

Environment and Climate Change Canada
Canada Nature Fund: Community-Nominated Priority Places for Species at Risk



Kootenay Connect: Wycliffe Focal Area

4WC Invasives
4WC Fencing



March 15, 2023 Final Report



Photo: Graham Osborne

Kootenay Connect is a project facilitated by the Kootenay Conservation Program



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Photos Courtesy of:

NTBC, Rocky Mountain Trench Natural Resources Society, EKISC & Graham Osborne

Maps Courtesy of:

Masse Environmental Consulting Ltd.

Ecologic Consultants Ltd.

NTBC (D. Morrison & M. Daniel)

1. BACKGROUND – WYCLIFFE CONSERVATION PROPERTY COMPLEX AND PROJECT:

The Wycliffe Conservation Property Complex (the “Complex”) is located just south of Kimberley, BC, and is comprised of twenty-three parcels totaling more than 1,109 hectares (2,740 acres). The complex includes properties owned by The Nature Trust of British Columbia (NTBC), the Nature Conservancy of Canada (NCC), and the BC Ministry of Water, Land and Resource Stewardship (MWLRS), together known as the “Conservation Partners” or “Partners”. Figure 1 shows the land ownership theme. The complex is ecologically significant with a diversity of habitats that support several species at risk, while also functioning as an important regional wildlife corridor.

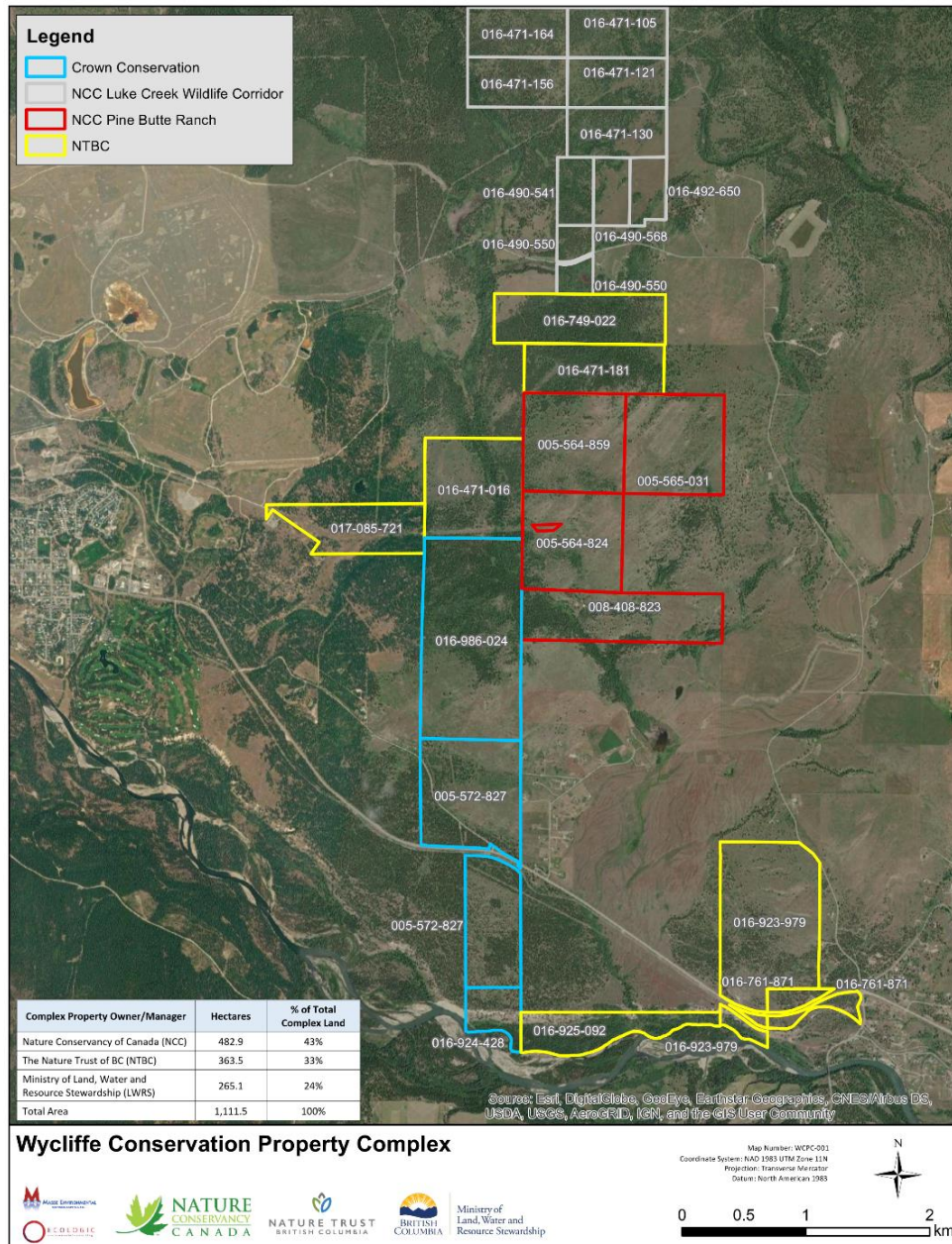


Figure 1: Wycliffe Conservation Complex – Conservation Context Map

In 2018-19, the Conservation Partners began looking to secure funding for a large-scale, multi-year project to maintain, restore and enhance ecological conditions across the Complex. External funding would be required to support the partner's vision, as internal funds would only be able to supplement larger funding contributions. The partners were successful in a grant application to the Columbia Basin Trust - Ecosystem Enhancement Program, in its inaugural year, for an amount of \$600,000. Despite this significant contribution, the partners still needed a significant cash match to access these funds and begin on-the-ground work.

In 2019, the Kootenay Conservation Program was successful with its Kootenay Connect proposal to Environment and Climate Change Canada - Canada Nature Fund for Community Nominated Priority Places for Species-at-Risk. As one of the focal areas within the proposal, the Wycliffe Conservation Property Complex received critical funding to secure the requisite CBT match and allow the partners to 'roll up their sleeves' and begin work on a multi-year project.

2. PROJECT IMPLEMENTATION BACKGROUND – YEARS 1 - 3:

As a brief recap, the first year of the project (2019-20) was focused exclusively on planning. Kootenay Connect funds were used by NTBC and NCC to hire contractors to develop ecosystem enhancement and restoration prescriptions on the Complex for several species at risk. Meanwhile, CBT funding was directed to consultant research, compilation, and stakeholder and Indigenous engagement efforts related to the development of a management plan and other strategic guidance documents for the Complex.

The second year of the project (2020-21) included both planning and stewardship projects. Kootenay Connect funds were managed by NCC to hire consultants to develop a Grassland Management Plan and a Range Use Management Plan for the Complex. NTBC's funding allocation through Kootenay Connect was directed to several invasive species management activities including an extensive inventory, invasive plant treatments (chemical) and monitoring, the establishment of long-term effectiveness survey plots, and the completion of a complex-wide Invasive Species Management Plan (ISMP). CBT funds were allocated to the completion of the management plans and strategic guidance documents including an Interim Recreation Management Plan started the year prior. CBT also contributed to project administration costs. The partners were also able to invest some of their internal funds into several activities on the Complex including legal surveys, boundary fence replacement, and the creation of public access and parking, to name a few.

The third year of the project (2021-22) marked a transition where most funding was put to 'on-the-ground' projects on the Complex, which was exciting after so much time and effort had been spent on the planning components. NTBC utilized Kootenay Connect Funds to hire the East Kootenay Invasive Species Council (EKISC) to implement work across the Complex, as recommended in the ISMP. This included inventory, chemical treatment, treatment monitoring, long-term effectiveness plot monitoring, data entry, and reporting. CBT funds supplemented this work.

NTBC also managed several fence contracts across the Complex, on behalf of the partners. This work included the removal of unneeded fences, repairs to compromised fences, replacement of fences in poor or non-functioning condition as well as, new fence builds in previously unfenced locations. One fence contractor, CBM Outfitters Ltd. completed all fence work. Fence costs were shared between Kootenay Connect and CBT funding. CBT funds were also allocated to legal surveys and staking, ahead of fence construction. Teck Resources Ltd. contributed to fence build costs in one instance where they shared a common property boundary with NTBC. NTBC used some of its internal funding to pay for legal title searches associated with one of its parcels, in preparation for future fencing.

NTBC also spent its internal funds in 2021 to install a culvert and road approach on one parcel, where it was necessary for fence contractor access.

Meanwhile, in 2021-22 NCC managed contracts associated with the enhancement and restoration of Species-at-Risk habitats (tree thinning based prescriptions developed in Year 1). NCC also headed up efforts associated with the finalization of a Recreation Management Plan for the Complex. FLNRORD also contributed funding to the Recreation Management Plan.

Finally, all Conservation Partners worked hard to finalize the Management Plan for the complex, which required several edits and was completed in late 2021. This work was financially supported by FLNRORD and CBT in the previous fiscal year.

For more information on Years 1 - 3 Kootenay Connect activities on the Complex, please refer to the 2019-20, 2020-21 and 2021-22 final reports from NCC and NTBC.

3. PROJECT IMPLEMENTATION – YEAR 4:

Year 4 of the project (2022-23) marked another ambitious ‘on-the-ground’ effort guided by the annual work plan. With this anticipated workload, the Conservation Partners hired a project manager to assist with organizing contracts, project implementation and contract supervision and various administrative functions (chairing meetings, financial tracking, communications and assistance with reporting). Marc Trudeau, Coordinator with the Rocky Mountain Trench Natural Resources Society (RMTNRS) was hired in April 2022 on a one-year contract to serve as the Project Manager. This contract was primarily funded through CBT’s financial contribution with additional financial support from MWLRS.

NTBC utilized Kootenay Connect Funds to once again hire the East Kootenay Invasive Species Council (EKISC) and its subcontractor to implement work across the Complex, as recommended in the ISMP. This included chemical treatment, treatment monitoring, long-term effectiveness plot monitoring, Invasive Alien Plant Database (IAPP) data entry, and reporting. This project component was funded primarily by CBT EEP and Kootenay Connect funding, with NTBC and NCC contributing minor but, equal amounts.

NTBC issued contracts for eight fence projects across the Complex, on behalf of the partners. This work included the removal of unneeded fences, repairs to compromised fences, replacement of fences in poor or non-functioning condition as well as, new fence builds in previously unfenced locations. Three local fence contractors, Darkside Fencing Ltd, GWE Contracting Ltd., and 1st Action Contracting Ltd. completed the various fence projects.

The fencing projects were primarily funded by ECCC/Kootenay Connect and CBT EEP funding. NTBC provided a sizeable cash contribution for its fence projects and covered various minor costs related to fence projects (i.e. survey stakes, paint, game camera, title searches, Teck mandated safety equipment, etc.) as well as an in-kind contribution of high viz fence markers. NCC funded the installation of a bridge to enable fence work on one of its parcels and provided a sizeable in-kind contribution of fence materials (posts) previously paid for (2019-20) by multiple funding sources, that were shared amongst various projects. MWLRS provided fence droppers that were shared amongst the various projects and made a purchase of high viz fence markers also. The Province also secured funding through the Province’s Together for Wildlife program for grass seed. One legal survey was completed in 2022 on the MWLRS property, funded by CBT EEP. Other fence projects were guided by legal surveys completed in previous years or, did not require them. All work completed in 2022-23 had significant staff labour contributions from each of the Conservation Partners.

The final sub-project in 2022-23 was led by NCC, as it continued to manage work associated with the enhancement and restoration of Species-at-Risk habitats in forested ecosystems on the Complex based on tree thinning prescriptions developed in Year 1 of the project. NCC also headed up efforts associated with the Recreation Management Plan for the Complex, though no expenditures or on-the-ground work took place. That component of work will ramp up in 2023-24 and beyond.

4. 4WC - INVASIVE SPECIES MANAGEMENT DESCRIPTION & HIGHLIGHTS:

Although NTBC was allocated the Kootenay Connect project funds for the Invasive Species Management project component, it collaborated closely with the other Conservation Partners throughout all phases of work. The project itself took place on property owned by all three Conservation Partners.

In the spring of 2022, the Conservation Partners invited the East Kootenay Invasive Species Council to submit a proposal and costing. A non-profit society, EKISC <https://www.ekisc.com/> seeks to prevent and reduce the spread of invasive species in the region by connecting a broad range of partners and stakeholders to undertake management actions and communicate knowledge.

Because of their work on the complex and development of the ISMP in 2020, EKISC was the obvious contractor to lead invasive plant management efforts in 2022. On May 13th EKISC submitted a thorough proposal (incl. budget), with a logical treatment plan integrating previous Invasive Alien Plant Program (IAPP) data and recommendations from the ISMP. A field tour was organized for May 31st where representatives with the Conservation Partners, RMTNRS, EKISC and sub-contractor Mountainview Resources met at the Complex. The objectives of the field day were: i) discuss previous year's treatments and lessons learned; ii) explore options for treating Downy brome/cheatgrass in future; iii) discuss benefits and drawbacks of broadcast applications in highly visible areas of the complex where recreational use is common; iv) re-evaluate priorities from the ISMP; v) solidify the 2022 work plan.

Over the course of the six weeks, EKISC and NTBC corresponded several times using discussions and decisions made during the field tour to guide revisions to the budget and work plan. A contract between the parties was fully executed on July 19th.



Photo 1: Visiting a treatment site on NCC's Pine Butte Ranch Conservation Property, within the Wycliffe Conservation Complex during the May 31st field tour.



Photo 2: Richard Klafki discussing plant communities on the complex, pointing to the transition area of treatment at NCC's Pine Butte Ranch Conservation Property.

Fieldwork took place throughout the summer and fall months, while data entry and report writing took place over the winter. Project deliverables were submitted to NTBC on February 15, 2023 and following revisions, the final report was provided in early March.

It is important to emphasize that all fieldwork associated with this project was dedicated to invasive plants, as they are the primary invasive threat to conservation values on the Complex. Invasive species, more broadly, receive attention in the ISMP and will be essential for the Partners to monitor in the future. But, they are not a current, known concern on the Complex.

The following provides a summary of the work accomplished through this project. All this work was paid for by Kootenay Connect, CBT Ecosystem Enhancement Funding and internal NCC and NTBC sources. EKISC's final report (Wycliffe Conservation Property Complex Invasive Plant Treatment Report 2022) was the source for most of the following information.

Inventory:

- Inventory was not a significant focus of the fieldwork in 2022, primarily because a comprehensive inventory was completed for the Complex in 2020.
- However, opportunistic inventory was communicated to the sub-contractor completing on-the-ground chemical treatments, as necessary using IAPP. IAPP inventory entries provide important data for future planning and treatment including the location, species, density, and distribution of an infestation.



Photo 3: Boomless nozzle treatment results from 2022 showed the change of plant communities, with Sulfur cinquefoil prevalent to the right and native and agronomic grasses re-establishing on the left.



Photo 4: Mountainview Resources Ltd. conducted chemical control for the third consecutive year as an EKISC sub-contractor

Treatment:

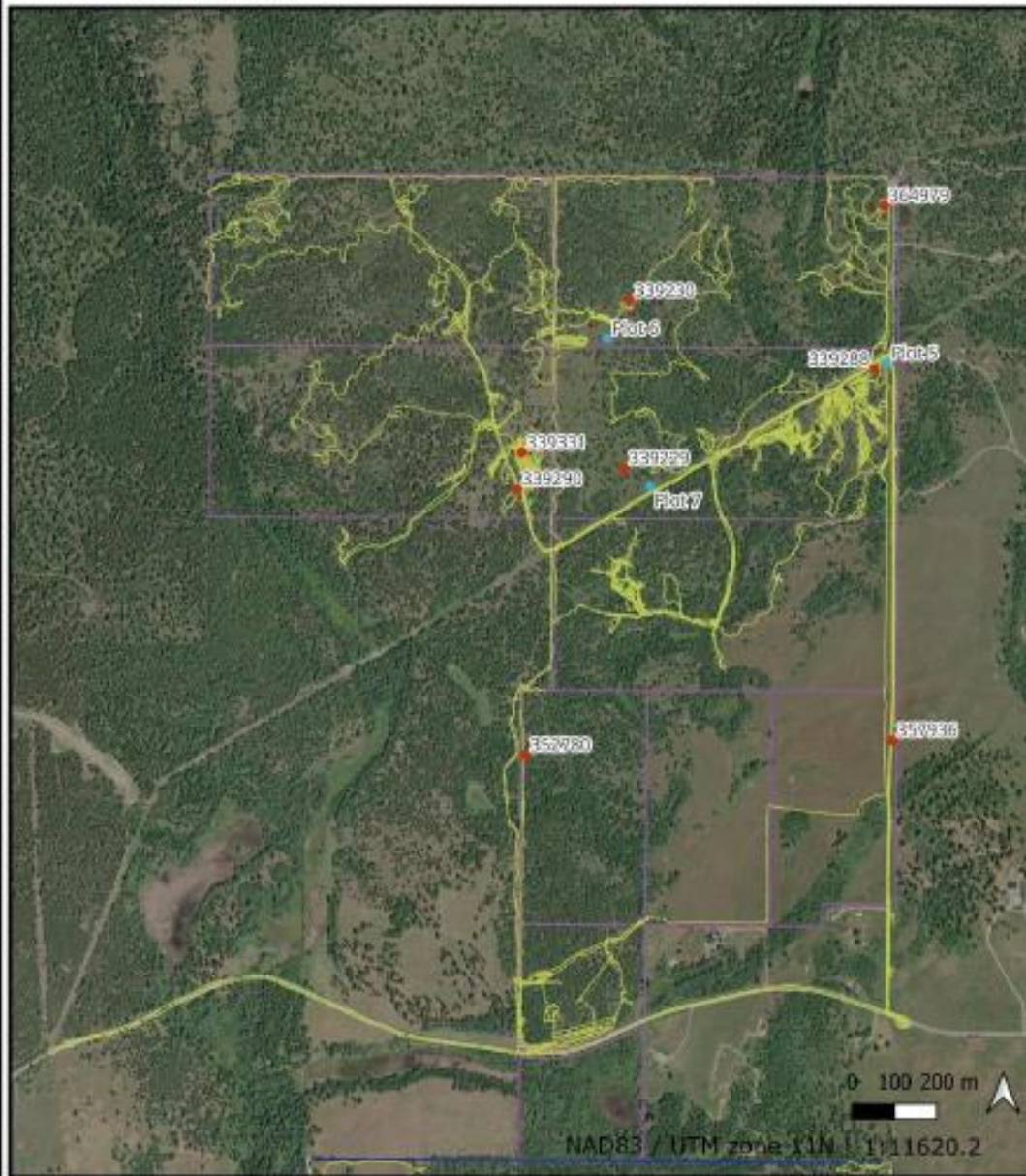
- Treatments were informed by a comprehensive inventory completed across the Complex in 2020 (and associated IAPP entries). In turn, this information was incorporated into the ISMP which provided detailed recommendations for annual treatment. Historical IAPP entries and local knowledge of the EKISC sub-contractor were also incorporated into the annual treatment plan, as well as discussions from the May 31st field tour.
- The contract with EKISC specified an ambitious goal of chemically controlling up to 25 hectares of invasive plant treatments in 2022, a substantial increase from the contract objective of 12 hectares in 2021.

- Treatments took place over several days between August 6th and October 2nd, 2022. They were all conducted using side-by-side ATVs equipped with boom-less nozzles for efficient treatment (Photo 3).
- Chemical treatments were carried out by long-time EKISC sub-contractors Lee and Eric Holm of Mountainview Resources Ltd. (Photo 4), who undertook treatments on the Complex in 2020 and 2021, creating operational efficiencies. Lee is also a former Wycliffe resident and had treated some of the land base in the past, bringing a lot of local knowledge to the project.
- All treatments used Clearview, a Class 2 & 4 Herbicide manufactured by Corteva Agriscience and approved for use in Canada by the Pesticide Management Regulatory Agency (Health Canada). Clearview is a selective herbicide for post-emergent control of annual and perennial broadleaf weeds, invasive plants and shrubs on rangeland, permanent pasture, rights-of way, industrial and other non-crop areas of Canada. Clearview contains the following active ingredients: Aminopyralid, present as potassium salt 52.50% and Metsulfuron – methyl 9.45%.
- Chemical treatments were prioritized into 3 categories:
 - 1) *Priority 1* treatments generally focused on low to medium distribution species, which offer a strong opportunity to eradicate;
 - 2) *Priority 2* treatments focused on Yellow hawkweed and Sulfur cinquefoil within containment lines of the three ecosystem restoration units (forest thinning) on NCC, NTBC and MWLRS lands as well as, treating along property lines where adjacent landowners are investing in treatments on their lands, as a way to coordinate efforts and use a ‘good neighbour’ approach;
 - 3) *Priority 3* treatments were focused on broadcast applications in select areas of dense, widespread infestations of Yellow hawkweed and Sulfur cinquefoil and other invasives including alongside Miles Road and the Kimberley Trap and Skeet Club footprint.
- The total number of treated sites decreased to 19, compared to 2020 and 2021 figures (60 and 34 respectively) but, many of the 2022 treatment sites (infestations) were larger in area.
- There were 8 treatment sites on NCC’s Luke Creek Wildlife Corridor parcels, 6 sites at NCC’s Pine Butte Ranch parcels, 2 sites at MWLRS Wycliffe Conservation Property 3 sites on NTBC’s Wycliffe Wildlife Corridor.
- In total, 23.31 hectares were treated in 2022, which was slightly lower than the 25 ha target of the contract, yet exceeded the projected deliverables listed in the Kootenay Connect Contribution Agreement (20 ha).
- The area-based treatment can be broken down as: MWLRS lands (3.08 ha), NCC lands (14.88 ha), and NTBC lands (5.35 ha).
- In total, 5.36 kilograms of undiluted Clearview herbicide was applied over the Complex in 2022.
- Invasive species treated in 2022 included: Blueweed, Dalmatian toadflax, Common tansy, Spotted knapweed, Sulfur cinquefoil, and Yellow hawkweed.
- No mechanical treatments were undertaken in 2022.
- All treatment data was recorded in IAPP, which is important for both planning future treatments and monitoring activities.
- Treatment and travel maps and spatial data based on GPS tracks were used to create maps for inclusion in the final report (see Figure 2)



Wycliffe Conservation Complex Invasive Plant Management

Luke Creek



LEGEND

Treatment sites	● MWLRS property boundary	□
Linear segments travelled	— NCC property boundary	□
Monitoring plots	● NTBC property boundary	□

Figure 1. North area Luke Creek (NCC) invasive plant treatment locations on the Wycliffe Conservation Complex completed in 2022.

Figure 2: Example of GPS Travel tracks and treatment sites at NCC's Luke Creek Conservation Property

Treatment Monitoring:

- The contract stipulated a minimum of 10% of treatments be monitored for efficacy and site completion by EKISC staff, following treatment.
- A joint, early season monitoring session with EKISC and NTBC staff took place on NTBC properties on June 8th to review 2021 treatment results (Photo 5).
- Monitoring activities occurred on 5 of 19 sites, representing 26% of treated sites, more than the contract requirement. Four of the sites were on NTBC property and one site on MWLRS.
- 2022 Treatment monitoring was conducted by EKISC staff on August 23rd and September 13th, to allow a sufficient time lag so that herbicide damage was visible to the plants.
- Monitoring did not identify any issues with sub-contractor performance, with all treatment sites getting a 'pass' for site completion and efficacy measures.

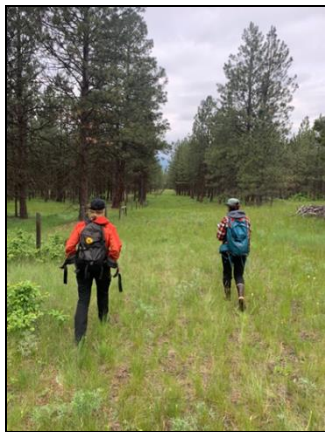


Photo 5: Monitoring previous year's treatments in June 2022.



Photo 6: One of 11 long-term effectiveness plots on the Complex

Long-term Effectiveness (Vegetation Plot) Monitoring:

- The Partners are committed to long-term effectiveness monitoring of chemical treatments and included a requirement in the contract to address this. In total, 11 long-term effectiveness monitoring plots were established across the complex in 2020, in areas containing invasive plant infestations.
- A modified protocol of the Province's Ecosystem Restoration Program Routine Monitoring Protocols for Understory Cover Sampling is being utilized.
- After getting baseline data in 2020, plots were monitored for the first time following treatments on June 29-30, 2021 and then again, on June 14th and 15th, 2022.
- Comparison between plot data collected in 2020, 2021 and 2022 displays a decrease in total mean invasive species percent cover in 9 out of 11 plots (Figure 3). Plot photos (Photo 6) and plot data were shared with NTBC as a contract deliverable.
- No statistical analysis has taken place to determine if the changes to vegetation are statistically significant. Analysis will not take place until 2024, allowing for a minimum of 4 years of data to be collected. This will allow for trends on the impact of invasive plant treatments on vegetation communities to be apparent.

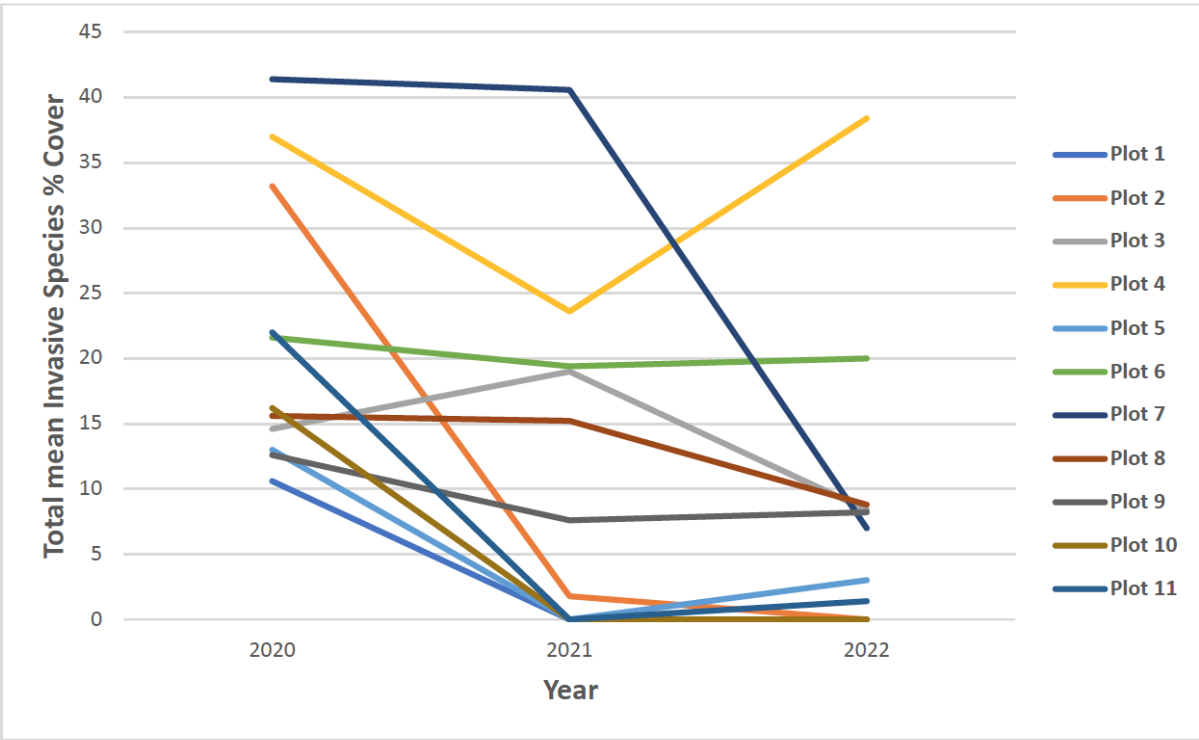


Figure 3: Total mean invasive species percent cover at monitoring plots within the Wycliffe Conservation Complex in 2020, 2021, and 2022

Data Entry (IAPP):

- The contract required that all treatment and inventory data be inputted into IAPP by December 1, 2022, as required by the Province.
- This was completed and an IAPP extract was shared with NTBC as a project deliverable.
- NTBC staff conducted some random checks of the IAPP data to ensure 2022 treatment data had been uploaded to the database.

Final Report:

- EKISC wrote a final report to summarize all treatment and monitoring activities for the field season. The report included treatment maps, tables, and recommendations for future consideration. Other deliverables included: spatial data, long-term effectiveness plot data and photos and IAPP treatment and monitoring extracts.

5. 4WC - FENCING PROJECT DESCRIPTION & HIGHLIGHTS:

The twenty-three parcels that make up the Wycliffe Conservation Complex interface with many other private and Crown land parcels. Given the ecological values of the Complex, particularly Species-at-Risk habitat suitability and vulnerability, it is critical that conservation lands owned and managed by NCC, NTBC and FLNRO have demarcated boundaries and control public use and access via fencing. Heavy cattle grazing (Photo 7) and motorized vehicle trespass (Photo 8) have historically threatened the conservation values of these lands and can be relatively easily protected by well-designed and constructed fences.



Photo 7: Fence installed in 2021 clearly identifies grassland grazed by cattle vs conserved for wildlife one year later with NTBC land to the right.



Photo 8: Motorized trespass, threatens sensitive ecological values on many conservation properties in the Region.

Once again in 2022, there were several fence projects implemented on the Complex which repaired non-functional fences, replaced fences in poor condition, and constructed fences where none previously existed. In other cases, unnecessary and derelict internal fences were removed, all in an effort to maintain or enhance the ecological values of this important assemblage of conservation lands.

Fence Assessment and Plan:

The need to survey existing fences and determine priority actions was identified by NCC, NTBC, and FLNRO staff in 2018, before commencing on this multi-year project. This need was corroborated by the consultants who researched and wrote the Wycliffe Conservation Property Complex Management Plan (2021), in which they identified a management action to develop a ‘Property Complex Fencing Plan’.

The Conservation Partners began addressing this need in 2021 by developing a fence assessment tool to evaluate all fenceline segments within the Complex and then documenting the segments in the field using a spatial data software app (ESRI Field Maps), as described in last year’s report. A total of 103 fenceline segments were sorted by score into four priority categories for management consideration (*Very High, High, Medium, and Low*). The higher the score, the higher the priority the fence segment was to address. There were many *Very High* and *High* priority fence projects identified, more than there was funding available to address. This resulted in some difficult choices. In some cases, lower priority projects (*Medium and Low*) were chosen due to ease of access, budget constraints, and contractor timing windows. In the end, there were 8 fence projects identified for 2022, representing the largest investment in fencing projects and the most logistically complex thus far in the multi-year project.

Procurement

A bid document (Figure 4) was created by the Project Manager and four local fence contractors were contacted to gauge interest and availability for the identified fence projects. A site visit was held on July 29th, 2023 to view each of the seven available fence project sites (Photo 9). Two contractors expressed interest in the work and submitted qualifying bids. 1st Action Contracting Ltd., based out of Creston would become the main fencing contractor, being awarded four fence jobs that were combined into one contract. Meanwhile, GWE Contracting Ltd., based out of Cranbrook was awarded three fence jobs, through another contract. An additional fence project was completed in the spring prior to the tendering process and was awarded to Darkside Fencing Ltd. This project was carried-over

from 2021-22, as it was not completed due to weather and equipment constraints. This project is referred to as fence Job 8 in this report.

GWE Contracting began working on October 17th and completed their contract on October 27th. 1st Action Contracting began work on September 27th, and completed the fence work in mid-December. However, due to cold weather and snow depths, a final clean up and treatment of cut exposed fence posts and rails could not be completed during this timeline. A holdback of \$5,000 on the original contract was agreed upon to ensure 1st Action will return in spring 2023 to complete the cleanup and treat cut posts and rails with a wood preservative.

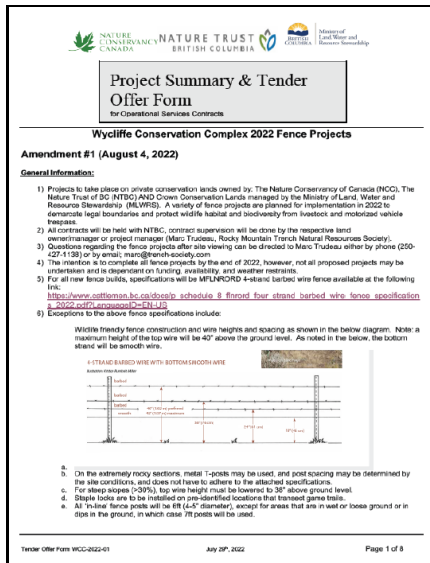


Figure 4: Fence Contractor Bid Document including specifications



Photo 9: Fence Contractor Site Viewing on July 29, 2023.

Fencing Specifications & Design (Wildlife Friendly):

It is well documented that fences can act as a deterrent, and even a barrier, to wildlife movement across the landscape. Because the Wycliffe Conservation Complex is a regionally significant wildlife connectivity corridor, it was critical that fence design and build specifications consider this value. As a result, all fences were designed to be ‘wildlife friendly’, with several modifications to FLNRORD’s Four Strand Barbed Wire Fence Specifications, including some provided by the Alberta Conservation Association (Figure 6).

The Conservation sections Partners had the contractor substitute smooth, high-tensile wire on the bottom strand so that wildlife passing under the fence would not be injured by the barbs. The height of the bottom strand was elevated two inches to leave an 18” gap, with enough space for young of the year (ungulates) to pass under. Meanwhile, the top strand was lowered two inches to a maximum height of 40” to reduce the effort required to pass over the fence, particularly in deep snow. In situations where a fence was located on sloped ground, the top strand height was reduced, where possible, to ease passage. In select instances where well-used game trails intersected a fence (Photo 10), a ‘staple lock’ (photos 11) was created whereby the top and bottom strands could be compressed into the middle two fence strands to facilitate ease of travel above and below the fence. The installation of droppers on all fences increases fence rigidity and reduces the risk of entanglement by increasing fenceline visibility. In 2022, NTBC purchased high visibility fence markers with reflective strips from Pexco, a plastics manufacturer in the US. These

were originally designed to increase fence strand visibility for Greater Sage Grouse and other ground nesting birds. These were installed on one new NTBC fence line in January 2023 (Photo 12), representing a further advancement in wildlife friendly fences at Wycliffe. NTBC purchased a game camera and located it at roughly the location of a staple lock identified in photos 10 & 11 and were able to capture photos and video of ungulates safely crossing the fence (Photo 13). There have been other observed occurrences of wildlife passing over fences, captured on photo and video, demonstrating that the wildlife friendly modifications are working.

4-STRAND BARBED WIRE WITH BOTTOM SMOOTH WIRE

Illustration: Kristen Rumbolt Miller

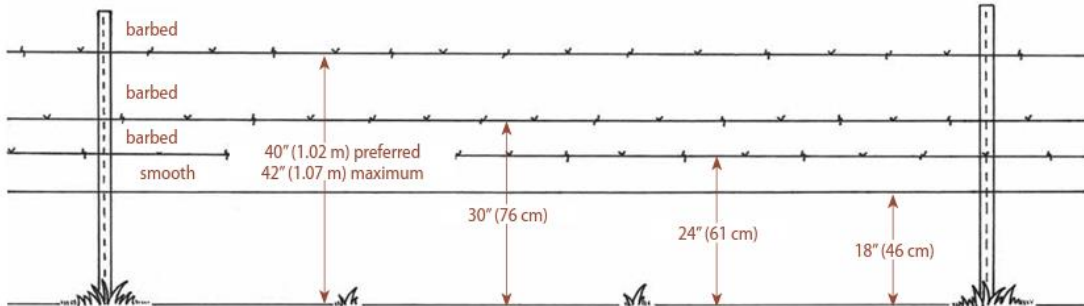


Figure 6: A sample of wildlife friendly fence design specifications used in 2022, taken from ACA's Wildlife Friendly Fence publication



Photo 10: Game trail before fence build & flagged for staple lock



Photo 11: Close up picture of staple lock on fence post adjacent to wildlife trail ready to be converted.



Photo 12: Fence high viz markers on sections of new fence on NTBC property.



Photo 13: Elk crossing a new fence line using wildlife friendly specs

Legal Surveys, Access Agreements & Permissions:

Fence replacement and construction is a considerable expense and diligence is required to ensure they are not in trespass. NTBC had previously sourced and paid for legal surveys by Skyline Land Surveying Ltd. The survey stakes were maintained over the last couple of years and two jobs on NTBC land (Job 3 & Job 8) utilized this work to ensure accurate fence placement. In 2022, Skyline was hired using CBT EEP funding to survey and stake a property line for a replacement fence that separated MWLRS and private land to the north (Job 5). This work was deemed necessary because there were discrepancies the original fence and the actual boundary as shown in Photos 14 & 15. In the end, alienated conservation land was recovered through accurate fence placement.



Photo 14: Original fence/gate 3m off property line/survey pin



Photo 15: Original fence located 2m off property line

One of the greatest logistical challenges for this project was securing access to several conservation lands that were remote and/or land-locked by adjacent private lands. Landowner outreach efforts began in 2021 and were followed up on in 2022. NTBC was able to secure access to three of its land-locked parcels (Jobs 2, 3 & 8) by verbal agreements with four separate landowners, which was very helpful. In some instances, NTBC accessed fence projects through Teck land through two separate road use permits, one acquired in 2021 and the other in 2022. One permit traversed through active mine rehabilitation areas and required NTBC staff and contractors to complete an

online orientation and use a Teck mandated sign-in/out digital service. Another private landowner also permitted access to contractors working on MWLRS parcels (Job 5).

For a portion of one fenceline (Job 3), the proposed location traversed under Hydro distribution lines. As a result, NTBC had to submit project details to BC Hydro for permission in the late spring, and on August 17th were issued a Compatible Letter of Use and thus, authorization to proceed. A requirement stated in the letter was NTBC and its contractor to undergo an on-site safety briefing which was conducted with BC Hydro staff on September 27th. A portion of one fenceline (Job 5) intersected with a FortisBC natural gas pipeline which required a permit and on-site supervision at the time of fence post removal and installation.

For fence removals taking place on NTBC and MWLRS conservation lands (Jobs 6 & 7) abutting the Northstar Rails to Trails, a Street Use or Occupancy Permit (Figure 5) was required from the City of Kimberley, with stringent conditions to ensure public access and safety. Motor vehicle use within the MWLRS parcels also required a Motor Vehicle Closure Area exemption permit issued under the BC Wildlife Act.

A final challenge involving NCC fence project (Job 4) was the fact that it was bisected by Luke Creek in a remote area of the Complex. This required the installation of a temporary bridge ovetop of the existing, compromised bridge. The temporary bridge was loaned out by BC Timber Sales and installed by CHIL Logging Ltd., which will be removed in spring 2023 (Photo 16).

KIMBERLEY
STREET USE OR OCCUPANCY PERMIT APPLICATION

The Street Use or Occupancy Permit is issued pursuant to "City of Kimberley Streets and Traffic Bylaw No. 1177, 2009" for all works within City road right of way, including sidewalks, boulevard and uncontracted right of way.

Application for this permit must be obtained a minimum of 24 hours prior to activity commencing.

Please complete the application and forward together with a "Works Map" and "Insurance Certificate" and "Traffic Control Plan" (if applicable) to:

City of Kimberley
340 Spokane Street
Kimberley, BC V1A 2E8
Fac: 250-427-5353
Email: operations@kimberley.ca

Please direct all enquiries to:
Operations Department at 250-427-5100
or email: ops@kimberley.ca

APPLICANT INFORMATION:

Name of Applicant: Marc Trudeau
Address: 500-888 Dunsmuir Street
City: Vancouver
Postal Code: V6C3K4

Name of Company (if applicable): The Nature Trust of BC
City: Vancouver
Postal Code: N/A

Contact Telephone: 604-524-9771
Contact Cell: 250-489-6338
Contact Email: marc@trench-society.com
Fax Number: 250-427-1138

Contact Person During Work (if different than above):
Contact Cell (must be available during work activity):

ACTIVITY INFORMATION:

Type of Activity:
 Service Repair or Install
 Road Access Construction
 Pkg Construction or Reinforces DPV
 Shallow Utility (Gas, Hydro, Tele, Sewer)
 Overhead Utility
 Container Placement
 Other (Specify):

Activity Description:
In doing so, a contractor has been awarded the work and will require temporary access through and adjacent to the rails to trails right of way.

Activity Location (Street Name(s), Civic Address(es)):
2.0km south of Marysville (49°39'57.24"N & 110°54'38.77"W) and 5.5km south of Marysville (49°39'16.31"N & 110°52'46.34"W)

Start Date: 10/17/2022
Start Time: 8 AM (Week Day)
End Date: 10/31/2022
End Time: 5 PM (Week Day)

Work Days: 32
Total Days: 4

Occupation hours on Weekends, holidays or between 5:00pm and 8:00am (requires special approval):
 Yes
 No (Works Map Attached)

All applications must include a works map including the following: location, street names, traffic control and barricades, location of installation and any other details specific to the event.

Personal information contained on this form is collected under the Local Government Act and in accordance with the Freedom of Information and Protection of Privacy Act and will be used only for the purpose of processing the application. For questions or additional information pertaining to your personal information, contact City Hall at 250-427-5311.

City of Kimberley "Street Use or Occupancy Permit Applications" page 1

Figure 5: City of Kimberley Street Use Permit



Photo 16: Installation of a temporary bridge over Luke Crk.

Fence Project Results & Discussion:

The first fence job of the season (Job 8) was completed over the course of four days in mid-June. The majority of fence projects began in early October and lasted until mid-December. GWE Contracting Ltd. was contracted to remove old page wire and range fence for two projects on MWLRS and NTBC parcels (Jobs 6 & 7) and for the repair of a short section of fence on NCC lands (Job 1). The works employed 2-4 staff depending on the job.

Meanwhile, 1st Action Contracting Ltd. had the lion's share of the fence work at the Complex. It concentrated all of its resources on these autumn fence projects, employing 2-5 staff, depending on the job. Winter conditions arrived relatively early in Wycliffe compared to the 2021 fence season. Cold temperatures and snowfall hampered efforts. Fortunately, heavier snowfalls didn't arrive until mid-late December. The conditions did, however, force NTBC to apply a \$5,000 holdback for the contract with 1st Action to ensure they remove limited construction debris and paint wood preservative on cut post and rail ends in the spring of 2023.

Overall, it was a highly productive fencing season, far exceeding the 7,000 metre deliverable outlined in the Kootenay Connect Contribution Agreement. In total, approximately 12,129 metres of fence line was addressed in the eight projects, more than double what was implemented in 2021 (5,674 m). This included approximately 144 metres of fence repairs, 5,637 metres of fence removal, 1,413 metres of new fence construction, and 4,935 metres of removal and new fence replacement combined. The following pages provide a detailed list of all fencing projects completed in 2022. Refer to the map in Figure 7 for the locations of each project.

Project/Job 1: NCC (PID 016-471-105) – NCC / Miles Road Boundary Fence Repairs

- This project was funded entirely by CBT EEP funding.
- This project ranked as a Low to Medium Priority with a score of 23/80.
- The purpose of the project was to protect the conservation property from motorized access, and enhance ease of wildlife movement through the fence.
- Project involved minor fence modifications and repairs along 144 metres of range fence alongside Miles Road. This work included replacing old rotten posts, re-enforcing bracing and re-stringing fence wire. (Photos 17 & 18).



Photo 17: Fence along Miles road on October 1, 2022



Photo 18: After repair photo on October 30, 2022

Project/Job 2: NTBC (PID 016-471-016) – Interior & Exterior Range Fence Removal

- This project was primarily funded by NTBC internal funds, with a minor component from ECCC/Kootenay Connect.
- The project ranked as a Very High Priority with a score of 60/80.

- The purpose of the project was to remove an internal and external range fence line segment, as well as an old coral system. Two segments of external range fence paralleled a functional fence creating a significant wildlife travel hazard (Photo 19).
- Project involved the removal of approximately 1,957 metres of a derelict posts and barbed-wire range fence along the NW and West parts of the property boundary. All posts and wire were disposed of at the RDEK Central Landfill (Photo 20) and grass seeding of soil disturbance will take place in the spring of 2023. Some non-treated fence posts were piled in the old coral and will be burned, then seeded in the coming year.



Photo 19: Double fences created a wildlife hazard, fence on the left was removed under this project.



Photo 20: Derelict fence ready for pickup and disposal

Project /Job 3: NTBC (PID 017-085-721) – NTBC/Oler/BC Hydro Boundary Fence - New Fence Build

- This project was primarily funded by ECCC/Kootenay Connect funds, with a minor component from NTBC internal funds. NTBC previously paid for a legal survey and staking of the property boundaries in 2020.
- The project ranked as a Very High Priority with a score of 50/80.
- The purpose of the project was to build new fence along the southern boundary and tie into existing Teck and MWLRS fence lines at the west and east terminus', respectively. The goal was to protect the property's conservation values from motorized vehicle access and livestock trespass while accommodating wildlife passage. The property's plant community had long been impacted by livestock trespass.
- Project involved the building of approximately 1,413 meters of new wildlife-friendly range fence, including 2 x 16ft metal gates (Photos 21 & 22) and 1 x wire gate. The installation of the metal gates allows BC Hydro and NTBC access, while the wire gate at the east end of the fence line can be used to remove livestock, in the event they are in trespass.
- There were many challenges associated with this project. The parcel is land locked and thus, special permission was required to access the property through Teck land and through the neighboring private property (Oler and Ryan Families and Teck). Teck required NTBC staff and contractors to complete an orientation course, equip vehicles with additional safety items and to use their sign in/out procedures. Other challenges for this project included BC Hydro permissions and safety concerns working around power poles (Photo 23), steep terrain/deep gullies and rocky ground (Photo 24). In some instances, rock drilling was required to get t-posts in the ground to support the fence line.



Photos 21 & 22: Before and after fence and gate photo on NTBC property line, October and December 2022.



Photo 23: Fence build/bracing with setback near BC Hydro infrastructure.



Photo 24: Bracing and T-Post on steep rocky terrain.

Project/Job 4: NCC (PID 008-408-823) – Fence Removal and New Boundary Fence Installation

- This project was funded nearly evenly by ECCC/Kootenay Connect and CBT EEP funds.
- The project ranked as a Medium Priority with a score of 40/80.
- The purpose of the project was to protect the conservation values of NCC’s property, alongside a shared property boundary with a landowner that has farming ambitions and a number of vehicles in close proximity to the property line (Photo 25). The fence would also ensure that livestock that are grazed for short periods of time on NCC can be better managed on the landscape. The existing fence was derelict in many places and needed removal. The work took place in the south and eastern portions of the property.
- Project included the removal/replacement of approximately 1,633 meters of derelict fencing with new wildlife friendly range fence construction along the boundary. The project also included the installation of 3 x new wire 12ft. access gates (Photo 25), clearing a fence right-of-way for access, disposal of waste at RDEK Central Landfill, and seeding of ground disturbance.
- Additional challenges were associated with this project also. The existing bridge access over Luke Creek was compromised last season, and a temporary bridge needed to be installed to access the western section of the fence line. Fortunately, BC Timber Sales loaned a metal bridge and supervised its installation by Chil Logging Ltd., paid for by NCC. Another significant challenge was a steep and rocky gully section east of Luke

Creek. The decision was made to remove, by hand, the old fence debris and re-align a new fence line shown in red (Figure 6) around the gully to minimize ground disturbance and maintain contractor safety.

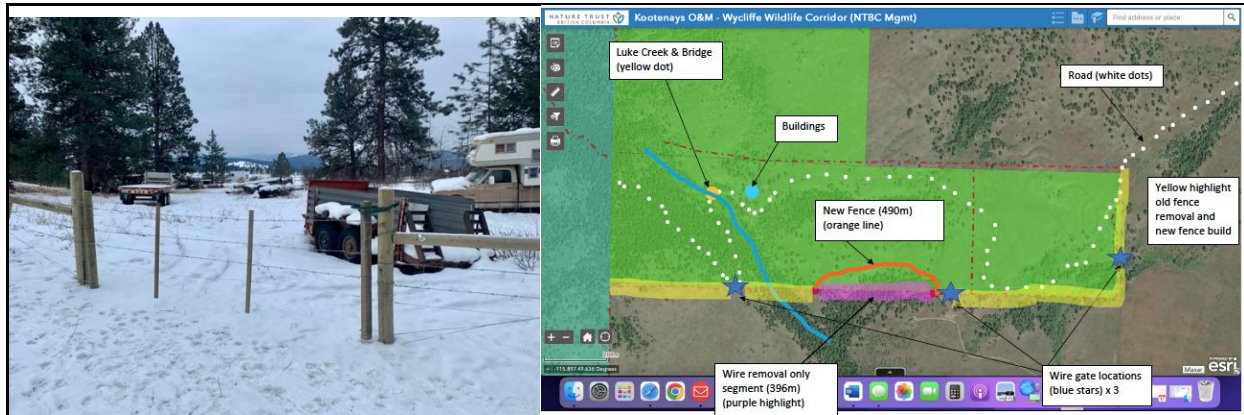


Photo 25: Image of new wire gate installation on NCC property **Figure 6:** Map illustrating fence build, removal and re-alignment.

Project/Job5: MWLRS (PID 005-572-827 & PID 016-986-024) – New Boundary Fence Installation & Fence Removal

- This project was funded entirely by CBT, including the legal survey and staking.
- The removal of this derelict fence was ranked as Very High, with a score of 50/80, requiring replacement.
- The purpose of the replacement fence was to install a wildlife-friendly range fence between MWLRS and neighbouring farm and restrain any motorized traffic or livestock grazing from the conservation property. The existing fence was derelict and livestock had previously been able to cross the fence.
- Project included the removal of the old fence and the creation of a new wildlife friendly range fence spanning approximately 1,633 meters. The project included the installation of 3 x new 16ft metal gates (Photo 26).
- The removal of the decrepit, internal fence on MWLRS lands were disposed at the RDEK Central Landfill (Photo 27).
- Several challenges were associated with this project. Contractors required a Motor Vehicle Closure Access exemption permit from the Province within the conservation land. Access from the neighbouring farm also had to be arranged. Finally, the removal and construction of the fence intersecting with a FortisBC natural gas pipeline required a permit and on-the-ground supervision (Photos 28 & 29).



Photo 26: Metal gate on new fence at junction of BC Hydro access road



Photo 27: Fence debris ready for site removal



Photo 28: FortisBC staff locating pipeline prior to work



Photo 29: Installation of new fence posts in proximity to pipeline

Project/Job 6: MWLRS (PID 005-572-827) – Boundary Page Wire Fence Removal

- This project was funded entirely by ECCC/Kootenay Connect funds.
- The project was listed as being a moderate priority, having a score of 36/80.
- The purpose of the project was to remove non-functional, page wire fencing along the northern part of the property boundary (Photo 30) and reduce the hazard to wildlife.
- The project included the removal of approximately 824m meters of decrepit page wire fence. The removal wire and downed posts was included in the scope of work, along with disposal at RDEK Central Landfill. Soil disturbance was also seeded. Standing posts were left on site to assist in identifying the property line and will allow for future signage to be installed identifying conservation land designation.
- One of the challenges associated with this project was getting a permit with the City of Kimberley to access the work site through the Northstar Rails to Trails right of way. In addition, the fence contractor was required to install temporary signage (Photo 31) on the trail to warn public users. Minimizing soil disturbance and increasing awareness of the work being done adjacent to the trail was paramount. Any debris/dirt on the rails to trails was quickly swept away.

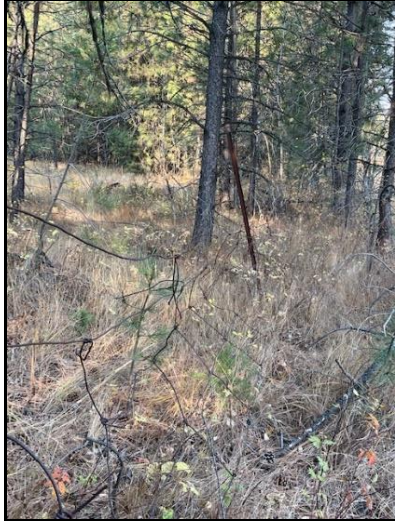


Photo 30: Hazard page wire prior to removal



Photo 31: Required signage posted in the vicinity of work along Rails to Trails

Project/Job 7: NTBC (PID 016-923-979 & PID 016-761-871) – Boundary Range & Page Wire Fence Removal

- This project was paid for entirely by CBT EEP funding. NTBC previously paid for a legal survey and staking in 2021.
- This project was listed as a moderate to high priority, having scores between 43/80.
- The purpose of the project was to remove non-functional and page wire (Photo 32) and range fence along all sides of the property to reduce hazards to wildlife.
- The project included the removal of approximately 2,856m meters of decrepit page wire fence and treated fence posts using a specialized implement to spool wire (Photo 33). The materials were transported to the RDEK Central Landfill and soil disturbance was seeded. Select standing posts were left in-situ to identify the conservation land designation.
- One of the challenges associated with this project was getting a permit with the City of Kimberley to access the work site through the Northstar Rails to Trails. In addition, the fence contractor was required to install temporary signage on the trail to warn public users. Minimizing soil disturbance and increasing awareness of the work being done adjacent to the trail was paramount. Any debris/dirt on the rails to trails was quickly swept away.



Photo 32: Page wire fence prior to removal



Photo 33: A specialized implement used to spool wire was highly efficient

Project/Job 8: NTBC (PID 016-749-022) – New Boundary Fence Installation & Fence Removal

- This project was paid for entirely by NTBC internal funding.
- This project was listed as a Very High priority, having scores between 60/80.
- The purpose of the project was to protect the conservation values of NTBC’s property, alongside a shared private property with a pasture that contains up to 25 horses from an outfitter. The work took place along the eastern portion of the property.
- Project included the removal/replacement of approximately 416 meters of fence at risk of failing soon with new wildlife friendly range fence constructed along the boundary (Photo 34). The project also included the installation of 2 new 16ft metal gates, repairs to an existing gate and the construction of a v-style pedestrian walkthrough (Photo 35).



Photo 34: New fence construction underway



Photo 35: Pedestrian walk-thru for access

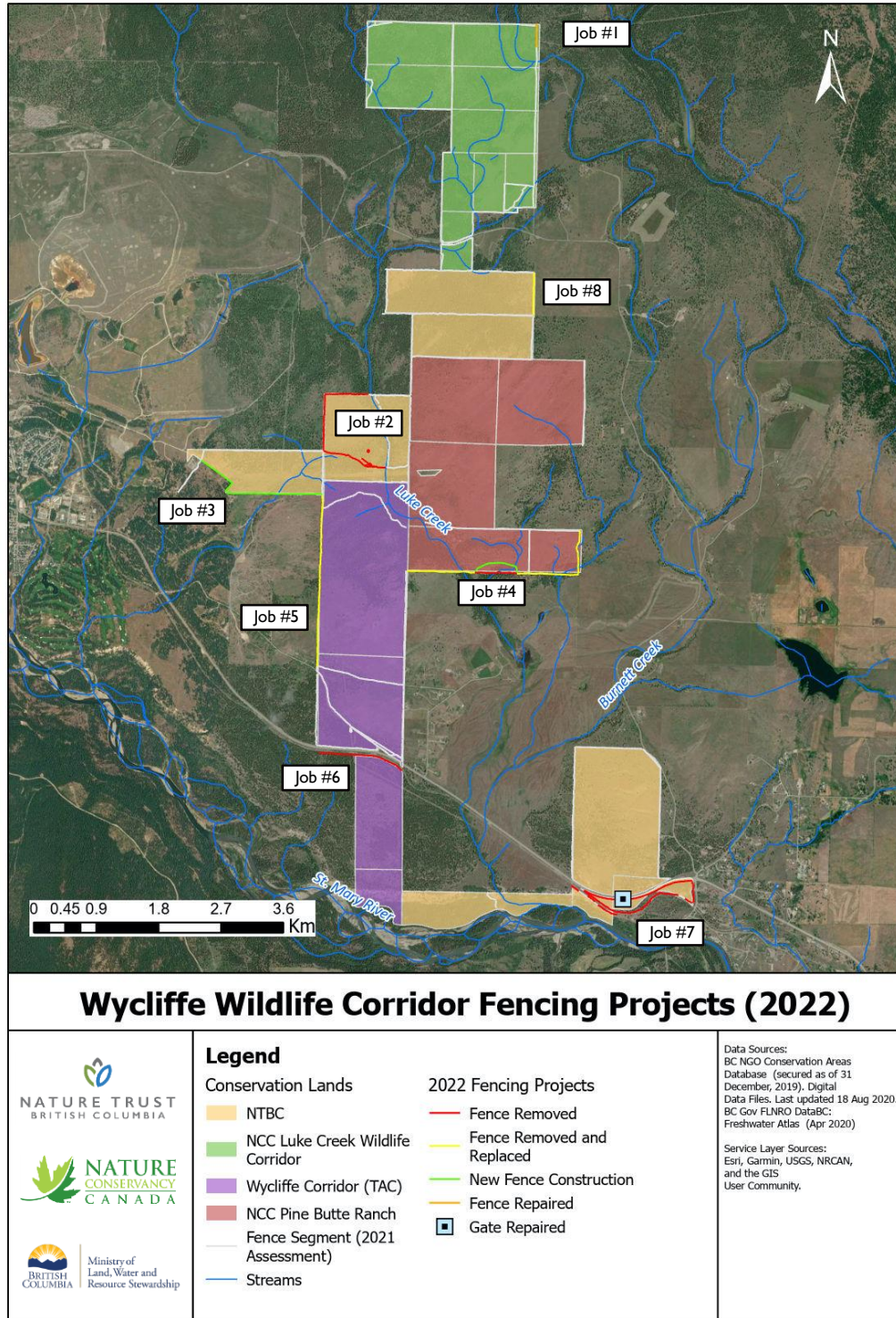


Figure 7: Wycliffe Wildlife Corridor Fence Assessment and Projects (2022)

6. CONTRACT REPORTING DELIVERABLES:

The contract with the East Kootenay Invasive Species Council involved the production of several supporting documents and files described below. Other deliverables associated with the fencing projects have been addressed by NTBC. Each of NTBC's Kootenay Connect Year 4 deliverables have been shared using a file sharing service. The video report was submitted separately on March 10th.

The project deliverables, as listed in Schedule A of the contract include:

4WC Invasives: <ul style="list-style-type: none">▪ Interim and Final Summary Reports▪ IAPP Data extract▪ EKISC Final Report▪ Spatial Data▪ Project Photos▪ Short video highlighting project▪ A variety of other project-related files	4WC Fencing: <ul style="list-style-type: none">▪ Interim and Final Summary Reports▪ Spatial Data▪ Project Photos▪ Short video highlighting project▪ A variety of other project-related files
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7. PROJECT FINANCIALS:

Documents related to project finances have been uploaded to the corresponding Year 4 Kootenay Connect Wycliffe online folder. They include:

- Relevant, invoices related to supply/material purchases;
- NTBC invoice to Kootenay Centre for Forestry Alternatives/Kootenay Connect;
- NTBC in-kind and cash declaration form;
- NTBC general ledger for Wycliffe accounts;

8. CONCLUDING REMARKS:

NTBC, NCC, and MWLRS wish to thank Environment and Climate Change Canada and its Canada Nature Fund: Community Nominated Priority Places for Species at Risk for making these projects possible in 2022-23.

The Wycliffe Conservation Complex Partners also wish to recognize the Columbia Basin Trust for providing multi-year funding through its Ecosystem Enhancement Project, which has been an important source of match funds. The Conservation Partners also contributed invaluable cash and in-kind contributions again this year.

Thank you to the Kootenay Centre for Forestry Alternatives for its role as the fiscal sponsor of the Kootenay Connect initiative. Finally, a very big thanks to the Kootenay Conservation Program, particularly Michael Proctor and Marcy Mahr for their vision of Kootenay Connect, an initiative that is already leaving a lasting legacy in the region!

We trust that this report satisfies all of the reporting requirements and look forward to implementing Year 5 of Kootenay Connect projects at the Wycliffe Conservation Property Complex. If there are questions, please reach out.



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