BC/NTBC Joint Conservation Land Management Program

(Wildlife O&M)

HCTF Project #0-451

Regional Summary Reports

2019-20

West Coast Region

Region: West Coast

Ecological Significance of the Region:

The Vancouver Island West Coast Region contains some of the most diverse and rarest ecosystems in British Columbia and support internationally significant populations of fish and wildlife as well as some of the rarest species found in the Province.

Estuaries, wetlands and riparian areas are among the most diverse and productive ecosystems in the world. The importance of protecting and managing these habitats cannot be understated given their substantial life history functions and benefits not only to fish and wildlife but to the human population as well (e.g. clean water supplies, flood protection, mitigating impacts from climate change). It is estimated that more than 50% of wildlife species in North America rely on access to wetland habitat for at least part of their life-cycles, and almost 35% of all rare, threatened, and endangered wildlife species are dependent on wetland ecosystems (Wetland Action Plan for British Columbia, 2010).

In British Columbia, estuaries and coastal wetlands comprise less than 3% of BC's coastline, while providing habitat to over 80% of all coastal fish and wildlife species. Approximately 500 species of named plants and animals are associated with wetlands and estuaries, and 70 of those species are federally listed as endangered or threatened. Vancouver Island and the Central contain significantly higher ranked estuaries than any other eco-region in the province (CWS Technical Report Series #476, 2007). Of the 8 Class 1 estuaries in BC, 4 are located on Vancouver Island.

Key Property Complexes

Baynes Sound	Buttertubs Marsh
Cluxewe Estuary	Cowichan Estuary
Dudley Marsh	Filberg Marsh
Kingcome Estuary	Lazo Marsh
Nanaimo Estuary	Orel Lake
Englishman River (PQWMA)	Salmon River Elk Reserve
Salmon River Estuary	Asseek Estuary
Somenos Marsh	Kumdis Slough
Willow Creek	Bella Coola Estuary
Koeye Estuary	Quatse WMA
Tofino Mudflats WMA	

Despite their importance and rarity, approximately 43% of the province's estuaries are threatened by coastal development, modification, and pollution; approximately 60% of marsh habitats along the estuaries of the Salish Sea have been lost.

Since 1976, The Nature Trust of BC and the Province of British Columbia has worked together with several partner agencies to secure these critical habitats on Vancouver Island and the Central Coast. From the Cowichan Estuary to the Kingcome Estuary more than 110 conservation properties have been secured protecting over 15,000ha of critical fish and wildlife habitat along with rare ecosystems.

Summary Statement of Regional Investment:

In 2019-2020, $134,510 was invested by HCTF in the West Coast Region. This funding was matched by over $1.8million dollars in partner cash contributions as well as $200,000 in in-kind contributions by volunteer groups, local governments and First Nations.

Project Highlights:

- $10,576 at the Nanaimo River Estuary Conservation area to support a large scale restoration project that removed 3.5km of old dikes, complete estuary resilience monitoring work, create updated habitat maps, continue invasive species inventory and removals and install updated interpretive signs.

- $12,088 at the Parksville Qualicum Beach Wildlife Management area to support ongoing restoration works at the Englishman River Estuary, installation of new boundary and regulatory signs, invasive species inventory and removal, ongoing work to address trespass and encroachment concerns, and work to implement a foreshore evaluation framework for coastal projects within the WMA.

- $8,048 at the Cluxewe Wildlife Management Area to support estuary monitoring work in partnership with the Kwakiutl First Nation, construction of a new interpretive kiosk, and updated habitat maps.

- $3,088 to support regional initiatives such as compliance and enforcement coordination, coordination of permitting, review of conservation land regulations, and finalization of foreshore evaluation framework.

- $13,257 at S'amunu Wildlife Management Area to support ongoing species-at-risk restoration and recovery plan implementation, invasive species inventory/removal, implementation of the Ye'yumnuts restoration and heritage plan with Cowichan Tribes, finalization of the S'amunu Management Plan, and ongoing work to resolve trespass issues throughout the WMA.

- $10,985 at Cowichan Estuary Conservation Area to support restoration work being completed in partnership with Cowichan Tribes, on-going species at risk restoration projects focused on Short-eared Owls, annual farm plans, dike inspection and maintenance, invasive species removal and viewing platform replacement/upgrade.

- $1,425 at the Asseek Estuary Conservation Area to implement estuary monitoring program in partnership with the Nuxalk First Nation; and,

- $3,719 at Dudley Marsh Conservation for viewing platform and boardwalk upgrades, ongoing invasive species inventory and removal, and water control structure maintenance and monitoring.

Conservation Outcomes:

Key conservation outcomes for the West Coast region include:

- Invasive species control measures taken on approximately 10ha of estuarine and riparian habitat at S'amunu WMA, Nanaimo River Estuary, Englishman River Estuary and Salmon River Estuary treated for invasive species. This includes over 6 ha of Scotch Broom and Reed Canary Grass treated at Salmon River Estuary and nearly 2ha of Scotch Broom and Himalayan Blackberry removed from the Nanaimo River Estuary.

- Restorative actions including planting of native trees, plants and shrubs on over 7ha of estuarine and riparian habitat at S'amunu WMA, Englishman River Estuary and the Salmon River Estuary.

- 65km of coastline re-surveyed and inventoried for spartina with 320kg removed (decreased from 200kg removed in 2018).

- 3.5km of dikes removed at the Nanaimo River Estuary restoring natural tidal circulation and inundation to over 60ha of habitat.

- Increasing monitoring and inventory work at several conservation area with focus on estuary resiliency, water quality, migratory and breeding birds, invertebrates, and salmonids.

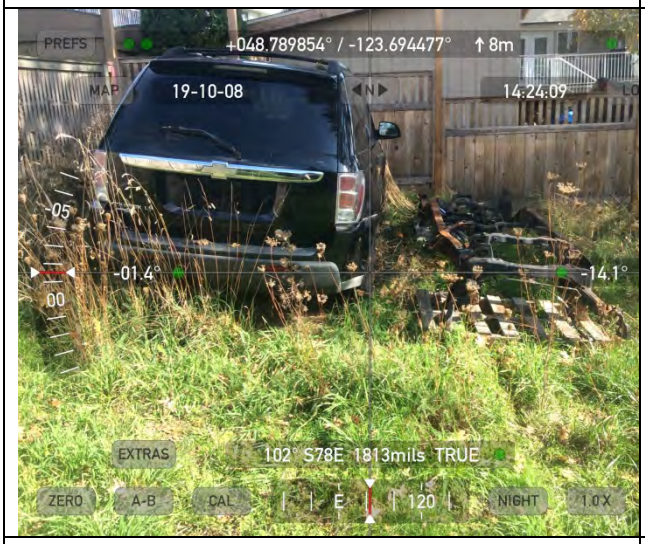
- On-going partnerships with First Nations, Local Governments, Stewardship Groups, and Fish and Game Clubs

Photographs

	
Before: Salmon River Invasive Plant Mowing	After: Salmon River Invasive Plant Mowing
	
Salmon River Site Prep for planting	Salmon River Site Prep for planting

English River: Planting with volunteers at restoration site

English River: WCCLMP Crew working with volunteers on watering program to maintain previous planting



S'amunu WMA Trespassing: Vehicle and Debris parked within WMA boundary

S'amunu WMA Ye'yumnuts: Test holes with Cowichan Tribes archeologist prior to planting/restoration

	
S’amunu WMA Ye’yumnuts: Invasive plant treatment – Solarisation of Reed Canary Grass	S’amunu WMA: Homeless Camps monitoring and removals

South Coast Region

Region: South Coast

Ecological Significance of the Region:

The majority of Lower Mainland Region conservation projects focus on the Fraser River and its tributaries. One of the largest rivers in the world, the Fraser flows from the Rocky Mountains south and west to the Fraser-Puget lowland, and into the Pacific Ocean at the Strait of Georgia. The Fraser Basin watershed drains one quarter of the province. Sand and silt eroded from glacial terraces along its path are deposited as a delta in the Strait of Georgia. This delta is highly productive from an agricultural and human habitation perspective, making the Lower Mainland the socio-economic centre of the province.

The confluence of the Fraser and the Pacific Ocean results in delta marshes, estuaries, and an incredible level of diversity in fish and wildlife populations. The Fraser is the world's largest salmon river, while its estuaries provide critical resting areas for salmon migrating from salt to fresh water. Important year-round habitat for many bird species, the Fraser estuary is also a vital link in the Pacific Flyway, supporting over 1.5 million birds from three continents and 20 countries. The Boundary Bay, Sturgeon Bank, Roberts Bank, and South Arm Marshes Wildlife Management Areas (WMAs) have been designated as Western Hemisphere Shorebird Reserve Network sites. The estuary supports the largest wintering shorebird and waterfowl populations in Canada. The area also provides habitat for significant numbers of raptors and marine mammals.

The South Coast Region contains 22 Conservation Land complexes, administered regionally, including a number of properties owned by The Nature Trust of British Columbia (NTBC).

Summary Statement of Regional Investment:

In 2019-2020 $91,580 was invested in 19 conservation land complexes in the South Coast region, to assist regional staff and partners in achieving management objectives. Significant investments were made to eradicate invasive species, maintain infrastructure and public access, remove rubbish, and identify ecological restoration opportunities from these conservation lands. A significant investment was also made to support the ongoing research into the cause of approximately 250 hectares of marsh loss throughout the Fraser estuary conservation lands. Additionally, local stakeholders and conservation partners were engaged to identify opportunities to facilitate the ecological resilience of tidal marshes in the Fraser estuary conservation lands with anticipated increases in sea level.

In October 2017, the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) partnered with Ducks Unlimited Canada (DUC), NTBC, and the Canadian Wildlife Service to initiate the South Coast Conservation Land Management Program

(SCCLMP). Modelled off the successful West Coast Conservation Land Management Program (WCCLMP), the goal of the SCCLMP is to provide a more collaborative and integrated approach to the management of conservation lands for the benefit of fish, wildlife, species at risk, and their habitats. In 2019/2020 this program continued to leverage resources to apply a strategic focus to the management of Wildlife Management Areas in the South Coast. A full-time Coordinator leads the partnership, including overseeing the South Coast HCTF Conservation Lands O&M budget and expanding the capacity of the program by soliciting additional funds and promote community stewardship throughout conservation lands. HCTF O&M funding continues to support the activities of the SCCLMP partnership program.

In 2017/2018 Fisheries and Oceans Canada selected three projects within South Coast Conservation Lands to receive significant investment from the Coastal Restoration Fund over the next five years. One of the main goals of each of these projects is to increase fish passage through river training structures and other infrastructure throughout estuaries. Funding includes $1.9 million to the Squamish River Watershed Society for a project in the Skwelwil'em Squamish Estuary WMA, $2.0 million to Ducks Unlimited Canada for a project in the South Arm Marshes WMA, and $2.7 million to Raincoast Conservation Foundation for a project in the Sturgeon Bank and Roberts Bank WMAs. Throughout 2019/2020 all three projects have been engaging stakeholders, conducting project planning activities, and monitoring fish utilization of the respective WMAs. In fall 2019 Raincoast Conservation Foundation continued construction of breaches in the Steveston North Jetty to facilitate fish passage and transportation of freshwater and sediments to the Sturgeon Bank WMA foreshore. In late 2019 Ducks Unlimited Canada replaced aging undersized culverts with larger culverts between two islands in the South Arm Marshes WMA to facilitate fish passage and freshwater flow. Over the next two years the SCCLMP Coordinator will continue work with each organization to help make each project a success and to look for opportunities to support ongoing conservation land management activities.

Project Highlights:

$8,356 invested in Bert Brink WMA for property inspection, invasive plant assessment, rubbish removal, and preparation of an ecological restoration plan.

$8,222 invested in Boundary Bay WMA for property inspections, rubbish removal, invasive plant management, sign maintenance, and engagement with local stakeholders for integrated planning.

$3,039 invested in Camp Slough Conservation Area for property inspection, invasive species management, and rubbish removal.

$22,488 invested in the Pitt-Addington Marsh WMA to assess land management needs and ecological values, maintain informational signage, maintenance of public access trails and facilities, demolish aging viewing platform, construct new viewing platform, and management planning for species at risk and nuisance species.

$2,188 invested in Serpentine WMA for tower and trail maintenance, garbage pickup and removal, and vegetation maintenance.

$1,713 invested in South Arm Marshes WMA for site visits and inspections, management of invasive species, and coordinating integrated shared stewardship with local stakeholders, research partners, and members of the public.

$7,883 invested in Sturgeon Bank WMA to support ongoing research into the cause of marsh recession throughout the WMA and coordinate with stakeholders and government to ensure the ecological and shoreline projection values of the Fraser River Estuary WMAs are incorporated into regional flood adaptation strategy planning. Sturgeon Bank WMA benefits from stewardship of, and proactive action by, the City of Richmond with respect to management of invasive species, vegetation management and removal of garbage along the dyke trail that is adjacent to the WMA.

$3,369 invested in the Lhá:lt/Harrison-Chehalis WMA for property inspection, rubbish removal, invasive species management, maintenance of property information signage, planning for site access and signage requirements, and integrated shared stewardship with local stakeholders.

$2,076 invested in the Silverhope Creek Conservation Area for inspection for land management needs, public information sign installation, rubbish removal, and boundary identification.

$1,888 invested in the Wells Sanctuary Conservation Area for property inspections, invasive plant removal, rubbish removal, and signage.

$2,734 invested in the Chilliwack River Conservation Area for property inspection, rubbish removal, and maintenance of property information signage.

Conservation Outcomes:

Restoration and enhancement of conservation lands for habitat values ensures that these lands are optimal for use by fish and wildlife that depend on them; approximately 29 hectares of conservation lands were directly restored or enhanced in 2019/2020. Informational signage, indicating property ownership and management partners, serves to demarcate boundaries and to provide the public with the means to contact a land manager to discuss management concerns

and issues. Maintenance of access points and facilities on conservation lands ensures that public access will be safe.

Additional and Partner Funding:

Over $692,880 of funding was provided by FLNRORD, DUC, NTBC and ECCC:

1. $33,176 from FLNRORD to support land management activities, including:
    a. $13,176 funding to support land management
    b. $20,000 in-kind support for SCCLMP office space and fleet vehicle use
2. $505,304 from DUC for land management activities in WMAs and other conservation lands, including:
    a. $355,320 invested in the South Arm Marshes WMA for the DUC Coastal Restoration Fund to restore tidal marshes and fish access, including
        i. $329,354 in direct costs
        ii. $25,966 in staff time
    b. $90,000 invested in the Boundary Bay and Roberts Bank WMAs for the Spartina Eradication Program
    c. $30,343 invested in the Serpentine WMA for general site management (e.g., regular project inspections, habitat maintenance, minor infrastructure repairs, design and installation of new signage, responding to inquiries from members of the public), including
        i. $12,296 in direct costs
        ii. $18,047 in staff time
    d. $23,394 invested in the Pitt-Addington Marsh WMA for general site management (e.g., regular project checks, habitat maintenance and vegetation control, excavator and operator for beaver dam removal), including
        i. $11,421 in direct costs
        ii. $11,973 in staff time
    e. $6,247 invested in the Cheam Lake Conservation Area for general site management (e.g., regular project inspections, maintenance of habitat and water control infrastructure, small tools and supplies), including

   i. $1,137 in direct costs

   ii. $5,110 in staff time

3. $94,400 from NTBC for operations and maintenance activities on NTBC leased properties, including:

   a. $20,000 funding to support land management

   b. $32,400 funding in private donations to support the Conservation Youth Crew

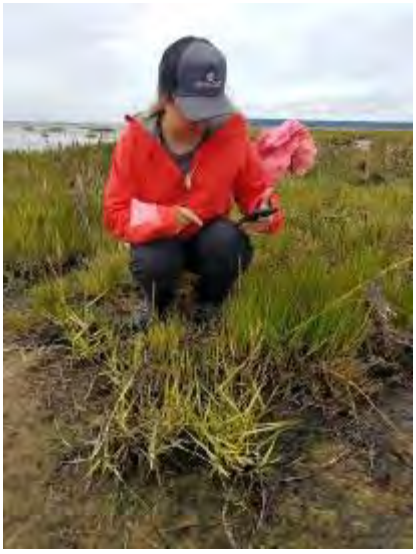
   c. $22,000 in-kind staff time to support land management

   d. $20,000 in-kind volunteer time for garbage cleanup events.

4. $60,000 from ECCC Priority Places funding for operations and maintenance activities and marsh recession project research.

Photographs

1. Bert Brink WMA – extensive rubbish removed from conservation area. Sediment tile installation and baseline measurements to measure freshet sediment deposition.



2. Boundary Bay WMA – mapping of Spartina. Community shoreline cleanup.

3. Camp Slough – wrapping select trees to prevent beaver damage. Maintaining nest boxes.

4. Lhá:lt/Harrison-Chehalis Wildlife Management Area – removal of rubbish.

5. Silverhope Creek – removal of rubbish from illegal dumping sites.

6. Wells Sanctuary – Recording yellow flag iris for removal. New perimeter fence installed to deter camping (no HCTF funds used for fencing project).

7. Chilliwack River – Shoreline cleanup events with Backcountry Hunters & Anglers and Mount Cheam Christion School.

8. Surrey Bend – monitoring for invasive plants and ecological features.

9. Skwelwil'em Squamish Estuary Wildlife Management Area – installation of signs for new WMA regulations and to highlight contributions of land management partners.

Thompson Okanagan Region

Region: Thompson Okanagan

Ecological Significance of the Region:

The Thompson Okanagan Region has a dry, continental climate, as it lies in the rain shadow of the Coast and Cascade Mountain ranges. Vegetation varies from Engelmann spruce and lodgepole pine at subalpine elevations, Douglas-fir at lower elevations, and ponderosa pine, bunchgrass, and sagebrush at the valley bottom. These vegetation zones are in relatively close proximity to one another, resulting in extremely rich biological diversity in a small area.

The Thompson and Nicola landscapes in the north and east of the region vary from the northernmost range of the Cariboo Mountains in Wells Gray Provincial Park to rolling grasslands and the river valleys of the North and South Thompson Rivers that merge in Kamloops and reach the Fraser River in Lytton. The region also extends beyond into Lillooet and the surrounding Coast Mountains through the Bridge River valley which flows from snowfields in the Coastal Mountains and joins the Fraser River near Lillooet. The landscape has more than 300 fish-bearing lakes, sage-dressed hills, vast rolling grasslands, looming mountains and alpine valleys. The grassland areas north of Kamloops Lake are recognized for their importance to wildlife, primarily California bighorn sheep, mule deer and many species at risk.

The Okanagan portion of the region, especially in the south, contains large numbers of unique flora and fauna, as it is the northern extension of the Columbia Plateau. Analysis has shown that the South Okanagan is both the top biotic rarity hotspot and the top species richness hotspot in British Columbia. It has more federally listed species at risk than any other area of the province, and more provincially Red-listed and Blue-listed species than elsewhere. Furthermore, with some 303 species of birds recorded from the Okanagan, and similar richness in other animals and plants, many species are found here and nowhere else in Canada (Scudder 2006). Human development over the past century has resulted in dramatic reductions in native habitat. Grasslands, and the antelope-brush ecosystem in particular, have been greatly impacted. Over the past 15 years, the antelope-brush ecosystem has been reduced in area by over 65%, with current loss estimated at 2% per year. Channelization of the Okanagan River for flood control in the 1950s reduced its associated marshland by 85 to 90%, seriously impacting riparian habitat viability in the region. With population expected to double in the next 25 years, habitat in the Okanagan will become increasingly endangered over time.

The Nature Trust of British Columbia has been working in the Okanagan area since 1971. To date, 19 properties have been secured with the help of many funding partners, totalling over 4,250 hectares. These conservation holdings are particularly contiguous, providing habitat corridors on a landscape scale.

Summary Statement of Regional Investment:

A total of $91,977 of Wildlife O&M money was invested in the Thompson Okanagan Region in the 2019-2020 fiscal year, and this greatly assisted the conservation partners in addressing key land management objectives.

Project Highlights:

- **$33,611** was invested at Antlers Saddle Complex with an additional $20,600 in partner funding and in-kind support contributed. Most of this funding was used to install Phase II of exclusion fencing (1.6 km) along the eastern side of ACQ2 to keep cattle out and deter off-road vehicle use, adding to the Phase I fencing (2.6 km) constructed in 2018/19 using HCTF O&M funds. Other activities in this property included post-fire monitoring in collaboration with Penticton Indian Band, habitat enhancement/fuel management treatments in collaboration with BC Wildlife Service, cattleguard purchase and installation, signage installation, wildlife inventory and monitoring, wetland monitoring, fireguard monitoring, and development of a rehabilitation prescription.
- $**3,051** was invested at Dewdrop-Rosseau Creek WMA with an additional $3,350 in partner funding contributed. Primary tasks included site visits, road deactivations, a grassland and wetland survey, fence repairs, and pre- and post-fire assessments.
- **$1,903** was invested at the Skull Mountain (ACQ1) property with an additional $500 in partner funding contributed. Primary tasks included site visits, fence maintenance and purchase and installation of five replacement gates around the Corral Lake enclosure.
- **$3,700** was invested at the Okanagan Falls Biodiversity Ranch. Primary tasks included site visits, invasive species management including survey and mechanical removal, fence repairs, and continuation of the photographic monitoring program.
- $**3,700** was invested at the White Lake Basin Biodiversity Ranch. Primary tasks included site visits, invasive species management including survey and mechanical removal, working with the Okanagan and Similkameen Invasive Species Society and National Research Council and other stakeholders to continue an area-based pilot project, fence repairs, and continuation of the photographic monitoring program.
- **$6,500** was invested at the Vaseux Lake (LEA8) – Schneider property. Primary tasks included site visits, working with partners, updating and implementing conifer thinning (prescription) to improve/restore movement corridors for Bighorn sheep, planning for invasive plant management to protect this high integrity grassland habitat, continuation of the photographic monitoring program, and review and discussions with RDOS staff and contractors regarding monitoring wells and leachate control plans.

- **$4,500** was invested at the Vaseux Lake – Emery & Franmar Complex. Primary tasks included site visits, replacement of approximately 1,000 m of boundary fence partially funded by O&M, invasive plant management including surveys, mechanical control seeding following treatments, watering of riparian restoration planting to ensure survival, and continuation of the photographic monitoring program.
- **$2,931** was invested at Shorts Creek (LEA) property. Primary tasks included completion of a draft management plan for the property (not funded by O&M), discussions with BC Parks and Wild Sheep Society regarding potential habitat restoration/improvements to benefit bighorn sheep, and invasive plant inventory and control.
- **$2,500** was invested at Salmon Arm Bay (LEA) property. Primary tasks included working with Columbia Shuswap Invasive Species Society and Salmon Arm Bay Nature Enhancement Society to carry out invasive plant work including organizing a community weed pull, surveying 19 hectares, and completing mechanical control on just under 1 ha.

Conservation Outcomes:

Each of the conservation lands in the Thompson Okanagan Region has distinct management needs and objectives that reflect the unique landscape and ecology of the area. Numerous conservation outcomes were achieved on these lands in 2019-2020 using Wildlife O&M funding and over **462 ha** of land were directly or indirectly restored or enhanced. Many of these outcomes continue to build upon the efforts and investments of previous years.

The largest single investment this year was in Antler's Saddle Complex. Building upon substantial Wildlife O&M investments in the two previous years and key partnerships with Range program, the local rancher and Penticton Indian Band, Phase II fencing along the eastern extent of the ACQ2 property will lead to a reduction in impacts from untenured cattle grazing, as well as reduced unauthorized motor vehicle use in the area. A small amount of fencing as well as a heavy-duty cattle guard are still required along the southern boundary of this property; once installed, approximately 215 ha (80%) of this conservation land will be completely excluded from untenured cattle grazing impacts, resulting in preservation of wildlife habitat values including ungulate winter range. This property was heavily impacted by both the 2017 Finlay Creek Wildfire and 2018 Mt. Eneas Wildfire; additional restoration and enhancement works were targeted towards these burn areas in 2019-2020 including tree clearing along the Phase I fence right-of-way to mitigate the risk of damaged trees falling on the new fence, habitat enhancement and fuel management treatments by BC Wildfire Service, fireguard monitoring, and development of rehabilitation prescription.

Annual maintenance activities continued in 2019-2020 at numerous conservation properties, including fence inspection and repair, gate and cattleguard installation, invasive species treatment, site clean-ups, road deactivations and sign installation. For example, approximately 15 km of boundary fence lines were checked and repaired (as required) within Dewdrop-Rosseau

Creek WMA and Skull Mountain ACQ1, and five gates were installed around the Corral Lake enclosure within Skull Mountain ACQ1 in an effort to reduce cattle use to this environmentally sensitive 32 ha area. Ecosystems Section also coordinated a full day of invasive weed pulling at the SOWMA Road 22 kiosk in collaboration with their co-op students and the Nature Trust summer students, with additional partner support used to complete the annual kiosk maintenance work including wasp nest removal, bird dropping/nest cleanup, and weed management.

The Nature Trust of BC land management staff worked with various partners to maximize Wildlife O&M funding at eligible conservation sites. Invasive plant management continued to play a key role in the conservation land management efforts for 2019-2020 season. Surveys and mechanical control in high priority areas were undertaken across the region. Updating survey information was a major focus for 2019-2020; this included continuing to work with the Okanagan and Similkameen Invasive Species Society (OASISS). More than 314 surveys across 154 sites covering approximately 213.5 ha of land were carried out by summer crews at the White Lake Basin Biodiversity Ranch alone. Other partnerships including working with Region 8 wildlife biologists, Wild Sheep Society of BC, Backcountry Hunter and Anglers and South Okanagan Sportsmen's Association to improve movement corridors, habitat utilization and connectivity for bighorn sheep, by reducing forest (conifer) ingrowth. Approximately 1.5 ha of habitat was treated and restored, with plans for future work to continue once COVID-19 health and safety restrictions are lifted.

Photographs

1. South Okanagan Wildlife Management Area: before (left) and after (right) photos of invasive plant removal at the Road 22 kiosk.

2. Antlers Saddle Complex: (a) Penticton Indian Band archaeological assessment for fence installation disturbance, (b) new Phase II fence line outside of surveyed gas line ROW, (c) unauthorized trail access restricted with fencing and posted with signage, (d) pedestrian access to Ritchie lake built into new fence, (e) new cattleguard with new signage posted, (f) BC Wildlife Service Phase I fence line ROW tree clearing in wildfire damaged area (in-kind support).


(a)


(b)


(c)


(d)


(e)


(f)

3. Skaha Lake Eastside: (a) utility ROW holder reseeding oversight, (b) invasive plant control, (c) new fence construction to reduce unauthorized recreation impacts.


(a)


(b)


(c)

4. Vaseux Lake (LEA8) – Schneider: (a) habitat restoration reducing forest ingrowth, (b) RDOS monitoring well 17-05D retrofit.


(a)


(b)

5. Vaseux Lake – East, West, North: (a) new fence installation, (b) invasive tree control, (c) sign replacement.


(a)


(b)


(c)

6. White Lake Basin Biodiversity Ranch: (a) assisting with rattlesnake research (partner project), (b) Burrowing Owl Conservation Society Project (partner project).


(a)


(b)

Kootenay Boundary Region

Region: Kootenay/Boundary

Ecological Significance of the Region:

The Kootenay region is world renowned for its scenic beauty and biological diversity. Forest, shrub, grassland and wetland ecosystems provide habitat for a wide variety of plant and animal species, including many species at risk.

From the heights of the Rocky Mountain Range, there are vantage points where you can overlook the entire expanse of the East Kootenay region of south-eastern British Columbia. The western horizon, viewed from these vantage points, is profiled by the Purcell Mountain range which is separated from the Rocky Mountains by an enormous valley known as the Rocky Mountain Trench. Two great rivers begin here: the Kootenay flowing south through dry grasslands, with signs of historic wildfires, and the Columbia flowing north through a series of long valley-bottom lakes and lush wetlands. This great river eventually swings south at Boat Encampment and continues south between the Monashee and Selkirk Mountain ranges in the West Kootenay and into the state of Washington at Waneta. Another important river, the Elk, begins its journey in the eastern Rocky Mountains and winds its way along towering cottonwoods to join the Kootenay immediately south of the small community of Baynes Lake.

The geographic diversity of the Kootenay landscape along with wide variations in climate has created conditions and habitats that support rare plant life, productive aquatic systems, and abundant populations of elk, deer, Rocky Mountain bighorn sheep, mountain goat and moose. Such abundant wildlife naturally attracts predators and consequently, wide-ranging carnivores are still common in the Kootenay's. Additionally, over 270 species of birds make use of the region, many on their migratory travels along the Pacific flyway.

From a rare species perspective, the grasslands, dry forests, montane forests, scattered wetlands, and cottonwood habitats in the Kootenay region provide unique habitats that support rare species such as the American badger, Swainson's hawk, Northern leopard frog and Lewis' woodpecker.

However, the low elevation valleys of the Kootenay's, which provide some of the most important habitat for a wide spectrum of wildlife, continue to be developed and attract increased levels of human settlement. In turn, this creates additional pressures on the landscape and impacts wildlife habitat and biodiversity values. Fortunately, the Ministry of Forests, Lands, Natural Resource and Rural Development (FLNRORD) along with The Nature Trust of British Columbia (NTBC) have worked for decades to conserve ecologically significant habitats within the region. As a result, dozens of properties have been secured and, when combined with properties conserved by other land trusts and agencies, have resulted in a significant area of the Kootenay landscape being conserved in perpetuity.

Summary Statement of Regional Investment:

In 2019-20, $104,474 was invested into 23 NTBC and FLNRORD conservation property complexes in the Kootenay/Boundary region to assist regional staff and partners in achieving management objectives.

The funding was used for a wide variety of operations and maintenance activities, the highlights of which are outlined below.

Project Highlights:

Project highlights for the Kootenay/Boundary region during the 2019-20 year, include:

- $15,609 was invested into the **Bummers Flats** Conservation Complex, where invasive plant infestations (terrestrial and aquatic) were mechanically treated by the FLNRORD staff, NTBC staff, EKISC staff, and local volunteers. Approximately 6 km of fence line was assessed and repaired to eliminate trespass by domestic livestock and motorized vehicles, and updated Conservation Property Complex boundary signage was installed. Recently restored wetlands were spot seeded with a native seed blend, and wetland photo plots were established to monitor the establishment of plant communities in these sites. Finally, approximately 10ha of ingrown forested area has been identified and mapped for prescription development, and hand thinning work.

- $8,639 was invested into the **Columbia Lake Eastside** Conservation Complex, where contributions from HCTF went towards the decommissioning, disassembly and removal of an old abandoned water tower. Invasive plant infestations were chemically treated through partnerships with other FLNRORD budgets, and new Conservation Property Complex boundary signage was installed in key locations within the Conservation Complex. Additionally, a new gate was installed to help to minimize trespass by unauthorized motor vehicles.

- $6,427 was invested into the **Columbia Lake Westside** Conservation Complex, where some action items taken from the Draft Management Plan have been implemented. An intensive inventory of access roads within the complex has started. Invasive plant infestations continue to be chemically treated, and are showing positive signs of reduction in size and treatment costs. Signage has been installed around popular locations that see unauthorized camping, and coordinated efforts have begun in regards to looking into effective ways to eliminate cattle from sensitive ecosystems on the property complex.

- $4,208 was invested into the **Duncan Flats** Conservation Property Complex. This property received initial wildfire interface thinning treatments around homesteads, which is expected to continue over the next few years. Additionally, areas adjacent to recently

restored wetlands were mechanically treated for invasive species, as well as planted with approximately 850 native riparian plants.

- $3,675 was directed to the **Grand Forks – Gilpin** Conservation Property Complex in 2019-20. The majority of funding was used to collect baseline inventory information for the complex, as well as for the treatment of invasive plant infestations. Additionally, the NTBC crew completed a property inspection, inclusive of fenceline repairs, sign installation, and browse protector installation on recent plantings.

- $790 was invested at the **Waldie Island** Blue Heron Reserve for NTBC staff time to complete invasive plant assessments, blue heron use surveys, and signage updates. Findings from the invasive plant assessments have revealed that Waldie Island is a great site for a biological control release.

- $7,412 was directed to the FLNRORD **Newgate** Conservation Property for the completion of exclusion fencing around the recently restored wetland complex. Approximately 1ha of riparian area has been protected from ungulate browsing, and through a coordinated effort from FLNRORD, NTBC, HCTF, the BC Wildlife Federation, and volunteers, thousands of plants, live-stakes, and tree seedlings were planted within these exclosures. Invasive plant infestation on the property were also treated, and will continue to receive treatment in year 2 and 3 of the project.

- $3,130 was invested in the **Columbia Wetlands Wildlife Management Area** through fence maintenance and invasive plant treatments. These activities will continue in year 2 and 3 of the project. Additionally, a property inspection and infrastructure inventory was completed on the Bergingham parcel within the WMA.

- $6,500 was directed to the **Creston Valley Wildlife Management Area** in the 2019-20 season. The entire HCTF O&M contribution went towards the removal of encroaching vegetation along 1,150 meters of channel in pond 3 of the Corn Creek Marsh.

- $8,000 of HCTF funding was allocated to the chemical treatment of invasive species throughout HCTF O&M eligible properties in 2019-20. Chemical herbicide applications were completed on approximately 9.08ha, and were recorded and input into the provincial Invasive Alien Plant Program (IAPP) database to allow for continued monitoring of infestations and evaluation of management effectiveness over time.

Conservation Outcomes:

The 2019-20 field season resulted in a wide range of critical land management needs being addressed on conservation lands in the Kootenay/Boundary region. These activities included, but were not limited to: infrastructure maintenance, repair and replacement, the development of prescriptions, as well as, habitat restoration, monitoring and inventory activities.

Fencelines were assessed and repaired to reduce trespass of livestock and unauthorized motor vehicle use on sensitive conservation properties, and new gates were installed in strategic locations to help with this initiative. Newly designed Conservation Property Complex boundary signage was installed in key locations throughout the region to inform the public of land ownership and protect the important conservation values that each property possesses.

Danger tree assessments were completed on properties which receive a high volume of public use, and dangerous trees were removed by a certified professional. Danger trees are assessed based on public exposure, tree condition, risk to infrastructure, and value to wildlife. Not all dead or dying trees are considered dangerous, and an effort is made to retain all high value wildlife tress on conservation properties.

Areas adjacent to homesteads were thinned with the objective of creating an urban wildfire interface buffer, and minimize the risk of natural wildfire spreading from conservation properties, and causing damage to neighboring property infrastructure. The installation and monitoring of wildlife cameras has already proven effective in identifying that management effort target species are present/utilizing the conservation properties. This effort is expected to continue throughout the 3-year duration of this project.

Mechanical and chemical invasive plant treatments and re-seeding efforts were undertaken on many properties, intended to restore compromised ecosystems to native vegetative conditions. Significant effort was also directed to assisting in the establishment of healthy native vegetation on recently restored wetlands, including riparian planting, seeding, and exclosure fencing. On other properties, detailed assessments and inventories were completed to help inform future management actions.

Some funding was also invested into future conservation by undertaking important planning activities, including property assessments, infrastructure inventory, and invasive plant inventories. Results assist in adapting the current 3-year HCTF workplan on Kootenay/Boundary Conservation Properties, and ensuring management activities are meaningful and effective.

Approximately 19 hectares of conservation land were restored in 2019-20 with HCTF Operations and Maintenance funding. The area of restored land was calculated through the amount of area treated for invasive plants, area planted/seeded with native vegetation, as well as an area that saw vegetation removal in the CVWMA. Many other projects contributed to the restoration of conservation lands, especially through projects funded outside of the HCTF O+M budget. A minimum of 40ha was likely restored through project partners and in-kind contributions.

Photographs

Photo 1 and 2: Work party event at the Newgate Conservation Property. Wetland exclosure building.

Photo 3: Fence repair at the Grand Forks – Gipin Conservation Property Complex.

Photo 4: Wildfire thinning work at the Grave Prairie Conservation Property Complex.
Photo 5: Bags of invasive Spotted Knapweed removed from the Bummers Flats Conservation Property Complex
Photo 6: Drone monitoring of the Bummers Flats / Cherry Creek restored wetlands – Response to rising water levels of the Kootenay River.

Photo 7: Kiosk repair and signage replacement – Bull River Conservation Complex
Photo 8: Fence repair – Columbia Wetlands WMA
Photo 9: Wetland restoration site for exclosure fences – Newgate Conservation Property

Photo 10: Installation of riparian vegetation exclosure fences at the Earl Ranch Conservation Property.
Photo 11: Conservation Proeprty Complex boundary signage instalation and kiosk repair at Wigwam Flats Consevation Proeprty Complex.
Photo 12: Wildfire interface thinning – Duncan Flats

Photo 13 and 14: Water tower removal – Columbia Lake East
Photo 15: Canada Thistle treatment – Duncan Flats

Photo 16, 17 and 18: Vegetation removal at Corn Creek march – Creston Valley Wildlife Management Area

Cariboo Region

Region: Cariboo

Ecological Significance of the Region:

The Cariboo Region is a diverse landscape, ranging from coastal inlets, to the vast dry grasslands of the Chilcotin Plateau, to the interior rainforest of the Cariboo Mountains. These varied terrains and conditions result in an equally varied diversity of fish and wildlife.

The Cariboo Region contains 6 Conservation Land complexes, administered regionally, including a number of properties owned by The Nature Trust of British Columbia.

Summary Statement of Regional Investment:

In 2019-20 $23,834 was invested in 4 properties in the Cariboo to assist regional staff and partners in achieving management objectives, including assessments and maintenance for safety and ecological integrity.

Project Highlights:

$623 was invested in the Chilanko Marsh conservation area to assess the property for safety and ecological concerns. A bat survey was conducted. The perimeter fence and signage were inspected and maintained as needed.

$21,607 was invested in the Chilcotin Lake & Marsh conservation area to complete the perimeter fence and to assess the property for safety and ecological concerns. Property information signs were installed or repaired as needed.

$416 invested in the Dale Lake conservation area for property assessment for safety and ecological concerns, maintenance of property information signage, and removal of invasive plants.

$832 invested in the Tautri Creek conservation area for property assessments for safety and ecological concerns, and maintenance of property information signage damaged by recent wildfires.

Conservation Outcomes:

The 2019-20 field season resulted in a number of important land management activities on Conservation Lands within the Cariboo Region.

Invasive plants (giant burdock) were removed from approximately 1 hectare at Dale Lake.

Fence maintenance at Chilcotin Lake & Marsh and Chilanko Marsh serves to protect sensitive habitat areas from inappropriate use. There is ~3.5km of fence at Chilanko Marsh and ~21km of

fence at Chilcotin Lake & Marsh to maintain. Assessments of the ecological attributes and issues specific to each property form the basis for activity planning for the following field seasons.

Chilcotin Lake & Marsh fencing project is now complete and the entire conservation land complex is fenced.

Informational signage, indicating property ownership and management partners, with contact information was posted on properties where appropriate. This serves to demarcate boundaries and to provide the public with the means to contact a land manager to discuss management concerns and issues.

Photographs

1. Chilanko Marsh – Installed boundary signage at access points. Removed deadfall trees from access road.

2. Tautri Creek – Removed debris from water control structure. Replaced signs damaged by wildfire.

3. Dale Lake – Maintained informational signage. Removed invasive burdock plants from access road.

4. Chilcotin Lake and Marsh log fence completed.

Skeena Region

Region: Skeena

Ecological Significance of the Region:

The Skeena Region covers approximately one third of the province of British Columbia. It is a highly varied landscape, characterised by mountainous terrain, interspersed with large plateaus, a multitude of lakes and several of the province's largest rivers including the Skeena, the Nass and the Stikine.

The Skeena Region includes BC's North Coast from the Coast Mountains to the Pacific Ocean. This area is rich in biological diversity and noted for the Pacific Flyway, an important migration corridor for birds. Large rivers, such as the Nass and the Skeena, flow into the Pacific Ocean, providing critical estuarine habitats. The Skeena Region's extensive wilderness areas provide habitat for a wide variety of wildlife. Both Black and Grizzly Bears occur here, and salmon are abundant in the major rivers and tributaries.

The Skeena Region contains 8 Conservation Land complexes, administered regionally, including a number of properties owned by The Nature Trust of British Columbia, a Wildlife Management Area, and a Wildlife Habitat Management Area.

Summary Statement of Regional Investment:

In 2019-20, **$19,988** was invested in 6 properties in the Skeena to assist regional staff and partners in achieving management objectives.

Project Highlights:

$3,088 was invested in the Alice Arm conservation area for property inspection and mechanical treatment of invasive plants, especially giant burdock in riparian areas.

$1,438 was invested in the Kitsumkalum Lake – Nelson River conservation area for property inspection, access and safety evaluation, maintenance of property information signage, and garbage removal.

$1,160 was invested in the Lakelse Lake – Mullers Bay conservation area for property inspection, access and safety evaluation, boundary sign maintenance, and rubbish removal.

$1,535 was invested in the Lakelse River conservation area for property inspection, engagement with local stewardship club, and maintenance of boundary and trail signs.

$3,174 was invested in the Nadina River Valley – Owen Lake conservation area for property inspection, and maintenance of signage. Invasive plant surveys were conducted and treatment (mechanical and chemical) of invasive plants was completed.

$4,500 was invested in the Hubert Hill conservation area for fence repair, invasive plant removal, habitat restoration, volunteer supervision, maintaining seedbeds, and monitoring extent and condition of restored sites for maintenance records, research and recommendations for long-term.

Conservation Outcomes:

The 2019-20 field season resulted in management of a number of Conservation Lands within the Skeena Region, including evaluation of ecological attributes and safety concerns, which guide activity planning for ongoing land management.

Informational signage, indicating property ownership and management partners, with contact information was posted and maintained on properties where appropriate. This serves to demarcate boundaries to protect habitat values from inappropriate public usage, and to provide the public with the means to contact a land manager to discuss management concerns and issues.

Site restoration of Hubert Hill, near Telkwa, is ongoing. Success is being achieved with re-introduction of native species, preventing further site damage, and educational outreach.

In 2019-2020, approximately 10 hectares of conservation land was restored through various activities in the Skeena Region.

Photographs

1. Alice Arm – mechanical management of invasive plants (giant burdock) in riparian areas.

2. Lakelse Lake – Mullers Bay – signs maintained and rubbish removed from shoreline..

3. Lakelse River – trail stewardship signs maintained. Property monitored for invasive plants.

4. Nadina River Valley – wildfire area monitored for invasive plants. Treatment of oxeye daisy. Signs maintained on boundaries.

5. Hubert Hill – fences maintained to protect restoration area.

6. Hubert Hill restoration plots: progress through the year.

Omineca Region

Region: Omineca

Ecological Significance of the Region:

The Omineca Region encompasses a large portion of northern British Columbia, with a diversity of landscapes ranging from the broad flat pine forests of the Central Plateau to the rugged peaks of the central Rocky Mountains. This Region includes the highest mountain in the Canadian Rockies, Mount Robson (3954 m).

The Omineca Region encompasses the headwaters, or portions of the headwaters, of several provincially important rivers, including the: Frazer, Nechako, Pine, Findley, Parsnip and Stuart. Within the drainages of these rivers lie several regionally important lakes and the Province's largest reservoir, Williston Lake which lies behind the W.A.C. Bennett Dam. The rivers and their tributaries provide spawning grounds for Chinook, Coho, and Sockeye Salmon. Arctic Grayling, White Sturgeon, Rainbow, Bull and Lake Trout, as well as several species of whitefish, suckers, minnows and Burbot, all live within the Omineca Regions lakes and streams. One of the highest valued recreational rainbow trout fisheries is in the Stellako River, which in 2013 became the Omineca Region's first Wildlife Management Area. Clear, cold mountain streams provide necessary habitat for Blue Listed Bull trout in the Omineca and the large meandering Nechako and Fraser Rivers are home to Red Listed White Sturgeon.

Regionally important wetlands, such as those on the Hominka and in the Cranberry Marsh / Starratt WMA, provide much needed rest and refueling stops for a number of migratory birds. Populations of American White Pelicans nest on some of the regions lakes and White Swans winter on several rivers. The northern extent of Sharptailed Grouse range occurs on southwest facing meadows in the southern portion of the region and in the agricultural lands local breeding groups of Long-billed Curlews and Sandhill cranes can be found in the spring.

The largest herds of Mountain Caribou left in the Province reside in the mountains on the eastern side of the region, and in the north populations of Northern Caribou still roam. Throughout the Omineca region there are Moose, Grizzly bear, Black Bear, Fisher, Marten, Lynx, Wolf, Mountain Goat, and Mule Deer, with local populations of Stone Sheep, Elk and White Tail Deer and Cougar where snow packs are thinner. Rare plant associations, ecosystems and habitats are scattered across the Omineca bolstering regional biological diversity, including the northern extent of Whitebark pine and Douglas fir, and the largest population of Haller's Apple moss in the world as well as the only known locations of Crumpled Tar Paper Lichen.

Given the highly diverse and geographically large area that the Omineca region covers it contains relatively few Conservation Lands. Only 6 such areas are administered regionally and the cover a small selection of the habitats that can be found regionally.

Summary Statement of Regional Investment:

In 2019-20 $18,110 was spent at 6 conservation properties in the Omineca to assist regional staff and partners in achieving management objectives.

Project Highlights:

$8,010 was invested in the Cranberry Marsh / Starratt WMA. Ongoing activities include Boundary identification, replacement of signs that are in disrepair, community engagement, management planning, trail assessment, minor repair of trail infrastructure, implementation of invasive plant management plans, and seasonal inspections. The Village of Valemount under FLNRO guidance contracted and funded trail resurfacing to finish the accessibility section of trail at a cost to the Village of $71,813. New updated boundary signage installation was completed, 0.4ha of invasive plants was treated, and danger tree assessment and removal was completed.

$2,460 invested in The Stellako River WMA for invasive species removal (.035ha), seasonal inspection, and garbage removal from public access points.

$1,814 invested in the Joanne Lloyd property for invasive species control and removal over 0.16 ha, infrastructure maintenance and seasonal inspection. Work with Ministry of Transportation and Infrastructure regarding highway upgrades adjacent to the property will continue until the project is completed in 2021/22. Garbage was removed from public access points; however, removal of a dock that has washed up on the property will have to wait until high water in 2020.

$1,357 invested in the North Nechako Tyee conservation property, to conduct management and safety inspections, manage invasive species, and maintain informational signage.

$2,895 invested in the Mount Robson Ranch property to assess property condition, needs, and public usage. Perimeter signage was installed and maintained as required. Assessment of adjacent industrial activity (forestry and oil & gas) was conducted to ensure no impact to conservation lands.

$374 invested in the Natasha Boyd property for property assessments and signage. Government staff conducted a site visit during the fall. Update signage was developed but acquiring images from community partners has not been completed. We will endeavor to install newly developed signage in 2020-21.

Conservation Outcomes:

Invasive plant management continues to be a focus on priority areas of concern and significant reductions of invasive plants have been achieved at Stellako and Joanne Lloyd. Implementing invasive plant management plans is ongoing, in conjunction with the Northwest Invasive Plant Council. In partnership with community groups, the Village of Valemount, final resurfacing 2km of trail in the Cranberry Marsh was completed in the fall of 2019, repairing the damage from significant frost heaving.

This was funded by the Village of Valemount. Maintenance of infrastructure, installation of signage, site visits and trail maintenance were undertaken by The Nature Trust of British Columbia and FLNRORD staff. Fisheries management continues to be a priority at the Stellako River WMA with increased effort from Government being spent. Management Plans for Stellako and Cranberry Marsh / Starratt are in final review. Increased regional capacity has permitted additional site visits and improved reporting.

Photographs

1. Cranberry / Starratt Marsh – Property inspections completed. Boundary signage installed and maintained at public access points.

2. Stellako River Wildlife Management Area – Garbage removed from access area and property signage installed.

3. Nechako River – Invasive plants removed and informational signage maintained.

4. Mount Robson Ranch – Adjacent forestry activity assessed and boundary signs installed and maintained.

Northeast Region

Region: **Northeast**

Ecological Significance of the Region:

The Northeast Region of British Columbia is located between the Rocky Mountain foothills and the Alberta Plains.

This region consists of the Peace River and Liard River drainages of the Arctic watershed, featuring plateaus, plains, prairies, and lowlands lying east of the Rocky Mountains. Areas at higher altitudes are poorly drained, resulting in extensive muskeg areas. The region is characterised by boreal forest with critical wetlands and lakes interspersed throughout.

Since the 1950's, the Northern Region has experienced rapid development of oil and natural gas resources, resulting in increased fragmentation of this landscape. A number of Class 1 wetlands provide critical habitat for numerous waterfowl.

Summary Statement of Regional Investment:

In 2019-20 $37,140 was spent on 6 conservation areas in the Northeast to assist regional staff and partners in achieving management objectives.

Project Highlights:

$7,186 invested in the Boundary Lake conservation area for property inspection, maintenance of water control structures, installation and maintenance of signs, and review of oil and gas industry projects on site.

$2,918 invested in the Comstock Marsh conservation area for property inspection and maintenance of water control structures. Boundary signage was maintained and public access areas maintained for safety.

$3,480 invested in the Dunlevy Creek conservation area for property inspection, boundary sign maintenance, and control of forest ingrowth in grassland areas (10 hectares) to maintain ungulate foraging habitat.

$3,315 invested in the Fort St. John Potholes conservation area for property inspection, maintenance of water control structures, fence inspection, and property boundary signage.

$13,134 invested in the McQueen Slough conservation area for property inspections and maintenance of water control structures. Public access facilities, including trails and boardwalk, were inspected for safety. At this time, the main boardwalk has been closed to public access due to instability.

$2,464 invested in the Worth Marsh conservation area for property inspections, installation of property signage, maintenance of water control structure, and review of oil and gas industry activities adjacent to the conservation area.

Although no HCTF O&M funding was used this year at the Donaldson Acquisition for invasive plant management, Ducks Unlimited Canada, through an in-kind contribution, did install an informational sign at a point of access into the property. It is anticipated that invasive plant management will resume at the property in 2020.

Conservation Outcomes:

The 2019-20 field season resulted in a wide range of critical land management needs being addressed on conservation lands in the Northeast Region. These activities, including habitat restoration and maintenance of public facilities and structures, ensure that habitat values are maintained or enhanced, and that public access to these conservation lands is safe and appropriate.

Informational signage, indicating property ownership and management partners, with contact information, was posted and maintained where appropriate and required. This serves to demarcate boundaries to protect habitat values from inappropriate usage, and to provide the public with the means to contact a land manager to discuss management concerns and issues.

Property assessments, including evaluation of the ecological attributes and issues specific to each property, form the basis for activity planning for the following field seasons.

Over 10 hectares of land at the Dunlevy Creek Conservation Area was kept clear of conifer seedlings, to maintain ungulate foraging habitat.

Photographs

1. Boundary Lake – Maintained water control structure. Installed new informational property signage.

2. Dunlevy Creek – Conifer seedlings removed from ungulate forage areas. Installation of boundary signs.

3. Fort St. John Potholes conservation area. Perimeter fencing inspected. Water control structure maintained.

4. McQueen Slough – Water control structure maintained. Boardwalk closed for safety. Signage installed at entry point.