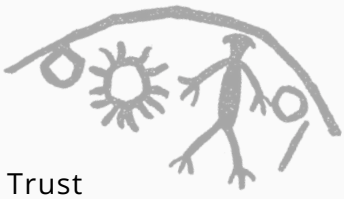
2025 PROJECT SUMMARY

LOWER COLUMBIA RARE SPECIES ECOSYSTEM ENHANCEMENT PROJECT (LCRSEEP)

Native plants with identification flags at Dove Hill restoration site

About the Project:



- Funded by the Columbia Basin Trust
- A 5 year multi-site project
- Led by the Okanagan Nation Alliance (ONA), with support from 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 and cultural awareness

Interested in learning more about the nsyilxcen language and Syilx culture and history? Visit our Website! Scan the QR code or visit: syilx.org/about-us/syilx-nation/

SCAN HERE

Contents

ONA technicians learned medicinal plant collection from Syilx Knowledge Keeper cewelna Leon Louis and his nephew Duane

Fall view from Dove Hill trail

2025 Highlights

- 2025 was year 5 for the LCRSEEP project. Here are some highlights from the work done by the ONA team and our collaborators:
- Worked with 63 volunteers
- Planted almost 1200 native wildflowers, grasses, shrubs, and trees from 43 different native species at Dove Hill, Waterloo Eddy, and Kinnaird
- Propagated native plants from collected seeds and cuttings which were used at our restoration sites
- Manually removed invasive plants over an area of more than 27,000 square meters at Dove Hill and Waterloo Eddy
- Spread more than 40 kg of native grass and forb seed mix along the Dove Hill trail network
- Documented the fledging of four qʷəlqʷlsinaʔ Western screech owlets in a riparian nest box
- Confirmed 9 species of bats using artificial roosts at Smallwood

Dove Hill Native Plant Project

The Dove Hill trail network is an important, high traffic recreational value for the Kootenay Community. This popularity presents both risk and opportunity. The busy trails act as routes for the spread of invasive plants as they wind through the sensitive brush land, impacting native plant diversity and species habitat. But the presence of people also provides significant opportunities to promote community awareness and stewardship of this important ecosystem in our backyard.

ONA initiated ecosystem enhancement activities in 2021 to protect and support native plant species diversity and habitat for species-at-risk along the trail. Since then, with the help of volunteers and support from partner organizations, ONA has reduced the density of invasive plants along the trail, established two native planting sites, installed educational signage and fencing, and conducted outreach activities. Planning is underway to continue and expand restoration activities on Dove Hill.

Dove Hill

Overlooking snɬuxʷqnm Castlegar at the confluence of ntx̌ʷitkʷ Columbia River below Arrow Lakes and nt̓əl̓txitkʷ Kootenay River downstream of Kootenay Lake, Dove Hill is home to a network of popular trails that lead visitors through a mosaic of wildlife habitats including rare and sensitive brushland ecosystems.

ONA technicians watering native plant site on Dove Hill

Temporary project sign on Dove Hill overlooking sn̓ɬuxʷqnm Castlegar

Dove Hill Native Plant Project

Many people came out to help weed, seed, and plant on Dove Hill, including the Wildsight Youth Climate Corps and 33 volunteers from:

- The Columbia Basin Alliance for Literacy (CBAL)
- Robson Scouts
- Castlegar community members

Native grass seed mix

In 2025 work crews on Dove Hill:

- Manually removed invasive plants over an area of more than 21,000 square meters along the trail network
- Planted 681 plants from 21 different native species at two planting sites
- Spread more than 40 kg of native grass seed mix along the trail network
- Installed temporary plant identification signs with nsyilxcen, English and scientific names
- Installed permanent project signs to inform trail users of restoration goals and activities.
- Collected data to help plan further restoration activities

ONA and Wildsight Youth Climate Corps workers roughing the ground along the trail with rakes and spreading native grass seeds just before the first snowfall.

Invasive plants

Invasive plants are non-native species that can out compete native plants, reducing biodiversity and ecosystem resilience. While some are recognized as weeds, others were introduced for their medicinal or ornamental value.

To learn more, visit the Central Kootenay Invasive Species Society (CKISS) at: ckiss.ca

Spotted knapweed is the most common invasive plant removed by ONA technicians and volunteers on Dove Hill

The Cultural Significance of Dry Ecosystems

skʷkʷlal E. Tonasket, Syilx Knowledge Holder and ONA Cultural Facilitator

The diverse and plentiful grassland and brushland ecosystems are valued harvesting sites for food, medicine and materials for traditional technological uses. They were also viewed by the Syilx Okanagan People as a diverse, sensitive, and deliberate collaboration of life that provided the teachings to sustainably co-exist and flourish.

Syilx knowledge systems are inextricably tied to the land, and these dry ecosystems provided culturally and ecologically important space and time for the transfer of knowledge, teachings, laws, protocols and societal delegations. More than simply a source of sustenance, these spaces housed story markers that would be revisited in spring by the emerging People, instilling and reinforcing role and responsibility to the land as guided by the captikʷɬ traditional oral stories that are shared and reflected on throughout the winter months.

These landscapes are home to plant relatives including sp'iƛ'əm bitterroot and siyaʔ saskatoon berry who play key roles in the Syilx Coyote story as two of the four Food Chiefs as told in How Food Was Given. These and other relatives mark the changing of the seasons and teach vital lessons in relationships, roles, and responsibilities.

Reciprocity and respect were practiced through sustainability and included seed propagation, cycling through the land to avoid over-staying in one place, and working with "good fire" to revitalize the land. Land was not considered to be managed for but a space to participate alongside all living things – our relatives.

Today, land-based ceremonies and gatherings by knowledge holders bridge knowledge systems to adapt to and address the current conditions of the land.

> The open grass and brushlands were viewed as a less rugged environment providing an ideal learning space for elders to transfer knowledge to children and adolescents.
>
> skʷkʷlal Elliott Tonasket, Syilx Knowledge Holder

The Four Food Chiefs

skəmxist Black Bear
ntytyix Spring Salmon
sp'iƛ'əm Bitterroot
siyaʔ Saskatoon

Robson Scouts removing invasive plants at Waterloo Eddy Regional Park

Waterloo Eddy Regional Park

In 2025 the ONA Natural Resources Department continued work begun in 2024 with the Regional District of Central Kootenay (RDCK) at Waterloo Eddy Regional Park to enhance rare ecosystems that support species-at-risk and restore habitat resiliency.

In the spring, with the help of two community volunteers, ONA technicians planted 226 plants from 13 native species in the dry-upland area along the road to the boat-launch. The previous fall a thinning treatment was conducted which opened the forest canopy to allow more light to reach these plants.

With the help of 26 volunteers, the removal of invasive plants over an area of 2,300 square meters was accomplished during a Central Kootenay Invasive Species Society (CKISS) community weed-pull event with the Robson Scouts. The Wildsight Youth Climate Corps also came out to help with weeding, watering and seed collection.

Cages protect riparian trees and shrubs from browsing deer at Waterloo Eddy

Watering is an important part of helping planted stock through our hot dry summers until they become established enough to survive on their own. It was a common sight to see ONA technicians working with sprinklers and hoses at the park last summer.

Early surveys show that the new plants at Waterloo Eddy are doing well. As they grow over the next few years, visitors will get to enjoy watching the rejuvenation of these important riparian and dry forest ecosystems at the park.

ONA tmxʷulaxʷ technician planting plug-stock grown from a tree cutting

Cardboard and mulch help planted nursery stock retain moisture and protect against competition

stəktəkcxwiɬp red-osier dogwood and mulx cottonwood stakes showing new growth at Kinnaird

Riparian Restoration: sn̓ɬuxʷqnm Castlegar

For the past five years, ONA technicians, with the support of students from Selkirk College's School of Environment and Geomatics (SEG) and other community-based groups, have worked on riparian restoration sites near sn̓ɬuxʷqnm Castlegar at Kinnaird and the Norns Creek confluence.

In the spring of 2025, ONA technicians added 272 mulx cottonwood live stakes to the Kinnaird restoration site, bringing the total number of stakes planted over 5 years to 1622. When surveyed in the fall, 68% of the newly planted stakes showed signs of successful establishment.

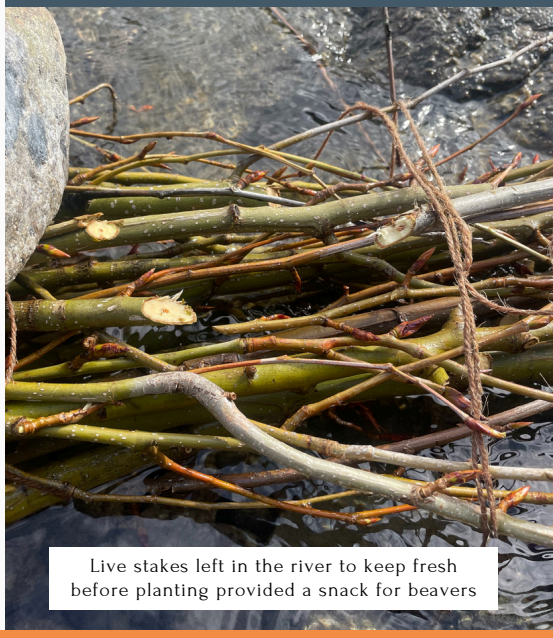
ONA technicians preparing to add more live stakes at Kinnaird

At the Norns Creek confluence, technicians were pleased to find only minimal maintenance work is needed to keep the Himalayan blackberry infestation under control. Successive years of manually cutting back and removing this thorny invasive with the help of Robson Scouts and CKISS have made space for native plants.

Himalayan blackberry infestation at Norns Creek in 2022 before treatment (left) and after treatment in 2025 (right)

Riparian mulx 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.



Live stakes left in the river to keep fresh before planting provided a snack for beavers

Silver-haired bat

Smallwood Artificial Bat Roost Monitoring

The Smallwood study area near kɬamiɬp Nelson is home to the Queen Victoria Mine, where bats roost over winter, as well as diverse ecosystems including old-growth ponderosa pines and natural wildlife trees which provide critical bat habitat.

In 2021, ONA installed nine BrandenBark™ artificial bat roost structures and created nine wildlife trees at three nearby sites to mitigate habitat loss and provide places for bats to roost.

In 2025, ONA continued monitoring these structures. Bioacoustic roost loggers were used to record bat calls which identified nine different bat species around the structures. Bat guano (feces) samples sent to a lab for species identification confirmed several of these species. Additional guano samples were collected to screen for the fungus that causes white-nose syndrome (WNS) but the results are not yet available.

This project was supported by additional funding from Fish & Wildlife Compensation Program (FWCP).

Photo: Selkirk College, Kamala M

Students from Selkirk College's Recreation, Fish and Wildlife Program listen to ONA technicians speak about bat monitoring at the Smallwood artificial roost site

t' ənt' anwiya? Bats

Bat species in North America are facing significant declines due to threats such as white-nose syndrome and habitat loss.

Townsend's big-eared bat

akɬ p̓ʕas Fort Shepherd Conservancy Area

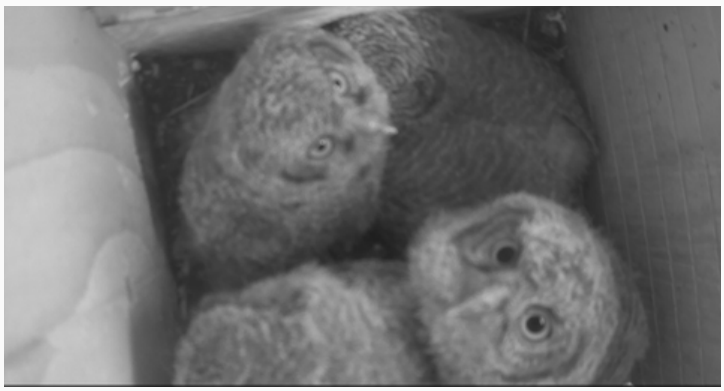
akɬ p̓ʕas Fort Shepherd Conservancy Area EcoCultural Restoration Project

In 2025 ONA continued monitoring the results of restoration work that was completed in the fall of 2023 in akɬ p̓ʕas Fort Shepherd Conservancy Area - FSCA south of Trail which integrated Syilx Traditional Ecological Knowledge (TEK) and western forestry principles to mimic the effects of the frequent low-intensity fires that historically maintained the area's ecosystems.

As with most restoration work, ongoing treatment of invasive plants is required for long term success. With the support of the Fish & Wildlife Compensation Program (FWCP) "weed crew", ONA removed spotted knapweed, sulphur cinquefoil, and St. John's wort from 3700 square meters.

Riparian Nest Box 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 nest boxes to meet the nesting preferences of three species: qʷəlqʷlsinaʔ western screech owl, ciwcu Lewis' woodpecker, and qʷamqʷmsqʼiyaiʔ wood duck. Twenty of these were installed at 6 riparian sites around snɬuxʷqnm Castlegar between 2022 and 2024, which ONA technicians monitor for signs of use.
One particular nestbox has been revisited by a pair of qʷəlqʷlsinaʔ for several seasons and in 2025 ONA documented the successful fledging of four owlets.



qʷəlqʷlsinaʔ western screech owlets a few days before leaving the nest box

Common goldeneye ducklings fledging from a nest box

qʷəlqʷlsinaʔ western screech owl

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

ONA technicians found this pair of nwiwiʔɬniẃt resting under a cover board

Partner Projects in the Lower Columbia Supporting At-Risk Species and Ecosystems

Teck North America Racer Monitoring

Funded by: Teck Resources Limited (TECK)

Following the identification of nwiwiʔɬniẃt North American racer over-wintering dens on Teck-owned land in 2023 by Okanagan Nation Alliance, the area was designated for racer conservation and habitat enhancement and recreational impact mitigation measures were instituted to support the species.
In 2025 ONA monitored the effectiveness of these measures and conducted cover-board surveys and den monitoring.

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 xʷaʔɬqaylḿ yellow-breasted chats has remained small over the years. 2025 was the fourth year of monitoring xʷaʔɬqaylḿ 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 18 nests monitored in 2025, 3 successfully fledged the new generation of xʷaʔɬqaylḿ. Our preliminary findings suggest that this small population at the northern edge of its range remains small due to high depredation rates combined with low adult and fledgling return rates.

nwiwiʔɬniẃt North American Racer

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

xʷaʔɬqaylḿ Yellow-breasted Chat

Branch cuttings are grown into stock for restoration projects in the ONA Columbia office greenhouse

Partner Projects in the Lower Columbia Supporting At-Risk Species and Ecosystems

Native Plant Propagation Project

Funded by: Fish & Wildlife Conservation Program (FWCP)

Initiated in 2023 with the support of the FWCP's First Nations Working Group, the Native Plant Propagation Project took the first steps towards a sustainable native seed collection and plant propagation program that could support ONA-led restoration projects and incorporates Syilx perspectives.

This year the project continued to support knowledge-sharing and land-based teaching opportunities with both scientific restoration practitioners and Syilx Knowledge Keepers.

ONA technicians strive to incorporate Indigenous and scientific approaches to ecosystem restoration, embracing the Syilx principle of suxwtxtem - the inherent responsibility as caretakers of the land.

ONA technicians learn about riparian restoration techniques with Kettle Ecological and Grandby Wilderness Society

Westbank First Nation Junior Researcher C. Fitzpatrick with ONA technicians

Learning seed processing with Gerald Puhach at Nupqu Native Plant Nursery

ɬimləmt | Thank You

sn̓ux̌wqnm Castlegar viewed from Dove Hill Trail

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, Fish & 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 - ɬimləmt:

Syilx Knowledge Holder skʷkʷlal Elliott Tonasket
Wildsight Youth Climate Corps
The Land Conservancy of BC
Castlegar Parks and Trails
Kinseed Nursery
City of Castlegar

FortisBC
Robson Scouts
Selkirk College
Sagebrush Nurseries
Columbia Basin Alliance for Literacy
Central Kootenay Invasive Species Society
Western Canada Bat Conservation Program

If you or your organization is interested in collaborating with the Lower Columbia Rare Species Ecosystem Enhancement Program, please contact:
Alysia Dobie, ONA tmxʷulaxʷ Land Technician - Project Lead at: adobie@syilx.org