and an extended survey of FSRs and trails at Marsden conservation area.
- d) Signage refresh, begun in 2018, was continued and has resulted in reduction of activities causing soil disturbance in Broadwater and Deer Park conservation areas.
- e) Data has been uploaded into the provincial Invasive Alien Plant Program database and the report uploaded to EcoCat.

Deliverable Reference: Fox, 2020.

4. Slashing – Limpid Creek and Marsden

- a) Completed 7 ha of slashing at Marsden conservation area to improve abundance and vigor of ungulate browse species.

A spatial layer showing EKE and WKE burning and slashing is available in the BC Government layer library.

<https://catalogue.data.gov.bc.ca/dataset/habitat-enhancement-burning-and-slashing-activity-fish-and-wildlife-compensation-program-columbia-ba>

6. Discussion and Recommendations

This year's Land Management Operations Project involved ongoing invasive species programs on conservation held properties. A contract biologist located near Meadow Creek conducted a general invasive plant survey of the Duncan/Lardeau conservation properties and an effectiveness review of the burdock control program that was initiated in 2014. Invasive species of concern that were noted on and adjacent to the properties (in the case of Scotch broom) include Canada and bull thistles, Scotch broom, reed canary-grass, spotted knapweed and burdock. Recommendations are to concentrate future invasive species control efforts in open areas that are lacking competition from taller species, such as meadows and wetland edges, and in discreet patches that can be fully eliminated.

This marked another year of gradual progress for invasive treatments in conservation areas and ecological restoration units where continued reduction in densities of hawkweed, hoary alyssum, Fuller's teasel, Scotch thistle, common tansy, Himalayan blackberry, and burdock to low levels at many sites is proof that appropriate and diligent removal techniques do work over time. Over a span of 60 field days during 2019, the weed crew mapped and treated twenty species of invasive weeds in eight conservation areas and four ecological restoration units. Invasive species removal efforts should continue, following the detailed site- and species-specific recommendations provided in the summary report.

Initiation of the Guardian Watch Program in 2019 resulted in a greater presence on the ground in the conservation areas. With the goal of improving compliance within the conservation areas, the Guardians conducted compliance monitoring, educated users, and worked with Natural Resource Officers. It also enabled for additional operations to be conducted within the conservation areas, including a survey of the rarely visited Renata conservation area, a yellow-flag iris removal project at Walter Clough conservation area, the survey and treatment of invasive of an Interfor staging site in Lower Arrow, the discovery and removal of the first Scotch

broom site in Lower Arrow, and an extended survey of FSRs and trails at Marsden conservation area. A signage refresh (including educational signs identifying prohibited activities in the conservation areas and clearly delineating conservation area boundaries) in the Deer Park and Broadwater conservation areas in 2018 was noted to have had a positive effect on compliance in these areas. Going forward, it is recommended that the Guardian Watch Program be continued and that the signage refresh be rolled out to all other conservation areas. A number of informal trails and off-road accesses have also been identified to be deactivated.

7. Acknowledgements

This project was prepared with financial support Fish & Wildlife Compensation Program on behalf of its partners, BC Hydro, the Province of B.C., Fisheries and Oceans Canada, First Nations, and Public Stakeholders to conserve and enhance fish and wildlife in watersheds impacted by BC Hydro dams. We would like to thank all identified above. Also, we would like to thank all branches of the FLNRORD that contributed to the delivery, including the Habitat section, Range branch, and Natural Recourse Officers. We would also like to thank the members of the Guardian Watch Program who contributed to this year's program. Other organizations such as CKISS, TNTBC and NCC also participated in aspects of this project and their help is greatly appreciated.

8. References

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