

2023 PROJECT SUMMARY

LOWER COLUMBIA RARE SPECIES ECOSYSTEM ENHANCEMENT PROJECT (LCRSEEP)

akł ńśas (Fort Shepherd Conservancy Area)

About the project:

- Funded by the Columbia Basin Trust
- A 5 year multi-site project
- Led by the Okanagan Nation Alliance (ONA), Trail Wildlife Association, and the BC Ministry of Forests
- In collaboration with multiple partners and supporting funders (See page 10)
- Supports rare and threatened ecosystems and wildlife species in the Lower Columbia Basin
- Protects and enhances habitat
- Focused on riparian, dry forest, and brushland ecosystems
- Incorporates Syilx Traditional Ecological Knowledge (TEK) for ecological resiliency
- Provides community outreach and education



Syilx Knowledge Keeper and ONA Cultural Lead sk*kwłal (Elliott Tonasket) addresses Kwu-Sqilxw & Nakimu Forestry crews and the ONA Natural Resources Columbia team at akł ńśas (Fort Shepherd), October 5th, 2023.

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Syilx Elder caylx (Richard Armstrong)

2023 Highlights

2023 was year 3 of 5 for the project, and it was a big one for the ONA team and our collaborators!

- **19.5 hectares** treated to increase fire resiliency and enhance habitat in dry open forest and brushland at akł ńśas (Fort Shepherd Conservancy Area - FSCA) south of Trail.
- **Over 1,000 riparian trees and shrubs** planted at Norns Creek and Kinnaird restoration sites along the Columbia River.
- **10 nest boxes** monitored at riparian sites around Castlegar.
- **2 Bank swallow colonies** protected near Castlegar
- Initiation of a **native brushland plant** restoration project at Dove Hill.
- Initial planning for **new restoration projects** for 2024.



ONA tmixw technicians Lindy Lin (left), Alysia Dobie (center), and Marcus Archambault (right) implemented Syilx shrub pruning techniques in akł ńśas (Fort Shepherd).

akł ńśas (Fort Shepherd Conservancy Area) EcoCultural Restoration Project

In October, ONA technicians, Kwu-Sqilxw Forestry crew from Penticton, and Nakimu Forestry from Revelstoke, completed restoration work on 19.5 hectares of dry forest and shrubland in akł ńśas (Fort Shepherd Conservancy Area - FSCA). Crews implemented a prescription which integrated Syilx TEK and forestry principles to mimic the effects of the frequent low-intensity fires that historically maintained the area's ecosystems. Dead and dying branches were removed from shrubs by hand-pruning to promote plant vigour and food resources for deer and elk. Small diameter trees and ladder fuels on larger trees were removed to open up the forest canopy and reduce fire risk. Removed branches were cut into smaller pieces and scattered to add nutrients to the soil and provide habitat for small wildlife.

akł ńśas - Fort Shepherd Conservancy Area

This mosaic of grassland, brushland, and dry forest is home to many at-risk species and is an area of outstanding ecological, cultural, recreational, and historical features.



Dry forest treated in akł ńśas



Riparian species plug stock grown from local cuttings for local restoration work

Riparian Restoration around snłuxwqnm (Castlegar)

For the past three years, students from Selkirk College’s School of Environment and Geomatics (SEG) and other community-based groups have supported work on riparian (near a waterbody) restoration sites at Kinnaird and the Norns Creek confluence.

- Planting of over 1,000 black cottonwood, red-osier dogwood and willow at Norns Creek and Kinnaird restoration sites.
- Management of invasives, removal of garbage.
- Hosted Central Kootenay Invasive Species Society (CKISS) Field Tour at Norns to highlight restoration work in the Kootenays.
- CKISS Robson Scout Community Weed Pull with 23 volunteers targeting Himalayan blackberry.

Himalayan blackberry removal and infill planting at Norns site with locally sourced riparian plants propagated with support from Selkirk Biology Department Greenhouse.

Riparian Cottonwood forests

are critical ecosystems that have been highly impacted and fragmented by altered water cycles, urban encroachment, recreational activities and the spread of invasive plant species.



Robson Scout and Venturers



Red-osier dogwood plug stock



Selkirk Recreation Fish and Wildlife (RFW) students, Kinnaird site



Live stake cottonwoods and bank stabilization at work



A northern flicker checks out a nestbox at China Creek

Riparian Nestbox Monitoring

Many species of birds rely on cavities in older trees for nesting, but in disturbed ecosystems there often aren't enough to go around. Trail Wildlife Association built nestboxes to meet the nesting preferences of three species: western screech owl, Lewis' woodpecker, and wood duck. Ten of these were installed at 4 riparian sites around Castlegar in late 2022 and early 2023.



Al Mallette from Trail Wildlife Association and ONA tmix™ technician Lindy Lin prepare to install a nestbox.



Alysia Dobie, ONA tmix™ technician, takes a picture before fall cleaning.



This pair of northern flying squirrels doesn't mind that the nest box wasn't intended for them.

But designing habitat for a specific species and having them use it are two different things.

When arriving on site in the spring, ONA technicians were surprised to see a western screech owl peering at them from a box intended for wood ducks. Another box also made for wood ducks was instead being used by both flying squirrels and red squirrels.

We'll continue monitoring the nestboxes over the coming years and hope that, in time, the intended species find and make use of these habitat enhancements.

qʷəlqʷlsina? (western screech owl)

is an at-risk species that relies on cavities in mature cottonwood trees in riparian areas for nesting. Nestboxes provide habitat where suitable trees are in short supply.



qʷəlqʷlsina? (western screech owl) at Kinnaird restoration site



Photo: ecopaysdecocagne.ca

Bank Swallow Colony Protection

- Primary threats include; habitat loss, changes in availability and timing of prey (flying insects), as well as disturbance by people digging or carving at the friable soils that swallows need for nesting sites.
- Signage was developed and installed to bring awareness to the sensitivity of these breeding areas and limit human disturbance at the nesting sites.
- City of Castlegar supported the printing and installation of signage for the Heritage Way colony.



Dove Hill colony

maḡwcn (Bank swallows)

have declined in number by an estimated 98% over the last 40 years and are listed as “Threatened” under the federal Species at Risk Act.



maḡwcn, Bank Swallow (*Riparia riparia*)

Sensitive Breeding Habitat
Please do not disturb or enter area

Bank Swallows have declined in number by an estimated 98 % over the last 40 years and are listed as “Threatened” under the federal Species at Risk Act.

Primary threats include habitat loss and changes in availability and timing of prey (flying insects).

Bank Swallows and their nests are protected under the federal Migratory Birds Convention Act, 1994.

It is an offence for anyone to kill, hunt, capture, injure, harass, take or disturb a migratory bird nest or eggs.

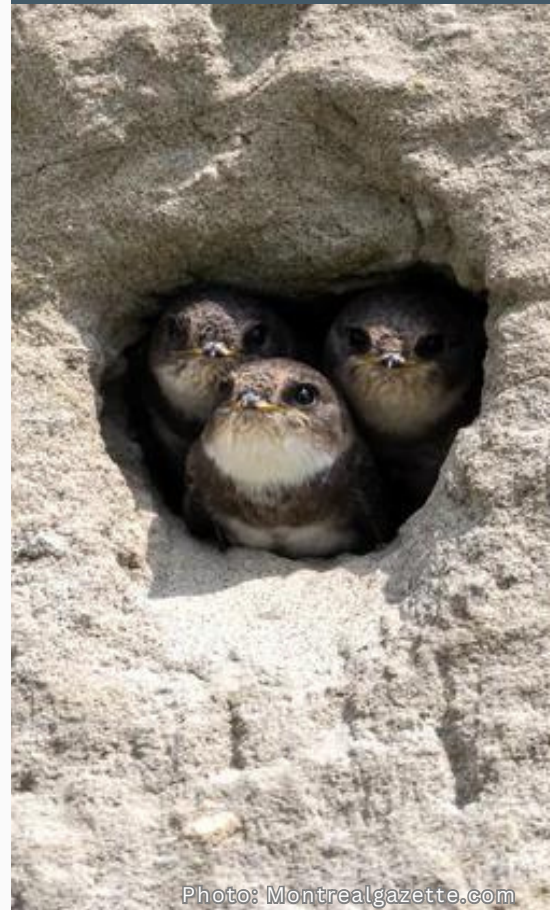


Photo: Montrealgazette.com





View of Waldie Island from Waldie Trail

Waldie Trail Armouring Remediation

Situated along the shores of the Columbia River near sn̓tuxwqnm (Castlegar), Waldie Trail traverses a mosaic of habitat types important for snikə́t'c'aʔ (elk), skəm'xist (bear), and stux (beaver), as well as numerous waterfowl, songbirds, and raptors.

Among the area's wildlife habitat features are a seasonal marsh, shallow water, adjacent spawning channels, dense shrub and a mixed coniferous and deciduous forest with numerous large cottonwood and willow trees.

The area is home to beavers who utilize riparian tree species for food and construction needs. Over the past 15-20 years various groups have engaged in both tree planting and armouring of trees with wire cages to protect them from beaver predation, however unmaintained armouring poses the risk of girdling the trees they were intended to protect.

Restoration included the remediation of unmaintained armouring of approximately 43 trees along the trail.

Waldie Island

identified as critical sk'w̓saʔs (Great Blue Heron) habitat for overwintering populations. Public access is prohibited to protect these easily disturbed birds.



Great blue heron | Photo: James Franssen



Unmaintained armouring girdling willow tree



View from Dove Hill Trail | Photo: Westkootenayhiking.ca

Dove Hill Native Plant Restoration

The Dove Hill Trail is a popular 5.7 km trail through a mosaic of shrub land and open forest that overlooks the Columbia and Kootenay Rivers. The trail is a popular area for local recreationists and therefore presents an opportunity to bring community awareness to an important ecosystem in our landscape.

Project goals include:

- Restoration of the trail with locally sourced and propagated native plant species seedlings.
- Creation of a sustainable seed-source population for future restoration work.
- Inventory of bird diversity around the site with automated recording unit (ARU).
- Increased community awareness of the ecological and cultural importance of native plants through signage and outreach.

Scattered rocky areas and high sun exposure make this site suitable for many Species-at-Risk including qʷayqʷaytʂaps (western skink) and aslaiyaʔqnə (northern rubber boa).



Red-Listed Ecosystems

Impacted by fire exclusion, invasive species, and development, BC's shrublands were red-Listed by the Conservation Data Centre in 2023.



Diverse native plant communities support healthy ecosystems by providing food and habitat for pollinating insects, birds, and other wildlife.

Okanagan Nation Alliance is working to reduce the number of exotic and invasive plants at this site and replace them with locally sourced native plants appropriate to Dove Hill's rare low-elevation dry brushland ecosystem.

Watch for these native plants in Spring 2024!



Silver leaf phacelia
Phacelia hastata



Shrubby penstemon
Penstemon fruticosus



Round-leaved alumroot
Heuchera cylindrica



Largeflower tritella
Triteleia grandiflora



skʷalsitmalx
Kinnikinnick
Arctostaphylos uva-ursi



styʔ
Bluebunch wheatgrass
Pseudoroegneria spicata



qʷacqʷacwixʷups
Yarrow
Achillea millefolium



qʷiqʷiqnitmik
Silky lupine
Lupinus sericeus





akt sas (Fort Shepherd Conservancy Area)

Other Projects in the Lower Columbia Supporting At-risk Species and Ecosystems:

Reptiles at-risk: nwiwi?+niwt (Western Yellow-bellied Racers)

Funded by Teck Metals Ltd.



Funded by Teck Metals Ltd. and led by Okanagan Nation Alliance in partnership with Jakob Dulisse Consulting, the Reptiles-at-Risk project was designed to capture and track nwiwi?+niwt (racers) in akt sas (Fort Shepherd Conservancy Area) and the adjacent Teck-owned property. We tracked three racers in the fall of 2023, leading to the identification of two over-wintering hibernacula which can now be protected and considered in land management decisions.

North American Bat Monitoring Program

Funded by Wildlife Conservation Society Canada

In early summer 2023, ONA technicians participated in bioacoustic surveys to record the high-pitched echolocation calls of foraging bats around the Pend D'Oreille and Trail areas. Locally coordinated and funded by the Wildlife Conservation Society (WCS) Canada, this work is part of a continent-wide multi-national collaborative bat monitoring program using standardized protocols to gather data to assess bat population status and trends, inform responses to stressors, and sustain viable populations. For more information about this program, visit www.nabatmonitoring.org

Native Plant Propagation Project

Supported by Nature Trust BC and Selkirk College Greenhouse

Initiated in 2023, this is a first step in creating a framework of sustainable native seed sourcing and cutting program that incorporates both Western and Syilx Knowledge. This project will support Syilx Okanagan People in suxwtxtem (the inherent responsibility as caretakers of the land), and provide guidance to Natural Resource technician in restoration work. To date, over 540 mulx (black cottonwood), kwrkwr'a?ti?p (sitka willow), staktakcxwi?p (red-osier dogwood) were collected and propagated in the Selkirk College Department of Biology Greenhouse. The methods developed in this project will diversify and inform both current and future riparian and brushland restoration projects led by the ONA.

nwiwi?+niwt (Racer Snake)

More common south of the border, racers are at the northern edge of their range in Southern BC and are considered a threatened species. These fast-moving snakes eat mostly insects and prefer open shrubland habitat with lots of cover to hide from predators.



Adult nwiwi?+niwt (racer) in akt sas



Technicians preparing to catch bullfrogs

Nelway American Bullfrog Management



Funded by the Fish and Wildlife Compensation Program (FWCP)

The American bullfrog is an invasive species to western North America. It is a major threat to native ecosystem by outcompeting and preying on species smaller than itself. They have a high reproductive rate and lack natural predators.

Since 2020, the Okanagan Nation Alliance has been leading the Nelway American bullfrog Management Project to monitor population movements and implement eradication efforts. In 2023, a total of 513 bullfrogs were captured with helping hands from the Ministry of Forest (MoF), Salmo Watershed Stream Keeper and CKISS. ONA continues our commitment to this responsibility for the sake of the health of Syilx tmx^wulax^w (land) and all tmix^w (living things and those that cannot speak for themselves).

Riparian Invasive Plant Management

Led by the Central Kootenay Invasive Species Society (CKISS)

During the summer of 2023, ONA technicians joined CKISS and partner technicians to survey and treat invasive riparian plants at sites along the Kootenay River and the West Arm of Kootenay Lake. Purple loosestrife and yellow-flag iris were removed by hand and brought to landfill for proper disposal. At select locations, native sedges were planted in their place.

Yellow-Breasted Chat Monitoring in the West Kootenays

Funded by:

- Environment and Climate Change Canada (ECCC)
- Canadian Wildlife Services
- Columbia Power Corp.

The West Kootenay population of yellow-breasted chats has remained small over the years. 2023 was the second year of monitoring chats by the ONA along the Pend d'Oreille and Columbia Rivers to better understand the bird's population dynamics. The program consisted of checking which territories were occupied, re-sighting previously banded birds, banding nestling and unbanded birds, monitoring nests to determine breeding success, and characterizing the shrub and plant communities around the nests. Of the 10 nests monitored in 2023, only 4 were successful. Continued monitoring is needed to better understand the challenges faced by this population.

x^wa?+qayl'm (Yellow-breasted Chat)

These hard-to-spot songbirds are considered endangered in Canada where they are at the northern edge of their range. Most of their BC population is in the Okanagan with smaller populations in the West Kootenay. Their preferred habitat is dense brushland.



Chat with both legs banded

limləmt | Thank You

snłuxwqnm (Castlegar) | Photo: travel-british-columbia.com

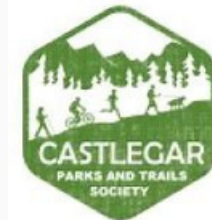
LCRSEEP is led by the Okanagan Nation Alliance in partnership with the Trail Wildlife Association, and the BC Ministry of Forests.

LCRSEEP is funded under the Columbia Basin Trust's Ecosystem Enhancement Program with additional funds and resources provided by Okanagan Nation Alliance, BC Hydro's Fish and Wildlife Compensation Program, and Trail Wildlife Association.

This project would not be successful without the support and dedication of volunteers, students, and staff from organizations that collaborated with us on LCRSEEP initiatives.

Our sincerest thanks for all you have done - limləmt:

- Selkirk College's School of Environment and Geomatics students and instructors
- The Land Conservancy of BC
- Castlegar Parks and Trails
- Elk Root Conservation
- Nakimu Ventures and Kwu-Sqilxw Forestry
- City of Castlegar
- Syilx Knowledge Keepers caylx (Richard Armstrong) and sk^wk^wlal (Elliott Tonasket)
- Selkirk College Department of Biology and Greenhouse lab technician Amanda Nicol
- Evan McKenzie Ecological Research
- Thomas Hill Environmental
- Central Kootenay Invasive Species Society



If you or your organization is interested in collaborating with the Lower Columbia Rare Species Ecosystem Enhancement Program, please contact:

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