



Fort Shepherd Conservancy Area 2021 Activity Report



Fort Shepherd Conservancy Area shoreline Photo by Al Mallette

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Prepared for:

The Land Conservancy of British Columbia

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Introduction

The Fort Shepherd Conservancy, located seven km south of Trail, B.C., is a 964-hectare tract owned by The Land Conservancy of British Columbia (TLC). The Conservancy is an ecologically unique property, with diverse habitat zones that support as many as 29 rare species of wildlife. Eight and a half kilometers of river frontage provide riparian cottonwood habitat to Lewis' woodpecker, great blue herons, and countless other animals. The low-lying open bench lands, which were historical wintering grounds for mule deer, now also serve as rearing grounds for elk. Brushland zones provide critical habitat for the yellow-breasted chat. Fort Shepherd's upslope area encompasses the largest intact area of very dry, warm interior cedar hemlock in British Columbia. Canyon wrens, Townsend's big-eared bats, skinks, and racers inhabit the rocky slopes, cliffs, and caves.

For centuries, the Sinixt people occupied village sites along the area's bench lands overlooking the Columbia River. The Hudson's Bay Company's Fort Shepherd was built in 1858, along the Dewdney Trail, a regional trade route. The location was important to both Indigenous and settlers as it was by a ford on the Columbia River, near the mouth of the Pend Oreille River valley. Fort Shepherd and the surrounding lands were heavily impacted by settler activities throughout the 20th century. Logging, cattle grazing, and airborne pollutants from the massive lead-zinc smelter plant located in Trail left much of the Fort Shepherd area and the surrounding valley denuded. Hydroelectric transmission corridors were built to serve the area's energy needs. The open bench lands of Fort Shepherd were additionally popular for destructive off-road vehicle use. Notwithstanding the heavy impacts, Fort Shepherd Valley and its broad, low-lying benches were popular for hunting, and are currently considered important wildlife refugia.

Teck Cominco Metals Ltd. (Teck) donated the 2200-acre property in 2006 as a split receipt under the Ecological Gifts Program, with the goal of conserving the ecological, historical, and cultural values inherent in the conservancy lands. A Fort Shepherd Management Plan was written in 2008, to guide collaborative activities at the Conservancy. The TLC formed a Fort Shepherd Stewardship Committee to encourage ongoing dialogue about management of the property. Multiple inter-organizational initiatives, including Indigenous partners, have been implementing ecosystem enhancement projects in this valuable site. Contracted and volunteer work by Trail Wildlife Association (TWA) members constitutes much of the ongoing site monitoring and maintenance.

This report summarizes Fort Shepherd Conservancy news and activities for the 2021 calendar year, featuring content that was contributed by various working partners. To begin, the TLC provides status updates from the Stewardship Committee, the forthcoming revision of the Management Plan, hunting regulations, and an ungulate population study. Work performed on the property in 2021 includes a power pole replacement project on the Teck/Fortis lines, several planting projects, watering of the plantings and other maintenance, access control, and scoping for a proposed brushing and thinning project. A recent publication sketches the historical conservation knowledge and ecosystem enhancement work by community members. The array of trail cameras at Fort Shepherd continues to produce extensive image data of animal activities on the lower benches. Collectively, these items attest to the growth of the local conservation neighbourhood and its benefits to Fort Shepherd Conservancy and the region in general.

Fort Shepherd Stewardship Committee

The purpose of the Fort Shepherd Stewardship Committee (FSSC) is to provide guidance to the TLC on matters pertaining to the management of the Fort Shepherd Conservancy Area. The FSSC is comprised of representatives from TLC, TWA, Teck Metals, and the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD). Efforts will be made to solicit membership from local First Nations.

The regular FSSC meetings in 2021 were held using the Zoom platform. The past year saw increased communications among representatives of the Committee, as needed, to handle emergent issues. The communications network surrounding Fort Shepherd has been strengthened considerably by these spontaneous interactions. As a result, it was decided by consensus in November, that regularly FSSC scheduled meetings could be reduced from monthly to quarterly in 2022. Please direct questions or agenda items to Karen Iwachow at the TLC (kiwachow@conservancy.bc.ca).

Fort Shepherd Management Plan (*Marlene Machmer, Pandion Ecological Research, Ltd.*)

The 2008 Fort Shepherd Management Plan is undergoing a revision, to update content and management goals. To this end, Marlene Machmer conducted field surveys for species at risk (SAR) and candidate listed grassland-brushland communities in 2021. She documented representative polygons and habitat types, special attributes, and access routes and infrastructure, using. Collation and analysis of that data is currently underway, supported by photos and detailed notes on status/condition, management concerns and recommendations.

First Nations representatives are being contacted by email/phone to initiate consultations on management priorities, goals, objectives and specific issues of concern or interest for the Conservancy. Other agencies (FWCP, Teck, FortisBC, BC Hydro, TWA, WKNs, BCNPS, etc.) and selected stakeholder groups, and individuals with specific knowledge, interest, involvement in the Fort Shepherd Conservancy are also being contacted opportunistically to discuss their management priorities, goals, objectives and specific issues of concern. The draft report will be delivered in early March 2022 for review.

Hunting policy updates for Fort Shepherd

Wildlife conservation and the needs of the resident fauna and flora are of primary concern at Fort Shepherd. Past damage to ecologically sensitive areas from unsanctioned ATV use resulted in the TLC prohibiting public access and hunting in 2016. Since then, TLC has received community feedback requesting hunting to be reinstated at the Conservancy and will be deciding in Spring 2022 whether this is possible. The TLC recognizes the importance of historic community activities and currently encourages activities that are compatible with the natural and cultural values of the land. The TLC is working diligently to balance limitations, such as outstanding access agreements and sourcing insurance, within the lens of prioritizing conservation.

Fort Shepherd Ungulate Study update

In 2020, the FSSC agreed that an ungulate study would be needed to determine whether hunting is aligned with conservation management in the Conservancy. This direction follows the objectives of the 2008 Fort Shepherd Management Plan, which support undertaking studies to improve our understanding of the abundance, distribution, and management of wildlife species.

The TLC has led efforts to source historic and current wildlife data for the Lower Columbia Basin. Sources include provincial and federal wildlife biologists specializing in ungulates, as well as private contractors. The overarching advice from all professionals was that we would need to increase our study area to ungulate habitat to include the entirety of the Conservancy and adjacent properties to attain statistically significant results.

A wildlife camera study was chosen to achieve baseline results while working exclusively within the Conservancy, and to take advantage of trail cameras already in place since 2020. The FSSC has been collecting data from 21 wildlife cameras set up throughout the lower benches for educational purposes. This data can additionally be analyzed to understand ungulate use of the Conservancy area, and as such, Raven's Bluff Consulting submitted a proposal for such a data project. The TLC is seeking funding to implement this analysis, and is prioritizing the Teck Metals Community Grant program this spring.



(Figure 1. Elk cow resting summer 2021).

Visitors at Fort Shepherd

The Fort Shepherd Conservancy is open to the public from May 1 through October 31. Visitors access the property via the main access road on foot, bicycle, and with horses, or by boat on the Columbia River. Dogs are permitted, but should be kept on-leash. Motorized vehicles are not allowed. The warden's reports and image data from trail cameras show regular visitation throughout its open season, despite being 5 kilometers from the road to the entrance marquee.

Warden's Report

Ted Gate and his partner Janet continue to serve as warden and ambassadors to the Conservancy, driving through at random intervals, several times per week. Ted and Jan act as ambassadors, speaking with hikers and bicycle riders, handing out information pamphlets about the Conservancy, and encouraging responsible use of the property. They also perform minor maintenance, like removing fallen trees and cutting brush along the access road. Ted calls in actionable items, such as larger downed trees, motor vehicle trespass, and this year's wildfire incident. Additionally, the wardens' notes include comments about the weather, wildlife sightings, and unusual events.

Fire at Fort Shepherd

On July 7, 2021, a lightning strike triggered a fire upslope of the power line right-of-way, about one kilometer into the Conservancy, which was quickly put out by the Kootenay Boundary Regional Fire Rescue crew from Castlegar. Fort Shepherd's Warden, Ted Gate, unlocked the access gate, which remained open until the incident was cleared on July 8. The question of who has keyed access to Fort Shepherd was subsequently revisited, in part due to concerns over wildfire safety from residents of nearby Casino. As a result of these conversations, a key was issued to the fire crew for emergency access across Teck lands.

Access and Motor Vehicle Trespass Issues

Consultation with the public under the 2008 Fort Shepherd Management Plan resulted in the consensus that the priority should be given to ungulates, mammals in general, and endangered taxa. Signage was placed that restricted where vehicles could be operated on the Conservancy. In March 2016, the TLC closed Fort Shepherd to motorized vehicles, due to violations against permitted uses. Teck also adopted the vehicle ban, and installed a gate at the northern end of the access road.



(Figure 2. Access control signage installments. Photo by Karen Trebitz, TWA).

While signage together with Teck’s gate have curtailed most illicit access, there are still incidents of vehicle trespass on the Conservancy. In 2021, there were several incursions on the property by a snowmobile and a four-wheeler. The most egregious trespasses, however, were with trail bikes. On multiple occasions, the dirt bikers rode on- and off-trail, all over the lower benches of Fort Shepherd Conservancy and adjacent Teck lands. Access was either via the BC Hydro’s easement from the Violin Lake area to the west, or bypassing Teck’s access gate.

Several changes were made in 2021 in hopes of stopping these destructive vehicle incursions and other negative human impacts on the Fort Shepherd Conservancy. Al Mallette and TLC’s Karen Iwachow installed new signs at popular areas of the property, which ask visitors to “let nature be”. Existing “no motorized” signs have been moved to more strategic places along access roads. A chain has been placed upslope, across the BC Hydro’s power easement, and existing inner gates have been closed, with Teck providing an additional lock. At the conclusion of their power pole work in 2021, Teck/Fortis installed gates to block other possible access routes. In spring of 2022, the western gate on the power cut will be shut with a lock provided by BC Hydro.

Maintenance and watering

Al and his partner Karen did over 400 hours of work for the Conservancy in the past year, in a mix of paid and volunteer hours. Maintenance work included the ongoing removal of old wire fencing that blocks wildlife passage, installation of new signage, clipping brush along the access road and the horse trail, and watering of conservation plantings. Beginning in the dry spell in April, and throughout the heat dome of 2021, Al applied a total of 18 tanks of water to plantings on the Conservancy, and three deliveries to restoration plantings at the Beaver Creek Provincial Park. The TLC’s F-150 is outfitted with a 132 imperial gallon tank, and a battery-pump driven watering system, which can also be contracted to off-site projects. Al acts as the TLC’s local interface for Fort Shepherd with other organizations, facilitating access to the property as well as contracting his time for technical support on conservation projects.

Projects at Fort Shepherd

Electrical Transmission Line Work (Jayne Garry, Community Relations Leader, Teck)

Work resumed in the Fort Shepherd area in the fall of 2021, on the four parallel electrical transmission lines (14-17L) from Waneta Dam to Teck Trail Operations. The work included structural repairs to transmission lines, access roads and vegetation management. The project area was divided into three sections, including the transmission line corridor within Fort Shepherd Conservancy. The lands associated with the transmission lines in this area are owned in fee simple by Teck. The transmission line facility is operated and maintained for Teck by FortisBC. There was open communication between the Fort Shepherd Steering Committee, TLC, Teck, and FortisBC in advance of and during the work. A project-specific Environmental Management Plan was developed with input from qualified environmental professionals.

There were several studies done preceding and throughout the work:

1. Presence and habitat use of wildlife species throughout the Project Area.
2. Occurrence of at-risk plant species within the Project’s footprint (i.e., access roads, construction and vegetation management areas).

3. At-risk ecological communities that intersect the ROW and access roads.
4. Ecological site conditions and wildlife habitat features.
5. Occurrence of invasive plants and noxious weeds on and along access roads and at work sites.

In addition to these surveys, data were collected by Project Team members (Amy Duncan, FBC, Steve Ogle, Wood) on seeding disturbed soil patches, Central Kootenay Invasive Species Society (CKISS) staff and Kootenay Ground Maintenance contractors during weed treatments. Looking ahead there is consideration of a longer-term weed treatment program to manage invasive species in the Fort Shepherd area in coordination with the TLC and outside of line maintenance.

Waneta Sunshine Rotary

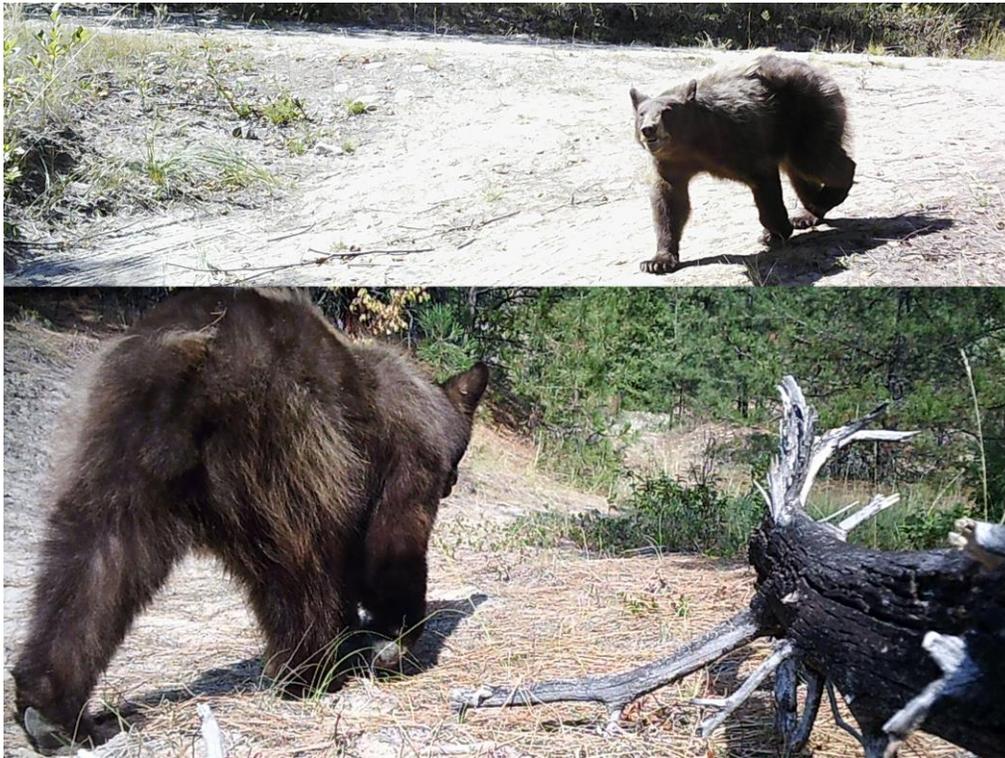
In spring 2021, the TLC was approached by the Rotary eClub of Waneta Sunshine, about the possibility of planting a restoration site at Fort Shepherd Conservancy. The eClub purchased 50 native shrubs and forbs through an Express Grant from District 5080,. On June 5th, Val Huff of the Kootenay Native Plant Society led almost 20 helpers in a day of planting and learning about the importance of flowering shrubs for pollinators in the Columbia Basin. The native shrubs included Nootka rose, Saskatoon, and chokecherry. The group additionally seeded forbs and native grasses all around the site. Al Mallette watered the site throughout the summer. Most of the plants survived the extreme heat; the roses even flowered and produced hips



(Figure 3. Rotary eClub of Waneta Sunshine planting work party. Photos by Karen Iwachow, TLC).

Trail cameras

Karen Trebitz continues to manage the array of trail cameras that are placed all around the lower benches of the Fort Shepherd Conservancy. There are now 21 cameras that remain on-site and collect image data year-round. The cameras have been quite reliable, but they do need maintenance. The past 12 months of camera operations produced over 100,000 raw images. Karen filters and codes the images into spreadsheets. It takes approximately 210 hours per six months solely to maintain the cameras, and to collect and process the images. Once collated, the data can provide valuable statistically rigorous information on animal populations, movement, and residence times; also fun facts, such as when the first babies appear on the Conservancy. The TLC is seeking grant-funding opportunities to contract this very important work going forward.



(Figure 4. Black bears caught on trail camera fall 2021)

Bird Boxes

The TLC contracted Ravens Bluff Consulting (RBC) to build and install 20 boxes throughout the lower benches of the Conservancy. RBC was able to procure a donation, on behalf of the TLC, of the mixed-length 1-by-7 boards from Kalesnikoff Lumber in Castlegar, B.C. Box designs were modified to incorporate the odd lumber dimensions. The blue bird boxes were additionally modified for the possibility of mounting trail cameras (Figure 5). The mix of owl, Lewis' woodpecker, owl, and wood duck boxes will be installed in georeferenced locations in spring 2022, following site recommendations in the updated Fort Shepherd Management Plan.



(Figure 5. Karen Trebitz installing blue bird box. Photo by Al Mallette, TWA).

Pollination Pathway (Val Huff of the Kootenay Native Plant Society)

The Kootenay Native Plant Society is working on a Columbia Basin Trust (CBT) Ecosystem Enhancement initiative in the Lower Columbia sub-region called the *Pollination Pathway Climate Adaptation Initiative* (“Pollination Pathway”). The three broad objectives of the project are: (1) Ecosystem enhancement of meadow/ grassland communities supporting camas (*Camassia quamash*) and bees; (2) Improving host and nectar plant availability for at-risk and climate-vulnerable butterflies; (3) Creation of a Wild Seed Library of climate-adaptive pollinator-preferred native plant species for restoration projects in the Lower Columbia.

In 2021, the Pollination Pathway group worked in two areas of the Fort Shepherd Conservancy (Figure 6). First, it expanded the experimental plots that were started in the previous year on a section of decommissioned road that was mechanically roughed. In late summer, a total of 400 camas bulbs and 5000 camas seeds were planted into separate experimental plots near existing camas populations. One aim is to test transplantation outcomes of two different ages of camas and direct seeding. The plantings will be monitored for three years. More camas plots will be added in the future as plants become available and as directed by monitoring efforts in previous years.



(Figure 6. Valarie Huff with team at experimental camas plots. Photo by Al Mallette, TWA).

Lower Columbia Rare Species Ecosystem Enhancement Program (Al Mallette)

Another CBT-funded project is the Lower Columbia Rare Species Ecosystem Enhancement Program (LCRSEEP). The LCRSEEP is a multi-year collaborative project, led by the Okanagan Nation Alliance’s Natural Resource Department, in partnership with TWA and FLNRORD. The program is designed to (1) support rare and threatened ecosystems and wildlife species in the lower Columbia River valley by enhancing or protecting rare habitats in the Lower Columbia River area, and (2) Develop strategic partnerships to help establish a network for collaboration and coordination of future stewardship activities or projects in the area. While the LCRSEEP’s focus is regional, several of the sub-projects involve the Fort Shepherd Conservancy.

LCRSEEP prescription development for brushing and thinning (Thomas Hill)

Shrublands and grasslands in the lower Columbia River area provide critical habitat to many SARA-listed species. Without a natural fire-regime, however, the shrubs accumulate a dense deadwood understory, and they do not receive the stimulation needed to push vigorous new growth. Key constraints at Fort Shepherd are that there should be no burning, due to concerns about unmanaged invasive plant populations along the nearby transmission line ROW’s, and the low resiliency of the cryptogammic crust in the area’s soils. Enhancing this valuable Gb zone,

then, requires prescriptions for brushing and thinning to mechanically mimic fire regimes in the property's open-bench mule deer winter range.

In 2021, Thomas Hill led fieldwork through the Fish & Wildlife Compensation Program (FWCP) and FLNRORD's Irene Manley, to develop prescriptions to manage these critical open brushland / grassland (Gb) habitats at the Fort Shepherd Conservancy. Thomas and Al Mallette flagged and georeferenced approximately 24 hectares adjacent to previous FWCP treatment areas dating to 2013 and 2014. The ONA was provided the contact info for ecologist Tom Braumandl so that prescriptions could be completed within the 24 hectares. The LCRSEEP partners are looking to do this work in the 2022 field season.

Conservation knowledge report (Al Mallette & Karen Trebitz)

Before any fieldwork was begun, the LCRSEEP initiative wanted to know about conservation efforts that had been done in the past by community members. Al Mallette conducted interviews with TWA members and other sports and conservation enthusiasts who still have memories of the projects in the area. Interviewees shared boxes of photographs and notebooks – including club minutes beginning in 1925 – and a reel of super-8 film! Al learned that TWA members spent countless hours in club-organized conservation work, including planting, brushing and limbing, controlled burns to improve habitat conditions at Fort Shepherd and elsewhere in the region. Other events included animal transplants, tagging and tracking projects, and feeding stations. The resulting Lower Columbia Ecological Conservation Knowledge Report summarizes these extensive efforts, accompanied by maps of projects and animal migration corridors, and will be published on the TWA's website and Facebook pages following its final review.

Other events in the Conservation Neighbourhood that affect Fort Shepherd

On October 14, 2021, the Fish & Wildlife Conservation Program's (FWCP) Kersti Vaino and consultant Evan McKenzie led a field tour of sensitive Gb sites in the Lower Columbia, near the mouth of the Pend d'Oreille River. The participant list included First Nations, government, industry, conservation consultants, and non-profit organizations. Throughout the day, the Conservancy was singled out for its prime Gb habitat areas and for successful conservation efforts. A need was identified to share data towards improved best management practices for work to be done, and also on a larger scale beyond the Lower Columbia region. Several key field tour participants volunteered to share their data toward this goal. Data sharing from this new Pend d'Oreille Working Group will be hosted through the LCRSEEP project.

Conclusion

It is evident from this activities summary that maintenance and project work continued at the Fort Shepherd Conservancy in 2021, despite Covid-19 pandemic restrictions. It is a popular space for both the protected species that live there and the people who come to enjoy it. The year in review especially underscores the great collaborations that are developing around conservation efforts on the property, and in the lower Columbia region in general. We are grateful to partners, volunteers, and other contributors.