

2017 - 2019 Program Report

Funding for the South Okanagan Similkameen Conservation Program (SOSCP) comes from partner contributions, grants and foundation funds. The work of the SOSCP would not be possible without the generous support of the following:





















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South Okanagan Similkameen Conservation Program

102 Industrial Place Penticton BC V2A 7C8

Email: bryn.white@gove.bc.ca Website: www.soscp.org

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Message from the Chair

It has been a pleasure to take on the SOSCP Chair duties from Nick Burdock of the Nature Trust of BC. Nick was an excellent leader and I learned from both him and Program Manager Bryn White during my time as Vice Chair.

It has been wonderful to work alongside Bryn White and the outstanding SOSCP Executive Committee. Bryn was the recent recipient of the Okanagan Conservation Alliance's Outstanding in Nature Award in 2019, a well-deserved recognition.

SOSCP has continued to achieve great things over the last two years. Two activities that stand out for me include an innovative SOSCP Annual Partners Meeting in 2018 with a graphic facilitator that brought our conservation work alive through art and renewed our dedication to working together; and in 2019 SOSCP hosted a Conservation Science Forum that brought together environmental professionals, scientists, land managers and conservation partners to highlight the research and conservation work being done right here in the South Okanagan. We hope these continue to be a tradition to spark collaboration and interest among our partners. Worth special mention as well, this fall we celebrated the third year of substantial local funding available to conservation organizations through the South Okanagan Conservation Fund.

It is amazing to me the range of impressive organizations working here in the South Okanagan and how much we all care about the environment. I am excited to see what the next few years will bring as we continue to work together for this incredibly unique and important landscape.

Lauren Meads, SOSCP Chair Executive Director The Burrowing Owl Conservation Society of British Columbia



Message from the Program Manager

SOSCP is coming to a significant milestone in its life, we have been working together under this cooperative umbrella for almost two decades.

Since 2006, as Program Manager I have had the good fortune to actively support our partners' conservation efforts, foster collaboration, conceive and deliver conservation programming in key sectors and increase the profile, capacity and support for biodiversity conservation in this region. I am very proud of the work that SOSCP itself has done, and of the work that our partners continue to do, day in and day out, to ensure the sustainability of nature.

For me, the highlights of this journey as Program Manager include the complexity of developing the Biodiversity Conservation Strategy - Keeping Nature in Our Future, the mutual trust and relationships fostered during the shared environmental planning program with local government partners, the many hands-on projects digging burrowing owl burrows, pulling weeds, restoring grasslands, riparian, wetlands and fish habitat, the ecologically important and beautiful places that have been secured and cared for by our partners, and finally, the incredibly valuable process to establish the South Okanagan Conservation Fund. I enjoyed every moment and thank all of my colleagues deeply for the learning, camaraderie and for their partnership and trust over the past 14 years.

This report is a highlight of the program and partner accomplishments for the years 2017-2019.

Bryn White SOSCP Program Manager



About SOSCP

South Okanagan Similkameen Conservation Program (SOSCP) is a partnership initiative that brings together a wide array of government and non-government organizations, indigenous cultural and academic institutions and others under one umbrella to conserve the region's unique species and spaces. Founded in the year 2000, there are now fifty SOSCP partners working collectively to conserve nature in one of the most biologically diverse and at-risk areas of Canada.

SOSCP functions to co-ordinate and facilitate the work of the partners, to improve the effectiveness of their conservation efforts, to deliver key conservation priorities, and to raise the profile for conservation in the region.

Our program and our partners make significant investments in the quality of life in our communities each year:

- We help landowners care for nature on their lands.
- We secure and restore important natural areas.
- We work with Traditional Ecological Knowledge Keepers.
- We use science to inform decisions, management actions, and conservation priorities.
- We provide sustainable land use information and resources to decision-makers.
- We engage the community in learning about, and experiencing nature.

Meet the SOSCP Executive

CHAIR | Lauren Meads - Burrowing Owl Conservation Society
VICE CHAIR | Darcy Henderson- Environment and Climate Change Canada
PAST CHAIR AND SECUREMENT TEAM CHAIR | Nick Burdock - The Nature Trust of BC
SECUREMENT TEAM | Barb Pryce - Nature Conservancy of Canada
OUTREACH | Janet Willson - Okanagan Similkameen Conservation Alliance
TRADITIONAL ECOLOGICAL KNOWLEDGE | Michael Bezener - En'owkin Centre
STEWARDSHIP | Alyson Skinner - Okanagan Similkameen Stewardship
MEMBER AT LARGE | Ross Everatt - Southern Interior Land Trust
MEMBER AT LARGE | Lisa Scott - South Okanagan Naturalists' Club

South Okanagan Conservation Fund

In 2016, the SOSCP and local government partners were instrumental in establishing the South Okanagan Conservation Fund (SOCF), the third fund of its kind in Canada to address important local environmental conservation priorities. Between 2017 and 2019, the Fund has invested over \$700,000 in 14 conservation projects including securement of important habitats, ecosystem restoration, invasive species control, and lake stewardship. This critical funding has leveraged a further \$2.4 million in cash conservation investments in our region.

Projects Supported by the South Okanagan Conservation Fund



Okanagan Similkameen Stewardship Society Land Stewardship Projects



Nature Trust of British Columbia Park Rill Creek Acquisition



Penticton Creek Restoration Project



Nature Conservancy of Canada Invasive Plant Management Projects

2018 PROJECTS FUNDED

- Park Rill Creek Acquisition
- Creation of Fish Spawning and Reconnection of an Historic Okanagan River Floodplain in Penticton
- Habitat Stewardship and Enhancement in the South Okanagan
- Managing At-Risk Wildlife in the Workplace
- Invasive-free Certification Program
- Providing Fish Passage at Ellis Creek
- Securement of Locatee Lands Parcel 40-4



2019 PROJECTS FUNDED

- Penticton Creek Restoration
- Trout Creek Fish Restoration Project
- Okanagan and Similkameen Invasive Species Society
- Love Your Lakes: Personalized Shoreline Assessments
 & Restoration Demonstration Sites
- Invasive Plant Management on NCC's South Okanagan Conservation Areas
- Habitat Stewardship and Enhancement in the South Okanagan
- South Okanagan Bat Habitat Conservation Project





Environmental Planning Support for Local Government

For almost ten years the environmental planning project continues to grow and evolve. SOSCP is engaged in a unique "shared-costs and services" partnership with the Regional District of Okanagan Similkameen, District of Summerland, City of Penticton and Town of Osoyoos. The contracted SOSCP environmental planning role continues to be recognized as an innovative approach to building capacity and support to local governments seeking help and better understanding of sustainability, biodiversity values, impacts, legislation and environmental planning tools. Support for SOSCP and its role in promoting sustainable land use come from Environment and Climate Change Canada Habitat Stewardship Program for Species at Risk, Real Estate Foundation of BC, and Habitat Conservation Trust Foundation with matching funds from local government partners. Registered Professional Biologist Alison Peatt has been working as the SOSCP Environmental Planner for the past six years helping to meet the environmental planning needs and priorities of participating local governments. Providing consistency of advice across jurisdictions, this innovative approach provides cost effective environmental planning services to local governments managing development in a region known for extensive sensitive ecosystems and high diversity of species at risk.

In October 2019, SOSCP was pleased to announce the addition of Stephanie Winton to the SOSCP Environmental Planning Project. Stephanie has spent the past five years conducting conservation research in the South Okanagan with Thompson Rivers University. She recently completed her MSc and received the Governor General's academic gold medal for her thesis on the impacts of roads on at-risk snake populations. Through her research she has developed relationships with many SOSCP partners and is committed to conserving biodiversity and maintaining healthy ecosystems in the changing South Okanagan Similkameen region. Stephanie had previous experience in environmental development planning in endangered grassland ecosystems in Alberta gives Stephanie a unique perspective and, along with her conservation background, will enable her to support and guide local government partners in environmental development planning.

Review of Development Proposals

A continuing important role of the SOSCP Environmental Planner is to support local governments in considering the environmental implications of development proposals. Since local governments in the region do not have biologists on staff, SOSCP has been bridging this gap since 2010, helping local governments to understand how submissions address biodiversity values, as well as federal, provincial and local government standards. This work includes review of development in shoreline and environmentally sensitive areas, as well as advice provided for parks and trails management. Participating in more than 175 referrals and related activities between 2017 and 2019, the SOSCP Environmental Planner has influenced environmental results across more than 3500 hectares.

Strengthening Official Community Plans and Bylaws for Environmental Protection

In June of 2017, the RDOS Board adopted revised Official Community Plans in Rural Areas A, C, D, E, F and I. Updated plans included provisions that SOSCP and RDOS collaborated to integrate such as revised Environmentally Sensitive

Areas maps, guidelines and exemptions that enhance protection of residential zoned areas containing environmentally sensitive lands. In 2018, RDOS revised the entire Area F Official Community Plan and again SOSCP supported this process. Since then, SOSCP has been continuing to support RDOS in the implementation of these new provisions, and has supported qualified environmental professionals in understanding and meeting these new requirements.



During 2018 and 2019, SOSCP worked with the City of Penticton to update the Official Community Plan, including maps, guidelines and exemptions related to development permits for the protection of the natural environment including environmentally sensitive and riparian development permits. In 2019, the City of Penticton adopted the updated and revised Official Community Plan. Through this update, Penticton has extended development permit protection to broader areas of the city, and adjusted regulations to better address species at risk and Critical Habitat. In spring of 2019, the Town of Osoyoos began working to update its Official Community Plan. Again, SOSCP has been invited to support the environmental components of this update.

Support Protection of Shorelines and Wetlands

SOSCP continues to work with local government partners to support policy and actions to better understand and conserve wetlands and shorelines. Outreach and education efforts particularly help highlight the value and sensitivity of areas near water including wetlands, lakes and streams. In November 2017, the SOSCP Environmental Planner presented at an Okanagan Wetlands Workshop highlighting the challenges of conserving wetlands and the approaches that local governments could adopt to better address wetland impacts and loss. This workshop built on the Okanagan Wetlands Strategy, and a provincial review of local government bylaws and procedures for managing



wetlands was designed to provide them with updated information. SOSCP also provided materials to South Okanagan Local Governments addressing the topics of flooding, foreshore management and docks to help explain the causes of flooding to residents and clarify the procedures required for replacement of docks and management of shoreline erosion as a result of flooding. There was a significant need for timely information on these topics, after the second consecutive year of spring flooding in the Okanagan.

Supporting Sustainability in Parks

SOSCP works with local governments and park users to provide education about the important ecosystems and species in local and regional parkland. In 2018/19, building on our successful collaboration on park planning and trails rehabilitation in Giants Head Park, SOSCP participated in the development of Summerland's Trails Master Plan, and further supported the plan by commissioning a comprehensive Environmental Report highlighting current environmental values and potential recreation impacts to natural areas with a focus on available avoidance and mitigation strategies to prevent impacts.

In addition, over the past several years SOSCP has been working with the District of Summerland on park restoration planning for Powell Beach Park which had been damaged by recent flooding as well as historical park use. Joined by SOSCP partners Southern Interior Land Trust, we addressed flooding impacts by replanting shoreline ecosystems. These projects showcase actions that shoreline property owners can take themselves to reduce flood and erosion impacts to shorelines.

Maintaining the Spotlight on Species at Risk

One primary focus of the SOSCP environmental planning project is protection of species at risk. This priority is highlighted in our projects to update bylaws, our review of environmental assessments and discussions with qualified professionals. All of this work is informed by our commitment to promote a better understanding of species at risk and their habitat needs. SOSCP has completed a portfolio of species-specific outreach materials designed to help qualified professionals identify Critical Habitat attributes in the field and design prescriptions to address impacts associated with development. Addressing nine priority species at risk, this resource will soon be available on the SOSCP website.

Over 2018/19, SOSCP initiated important conversations between provincial and federal species at risk experts and qualified professionals. SOSCP organized and delivered two different webinars. The first addressed Federal Wildlife Laws; the second focused on data needs and availability related to species at risk. This effort inspired other partners to engage in similar outreach events both on the coast and in the Kootenays using the materials provided at the SOSCP webinars.



The SOSCP Environmental Planner also completed a pilot lunch and learn session with the Summerland Public Works managers presenting materials focused on management of trees and the regulations involved in managing public trees and vegetation near powerlines. This effort was well received and SOSCP plans to engage further in lunch and learn sessions with other local government public works departments in the coming year.

SOSCP continues to identify gaps in knowledge and understanding about species at risk, believing that better decisions will result from ensuring that the best, most up to date and accurate information is available for consideration. We continue to support improvement and learning by maintaining and updating the SOSCP website page dedicated to Resources for Qualified Environmental Professionals.

Supporting Tree Protection and Management

With a growing awareness of the importance of trees to species at risk, for erosion protection and to mitigate impacts of climate change, local governments are increasingly interested in appropriate regulation and management of trees. The SOSCP Environmental Planner continues to work on providing planning advice and outreach related to tree management. There is growing interest by local governments in the climate-related benefits of management of the urban forest. To reduce infrastructure costs and gain ecosystem services benefits like reduced heating costs, cooling costs, and flood-drought mitigation, local governments are looking at opportunities to encourage tree planting and increase canopy for shade, while also examining how to prevent further costly losses of existing trees to disease, tree cutting and other impacts.

The SOSCP Environmental Planner supported the City of Penticton in urban forest mapping and planning. Based on this work, Penticton has conducted some tree canopy mapping, and determined an approach to track and monitor management actions for city. As part of the recently completed Official Community Plan update, the creation and implementation of an Urban Forest Strategy is an identified priority. This strategy will focus on additional work to identify, monitor and develop strategies to increase vegetation and tree canopy cover, and regulate removal of existing trees. The Environmental Planner is also beginning to work with the District of Summerland on urban forest planning and management. By participating in strategic planning of urban forests, SOSCP is building awareness of the important role that native plants play in local ecosystems. SOSCP continues to highlight cottonwood as a keystone species, required both for flood mitigation and protection of many Okanagan species, including species at risk.

Protecting, Enhancing and Restoring Natural Areas

Woodbridge Nature Preserve

In December 2017, SOSCP Program Manager Bryn White and Environmental Planner Alison Peatt joined Mayor Peter Waterman and Councillors Erin Trainer and Doug Holms to celebrate the formal dedication of Woodbridge Nature Preserve in Summerland. In 2015 the Woodbridge family of Summerland and the District of Summerland established the Woodbridge Nature Preserve which protects a small stand of remaining Cottonwood forest important to species at risk including Western Screech Owl and Lewis's Woodpecker. In Canada, Lewis's Woodpeckers are found only in British Columbia with fewer than 1000 individuals remaining.



These birds have nested at Woodbridge Nature Preserve, the only known area in Canada where they have been found in winter. As all remaining areas of Cottonwood forest in the South Okanagan are extremely important to conserve, this preserve will add to the complex of Cottonwood forest in Trout Creek and Sunoka Beach Provincial Park. In October 2018, SOSCP assisted the District with ongoing actions to protect this park including installing a perimeter fence, interpretive signage, a restoration planting plan and planting of additional cottonwoods in the park to help ensure this site continues to support black cottonwood and other flood tolerant plants in the future. SOSCP has also partnered with University of British Columbia PHD candidate Kasey Moran who has included Woodbridge in her work monitoring cottonwood floodplain areas.

Sponsoring Broader Conversations about Conservation

The SOSCP Conservation Science Forum in February 2019 provided an important opportunity to bring nearly 100 people together including SOSCP partners, scientists, qualified professionals and federal, provincial and local government staff to showcase, learn about and celebrate the vast array of conservation research being advanced in the region. The day kicked off with a focus on critical habitat for species at risk in the South Okanagan and the latest research to help manage habitat for amphibians and reptiles such as the tiger salamander and western rattlesnake, as well as some of the smaller but important species like the pallid bat found only in the South Okanagan. Afternoon sessions focused on solutions to pressing conservation problems including an outbreak of mange caused by mites in



local bighorn sheep herds, the loss of cottonwood riparian forests, recovering river habitat for salmon, white-nose syndrome in bats, stresses on Canada Lynx and bobcat at the edge of their ranges, grizzly bear recovery efforts, as well as declining mule deer populations. Many of the presentations stressed the importance of collaboration. Partnerships between Okanagan Nation Alliance, First Nations Band governments, the En'owkin Centre, universities, federal and provincial governments and nongovernment organizations, funders and local stakeholders were showcased and recognized throughout the day. One special highlight was the keynote address by Dr. Jeanette Armstrong, Penticton Indian Band member and Canada Research Chair in Okanagan Indigenous Knowledge and Philosophy at UBC Okanagan. Dr. Armstrong spoke about the importance of Traditional Ecological Knowledge and the need for collaboration between the Indigenous community and Western science methods. An example of this sort of successful collaboration is the application of Indigenous and western knowledge as the foundation upon which the work to recover sockeye salmon in the Okanagan River is based.

In May 2019, the South Okanagan Real Estate Board with partners including the SOSCP released Building Climate Resilience in the Okanagan: A Homeowner's Resource Guide. The SOSCP Environmental Planner was one of the authors of this guide and has been continuing to promote the materials in this guide as a helpful resource for local governments and property owners working to address climate change issues, including those that connect with priority topics like shoreline stewardship, water conservation, invasive species, wildfire, and vegetation management.

Sustainable Agriculture Program

Agriculture is an important part of the South Okanagan and Similkameen valleys. In 2018, SOSCP undertook a process to explore ways to better provide access to pertinent information and direction for the farming community to obtain support for implementing beneficial management practices. Interviews with farmers, agriculture and conservation stakeholders highlighted gaps in a number of areas, and pointed to the need for a support system for farmers and the agricultural industry that bridged service and knowledge gaps, provided extension services and resources, and connected farmers with programs and funding opportunities for on-farm sustainable agricultural practices. In 2019, SOSCP continues to advance a Sustainable Agriculture Program that "creates strong partnerships between farmers, landowners and stakeholders, fosters knowledge-sharing, and encourages increased uptake and development of stewardship incentive programs and practices to enhance ecosystems and native species".



Collaborating with partners beyond the South Okanagan-Similkameen

Working with Okanagan Collaborative Conservation Program

SOSCP has a history of working with other conservation partnerships, other regions and beyond. One important collaboration is with the Okanagan Collaborative Conservation Program (OCCP) in the north and central Okanagan.

In 2018/19, SOSCP worked together with the OCCP and partners on a project to complete an Okanagan Lake Living guide and online companion site to help support a better understanding of how healthy shorelines contribute to lake health. Following this, SOSCP adapted this product to other lakes in the South Okanagan Similkameen and this revised version is being shared with lakeshore landowners around lakes. OCCP and SOSCP are also collaborating with leadership of Okanagan Nation Alliance to enable a valley-wide planning effort designed to influence health and management of Okanagan Lake. After spring flooding in both 2017 and 2018, concerns about Okanagan Lake health and management have been building. Okanagan Lake Management Planning reflects the growing understanding by many partners that coordinated and consistent management by all jurisdictions is needed. The idea for a plan builds on information collected in the 2016 Foreshore Inventory Mapping Update, Okanagan valley-wide floodplain mapping now underway, and the Lakeshore Living guide.



Osoyoos Oxbows: Ted Pendergraft and Sons Conservation Area

Nature Conservancy of Canada

Nature Conservancy of Canada (NCC) manages this conservation area for the benefit of a wide variety of species by maintaining a mosaic of ecosystems across the property. Marsh areas reminiscent of the original wetlands here are being allowed to naturally expand, supporting amphibians, reptiles, insects and waterfowl. Haying a portion of the property – which was converted for agriculture in the mid-20th century – provides breeding and nesting habitat for bobolink, a provincial and federal species-at-risk.

In 2018 NCC began planting shrubs along an old oxbow channel to increase shrub cover and structure in order to provide nesting habitat for yellow-breasted chat (Southern Mountain (BC) population listed is red-listed in BC; endangered by COSEWIC and SARA). This restoration work was supported in part by funding from the Regional District of Okanagan Similkameen. Other stewardship actions include filling open fence poles to prevent birds from falling in and becoming trapped, and treating invasive plant species such as Russian olive. This invasive species work on Osoyoos Oxbows was supported in part by funding from the South Okanagan Conservation Fund.

Sage and Sparrow Conservation Area update

Nature Conservancy of Canada

Wildlife work on Sage and Sparrow remains active in the past two years. Working in partnership with the Burrowing Owl Conservation Society of BC, NCC staff and volunteers continued to release owls into constructed burrows on the property. In 2019, six pairs of burrowing owls were released. Unfortunately, the presence of a short-eared owl nesting in close proximity to three of the nest sites resulted in those nests being abandoned. Two other nests were used successfully by the birds to fledge young.

Bat monitoring on Sage and Sparrow has also been ongoing. Two bat detectors were installed and corresponding transects completed in 2018 and 2019 as part of the North American Bat Monitoring Program.

Riparian fencing project to protect wetlands from cattle was undertaken along the Canada/US border to prevent livestock trespass and associated potential for invasive plant introduction and grazing of sensitive areas.

Invasive plant management on Sage and Sparrow has experienced some great success, with fewer infestations and a reduction of overall area of pre-existing infestations. One great example of success in captured in the 2018 invasive species report: a dense outbreak of Russian knapweed identified on the conservation area in 2013 has been reduced by 97%. This invasive species work on Sage and Sparrow was supported in part by funding from the South Okanagan Conservation Fund.

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Lehmann Springs Conservation AreaNature Conservancy of Canada

Canadian Wildlife Service surveys confirm this conservation area contains high quality habitat for Williamson's sapsuckers (blue-listed in BC; endangered by COSEWIC and SARA). NCC is working to enhance habitat for this and other species through a multi-year project to enhance the growth of larch trees and reduce fuel load in the woodlands. Blow down wood was removed and donated to the local community for firewood. Additional stewardship actions on this property included invasive plant management, including digging out common tansy, monitoring bio control agents for Canada thistle and applying chemical controls on other invasive species such as knapweed.



A trail camera monitoring station was set up in 2018 to document wildlife on the conservation area. An American badger was filmed using the site. Badgers are red listed in BC and BC Western Population is Endangered COSEWIC and SARA.

NCC's field work on Lehmann Springs and other South Okanagan conservation areas was carried out in part by conservation interns during their summer work placement with NCC. NCC's internship program helps to educate and provide direct field experience to the next generation of conservation professionals.

Park Rill Creek Property The Nature Trust of BC

In December 2018, The Nature Trust of British Columbia completed the purchase of the Park Rill Creek property in the White Lake Basin. This property is rich with vegetation, including aromatic gray sagebrush, desert grasslands and broadleaf woodlands and provides important habitat for some of the most endangered and rare species in the province. The property contains habitat for two endangered species: Rusty Cord-moss and Half-moon Hairstreak butterfly. The Red-listed Brewer's Sparrow has been confirmed on the land while the Red-listed American Badger and Lewis's Woodpecker may be found here. The property also provides habitat for the Blue-listed Painted Turtle. The new 32.2 hectare (80 acre) parcel adds to the Nature Trust's White Lake Basin Biodiversity Ranch, one of the largest intact grasslands in the region as well as an innovative program in which the organization works with a ranching family to help protect species at risk while they maintain a viable ranching operation. This project was possible due to a significant contribution from the South Okanagan Conservation Fund.



White Lake Basin Biodiversity Ranch

The Nature Trust of BC

The Nature Trust of British Columbia is continuing to implement the high priority recommendations identified in the White Lake Basin Biodiversity Ranch Management Plan (2014): including monitoring the effectiveness of livestock exclusion fencing and compare vegetation assessment to previous years; continue monitoring Rusty Cord Moss in Critical Habitat locations; monitoring vegetation transects established by Canadian Wildlife Service to help determine changes in vegetation and biophysical attributes for SARA-listed species and the difference in vegetation trends in grazed and non-grazed areas over the long term.

In partnership with the National Research Council of Canada and other stakeholders The Nature Trust developed an Integrated Invasive Plant Management Strategy for the White Lake Basin Biodiversity Ranch. The plan was developed by the Okanagan and Similkameen Invasive Species Society (OASISS) and done in concert with OASISS's Second Pilot Project using an area base management approach to manage invasive species across Provincial Crown land, private land, conservation land and Federal land within the White Lake Basin.



Managing and Enhancing Similkameen Conservation PropertiesSouthern Interior Land Trust Society

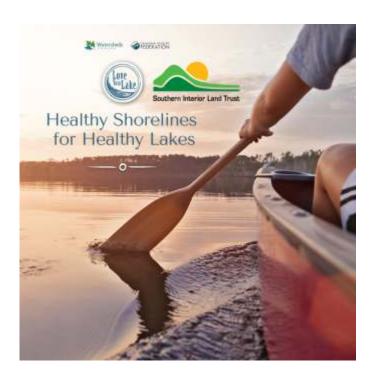
The Southern Interior Land Trust (SILT) currently owns five conservation properties: the R.E. Taylor Conservation Property near Olalla; Ginty's Pond in Cawston; Cold Creek near Keremeos; and Edwards Pond and Wards Lake at Grand Forks. SILT's primary emphasis is to acquire local gems of productive habitat that provide for wildlife movement through developed areas.

SILT is a registered, not-for-profit charity run by a volunteer board. Donations are tax-deductible and directly support habitat acquisition in BC's southern interior for all living things, including people.

In 2018, SILT acquired 12 acres of productive water birch habitat on the floodplain of Keremeos Creek near Olalla. It provides habitat for at least six federally listed species at risk such as yellow-breasted chat, western screech owl, Lewis's woodpecker, barn owl, badger and common nighthawk. Deer, bear, moose and bobcat also use the property, and there are rainbow trout in the creek. The property is called the R.E. Taylor Conservation Property in honour of Ron Taylor of Winfield, BC, whose dedication and commitment to wildlife conservation has spanned more than half a century.

SILT also held its first ever BioBlitz at its Cold Creek property near Keremeos in 2018, with 17 attendees including local naturalists, and national and provincial experts in plants, mosses, butterflies, bats and birds. Over 200 species were found in the property's diverse habitats that extend from riverfront cottonwoods to dry upland cliffs.

In 2019, SILT partnered with Watersheds Canada and the Canadian Wildlife Federation to bring the highly successful Love Your Lake (LYL) program to BC for the first time ever. Purchasing lakeshore habitat is expensive and much is already developed. The LYL project provides lakeshore landowners with a free, personalized evaluation of their shoreline, with specific suggestions for how to voluntarily improve it to improve wildlife habitat and lake health while maintaining their waterfront view. SILT received funding from the South Okanagan Conservation Fund and other supporters to pilot the program at Vaseux Lake and on Okanagan Lake in Summerland. SILT evaluated over 300 shoreline properties in 2019. In the coming years, SILT hopes to expand the LYL program to other lakes in the southern interior and is working on land acquisition prospects in the Similkameen, Okanagan, West Kootenay and Thompson-Nicola areas.







Landowner Engagement

Okanagan Similkameen Stewardship Society

Okanagan Similkameen Stewardship Society (OSS) was established to assist and support communities and land stewards in understanding and caring for the natural environment. Through directed landowner contact projects, OSS provides landowners with large properties and wildlife habitats with information and support regarding local conservation and wildlife concerns. This is a key initiative intended to raise awareness and respect for wildlife needs, habitat values and threats to local wildlife populations. Through OSS initiatives from 2017 to 2019, over one thousand landowners and residents throughout the Okanagan and Similkameen valleys were contacted.

Wildlife Habitat Stewards

Okanagan Similkameen Stewardship Society

OSS partners with Wildlife Habitat Stewards to provide them with recognition, technical support in habitat enhancement projects, management plans and implementation of best management practices for wildlife on their properties. Wildlife Habitat Stewards are voluntary caretakers of important wildlife habitats on their properties. These landowners and managers maintain agricultural, tourism and other land use practices while implementing best management practices for wildlife. They drive stewardship, conservation and enhancement efforts on their properties. OSS developed partnerships with 34 new Wildlife Habitat Stewards from 2017 to 2019.

Habitat Enhancement

Okanagan Similkameen Stewardship Society

OSS assists landowners and communities in wildlife habitat enhancement projects. Projects are implemented based on mutual partnerships with stakeholders. Between 2017 and 2019, OSS planted 8,334 native trees and shrubs, and removed 5,500 kilograms of invasive plants. In 2018 and 2019 OSS carried out 74 enhancement projects at 35 different sites, restoring 1230 acres of wildlife habitat.

One highlight was OSS' partnership with Okanagan Crush Pad through the Wildlife Habitat Steward program. In

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2016, OSS began to make plans with the landowner to restore a 6-acre hayfield to riparian forest, and over the next two and a half years, planted 2,800 native trees and shrubs in an effort to restore a waterbirch-dogwood community in this floodplain along Eneas Creek in Summerland.

Community Stewardship and Outreach Initiatives

Okanagan Similkameen Stewardship Society

Community stewardship and outreach initiatives are a cornerstone of the stewardship programs at OSS. About 25% of Wildlife Habitat Stewards find out about OSS through community initiatives. Recently OSS developed a wildly popular Birding for Beginners session. Birding is a great way to encourage people to get outside and explore the natural world around them. OSS has also initiated workshops on native plants and pollinators. Planting more native plants in gardens and landscaping is a way that all landowners can improve habitat for pollinators.

By attending and putting on 43 community events in the past two years, OSS was able to reach a broad cross-section of the community that otherwise might not have been reached through other means. These broader initiatives support habitat stewardship and facilitate information sharing in our communities, and they also create a buzz and help encourage a shared stewardship ethic, supporting overall acceptance of conservation in our communities. Most community stewardship initiatives include outreach at local events, presentations, tables at industry parties, engaging citizen science through road mortality surveys, community planting projects, garbage clean ups, and open houses. To date OSS has involved 600 volunteers in community projects.

Stewardship Evaluation and Planning

Okanagan Similkameen Stewardship Society

In 2017, OSS completed development of its Strategic Plan to direct the organization's efforts through to 2022. In 2019, OSS celebrated its 5-year anniversary by completing a 5-year evaluation of programs. This evaluation included the perceptions and usefulness of the initiatives from the landowners involved in the program as well as quantitative evaluation of acres conserved, native plants planted and numbers of individuals engaged over time. An evaluation summary is available at www.osstewardship.ca.

Okanagan River Restoration InitiativeOkanagan Nation Alliance

The Okanagan River Restoration Initiative (ORRI) Steering Committee's effort to restore salmon spawning habitat in the Penticton Channel section of the Okanagan River was completed in 2019. Channelization reduced the river's total length, disconnected all floodplain habitat, removed nearly all riffle-pool sequences, flattened the channel gradient, and reduced salmon spawning habitat to a meager 63 m2 from tens of thousands of meters historically.



Hydraulic modeling and conceptual planning began in 2012 and was followed by construction in 2014, 2015,

and 2018. Total restoration in Penticton Channel from these efforts includes:

- 17,300 m2 spawning habitat for Sockeye and steelhead salmon,
- 10,500 m2 spawning habitat for Rainbow Trout and kokanee salmon,
- 480 m2 spawning habitat for Chinook Salmon, and
- 25 naturally-inspired boulder clusters restoring refuge and rearing habitat for juvenile fish and aquatic organisms.

All spawning beds have been used near maximum capacity by salmonids since installation.

The envisioned salmon spawning habitat restoration constructions may be complete, but the ORRI Steering Committee has not turned away from Penticton Channel just yet. The ORRI committee continues to monitor restoration activities and research options for improvement in all degraded sections of the Okanagan River.

The volunteer-based planting efforts at the Ellis Sediment Basin are proving to be a wonderful success story. The sediment basin at the creek's mouth underwent extensive construction in 2018 to create more fish and wildlife-friendly conditions for sediment extraction. Over 30 volunteers rallied in April 2019, planting a variety of native plants in the barren construction footprint.

The ultimate goal for these plantings is to assist survival just enough to ensure the plants can continue thriving without becoming reliant on artificial irrigation. The first handful of years following planting requires intermittent irrigation and introduced invasive plant management to ensure the new plants have the best chance at gathering water and nutrients on their own.



Penticton Creek Restoration Initiative

City of Penticton

Penticton Creek has historically been a significant and productive tributary that provided important habitat for kokanee salmon and rainbow trout for Okanagan Lake. In the late 1940s - early 1950s, the creek was significantly modified in order to protect the City from future flooding. Flood protection included channelizing many sections of the creek and installing a full concrete lining in the lower reaches. These flood control measures have resulted in major losses of fish habitat, have contributed to the overall decline of fish populations in Okanagan Lake and are now reaching an age where the infrastructure is deteriorating. The Penticton Creek Restoration Committee was struck by City Council in 2013, and since then has completed an 80 meter Showcase restoration project in 2015, finalized a Master Plan in 2017, and in 2018, undertook another 80 meter restoration section (Lower 3a) just upstream of the Showcase section with funding support from Freshwater Fisheries Society of BC, Habitat Conservation Trust Foundation, Recreational Fisheries Conservation Partnership Program and the City of Penticton.

Now the entire stretch between Ellis St. and Nanaimo St. bridges has been deepened, widened, and concrete removed to restore the more natural features of riffles, pools, small gravel spawning areas, and new riparian plantings. In 2019, the Committee was expanded to address Ellis Creek as well, including initiating a master plan. In 2019, the Penticton Fly Fishers Society was successful in their application for South Okanagan Conservation Funding.

Matched with City of Penticton funds, the funding has supported the development of engineered restoration designs for a significantly larger next section on Penticton Creek (Upper 3a and b) just upstream of the currently restored section (Nanaimo St. Bridge to Structure #2 at the Wade pedestrian bridge). Construction for that section is planned for 2021.

The Committee has also been directed to develop a fundraising campaign strategy to help receive public donations for the creek restoration. Newly opened Slackwater Brewing in Penticton announced in 2019 that they would be donating .25 cents from the sale of every Anglers' Tale Pale Ale in their taproom to the Penticton Creek Restoration Project.



Crown Land Stewardship

British Columbia Ministry of Forests, Lands and Natural Resource Operations and Rural Development

The Ecosystems section of the BC Ministry of Forests, Lands and Natural Resource Operations and Rural Development has continued to lead initiatives for conservation of species and ecosystems at risk in the South Okanagan. Methods include multi-stakeholder consultation and collaboration, implementation of regulations and voluntary stewardship.

In 2017 a Stewardship Agreement between FLNRORD and the Regional District of Okanagan Similkameen was created to protect the endangered Short Rayed Alkali Aster. This agreement for Christie Memorial Park in Okanagan Falls includes management direction to leave some of the natural beach vegetation intact so the aster can persist. The FLNRORD Ecosystems Section performs annual surveys to monitor this small population, one of only ten in Canada.

The Okanagan Large Lakes Foreshore Protocol was updated in early 2018 to include updated kokanee foreshore sensitivity zones plus new freshwater mussel and foreshore plant zones. Additionally, the management of conservation lands continues to be a focus of the Ecosystems Section. Work over the past two years has included the following:

McTaggart-Cowan/nsək'iniw't Wildlife Management Area: FLNRORD funded a recreational use study to help determine and mitigate impacts of public recreational use on the conservation land; new signage was developed to help educate users about the sensitive habitat for sheep and other species.

Antler's Saddle-Garnet Valley Conservation Land: In collaboration with Penticton Indian Band (PIB) in 2019, perimeter fencing was installed to protect sensitive ecosystems and culturally important land from cattle grazing. In 2018, Ecosystems also conducted post-fire monitoring in the area that burned in the 2017 Finlay Fire to help inform FLNRO's Range Program's decision to let the area recover more fully before reintroducing cattle. In 2017, a collaboration between Ecosystems, Fish and Wildlife, PIB and BC Wildfire Service implemented thinning of forest stands to improve habitat for mule deer and reduce fuel loads for wildfire mitigation.

Oliver Mountain: In 2016, much of Oliver Mountain was closed to motor vehicles to halt degradation of sensitive habitat by off-road vehicles. Species and ecosystem health has been monitored since then to document habitat recovery. Target species include Lewis's woodpecker, Behr's hairstreak and Great Basin spadefoot. Vegetation monitoring is also used to document passive recovery of trails since the motor vehicle closure. Wildlife cameras are used to monitor unauthorized Off Road Vehicle (ORV) use, and they show drastic declines in unauthorized ORV use since the closure. Other efforts include working with Osoyoos Indian Band to perform joint monitoring and produce signage. In the past two years, improved signage has been posted at access points to closure areas and conservation signage has been posted at the Recreation Site kiosk.

Other conservation efforts are focussed on producing a collaborative Land Management Strategy for protection of species at risk and cultural values at Osoyoos West Bench. The area is a 470 ha. parcel of crown land that is home to at least 35 species and ecosystems at risk, 20 of which are federally listed. FLNRORD is currently working with the Osoyoos Indian Band to fund a Cultural Overview Assessment that will help coordinate efforts in stewardship of the land.





Osoyoos Desert Society

The mission of the Osoyoos Desert Society (ODS) is to conserve and restore the antelope-brush ecosystem in the South Okanagan and to educate and inspire active concern for ecosystems worldwide. The Society stewards 67 acres of endangered antelope-brush habitat at its nature education facility – the Osoyoos Desert Centre. The Centre provides visitors with an opportunity to learn about local wildlife and ecology by taking a tour along a 1.5 km boardwalk, exploring hands-on exhibits, and strolling through a native plant garden.

In 2018 the Desert Society began fundraising for a new interpretive building for the Desert Centre. The building used to display the Centre's educational exhibits was badly deteriorated and in critical need of replacement. Thanks to the support of funders and individual donors, the Society was able to install an all-new modular building in the spring of 2019. In keeping with its mission, the construction and siting of the structure was designed to minimize habitat disturbance and complement the beauty of the natural surroundings. The new building serves as a welcoming gateway to the site and – most importantly – enables the Society to continue protecting one of Canada's most endangered habitats and educating the public about its importance.

Each year the Desert Centre welcomes approximately 10,000 visitors. Hundreds of K-12 students receive guided tours, and post-secondary schools utilize the site for instruction and research. In addition to its activities at the Desert Centre, the Society offers a variety of off-site educational programs. In the winter it hosts a popular lecture series, featuring a guest speaker paired with a documentary film. Recent programs focused on bears, bighorn sheep, local pollinators, endangered amphibians, seeds, and grassland ecology. Other Desert Society programs offered throughout the year include community presentations, outreach programs, and hands-on workshops.

Native landscaping resources and expertise are also provided by the Society. Native seeds are collected and made available to the public, and a native plant garden is showcased at the Desert Centre. Volunteer Work Parties are held to maintain the garden and control invasive weeds. In the spring of 2019 a heavily-weeded area at the Centre was converted to an eco-friendly yarrow lawn thanks to support from the Okanagan Similkameen Stewardship Society. The Desert Society seeks to collaborate with and support other conservation organizations whenever possible, and greatly appreciates the many community partners who make its efforts possible.





EcoStudies Programs

Okanagan Similkameen Conservation Alliance

With funding from Nature Canada, Okanagan Similkameen Conservation Alliance ran its fifth year of Migratory Bird school programs at the Vaseux Lake Bird Observatory (VLBO) in fall 2019. The Program offers students the chance to

observe science in action at the bird banding station where data are collected to monitor birds migrating south to their wintering locations in Mexico, Central and South America. Students also learn about adaptations for flight and migration by studying taxidermy bird specimens, and they get to spend a season in the life of a migratory bird in the migration game, learning about the various threats migratory birds face on their long journey north and south each year. In both 2018 and 2019, 10 schools from School District 53 and School District 67 participated, for a total of 592 students. OSCA also hosted weekend public open houses at VLBO attended by approximately 100 people each year.

OSCA again ran successful Celebrate our Salmon and Go Batty school programs in 2018 and 2019. The former program celebrates the return of sockeye salmon coming home after a 6000-kilometre journey to the ocean and back. It explores the life cycle of the sockeye salmon, the challenges these fish face as they travel through different habitats and the efforts to restore spawning habitat in Oliver and Penticton. In the past two years, 12 elementary schools have participated with a total of 415





students visiting the salmon spawning channels. About four hundred people attended weekend salmon spawning tours held in Oliver and Penticton. The Go Batty Program teaches students about anatomy, behaviour, and habitat needs of bats, as well as the fourteen species of bats living in the Okanagan. This hourlong interactive PowerPoint presentation uses props, videos, sound clips and a bat costume. In 2018 and 2019, 29 Go Batty school programs were delivered reaching 1534 students.

EcoManagement Programs

Okanagan Similkameen Conservation Alliance

In 2018 and 2019, OSCA delivered four ecomanagement workshops with funds from the South Okanagan Conservation Fund. The first workshop with over 30 attendees, showcased on-the-ground conservation projects protecting riparian areas and associated species at risk, and practices to protect and minimize conflicts with them. A second workshop for over 40 members of the Penticton Outdoor Club (including rural and small acreage landowners), focused on actions to protect SAR and their habitats. The third workshop to over 20 attendees, focussed on discussing the challenges of farming in SAR habitats and providing information on environmental legislation, and actions and programs to protect SAR and their habitat. Staff and planners from Okanagan Similkameen Stewardship Society, Environmental Farm Plan, and Species at Risk on Agricultural Lands programs introduced their programs and to how to obtain assistance for conservation projects on the farm. The fourth workshop, 'Got Bats? Managing Bats in Buildings' was provided to over 15 pest control professionals and other interested professionals. Participants learned about bat biology, habitat needs, bat protection legislation, and best management practices when working with bats.

Meadowlark Nature Festival

Okanagan Similkameen Conservation Alliance

Each year OSCA presents its largest environmental education and outreach event, the Meadowlark Nature Festival. Offering over 80 diverse events, the Festival aims to connect people with nature with the goal that they will embrace stewardship and sustainability of the unique ecosystems and species of the Okanagan and Similkameen. Meadowlark events are designed to offer interactive, educational and engaging outdoor experiences, led by expert guides in their fields. Events are presented in areas of environmental significance, some not normally accessible to the public, covering such topics as protection of our waters, species at risk, fragile habitats, and other sustainability issues important to this region. The Festival is geared to appeal to a wide cross-section of people and interests and includes canoe trips, guided walks, film screenings, Aboriginal cultural events, bird watching tours, back-country horseback riding, geological lectures, astronomy events, art exhibitions, photography, writing and painting workshops, children's programming, conservation and environmental seminars and more. Now approaching its 23rd year, Meadowlark has exposed thousands of local and visiting participants to our surrounding area and promoted this region as an exciting eco-tourism destination.



South Okanagan Naturalists' Club

The mission of the South Okanagan Naturalists' Club (SONC) is to provide a dynamic local focus for experiencing the natural world of BC and for promoting its conservation. Activities include education and awareness such as creating content for local print media, volunteering for the Meadowlark Festival, guest speaking at various service club meetings, coordinating field trips, and maintaining a native species garden at Okanagan College, among others. SONC also adds its voice to many environmental concerns through advocacy and has made donations in support of land acquisitions. Citizen science research is another aspect of SONC's activities. Members regularly participate in such activities as bird and wildlife surveys and annual bird counts, volunteering at the Vaseux Lake bird banding station, assisting with DNA research on rattlesnakes and hummingbird banding.

Helping People and Saving Bats

Okanagan Community Bat Program

The Okanagan Community Bat Program (OCBP) is part of a larger BC-wide network of community bat programs, carried out in partnership with the Ministry of Environment and the provincial Bat Action Team. The 14 species of bats in the Okanagan eat a variety of insects, including major agricultural and forest industry pests, as well as disease-vector pests (i.e. mosquitos). OCBP provides support to landowners to increase land stewardship and enhance bat habitat and engages residents in citizen-science to monitor bat populations.

In 2018, Peachland was declared a bat-friendly community! They are only the second community in BC, and the first in the Okanagan to achieve this honor due to their efforts to protect and create habitat, provide information and promote learning about bats, in large part through the work of our partner, the Bat Education and Ecological Protection Society.

Over the past several years, OCBP's Bat Line responds to an average of over 300 calls per year. They average 15 yearly visits to landowners with bats in home or commercial buildings to provide suggestions for stewardship opportunities. To assist with evictions and habitat enhancement, OCBP constructed and distributed 35+ bat boxes.

Over the past two years, OCBP has helped develop new documents to help the public understand how to cohabitate with bats or, if eviction is unavoidable, do it in a manner that is least disruptive to bats. To assist with the dissemination of sound information about bats and bat management in buildings, OCBP organized and held Managing Bats in Buildings, a half-day workshop in January 2019 for pest control operators, roofing contractors, building companies and other professionals that work with bats in buildings.

Community events are attended each year to encourage participation in Bat Friendly Communities, and in coordination with Okanagan Similkameen Conservation Alliance Ecostudies programs, OCBP delivers Go Batty presentations to schools each year.



QEP and Government Planning Workshops

BC Ministry of Forests, Lands and Natural Resource Operations and Rural Development

The Ecosystems section of the BC Ministry of Forests, Lands and Natural Resource Operations and Rural Development hosted and participated in several outreach activities in the past two years including a workshop for planners and qualified environmental professionals (QEPs) on Working In and Around Water and Species and Ecosystems at Risk (February 2018); wetlands workshop for local government, QEPs and provincial staff to discuss opportunities to work better across jurisdictions to improve protection of Okanagan wetlands (March 2017); foreshore plant species at risk and survey workshop (September 2018); freshwater mussel QEP workshop (August 2019); snake and amphibian research and mitigation update at SOSCP Annual Partners Forum (February 2019).

Okanagan-Similkameen Invasive Species Program

Okanagan and Similkameen Invasive Species Society

Invasive species initiatives in the Okanagan-Similkameen region are led by the Okanagan and Similkameen Invasive Species Society (OASISS) in cooperation with over two dozen partners. OASISS cooperates and collaborates at a regional, provincial and international level.

Approximately 80% of the annual budget is spent on the management of invasive plants. OASISS encourages and facilitates agency coordination, prioritizes management activities, coordinates and evaluates on-the-ground treatment and provides public information programs. The remaining 20% is largely spent on the aquatic invasive species prevention program, primarily to defend against invasive zebra and quagga mussels.

OASISS has been cooperating with the Okanagan Basin Water Board and other agencies since 2013 to deliver the valley wide "Don't Move A Mussel" and "Clean-Drain-Dry" public campaigns to stop the spread of aquatic invasive species. Summer students assist with monitoring water bodies for invasive mussels or their larvae and educating boaters about invasive mussels and how to prevent their spread at various marinas, boat launches, campsites and other locations around the Okanagan Valley.

OASISS also helps to spread information about invasive insects, including Brown Marmorated Stink Bug (BMSB), Elm Seed Bug and European Fire Ant. Summer students annually assist the Ministry of Agriculture with surveys for BMSB.



- The development of a new invasive species online resource, the website www.oiso.ca, as part of the BC Agriculture and Food Climate
 - Action Initiative; this digital one-stop shop features resources to assist agricultural producers in identifying invasive species, as well as management options and contact information for local experts.
- The adoption of a pilot project in two locations Oliver Mountain and White Lake to implement a holistic, area-based management approach that aims to reduce the abundance and diversity of invasive plants over 3 years through treatment and adoption of best management practices; and demonstrate an integrated approach that is aligned with the principles of sustainability, and considers social, environmental and economic factors with a view to the long-term.
- Switching to become fully digital in the field, thanks to a partnership with the RDOS utilizing their ArcGIS licence.
- Completion of a two-year Eco-Action Community grant targeting the removal of yellow flag iris and replacement with native riparian plants in several locations throughout the Okanagan Valley
- Introduction of an Invasive-Free Certification Program for landscapers, horticulturalists and earth-moving businesses thanks to funding from the South Okanagan Conservation Fund.



Invasive Mussel Defence

Okanagan Basin Water Board

Several initiatives are underway in the Okanagan Similkameen to defend against invasive Zebra and Quagga mussels. Okanagan Basin Water Board (OBWB) has been leading the way with its "Don't Move A Mussel" public outreach campaign and lobbying efforts to provincial and federal governments to increase capacity and resources to prevent the fouling of our waterways. If introduced, these invasive mussels would impact water quality, fisheries and the ecology of our lake systems, tourism, property values and infrastructure costs.



The OBWB has enlisted the support of several partners in extending the reach of their mussel message, including providing funding and other support to the Okanagan and Similkameen Invasive Species Society (OASISS). While OBWB's Okanagan WaterWise program has done public outreach throughout the valley, OASISS summer students have assisted with monitoring water bodies for invasive mussels and their larvae and conducted boater outreach at various Okanagan marinas, boat launches, campsites and other locations. Additional partners include RCMP volunteers in West Kelowna and Vernon, various chambers, and more.

The Province of BC, with financial support from BC Hydro, FortisBC, Columbia Power and the Columbia Basin Trust, operates 12 inspection stations, April to October, at major entry points along BC's borders with Alberta and the United States. The stations operate seven days a week, either dusk to dawn or 10 hours a day, with one station operating 24-hours.

At this writing we are waiting for final results from the 2019 BC inspection season. The 2018 season resulted in over 40,700 watercraft inspected coming into BC. Of those inspected, 1,652 were identified as high-risk, 288 required decontamination, 228 were issued quarantines to meet the required 30-day drying time, and 25 were confirmed to have adult invasive mussels. Three of these 25 were headed to the Okanagan.

Guidebook to Promote Wetland Construction

Okanagan Basin Water Board

Wetlands are vital to the health of our ecosystems, protecting us from flooding and drought, buffering us from the effects of climate change. They also support many rare and endangered species and provide critical habitat to wildlife and fish.

Yet, wetlands are among the rarest and most sensitive ecosystems in the Okanagan, representing only about 0.2% of the regional landscape, and they continue to be threatened by development, invasive species, pollution and now, climate change. It's estimated that 84% of low elevation wetlands in the Okanagan and lower Similkameen valleys were lost between 1800 and 2003. A second study of low elevation wetlands in the Okanagan Basin indicates a 38% loss of wetlands between 1988 and 2010. In an effort to re-establish these important ecosystems, the Okanagan Basin Water Board underwent a three-phase effort. This included data collection, prioritization, and mapping of Okanagan wetlands, work with partners to establish long-term data management as well as on-the-ground wetland construction projects, the build-out of the okanaganwetlands.ca website, and the "Constructed Wetlands for Stormwater Management: An Okanagan Guidebook" found on the OBWB website.

Sustainable Community Resource Database

Okanagan Basin Water Board

The Okanagan Basin Water Board partnered with CivicInfo BC to create an online database of more than 100 planning guides and toolkits to help communities mitigate and adapt to climate change, protect green infrastructure, and carry out sustainable land and water use practices. The resources include legal mechanisms, innovative policies, and best practices that local governments, NGOs and even local residents can use. Find them at https://www.civicinfo.bc.ca/planning-guides.

Environmental Flow NeedsOkanagan Basin Water Board

OBWB has been working with Okanagan Nation Alliance's fisheries department and the Province of BC to determine Environmental Flow Needs (EFNs) for several valley streams. EFNs are scientifically-determined estimates of how much water a stream needs to support healthy aquatic life.

According to the 2016 BC Water Sustainability Act, water managers must now consider EFNs in non-domestic water licensing decisions for surface and groundwater. The goal of the Okanagan EFN Project is to produce defensible, transparent and robust EFN values for Okanagan streams. As part of this effort, the OBWB has been conducting rigorous field studies with Okanagan Nation Alliance (ONA) and provincial fisheries staff. Results should be available by winter 2019.



Also, in October 2018, the OBWB partnered with the Canadian Water Resources Association and ONA on an international EFN conference titled: siwłk (Water) for all—Our responsibility. The conference brought together representatives from national and international organizations engaged in water management and research. Full conference resources, including presented papers and conference proceedings, are available online at https://www.obwb.ca/efnconference/.

Water Grants

Okanagan Basin Water Board

Each year, since 2006, the Okanagan Basin Water Board awards funds to local governments, improvement districts and non-profits through its Water Conservation and Quality Improvement Grant Program. Grants are available for up to \$30,000 with a total \$300,000 available. New in 2019 was a change in funding allocation, moving away from providing funds on a regional basis in favour of a valley-wide focus, recognizing that the water of the Okanagan is all connected. Funding categories considered include: drought and flood preparedness, education, irrigation, groundwater studies, metering, source water protection, system improvement, water treatment studies, water management planning, xeriscape, water flow monitoring and restoration. In addition, the OBWB's Board of Directors approves annual priorities. As of 2019, the WCQI program had provided more than \$4.4 million to 267 projects.



Rare Species Inventories and Research in the South Okanagan Similkameen

BC Ministry of Forests, Lands and Natural Resource Operations and Rural Development
Since 2015, the Ecosystems section of the BC Ministry of Forests, Lands and Natural Resource Operations and Rural

Since 2015, the Ecosystems section of the BC Ministry of Forests, Lands and Natural Resource Operations and Rural Development has collaborated with Thompson Rivers University (TRU) to research rattlesnake roadkill in the White Lake basin. In response to research findings that suggest road mortality will cause local extinction, Ecosystems collaborated with the Ministry of Transportation and Infrastructure in 2017 to install underpass culverts for snake and amphibian crossing. In 2018, specialized wildlife fencing was added to help keep snakes and amphibians off the road and direct them toward culverts. In addition, Ecosystems continues to collect data from road-killed snakes to support research at TRU and UBC Okanagan looking at rattlesnake diet, behaviour and population structure.

In 2019, FLNRORD funded an environmental DNA project sampling Okanagan wetlands for the presence of blue-listed spadefoots and the invasive American Bullfrog. No evidence of bullfrogs was found, supporting evidence from other researchers that eradication efforts in the past several years may have been successful.

Vaseux Lake Bird Observatory

Okanagan Similkameen Conservation Alliance

Vaseux Lake Bird Observatory (VLBO) is a Canadian migration monitoring station operated by Okanagan Similkameen Conservation Alliance (OSCA). VLBO presents a great opportunity for birders, nature enthusiasts, and tourists to get an up-close encounter with songbirds and the science of bird banding. Situated at one of the South Okanagan's best birding hotspots and is easily accessible from Highway 97, it attracts many visitors. In the past two years, over the August to October banding season, about 600 visitors stopped by the station or attended a September Open House. Organized groups including naturalist clubs, youth programs and college field courses toured the station.



Western Rattlesnake Female Ecology Research in the South Okanagan

Nk'Mip Desert Cultural Centre

Female reproductive success, habitat selection and behaviour are all important elements in rattlesnake ecology. In Canada, a large portion of research on the Western Rattlesnake (Crotalus oreganus) has focused heavily on male behaviour, leaving a large knowledge gap and biasing the development of effective recovery plans. In 2017, Dana Eye began the first study on female rattlesnake ecology at the Nk'Mip Desert Cultural Centre, alongside her research partner Anna Skurikhina. Together they investigated habitat selection and movement ecology via radio-telemetry. Eye has continued this work over the last two years as part of her graduate thesis at Thompson Rivers University. In 2019, Eye's research focused on feeding ecology in order to investigate the potential drivers of rattlesnake movement. To date, Eye has radio-tracked 32 female rattlesnakes and has identified 18 rookery sites. From this data, Eye hopes to shed insight into a critical phase of the life history of female rattlesnakes, as well as identify critical habitat in the Southern Okanagan for future mitigation and conservation efforts.

Road Mortality Research in the White Lake Basin

Thompson Rivers University, The Nature Trust of British Columbia, Environment Canada, National Research Council Canada

Since 2015, researchers from Thompson Rivers University (TRU) have been monitoring roadkill and assessing the impacts on the amphibian and reptile community of the White Lake basin in partnership with The Nature Trust of BC, the Dominion Radio Astrophysical Observatory (National Research Council), and Environment and Climate Change Canada. In the past four years of monitoring there have been over 2,500 wildlife roadkill events documented. This is equivalent to one animal dying for every 100 vehicles that travel along the road or almost four animals dying every day from April-September. The number of animals killed on the road, however, is estimated to be three times greater than the number actually found, presenting a staggering amount of roadkill for this low traffic volume road. Animals killed on the road include all species of



amphibians and reptiles found within the White Lake basin as well as 38 bird species and 16 mammal species. This further includes many at-risk wildlife species such as the Western Tiger Salamander and Sage Thrasher, both endangered in BC.

The Master of Science thesis by Stephanie Winton found that the current rate of roadkill significantly decreases the size of Western Rattlesnake populations (another at-risk species) and sustained higher roadkill rates will even cause local extinction. Increases in traffic volumes on the road due to continued tourism and development within the Okanagan will result in more roadkill, making the situation even more dire. The loss of only one or a few at-risk species can have detrimental effects on the entire ecosystem. This is a serious concern for the White Lake basin, a federal and provincial priority conservation area as well as a designated Important Bird and Biodiversity Area, due to the high number of species living in this endangered ecosystem that are threatened by roadkill.

Based on these results, in 2018-2019 the BC Ministry of Transportation and Infrastructure and Ministry of Forests, Lands, Natural Resource Operations and Rural Development installed underpass culverts, to permit animals to safely pass underneath the road, along with wildlife fencing to keep animals off the road and direct them into the culverts. The goals of these mitigation measures are to reduce roadkill while maintaining habitat connectivity. Research is being continued by TRU graduate student Jade Spruyt to assess the efficacy of the mitigation measures and explore options for further habitat protection. She is continuing to monitor roadkill as well as assess the rattlesnake population to determine if the mitigation is reducing the amount of roadkill and allowing the population to recover. Future results will inform adaptive management actions to help threatened wildlife populations persist on the landscape.



Species at Risk

Canadian Wildlife Service, Environment and Climate Change Canada

As the lead federal government agency for species at risk and migratory birds, the Canadian Wildlife Service (CWS) is involved in a variety of regulatory, planning, implementation, and monitoring activities in the Regional District of Okanagan-Similkameen and unceded traditional territories of the Syilx (Okanagan) peoples. Most of our staff in the Pacific Region are located in Delta, but a small office in Kelowna is growing from two to seven members in 2020.

In fiscal year 2019-20 CWS awarded \$1,156,867 in funding to nine organizations working in this area. This funding was used to help implement wetland, grassland and other habitat securement, enhancement, and restoration projects, or to support planning and monitoring. CWS administers these funds through application-based programs like Habitat Stewardship Program, or Aboriginal Fund for Species at Risk, and we now have more resources for directed-funding under the Canada Nature Fund.

In 2020 there were nine active permits under the Species at Risk Act in this area. Those permits authorized scientific research activities, or development activities that potentially affected species and their critical habitat. Because federal lands and federal species are the mandate of Canadian Wildlife Service, much of this work involves National Research Council, National Defence, Indigenous Services Canada, and Indigenous communities. CWS provided advice on a number of related inquiries, and held critical habitat screening workshops for government, industry, and consulting sectors in Penticton, Kamloops, and Revelstoke. Biologists also provided advice on a number of migratory bird permit and enforcement investigations, largely related to the cross-listing of Barn Swallows and Bank Swallows under the Species at Risk Act.

Biologists from Canadian Wildlife Service and the Science and Technology Branch of Environment and Climate Change Canada continue to carry out field-based monitoring of Williamson's Sapsucker in the IDF, Lewis's Woodpecker in the PP & BG zones, and Yellow-breasted Chat within the Regional District of Okanagan-Similkameen. Populations are remaining stable since monitoring began, but loss of critical habitat continues in the absence of legal protection.

Vaseux-Bighorn National Wildlife Area and Vaseux Lake Migratory Bird Sanctuary are also managed by the Canadian Wildlife Service. This past year we supported some riparian habitat restoration, and post-fire recovery monitoring work, as well on-going monitoring of bats in that part of the valley. The proposed re-development of the Kettle Valley Railway (KVR) right-of-way for recreational use has also engaged staff in the environmental assessment of the project. Camera-trap monitoring in 2017 indicated people were the second most common large mammal (after mule deer, before black bear) accessing the West Side unit, which is bisected by the KVR and where unauthorized access is prohibited.

Bringing Back Burrowing Owls to BC

Burrowing Owl Conservation Society of BC

Burrowing Owls have been extirpated in BC since the 1980s. The Burrowing Owl Conservation Society of BC's (BOCSBC) program works to breed and reintroduce the owls back to their natural grassland habitat. To date the Society continues to work with seven private ranch owners, two provincial sites, three Nature Conservancy sites, one Nature Trust of BC site, and sites with The Upper Nicola Band and The Penticton Indian Band.

BOCSBC is composed of a group of dedicated staff which includes Lia McKinnon (head field biologist), Charyl Omelchuck (Field assistant) and Lauren Meads (Executive Director). The staff is supported by (BOCSBC) board members headed by the President/founder Mike Mackintosh. In addition, many volunteers help install and maintain

burrows, participate in field work, and help care for the owls at three breeding facilities (Oliver, Wildlife Park of BC in Kamloops and Port Kells). Without the continued community support this program would not prosper as it has.

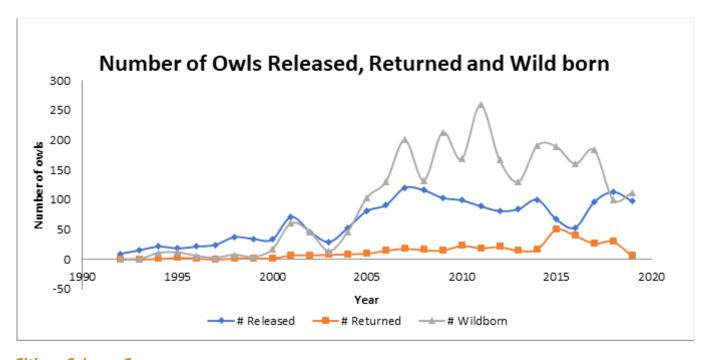
Since 2018 BOCSBC has partnered with the Okanagan Similkameen Stewarship Society (OSSS) to share students coming from the Canada Summer Jobs initiative. The students work one day a week with the Burrowing Owl progam building burrows, monitoring wild owls, and banding owls.

Year after year, as a result of this program, the number of burrowing owls returning to nesting grounds in BC after migration had been between 30-60 owls per year, a more than 50% increase from the previous years. However, in 2019 BOCSBC hit a low of six returning owls to all of BC (see graph below). The reason for this low could be a combination of climate change not only in the breeding grounds here in BC, but extreme weather events at the owl's wintering grounds in Mexico and California. This is



not isolated to BC alone. Reports from programs in Oregon and Alberta have seen lower than normal returns this year as well. The next step in the program is understanding the influence of climate change (extreme weather events) and migration patterns have on the owls.

The program continues to work in partnership nationally and internationally with various organizations. In 2019 BOCSBC gave a talk on the program in BC at the Prairie Conservation and Endangered Species Conference held in Winnipeg, Manitoba. The Society comminicates reguarly with government and non-profit organizations related to Burrowing Owl recovery in Alberta, Saskatechwan and Manitoba. Every year BOCSBC assists at the research site on the Umatilla Army Depot in Oregon where artificial burrows built by David Johnson and the Global Owl Project provide nesting opportunities to many wild Burrowing Owls, even some of BC's migrating owls. This collaboration has had great impact on both programs to improve the nesting areas for Burrowing Owls in Canada and the United States. BOCSBC has also been in contact with a new recovery program in San Jose, California offering advice and support, as well as supporting the continued efforts by the San Diego Zoo to re-establish burrowing owls to Southern California. The program in BC is only one part of the puzzle to help grassland birds across North America. BOCSBC will continue to tackle the problems facing Burrowing Owl success through, collaboartion, research and reintroduction.



Citizen Science Surveys

Okanagan Community Bat Program

Monitoring for White Nose Syndrome (WNS), a fungal disease responsible for the deaths of millions of bats in eastern North America, has been a priority. WNS was first detected in Washington State in March 2016 and was reported east of the mountains for the first time this year. To monitor the spread of this disease, Community Bat Program coordinators have been collecting reports of unusual winter bat activity across southern BC and submit dead bats during the monitoring period (November through May) to Canadian Wildlife Health Centre lab for disease testing. To date, there has been no WNS confirmed in the province. To monitor bat populations, OCBP engages Okanagan residents in annual bat counts. With partners and volunteer leaders, OCBP coordinates an average of over 100 of these counts each year, engaging over 200 volunteers.

Map our Marshes Oliver & Peachland

BC Wildlife Federation Wetlands Education Program

The BC Wildlife Federation Wetlands Education Program (WEP) held two Map Our Marshes events, one in July 2017 in Oliver, and the other in Peachland in May 2018. The first event, in Oliver, was held in partnership with the Southern Okanagan Sportsmen's Association. The field sessions were held at Forbes Wetland and involved community members from the South Okanagan Similkameen Conservation Program, the Okanagan Similkameen Stewardship Society, Swansea University, and the Lower Similkameen Indian Band. The second event, in Peachland, was held in partnership with the Peachland Watershed Protection Alliance and involved 13 participants from within the community. The field sessions were held at the Rose Valley Regional Park wetland. In both events, the course offered community members the technical and field skills for mapping wetlands, tracking changes to wetland landscapes, using GPS technology and uploading to online databases. Each of these elements are important for habitat protection and conservation.

The WEP team also held at Wetlandkeepers course in Cawston in July 2019, held in partnership with the Southern Interior Land Trust and the Ministry of Forests, Lands, Natural Resources and Rural Development (FLNRORD). The course took place over two days and involved 21 participants from the community and the Ministry of FLNRORD. Participants gained knowledge in wetland classification, wetland delineation, wetland restoration and design and invasive species identification. This knowledge will enable participants to better understand wetlands, how they have been modified and impacted in the past, and how they can be restored and conserved to better ensure functional wildlife habitat now and into the future. Options to enhance and improve habitat for Ginty's Pond, an oxbow wetland in the heart of Cawston, were also explored during the workshop.





Advancing Recognition and Application of Syilx Traditional Ecological Knowledge (TEK)

From 2017-2019 the En'owkin Centre continued its work with community partners to advance widespread recognition, adoption and application of Syilx TEK throughout the SOSCP and OCCP areas related to habitat securement, protection and caretakership.

Securing and Protecting Riparian and Wetland Habitat through the Locatee Lands Project

With support from participating Penticton Indian Band locatee title holders, Environment and Climate Change Canada's Aboriginal Funds for Species At Risk program, and the South Okanagan Conservation Fund, the En'owkin Centre was successful in achieving the first stages in the permanent securement of CP 40-4 as part of the En'owkin Centre's Locatee Lands Project in the K'əmcənitkw (pronounced kem-cheh-neet-kwuh, and meaning "Alongside the Water") floodplain conservation corridor (formerly known as the ECOmmunity Place Locatee Lands).

CP 40-4 is a 2.29 ha parcel of culturally and environmentally significant black cottonwood habitat on the Penticton Indian Reserve #1. This key parcel adjoins previously purchased locatee parcels CP 38-1 and CP 38-2, which, in addition to other leased parcels, form an increasing network of protected lowland riparian and wetland habits on-reserve that are essential in maintaining the richness of Indigenous biodiversity in the Penticton area, and which provide homes to populations of over 25 species at risk.

Restoring Lowland Riparian and Wetland Habitat, Species At Risk and Species of Cultural Significance

Successful securement and permanent protection of locatee parcels on the Penticton Indian Band reserve has allowed advancement of habitat restoration planning efforts for the K'əmcənitkw Floodplain Re-engagement Project. The first phase of this ambitious project represents the next phase of the Okanagan River Restoration Initiative with specific focus on advancing recovery of endangered Chinook Salmon and other species at risk populations in the Penticton portion of the Okanagan River.

Both Syilx Traditional Ecological Knowledge and western science are being utilized in collaborative planning and pre-construction assessments led by the En'owkin



Centre, Penticton Indian Band Natural Resources
Department (PIBNR), and the Okanagan Nation Alliance
Fisheries Department (ONAFD). Collaborative work
completed or in-progress at the K'əmcənitkw project site
include a 4-season TEK Assessment, Phase II
Environmental Site Assessment Soil Investigations,
Archaeological Impact Assessment, and removal of
Invasive trees in advance of habitat restoration
construction works.

A key aspect of the K'əmcənitkw Floodplain Reengagement Project will be the restoration of Indigenous riparian and wetland plant communities. From 2017-2019 the En'owkin Centre's ECOmmunity team engaged 2,953 students and teachers, youth, and community volunteers providing 1,372 person hours of effort to assist in the collection of seeds and cuttings, and to assist



with the propagation of 35,000 Indigenous riparian and wetland plants at the En'owkin Centre educational Greenhouse & Nursery. Plant propagation work, incorporating both western science and Syilx Traditional Ecological Knowledge (TEK) priorities, perspectives, practices and techniques, will support future habitat restoration plantings at the K'əmcənitkw project site to support recovery of for ntytyix (Chinook Salmon) and multiple species at risk.

Management of human use of the K'əmcənitkw area is ongoing, including management of unauthorized campers. The En'owkin Centre and PIBNR staff continue to collaborate in Guardian Watcher program patrols and fencing repairs to protect the K'əmcənitkw area from uses that jeopardize cultural and environmental values.

Facilitating and Strengthening Partnerships

En'owkin Centre ECOmmunity staff continued multi-year collaborative work with researchers from Environment & Climate Change Canada and the University of British Columbia – Okanagan to study the life-cycle of riparian bird species nesting at K'əmcənitkw. Our research todate indicates the K'əmcənitkw study area is now home to between 24 and 30 xwa?4qwaylm' (Yellow-breasted Chat) nesting territories, representing a significant contribution toward recovery of their Endangered population. Data provided by migratory xwa?łqwaylm' nesting at K'əmcənitkw indicates they are overwintering in western Mexico. Our next step is to explore opportunities for collaborative research and conservation partnerships throughout xwa?4qwaylm's nesting, migratory and overwintering territories. ECOmmunity staff also completed mapping of sn'klip semanxw (Showy Milkweed) habitat used by tawnixw pəlpálwicia (Monarch butterflies) at the K'əmcənitkw study area.



The En'owkin Centre and its Syilx partner organizations continue to advance Syilx Traditional Ecological Knowledge awareness and integration through collaborative projects, discussions, presentations and events including:

- Indigenous Pollinator presentation at the En'owkin Centre
- Annual Meadowlark Nature Festival tours
- Tour of the K'əmcənitkw project area and presentation on the Beyond the Aichi Targets by Harvey Locke
- Participated in discussions and enowkinwixw to support the UBCO Rooting Reconciliation project concept and UBCO Eminence Fund (with focus projects on Grizzly Bear / Huckleberries, and Chinook Salmon / Riparian areas).
- Assisted with field work on Black Cottonwood ecology and restoration conducted by UBC-Vancouver PhD candidate Kasey Moran.
- Work with local and regional elementary schools through Syilx Indigenous Land-Based Learning Program visits to share knowledge on xwa?tqwaylm', Indigenous plants, bats, and Syilx culture and language.





South Okanagan Similkameen Conservation Program Partners

BC Conservation Foundation

BC Lake Stewardship Society

BC Ministry of Forests, Lands and Natural Resource

Operations

BC Ministry of Agriculture

BC Ministry of Environment

BC Nature

BC Wildlife Federation – Okanagan Region

Burrowing Owl Conservation Society of BC

Canadian Parks and Wilderness Society – BC Chapter

Canadian Intermountain Joint Venture

City of Penticton

Conservation Northwest

Department of Fisheries and Oceans Canada

Destination Osoyoos

District of Summerland

Dominion Radio Astrophysical Observatory

Ducks Unlimited Canada

En'owkin Centre

Environment and Climate Change Canada – Canadian

Wildlife Service Pacific Yukon Region

Federation of BC Naturalists

Friends of the Oxbows – Penticton

Green Earth Movement (GEM) Penticton High School

Grasslands Conservation Council of BC

Habitat Conservation Trust Foundation

The Land Trust Alliance of BC

The Nature Conservancy of Canada – BC Region

The Nature Conservancy of Washington

The Nature Trust of BC

Town of Osoyoos

Town of Oliver

Okanagan Collaborative Conservation Program

Okanagan College

Okanagan Similkameen Conservation Alliance

Okanagan Similkameen Parks Society

Okanagan Similkameen Stewardship Society

Osoyoos Desert Society

Osoyoos Indian Band

Osoyoos Lake Water Quality Society

Pacific Salmon Foundation

Partners in Flight

Penticton Museum and Archives

Regional District of Okanagan Similkameen

Royal BC Museum

Southern Interior Bluebird Trail Society

Southern Interior Land Trust Society

South Okanagan Rehabilitation Centre for Owls

South Okanagan Naturalists' Club

University of British Columbia Okanagan

Village of Keremeos

WA Dept. of Fish and Wildlife



SOUTH OKANAGAN CONSERVATION FUND

Today, many of our natural areas are in trouble and are at risk of being lost or damaged forever.

We are investing in the environment so it continues to sustain us.

The South Okanagan is a special place. Our natural environment contributes greatly to our quality of life. Healthy lands ensure clean and abundant water, fresh air, habitat for fish and wildlife, local food, working farms and ranches, and natural places for people to enjoy.

Residents here care about where they live. Each and every one of us is turning a modest annual contribution into major environmental achievements that will benefit us now and for generations to come.

The South Okanagan Conservation Fund is a dedicated source of funding for local conservation projects that help us ensure the sustainability of our environment and protect our quality of life now, and for the future.

Learn more at soscp.org or soconservationfund.ca