"The voice of grasslands in British Columbia"

SPRING | SUMMER 2023

BC GRASSLANDS

MAGAZINE OF THE GRASSLANDS CONSERVATION COUNCIL OF BRITISH COLUMBIA

Diversity in the Grasslands

Lac Du Bois Grasslands
PHOTO: Murray Foubister

The Grasslands Conservation Council of British Columbia (GCC) became a society in August 1999 and a registered charity on December 21, 2001. We are dedicated to promoting education, conservation and stewardship of British Columbia's grasslands in collaboration with our partners, a diverse group of organizations and individuals that includes government, range management specialists, ranchers, agrologists, ecologists, First Nations, land trusts, conservation groups, recreationists and grassland enthusiasts.

GCC MISSION:

- to foster greater understanding and appreciation for the ecological, social, economic and cultural importance of grasslands throughout BC;
- to promote stewardship and sustainable management practices that will ensure long-term health of BC's grasslands; and
- to promote the conservation of representative grassland ecosystems, species at risk and their habitats.

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bcgrasslands.org/about-us/leadership/

COVER PHOTO
Cover: Churn Creek Grasslands, Michael Keefer
Editor: Toni Boot
Design: Julianne Leekie, Fairwinds Design

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Northern Harrier on a frosty morning
PHOTO: Mariko Margetson

Diversity in the Grasslands

We wish to gratefully acknowledge the financial support of the Province of British Columbia, Rotary Club of Kamloops Daybreak, BC Interior Community Foundation and Cenovus Energy

BC INTERIOR COMMUNITY FOUNDATION
Rotary Kamloops Daybreak
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BRITISH COLUMBIA

Message from the Chair

Grassland protection ensures habitat for a myriad of species

Bob Haywood-Farmer

The Grasslands Conservation Council (GCC) has enjoyed an exceptional year.

We started our year in June 2022 with our annual meeting followed by a Lac Du Bois field tour in the afternoon. The next day we met in the historic town of Walhachin and bussed out to the low elevation rangelands in the Thompson Valley to view and discuss the effects of the 2021 Tremont Creek summer fire. This was followed by a popular social event at the Walhachin Community Hall. Kathleen Haywood-Farmer and her crew, George and Lise Sennewald and Judy Barnett with sister Mary Ann Snowden, provided a delicious spread at the event.

Another exceptionally popular event, our fundraiser, was held in early February at Sun Rivers in Kamloops. I cannot say enough about the volunteers that helped make theses two events the highlight of our year. Judy and Mary Ann added an artistic, grassy touch to both events. I am grateful to the GCC members and all the contributors and generous supporters of these two events.

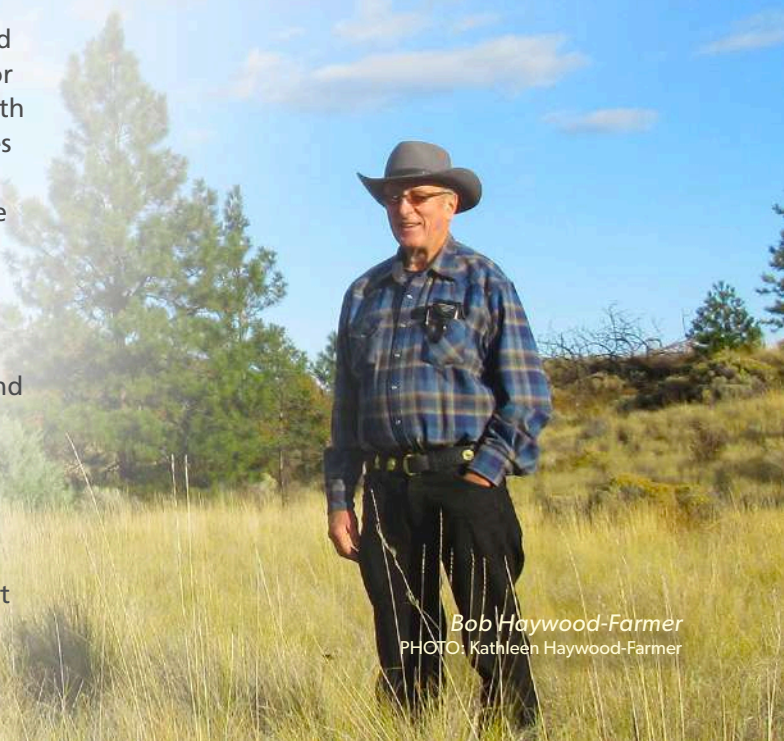
The directors of the GCC are all hard-working volunteers that carry on the mission of the organization. The support we get from our membership and financial backers is appreciated by all of us. This support enables us to do the teaching, education and project work that creates public awareness of the importance of the grassland ecosystem in the province. Protection of the grasslands provides habitat for a myriad of species and a beautiful landscape for the public to enjoy, not to mention the amount of carbon that is sequestered by healthy grasslands.

The addition of Mike Dedels as executive director, with his many years of experience overseeing BC rangelands, is a huge success story for the organization. Mike's connection with the ranchers, the environmental crowd, and BC people in general add a whole new dimension.

The Laurie Guichon Memorial Grasslands Interpretive Site east of Merritt continues to be a major focus for the GCC where we collaborate with the Nicola folks to show the travelling public the importance and diversity of the grasslands. The Lac Du Bois area northwest of Kamloops is also one of our main focus areas where the proximity of the city and the variety of grassland ecosystems provides an excellent opportunity for demonstration projects. Here we collaborate with the Friends of Lac Du Bois. Dennis Lloyd deserves special recognition for his consistent, diligent work at both sites supported by his considerable ecological expertise on grassland issues. Mandy Ross also provides a close connection and keeps us informed about the efforts of the Friends of Lac Du Bois. I can't help but mention the efforts of Heather Richardson in producing the grassland e-news on a regular, thoughtful basis.

It is timely that the government has added "forest landscape plans" to address potential environmental impacts from timber harvesting operations. It is my hope that the pilot projects result in a true landscape-oriented initiative that takes all habitats into consideration, including the precious grasslands. There are many more values to consider, not just the maximization of fibre production. The creatures and citizens of the province deserve respect by preserving the diversity for which BC is famous.

The Prime Minister had the best of intentions when he promised us two billion trees. Let us hope that the trees are of a diverse species mix and are well placed to maximize biodiversity, not fibre production. All habitats need to be maintained and the grasslands are an important part of that mix. Let's not allow the grasslands to be forgotten in that process.



Bob Haywood-Farmer
PHOTO: Kathleen Haywood-Farmer

Message from the Executive Director

The GCC: Past, present and future

Mike Dedels

A year ago, I was given the opportunity to lead the Grasslands Conservation Council (GCC) as its Executive Director. It has been a fantastic experience so far. How could one complain about getting to work on the lands they love, with old and new friends, while getting to talk to as many people as possible about BC's amazing grasslands?

This work is not, however, without its challenges. As a small non-government organization (NGO), we share the requirement of many groups to find stable funding to carry on basic operations and to expand our programs. Our dedicated Board carried us through the last few years with very limited funding and helped the GCC continue to represent grasslands and carry out stewardship projects. I would love to thank each of the Directors for their contributions, but I don't have the room in this short space.

An exciting project for the GCC through early 2023 was creating *The GCC, Past, Present and Future* document for the Ministry of Water, Land and Resource Stewardship (WLRS). This document outlines the history of the GCC, the materials we have produced and funding over the years. A final document will be prepared for publication this fall. It shows the immense value of the Council, especially in this time of increased concern with climate change, species at risk, First Nations reconciliation, biodiversity and food security–all issues in our changing world.

Another achievement in early 2023 was our February 2 "Loving the Grasslands" fundraiser held in Kamloops. Thanks to amazing sponsorship support, we raised over $20,000. People also truly appreciated getting together with old friends for a casual event and the opportunity to learn a bit more about the GCC and grasslands. A huge thanks to all of our Directors who contributed to the success of this event. See page 26 for more on the fundraiser and a note of thanks from our Chair to our valued sponsors. We are well underway planning for next year and would be happy to help host an event in your community in the future.

Fortunately, GCC is not doing this work alone. There are many other organizations in BC involved with grassland conservation. Many of them are regional in nature; while others are provincial or national, but with a scope beyond grasslands. As the only non-profit in BC dedicated solely to grassland conservation province-wide, a major role of the GCC is collaborating with these groups to further our common goals.

My goal for this year is to connect with as many groups as possible to look at synergies to benefit grassland conservation. If you, or your organization, is interested in working together or learning more about grasslands, please get in touch at mike@bcgrasslands.org. I look forward to working with you on the grasslands over the coming year and into the future.

Western Meadowlarks
PHOTO: Tyler J. Moulton

Stswecem'c Xget'tem First Nation: The return of the traditional stewards

Michael Keefer
Jesse Nicholas
Tom Braumandl

BCCA Cowboy
PHOTO: Michael Keefer

The Stswecem'c Xget'tem First Nation (SXFN) are a people of the grasslands, mountains and of course, closely tied to the salmon of the Fraser River. The establishment of the BC Cattle Company alienated SXFN from parts of their traditional territory and members were forbidden to utilize what were once parts of their territory, unless they were conducting work on behalf of the cattle company. The 16,000-acre property has a diversity of grasslands, including areas along the Fraser, that are representative of the hottest, driest climates of BC—the bunchgrass biogeoclimatic zone—that supported the Nation through the diversity of edible and medicinal plants and wildlife. The Nation's footprint on the land is visible through cultural sites such as pithouse village sites and pictographs, but their vibe is felt everywhere by those with well-trained senses.

The setting of the SXFN Canoe Creek Reserve (Stswecem'c) is on the edge of the bunchgrass zone and was surrounded by the alienated private lands that make up the BC Cattle Company. Through the Treaty process, the Nation was seeking to gain ownership over the land, as currently Indigenous Title on fee simple lands does not grant many rights. The Nation was in a long and protracted negotiation to purchase the land the cattle company was on, only to be shocked with the news one day that Ross Beaty, one of Canada's most famous mine developers and land conservationists, had instead purchased the property.

Shortly after the purchase, Ross Beaty hired Keefer Ecological Services (KES) to conduct an ecological integrity assessment. At the end of the first week, we met the SXFN to understand their interest in the land and to share the results of the study. At this landmark meeting, it was determined that the conservation interests of SXFN and Ross Beaty were in close concert. It was agreed that we would work together to collectively develop a set of conservation principles for the land and to also zone the land based on existing conditions for three main uses, intensive agriculture (on existing developed land only), potential dwelling areas for the Nation and conservation ranching.

Using the principles developed, a negotiation between SXFN, BC, Canada and Ross Beaty went forward at a rapid pace with a final agreement for sale being completed by December 15, 2022. When that date arrived, SXFN members were invited to a celebration at Canoe Creek. What began as a normal day for Stswecem'c Xget'tem people with a constant reminder that their territory had been unfairly and unjustly taken away from them, ended with the incredible knowledge that all the land in the viewscape was now again a part of SXFN's and they were free to utilize the land as they had once done.

The good news continued as it was revealed that Ross Beaty, out of an incredible act of generosity, had agreed to transfer all the proceeds of the sale to a land trust. This land trust is designed to last through perpetuity and will allow the Nation to manage the grasslands, wetlands and other ecosystems to the best possible standards.

Amid the cultural landscape lies grassland ecosystems of national significance. The area is designated as part of the Dry Interior of BC, and is included in the federal government's Priority Places Program, which is taking a multi-species approach to conserving key ecosystems across Canada. The area is recognised for its unique and diverse range of sagebrush, grassland and woodland habitats that support numerous threatened species including American badger, bighorn sheep and Lewis's woodpecker. Numerous small mammals occupy the sagebrush and grassland habitats, providing a prey base for

Sagebrush and grasses, Churn Creek
PHOTO: Michael Keefer

Churn Creek Grasslands and Fraser River
PHOTO: Michael Keefer

raptors and meso-carnivores. Although the land is rich in biodiversity, it has been impacted by past land uses such as unsustainable livestock grazing; as a result there is a lot of scope for landscape recovery. Management is prioritizing sustainable cattle grazing and planning grassland restoration to improve habitat conditions for a number of target species such as American badgers.

Work on the land has already begun. KES biologists, in cooperation with SXFN and Ross Beaty, conducted an initial reconnaissance survey in the summer of 2022. The survey was an excellent opportunity to be on the land and see the potential for conservation and restoration.

According to KES Senior Wildlife Ecologist Steve Ross (PhD, RPBio), "Some baseline wildlife work has been conducted at BC Cattle Company including sign surveys and camera trapping with the local Indigenous Guardians. The work has highlighted the tremendous potential for wildlife this unique habitat provides. Upcoming work this summer will focus on developing solutions for American badger, bighorn sheep and Lewis's woodpecker habitat recovery. The work will adopt an ecosystem perspective looking to restore safe wildlife connections to the larger landscape, and recover keystone resources such as the small mammal community that support the resident carnivore and raptor populations. Incorporating scientific tools into traditional stewardship methods will also be a major goal of the wildlife program, looking to foster long-term and community-led wildlife management and recovery."

There is much more work to be done and it will all be conducted through deep and meaningful engagement with Stswecem'c Xget'tem First Nation. To serve as a basis for management, an ecosystem map of the property that identifies habitats of special importance is being developed. Other detailed field studies—including wildlife surveys, stream assessments and invasive species management plans—will be required to support ranch management planning while also protecting cultural sites. Greenhouses for food, cultural plants and income generation are being planned.

Some of the additional work planned includes a 'Bioblitz' taking place from May 26 to 29 on the property. Simon Fraser University will take the lead on this process that will see students and staff from SFU photographing and recording everything they can using their phones and cameras. These records will be uploaded to iNaturalist, a website for science and conservation efforts, for further study and review and be used for the permanent protection of the land.

"The kind of data and information we compile will be useful not just for SXFN, but for all landowners in the region, including other ranchers," said Jim Doswell, BC Cattle Company Director. "Long term conservation and protection is a team effort, and we are willing to share the information we collect with others."

"This situation presented itself as a unique opportunity," said Ross Beaty. "By returning these lands to SXFN, and through our commitments to biodiversity and traditional and cultural ecological knowledge, we will ensure these lands support both SXFN's ecological and economic initiatives as well as BC's ranching economy."

Stswecem'c Xget'tem First Nation Councillor Hank Adam Jr. added, "Stswecem'c Xget'tem First Nation has been stewards of our territory from time immemorial. We look forward to collaborating on our BC Cattle Ranch to protect and revitalize the biodiversity within our territory for future generations. Our relationship with the land and all living things is critical because we understand that everything is interconnected."

Keeping BC's vital grasslands and the Grasslands Conservation Council healthy

Ian Barnett

Coyote
PHOTO: Mana Lane

The Grasslands Conservation Council of BC (GCC) has been a very active participant on the BC conservation landscape since its inception in 1999. Being a not-for-profit, the GCC depends upon membership, private donations, foundations, partners, various levels of government, including First Nations, and others who believe in our mission to help support our work.

Over the first 10 years of GCC's work, most of our revenues were from government grants and contracts, with some foundation grants, as well as modest proceeds from membership dues and cash donations. In 2008 when the global economy was severely impacted by a recession, the GCC's revenues were also hit hard and it took several years to get back up on our feet.

Thankfully, the GCC, through a committed group of volunteers and staff, rebounded. Our recovery was based on outstanding work and important contributions by members that included "products" on grassland conservation education, extension and an important grassland inventory. These efforts developed significant credibility amongst our supporters and the public that have allowed us to navigate the stormy economic waters and continue to carry on.

We firmly believe that we are now able to contribute in a very impactful manner and engage with more partners and funders to make proactive contributions to conservation on the grassland landscape.

GCC's funding requirements over the next four years are commensurate with our *Strategic Action Plan 2022-2026*.

The priority issues that the GCC will concentrate on include:

- Balancing human values and uses to ensure grassland ecosystem health, using a philosophy of *Walking on Two Legs* to ensure GCC is balancing Indigenous knowledge with Western science in tackling invasive species; and
- Increasing the awareness of the importance of grasslands to the public and focusing on collaboration with other conservation minded groups.

The main activities that the GCC will pursue over the next four years to advance the above components include:

- community engagement, education, outreach and communications;
- hands-on activities for the conservation, restoration and stewardship of grasslands;
- supporting research informed by science, Indigenous and local knowledge; and
- policy support, input, recommendations, and guidance to decisionmakers and building the GCC capacity to ensure that we can enhance our effectiveness in grassland conservation.

Financial stability is an important objective for GCC and the most financially solid not-for-profit groups have diverse funding sources; the GCC would also like to ensure that we continue to expand our revenue base. To that end it is critical that the GCC secure stable longer-term "unrestricted"

Common Camus
PHOTO: Thayne Tuason

dollars to guarantee that we can be at the table with partners and others who are seeking our much sought after input on grassland conservation programs, projects, education, research and policy input. Membership in the GCC is a key means of providing both unrestricted revenues as well as helping build the backbone of our organization. Decisionmakers, funders and partners will often interact much more readily with an organization that has a broad and strong membership base. Our goal is to quadruple our membership base in four years to well over 600.

Monthly and regular cash donors are a vital revenue source, and it is very important that the GCC increase these by a significant measure. Both membership in the organization and regular cash donors are very important to developing long term fiscal health as they often lead to higher levels of giving and bequests. GCC is a registered charity and we would like to build upon our regular membership donations by communicating more with these and other potential members and donors about our work. Donor stewardship is a vital action which all successful charities undertake and it almost always leads to more consistent and increased support for their work.

Fundraising events are an important means of gaining public recognition and securing additional financial support and the GCC in February of this year held its first such event in Kamloops. The musical entertainment, display information, silent and live auctions and numerous very generous cash and other in-kind donations helped us raise a net profit of $22,000. The response was so positive and people had so much fun that we are already planning another event on February 1, 2024.

Hands-on conservation projects are also important GCC objectives. Over the years, the GCC has worked with numerous funders, foundations and various levels of government to take on projects that meet our mission and strategic plan goals. We hope to expand this significantly: GCC is presently working on two major projects at Lac du Bois near Kamloops and the Laurie Guichon Memorial Grasslands Interpretative Site. Both projects involve a diverse set of activities including education, invasive plant control, scientific and Indigenous knowledge gathering, habitat inventory, interpretative trails, fencing and other management tool implementation and evaluations. It is our goal to considerably improve the grassland quality at these sites and transfer these types of partnerships and activities to other very important grasslands throughout BC.

The GCC is in a "walk before we run" phase as we want to continue to do our work well before knowingly expanding. We are optimistic that we are not far off undertaking some new initiatives that will require considerable resources to actuate them. We will continue to explore and seek new revenue sources and, as our *Strategic Action Plan* indicates, we will be developing and implementing a GCC engagement and funding strategy. We encourage all members and friends of grasslands to work with us and as a famous actor used to say when advocating for his favourite charities, "If you have a few extra nickels please don't hesitate to throw them into the can!" The GCC and BC's critical grasslands would certainly welcome them.

Biodiversity challenges at the forest/grassland interface

Bob Haywood-Farmer

As a rancher operating in the Thompson Valley west of Kamloops, I would like to give you my thoughts on one of our most important habitats—the grassland/forest interface. British Columbia is well known for its vast forest lands. In the dry Interior, Douglas fir is the dominant conifer and at mid elevations Douglas fir forests make up a lot of the landscape, with spruce and deciduous species common on wetter sites. Lodgepole pine is a common seral species, especially in areas where fires have occurred. This species depends on fire to open up the cones and release their seeds, hence lodgepole pine stands are often evenly aged, based on a past fire having burnt an area. Douglas fir eventually retake these areas, relying on the protection of this seral species for establishment. At lower elevations ponderosa pines are the more common conifer, often growing in quite open stands, usually associated with bunchgrasses and forbs.

The Douglas fir forest in the dry Interior typically has well-spaced trees with a component of bunchgrasses, shrubs and forbs with many small open areas, depending on soil types and aspect. There is typically a variety of ages and species of trees in these diverse landscapes, with aspen being common where there is seasonal higher moisture. Dryer sites favour open grasslands.

At the lower elevations in the river valleys, it is too hot and dry for tree species to thrive and open grasslands are the norm. Bluebunch wheatgrass is the dominant bunchgrass. Big sagebrush, needle grasses (Stipa sp.) and annual grasses such as Downy brome (commonly called cheatgrass) are common where grazing pressures have been excessive. The grasslands extend into the mid and high elevations depending on soils and dryness of the site. Bluebunch wheatgrass is also common at these elevations but rough fescue, another bunchgrass, often dominates many sites. At the higher elevations poor grazing practices can lead to a shift to less productive species such as Kentucky bluegrass (a sod grass), or annuals such as cheatgrass. Poor grazing practices leave all landscapes vulnerable to invasive species. It is important to maintain the bunchgrass communities to achieve high productivity and to maximize carbon sequestration, the chemical process for which grasslands are famous. One has only to look at the black, rich soils in grassland areas to appreciate the effects of carbon sequestration in this landscape. The richest soils in the world are those that have developed in grassland ecosystems.

> *"One of our most important habitats is the grassland/forest interface. This area provides exceptional biodiversity where a multitude of organisms take advantage of the close proximity of these two habitats. Depending on various forces of nature, the interface is in a state of constant flux."*

The landscape that I would like to concentrate on is the transitional zone where the Douglas fir forest and the grassland meet, often referred to as the grassland/forest interface. This interface area provides exceptional biodiversity where a multitude of organisms take advantage of the close proximity of these two habitats.

Depending on various forces of nature, the interface is in a state of constant flux. During wetter cycles the trees tend to advance into the

Douglas Fir Forest, common in the drybelt of BC's Interior
PHOTO: Bob Haywood-Farmer

Devasting effects of hot summer fire
PHOTO: Bob Haywood-Farmer

grasslands, a process commonly referred to as tree encroachment. Small open areas within the forest tend to be filled in by tree seedlings in such wet periods, referred to as infilling. During dry cycles, some tree seedlings in these areas fail to survive, especially on coarse textured soils. Fire is an important natural force that tends to set back tree encroachment and infilling, restoring the grassland component at the interface. Young conifers at the interface can be removed by well-managed spring fires if there is sufficient fuel on the ground. Grazing practices that allow adequate rest the previous year accomplish this.

Insect infestations are another natural factor in controlling tree encroachment and excessive infilling. Spruce budworm, for example, feeds on the new growth of Douglas fir and, if left unchecked, provides natural control of conifers at the interface. Tussock moth is another natural pest that affects all ages of Douglas fir and is known for infesting a swath of trees at a specific band of elevation. These forces seem bad from a forester's point of view but they are part of nature's way of maintaining biodiversity in the landscape. This is especially important at the interface where conifers tend to take over the landscape. We should consider leaving some infestations to nature in interface areas.

The interface becomes even more complex in areas where wetlands and deciduous stands of aspen and cottonwood occur along with the conifer/grassland habitats. The riparian zones that surround the wetlands provide important habitat for all sorts of organisms. Deciduous species such as alder, cottonwood, willow and aspen provide important habitat for many game animals such as deer and moose that browse on the new growth of these species. The deciduous species all reproduce vegetatively sending up shoots from their roots, making them very fire resistant.

Management practices are important when it comes to maintaining a diverse landscape at the interface. Forest practices in the Interior Douglas fir zone should be respectful of biodiversity. Trees need to be spaced to allow an understory of grasses, forbs and shrubs to persist. Small grassland openings and deciduous groves need to be left as such for they add diversity to the forest ecosystem. A stand of conifers that has mixed species and trees of a variety of ages is better from a biodiversity standpoint and more resilient.

Turning diverse landscapes into plantations that have single species such as lodgepole pine, evenly aged and spaced to eventually exclude the understory, is a questionable but standard practice in the forest industry. I have seen many examples of just this practice on range that our ranch uses and it is frustrating to see the loss of biodiversity that results. Even small open areas are, unfortunately, site prepped and planted to trees along with the treed areas. This is often just an oversight on the part of overzealous machine operators that haven't been given detailed instructions and accurate mapping. When site prep and tree planting take place at the interface, the loss to biodiversity is huge when planting encroaches onto the grassland or deciduous portions of the landscape. There is a big difference between a forest ecosystem and a tree plantation.

The conservation of grassland birds in British Columbia

Tom Dickinson

Mountain Bluebirds
PHOTO: Bob Needham

Horned Lark
PHOTO: Glenn Dreger

North American bird populations are in peril. There are three billion fewer birds today than there were in 1970. Nowhere are these declining bird populations more evident than in British Columbia's grasslands. Birds Canada estimates that Canada's grassland birds declined by 60% over the last 50 years. For some species, such as chestnut-collared longspur, nearly 95% of the individuals have disappeared from Canada's prairies. In BC, the sage grouse has disappeared, and the numbers of most birds associated with grassland habitats are in decline.

The causes of these declining populations of grassland birds are not surprising. They are the same ones that we see as threats for other grassland species—namely habitat loss and change. Each bird species has its own species-specific requirements for food, nesting cover, and safety from predators. When native grassland habitats are converted by other uses, some of a species' habitat requirements are lost.

Intensive agriculture, residential housing development, and the changes that accompany the expansion of transportation corridors all affect bird habitats; these developments occur most heavily in BC's grasslands and valley bottoms. Residential housing adjacent to grasslands also brings with it threats to habitats from intensive recreational activity and free roaming pets—especially cats. Finally, exotic species that are commensals with humans, such as European starlings or Eurasian-collared doves, often displace native species.

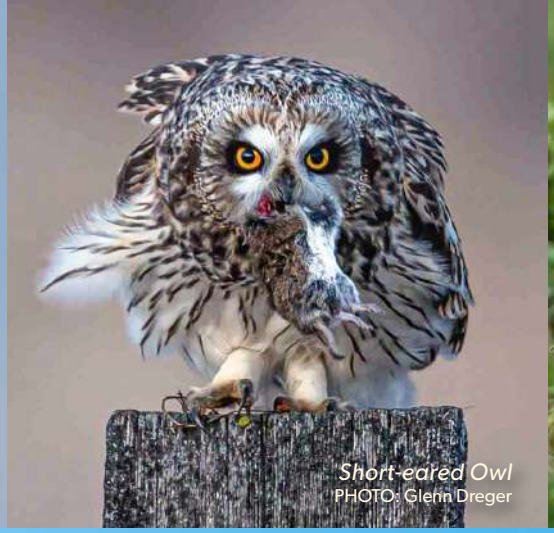
Most of Canada's grassland birds also face a significant additional challenge: migration. In a migratory bird's annual cycle, the nesting season is followed by a relocation to more amenable wintering habitats, before returning the following spring to nest. By itself, migration is a risky business and especially so for birds that migrate thousands of kilometers. Throughout their migration and upon reaching their wintering grounds, the same factors that change the habitats in their breeding grounds impact their chances of survival. Furthermore, they are affected by the frequency and severity of weather patterns that are associated with a changing climate. These weather patterns often catastrophically alter the timing and pathways for migration that are instinctively rooted in a bird's behaviour.

> *"The conservation of grassland birds relies on a combination of protecting critical habitats and good stewardship of all lands....We can all play a role in helping conserve grassland birds."*

Many have characterized the current situation that grassland birds face as an environmental crisis and have been calling for rapid actions to reverse declining populations. The conservation of grassland birds relies on a combination of protecting critical habitats and good stewardship of all lands. Birds Canada, in their publication *Grasslands Conservation Incentives Guide*, has inventoried a range of incentives to help managers conserve grassland habitats for birds.

Northern Harrier
PHOTO: Glenn Dreger

Western Meadowlark
PHOTO: Glenn Dreger



Short-eared Owl
PHOTO: Glenn Dreger

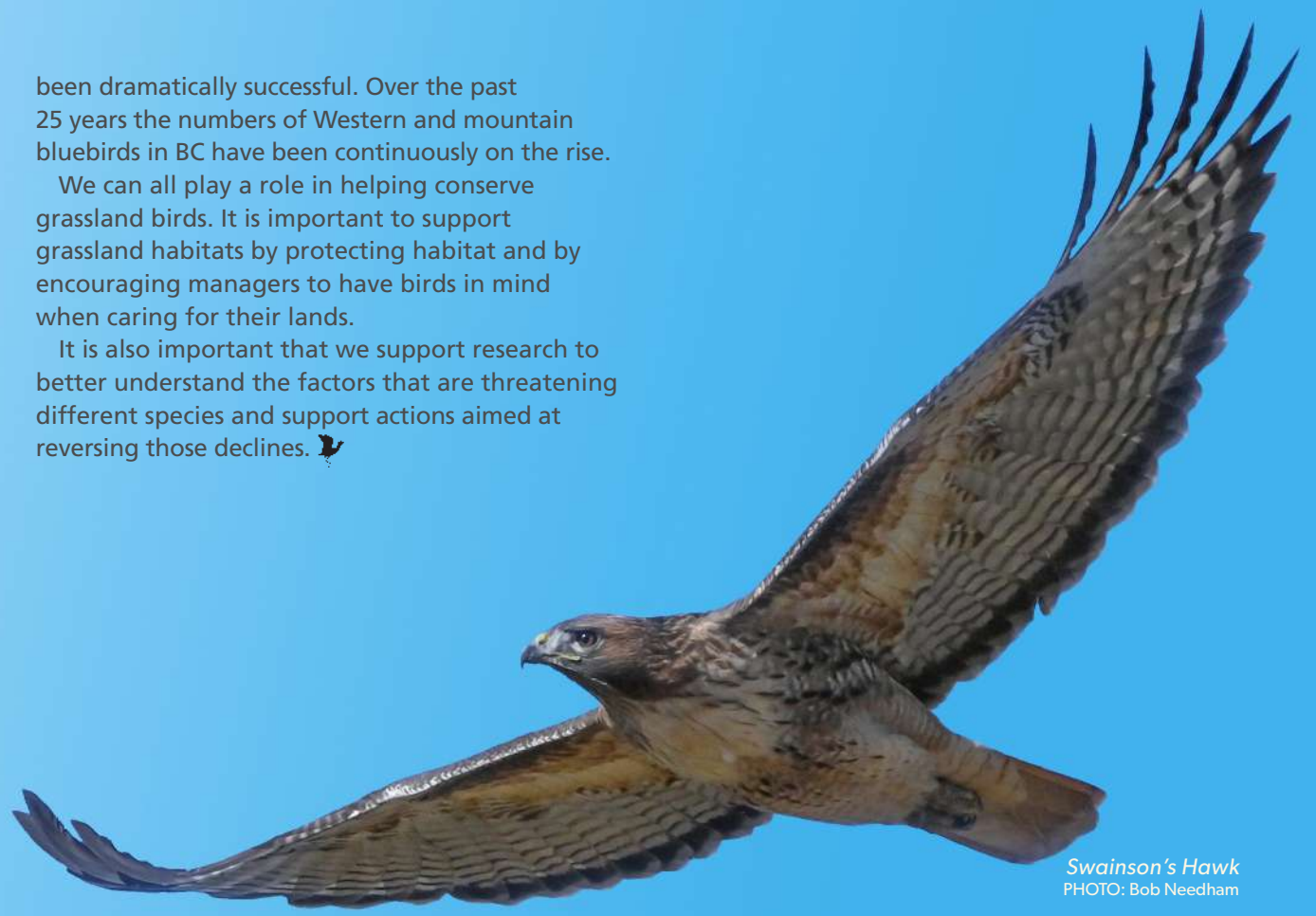
Clay-colored Sparrow
PHOTO: Glenn Dreger

These range from programs to protect wetlands to strategies to manage cattle in rangelands.

I am convinced that the conservation of BC's grassland birds is not a lost cause. In the past, when the threats to individual bird species have been identified, it has been possible to reverse population declines. For example, in the 1990's there was precipitous decline (roughly 50%) in the North American breeding population of Swainson's hawks. Research discovered that this decline was due to the use of a particular pesticide on the species' wintering habitat in Patagonia. Lobbying by international conservation groups stopped the use of the pesticide and resulted in a rapid recovery of Swainson's hawks across all North America. Another example, occurring in the middle of the previous century, is the explosion of European starling populations across North America and subsequent competition for nest cavities. This resulted in dramatic declines in all bluebird populations. Coordinated activities of individual volunteers to install and monitor nest boxes to supplement natural nesting sites have been dramatically successful. Over the past 25 years the numbers of Western and mountain bluebirds in BC have been continuously on the rise.

We can all play a role in helping conserve grassland birds. It is important to support grassland habitats by protecting habitat and by encouraging managers to have birds in mind when caring for their lands.

It is also important that we support research to better understand the factors that are threatening different species and support actions aimed at reversing those declines.



Swainson's Hawk
PHOTO: Bob Needham

Nicola Valley
PHOTO: Paul Joseph

Grassland plant species at risk in BC

Dennis Lloyd

British Columbia is rich in flora and fauna, with each species contributing to the complex balance within the ecosystems they inhabit. Many species are at risk of extinction, often due to unfavorable land-use practices. Negative trends in rare species populations may be a valuable indicator of significant environmental changes.

What is a species at risk?

The degree of risk to loss or extinction for individual species is assessed globally, nationally and provincially using similar principles. Categories are applied at different spatial scales as it pertains to the species occurrence, distribution, and the degree it is threatened by humans including population growth, and naturally occurring events such as disease, pollution, and climate change related events. Little is known about the location, biology and requirements of many species which make it difficult to impossible to assess their risk of extinction. Historically, wildlife have received the greatest attention; only recently have a few plants been more seriously considered.

In 2002, federal legislation established the *Species At Risk Act* (SARA), which governs the Committee on the Status of Endangered Wildlife in Canada, (COSEWIC) and works globally to rank Species At Risk (SAR). In BC, the Conservation Data Centre (CDC) is primarily responsible for compiling a list of species, assessing the conservation status ranks, mapping known locations, and making data and information available to a wide range of clients. The collected data also informs government decisions on legal designation and management planning. CDC species rankings can be identified using their web-based BC Species & Ecosystems Explorer tool in which species ranks are assigned according to several factors. The status can also change with time as additional inventories are completed or the level of threat to species changes. The more charismatic wildlife species have garnered more attention than plants. Of 792 plants listed in BC, only 63 have been assessed by COSEWIC. The CDC does not make laws about managing or conserving species at risk or their habitats.

Ranking Species at Risk in BC

CATEGORICAL TERMS	CDC	CRITERIA
Extinct		Not found and unlikely to be found despite extensive searches.
Extripated or possibly extinct		Possibly extinct from a jurisdiction, not seen in 20-40 years, search not exhaustive, viable captive populations.
Critically Imperiled or endangered	Red Listed	Extreme risk of being lost due to rarity and is highly threatened, facing imminent extripation or becoming endangered if factors threatening loss are not or cannot be addressed. Typically <6 population occurrences, or <1,000 individuals and/or threats that make it extremely vulnerable to extinction.
Imperiled or endangered	Red Listed	High risk of loss due to restricted range, few populations, or occurrences and a steep decline in numbers, and severely threatened. Typically 6 to 20 population occurences, or 1,000 to 3,000 individuals.
Special concern or vulnerable	Blue Listed	Species that are vulnerable to extinction or extripation, moderate risk of loss in jurisdiction. Rare; typically having 21 to 100 population occurrences, or 3,001 to 10,000 individuals and a moderate risk of loss in BC, although possibly secure elsewhere.
Likely secure	Yellow Listed	Somewhat threatened in BC but apparently secure elsewhere.
Not at Risk		No concern, widespread, abundant and secure.

Table 1. Criteria and characteristics of species at risk.

Identifying and mapping critical habitats for protecting and rescuing listed species is essential for recovery. However, designating areas for protection tend to be highly contentious due to conflicting social, economic and political interests. In BC, federal laws only apply for species recovery and protection of critical habitat on federally administered lands. Generally, legislation is not in place to protect vascular plants at risk in BC. Although limited consideration has been legislated in BC via the *Wildlife Act* for four animals and, under the *Forest and Range Act* (FRPA), for 17 of the 792 CDC listed plants and 65 of the 190 wildlife species at risk in BC, this is clearly inadequate.


PHOTO: Ingalls Creek


PHOTO: Tab Tannery


PHOTO: Andrey Zharkikh

Lyall's mariposa lily

(Calochortus lyallii)

Lyall's mariposa lily *(Calochortus lyallii)* is a single-leaved long-lived perennial monocot that arises each year from a subterranean bulb, reproducing solely from seed. It has a narrow geographic range east of the Cascades, from the extreme southern Okanagan and Similkameen Valleys to Yakima in Washington state. There are only 11 known population centers in BC. Historically ranked as red-listed, Lyall's mariposa is currently yellow-listed and deemed to be globally secure.

Lyall's mariposa lily often occurs in association with the more common sagebrush mariposa lily *(Calochortus macrocarpus)* which can be distinguished by larger, tulip-shaped, lavender flowers. The single leaves of sagebrush mariposa are usually linear and channeled in cross-section, whereas those of Lyall's mariposa are always flat. Indigenous people ate the bulbs raw or steamed them (Turner et al., 1990).

Flat-topped broomrape

(Orobanche corymbose)

Flat-topped broomrape *(Orobanche corymbose)* is a parasitic, annual herb with tube-like flowers. The flowers vary in colour from pale yellow to dark-veined pink or purple. It lacks leaves and chlorophyll, and generally extracts nutrients and water from its host, Big sagebrush *(Artemisia tridentata)* or Pasture sage *(Artemisia frigida)* to grow and develop. It occurs primarily in the shrub-steppe Big sagebrush-dominated lower elevation grasslands, south of Kelowna in the Okanagan valley to Death Valley on the east side of the Cascades. In 2000, it was provincially red-listed, however with additional research, it is now a yellow listed species of concern, deemed secure in the US.

Showy phlox

(Phlox speciosa)

Showy phlox *(Phlox speciosa)* is a 15-40 cm tall perennial herb with a woody taproot. It has five pink to white petals with prominently notched tips. It is native to western North America, from the South Okanagan to Washington State, California and New Mexico in very hot, dry grasslands and shrub-steppe communities. In 2004, CDC deemed it to be a critically imperiled, red listed species. Today, COSEWIC acknowledges it is critically imperiled, extremely rare, and vulnerable to extirpation in the South Okanagan. However, globally it is considered secure. In the South Okanagan there is a similar looking, more common species called long-leaved phlox *(Phlox longifolia)* which lacks the notched petal tips and is valued for use in rock gardens. Both species are believed to be somewhat adaptable to disturbed habitats.


PHOTO: M.E. Sanseverino


PHOTO: Andrey Zharkikh


PHOTO: Tab Tannery

Deltoid balsamroot

(Balsamorhiza deltoidei)

Deltoid balsamroot *(Balsamorhiza deltoidei)* is a showy, sunflower-like perennial with a deep fleshy taproot, and distinctive triangular leaves. It occurs in grassy meadow-like ecosystems or open woodlands of Garry Oak and/or Douglas fir on the southeast side of Vancouver Island, south of Campbell River, and the Gulf Islands. It is the northern extension of a species that extends to California. It favours full sun or light shade, and well-drained, dry soils. CDC and COSEWIC consider it to be imperiled and in decline in BC but is deemed to be secure in the US. It has many traditional uses for its edible roots and seeds, plus medicinal applications. Early settlers in the Victoria area used the seeds as chicken feed (Turner et al., 1990). Floristically, it is very similar to the more common and widespread balsamroot *(Balsamorhiza sagittata)* found in the southern Interior of BC.

Sulphur lupine

(Lupinus sulphureus)

Sulphur lupine, *(Lupinus sulphureus)* is a perennial herb with branched basal stems, palmate leaves and numerous terminally, whorled, creamy white to pale yellow pea-like flowers. The pea-like pods are pinkish brown and covered with dense silky hairs. In BC it is found in the mid elevation Fescue, Bluebunch wheatgrass grasslands south of Kamloops, and the Okanagan Valley south of Kelowna. Provincially it is a blue-listed vulnerable species, is not listed by COSEWIC, and considered to be globally secure in the dry Interior of central Washington and Oregon. Lupines are nitrogen fixers that enhance grassland soils and nourish associated plants. The Indigenous people used lupine 'peas' in soups, stews, and 'lupine hummus' and ground them to make a flour substitute for pancakes (Turner et al., 1990). The more common Silky lupine *(Lupinus sericeus)*, with its purplish flowers, occupies similar grassland habitats.

Grand coulee owl-clover

(Orthocarpus barbatus)

Grand coulee owl-clover *(Orthocarpus barbatus)* is a semi-parasitic, erect annual herb, reaching 8-25 cm in height with yellowish, tube-shaped flowers with distinctive yellowish-green bracts. In Canada it is known to occur at four locations in the south Okanagan Valley, however, is known to extend at lower elevations to south-central Washington State. It often occurs on disturbed Big sagebrush-dominated sites with sandy to gravelly soils. Provincially and federally it is red-listed and critically imperiled, while globally it is considered imperiled/vulnerable. Yellow owl's clover *(Orthocarpus luteus)* also has yellow flowers, but their bracts are 3-lobed and shorter.

The long road to antelope-brush grasslands restoration

David Nixon

Durable. Many thoughts come to me as I walk the grasslands, but one notion stands out: durability. These native grasses have been through a lot, going right back to the Ice Age. Durability is the instinct for survival, but behind durability is another, more important trait—resilience. The ability to respond successfully to unexpected changes, be they negative or positive.

The moment she saw it, there was no going back for Ariel Vernon.

Rolling hills of yellows, greens, and grays, punctuated by ponderosa pine and pink long-leaved phlox. Gnarled brown antelope-brush branches, twisting along the ground. The cheerful chupps and warbles of meadowlarks singing.

She was hooked.

"We knew then that this was a place we wanted to live and raise our young son," said Vernon.

It was spring 2016. Vernon, with her partner and son, were at the summit of Oliver Mountain. They stood there awestruck by the full bloom of the South Okanagan's antelope-brush needle-and-thread grass ecosystem, a type of grassland that's among the most rare and endangered ecosystems in Canada, and whose only foothold in the country is the South Okanagan.

One year after their hike, Vernon and her family purchased land in Oliver at the south end of Willowbrook Road, near the old gold mining town site of Fairview.

It was five acres of fallow fields dotted by derelict sheds and bordered by barbed wire. Crested wheatgrass, a Russian native introduced as livestock feed, and weeds had taken over much of the site. One lonely mobile home sat among the ruins of the former cattle-grazing lands.

Next door were healthy patches of antelope-brush and a ponderosa pine forest. As a result, the area was teeming with life despite its cultivation.

Vernon, a landscape architect, dreamed of restoring the land to its natural ecosystem.

A rare, endangered grassland ecosystem

The antelope-brush ecosystem looks like a desert, (and is often referred to as "Canada's pocket desert"), but it's not a wasteland. It's a type of grassland called a "shrub-steppe" and is home to many species of plants, insects, amphibians, reptiles, birds and mammal—many of which can't be found anywhere else of this ecosystem in Canada.

Technically, the full name is "antelope-brush needle-and-thread grass." Biologists name ecosystems after their two most-dominant plant species, so "antelope-brush" could refer to many similar ecosystems depending on its partner plant species. But for the purposes of this article, we'll call this South Okanagan ecosystem "antelope-brush."

Since 1938, agricultural and urban development, like what occurred on Vernon's land, has replaced 68 per cent of the South Okanagan's antelope-brush. Human-introduced invasive species and overzealous fire suppression have also taken a toll. Today, only around 3,100 hectares of antelope-brush remains of the original 9,801 hectares. (For comparison, BC covers 95 million hectares, or 234 million acres.)

Low-elevation grassland communities are the rarest type of land in BC. They cover one per cent of the province but are home to 30 percent of its

Antelope-brush at McIntyre Bluff, located between Okanagan Falls and Oliver, BC
PHOTO: Orville Dyer

endangered species. Among the 15 communities that make up this rare grouping, antelope-brush is one of two most threatened.

Maybe it's no surprise, then, that antelope-brush has one of the highest densities of endangered species in Canada. There are 45 species listed on Canada's federal Species at Risk Act (SARA) that depend on antelope-brush and many more that are of provincial concern.

What makes it so rare? The special sauce is the soil that is full of gravel and sand deposited here 10,000 years ago by run-off from Ice Age glaciers that had pushed into what is now Washington. Water passes through sand and gravel quickly, so it takes a hardy plant to survive here. Antelope-brush shrubs and ponderosa pine trees, for example, are known for their long tap roots, which can dig through the gravel and sand to the moisture-rich soil below.

Other species, like the Great Basin Pocket Mouse, are happy to stay in the shallower sandy soil. It makes for great burrowing. They eat antelope-brush seeds, which they stash in the ground and sometimes forget about, making them this ecosystem's tiny inadvertent gardeners.

Land stewardship in your backyard

Vernon is living her conservation philosophy. Recently, she founded Delve Landscape Design, which specializes in using local materials, native plant communities and ecological systems. She's using her own land as a pilot project to show what can be done.

"If we focus conservation efforts strictly on public land, there's only so much we can do," said Vernon. "But if landowners turn their backyards into restoration sites, then as an aggregate it can offer more than a national park ever could."

It isn't easy work, even for a professional landscape architect like Vernon. But there's a lot of support for landowners who are looking to become stewards of their properties. Retired biologist, Orville Dyer, connected her with several organizations to assist her in her work.

From the Okanagan Similkameen Stewardship Society (OSS), Vernon received support on restoration strategies and invasive species, including a land assessment conducted by local biologist Mike Sarell.

According to the OSS, "empowering land managers to undertake conservation on their own lands and within communities is critical to maintaining healthy ecosystems and thriving populations of native species."

In the South Okanagan, approximately 87 percent of the remaining antelope-brush ecosystem is on private land and First Nations Reserve land. That makes these kinds of partnerships with landowners "particularly important," according to Valerie Maida, stewardship officer at the OSS.

To date, Vernon has restored about one acre of land on Willowbrook Road.

"I couldn't have done it without many partners, especially Orville," she said. "It became a much bigger project than I expected but I've had so much help."

Last year, Vernon had some extra, albeit smaller, hands to help. Dyer connected her with a participatory environmental stewardship project that brought three grade seven classes from Oliver to learn about the local ecosystem and help restore it by planting native seedlings.

These classes were part of a larger initiative to educate South Okanagan students about their environment and involve them in restoration of the endangered antelope-brush.

Students gather for an outdoor classroom
PHOTO: Orville Dyer

Students help restore endangered ecosystem

It began with turtles and coyotes.

The Penticton Regional Airport was fenced to stop coyotes and deer from running onto the runways.

But there was an unintended consequence: Turtles could no longer make it from their home on Penticton Indian Band land to the Skaha wetlands, where they lay their eggs. They were getting stuck at the fence and dying.

The Okanagan Nation Alliance (ONA)—a First Nations Tribal Council of eight member communities from the Upper Nicola Band in the north to Colville Confederated Tribes (Washington, USA) in the south—created underpasses to allow only turtles through. But it didn't take long for weeds to block these passages.

Allison Dietrich, a teacher at Skaha Lake Middle School, is always looking for outdoor education opportunities for her class. After speaking with Dyer and Dave DeRosa from ONA, she secured permission from the locatee landowner and took her class to the airport. They weeded the area and began a turtle monitoring program.

Dyer and Dietrich kept talking. Their focus turned to the antelope-brush ecosystem. Dyer, a retired biologist, has studied these grasslands for more than two decades. He's the author of a program funded by the South Okanagan Conservation Fund to conserve, restore and manage antelope-brush in the South Okanagan.

Dyer helped the program start, but Dietrich has done the heavy lifting. Thanks to her work, the program has expanded from six classes and one term in 2022 to nine classes over a full year in 2023.

Dietrich has built an outdoor education and community stewardship program that aligns with BC curriculum and Ministry learning outcomes. Teachers who participate receive free field trips, guided lessons, lesson outlines, activities and more.

> *"The diversity of educational offerings provides students with a rounded understanding of why conserving and restoring endangered antelope-brush ecosystems is important," said Dietrich. "What we're really trying to do is instill the concept that stewardship is a shared community responsibility."*

"What I was looking to do is create a program that uses an action-based approach to help connect kids with nature and develop skills to take care of the environment," said Dietrich. "That's the most exciting thing: We're acting, we're hands-on and actually doing it."

Students were each responsible for weeding a two-by-two-meter plot of land and then re-seeding it with native grasses, forbs, and antelope-brush. This work has occurred on damaged antelope-brush sites on land owned by private owners (one being Ariel Vernon) and the Nature Trust of B.C., a non-profit land conservation organization that acquires important habitats to protect them in perpetuity.

Antelope-brush is a "miniature" world, where one must "get down low to see all the beauty," according to a brochure published by the BC government in 1995. Maybe that makes it an especially fitting environment for students to learn—a world they're much closer to than the adults. highlight of the year.

Antelope-brush flowers
PHOTO: Orville Dyer

Sometimes that miniature world bites, though. The kids were beset by prickly pear cactus. It stuck to their shoes wherever they went. That made for an "eye opening experience … to see what it's like off the beaten path," said Jef Vreys, a former Nature Trust B.C. field technician who participated in the first year of Dietrich's program.

The cacti became a bit of a meme among everyone involved. Grade 11 biology teacher Cameron Adam called his program "learning that really sticks," a nod to how often kids had to pull the cacti off their shoes. His Keremeos students were the first seniors to join the program, which is mostly dominated by middle schoolers.

Adam was "blown away" by the depth of responses from his students on assignments about antelope-brush. He said that over ten years of teaching Biology 11, it was the highest quality of work he's seen on any topic.

For the Nature Trust of B.C., it's been a unique and welcome activity for their staff to be working directly with youth. Alex Thomson, Conservation Field Operations Coordinator with the trust, said the work was his team's highlight of the year.

The students also learned from professionals on various topics important to the environment, including local wildlife, energy flow, invasive species, Indigenous stories and perspectives of place, burrowing owl history and re-introductions, seed dispersal and native plant seed identification.

"The diversity of educational offerings provides students with a rounded understanding of why conserving and restoring endangered antelope-brush ecosystems is important," said Dietrich. "What we're really trying to do is instill the concept that stewardship is a shared community responsibility."

These lessons were provided by the project's partners: Anona Kampe from the Penticton Indian Band, the Nature Trust of B.C., the Okanagan and Similkameen Invasive Species Society (OASISS), the Penticton Museum, the Okanagan Similkameen Stewardship Society, the Osoyoos Desert Centre, and the Burrowing Owl Conservation Society. Fortis BC and the Habitat Conservation Trust Foundation (HCTF) also provided funding support for local teachers.

Over the winter students in Dierdre Simpson's class were trained by Sagebrush Nursery in Oliver (who supplied the plants for the initial restoration) to plant and germinate antelope-brush seeds, which they will plant in the spring. Students have also been reviewing wildlife camera footage from stations they erected.

In the spring, the students will analyze the progress of their plants. The results will help inform future restoration work around the South Okanagan. Antelope-brush is difficult to grow, and there isn't enough data on what methods work best for restoration.

Dietrich's program has involved over a hundred students and she hopes to continue expanding it to other classes and schools in the South Okanagan.

If you measure it, they will manage it

Jef Vreys was part of the Nature Trust of B.C.'s field crew when Allison Dietrich's education and restoration project began. Before that, he worked with the Burrowing Owl Conservation Society. Now, he's a Master's student at the University of British Columbia Okanagan (UBCO) and is working on a thesis that could become important to antelope-brush conservation work in the South Okanagan.

California quail on Antelope-brush
PHOTO: D.C. Rjsar

Through his work, Vreys met Dyer, who connected him to Darcy Henderson. Henderson is head of stewardship with Environment and Climate Change Canada's Canadian Wildlife Service and leads a program called Priority Places that identifies ecosystems in need of funding for conservation programs.

The South Okanagan has been identified as a Priority Place. Henderson was interested in funding a thesis focused on antelope-brush.

One of the problems facing antelope-brush conservation in the South Okanagan is a lack of reliable and accessible data about the state of the ecosystem and how best to improve it. The ecosystem is spread out over so many different areas, conditions and landowners.

Strategies for conservation are only as good as the data they're based on. As management consultant Peter Drucker said, "what gets measured gets managed."

Vreys hopes to address that problem with his thesis. He has three goals: First, to design a long-term monitoring protocol for antelope-brush lands. Second, to establish a standardized rating protocol for healthy antelope-brush. And third, to rank antelope-brush properties across the South Okanagan according to this standard.

Antelope-brush can live for more than 100 years, but it has a tough time taking hold.

"We're not seeing the natural regeneration that we should see," said Vreys. "So, is there a difference we don't know about in these disturbed ecosystems that's preventing the growth we would expect?

That's one of the things I want to find out."

Vreys began his first of two field-work seasons in May.

Remaining antelope-brush faces severe threats

The work of Jef Vreys, Ariel Vernon, and Allison Dietrich are bright lights in a long dark tunnel.

Of the 3,129 hectares of antelope-brush that remains in the South Okanagan, 50 per cent is considered to be in poor or fair condition. The scientific community has set a protection target of 4,900 hectares, but today only 653 hectares are formally protected despite efforts by conservation groups for more than 20 years.

About 2,476 hectares are currently identified as an opportunity for more protection.

Protected land, however, still faces threats. The Nature Trust of B.C., for example, purchases land and then employs field crews to remove invasive species and prevent encroachment of the grassland by trees.

The target of 4,900 hectares for protection is larger than the remaining area of antelope-brush, which means that 1,771 hectares must be restored. In 2021, one hectare was partly restored. Sadly, more is lost each year than is being restored.

That may seem bleak. But as one of the students said to Dietrich: "Even though I just planted one small plant, one can make a big difference."

Antelope-brush
PHOTO: Orville Dyer

My grassland roots

Mike Dedels

Those of us lucky enough to grow up around the grasslands all have a story to tell. Mine starts in my elementary years when we moved to a rural subdivision in the Aspen Parkland northwest of Edmonton. There, as was common at the time, I was free to roam as I pleased. I happily wandered on the vacant acreages and grassy slopes down towards Big Island on the North Saskatchewan River. Meanwhile, my older brothers would sit on the deck and patiently watch with their 22's for gophers to pop up less than 100 yards away until neighbors moved in the lot one over which meant shooting that direction was no longer a good idea. Mom was also tired of pulling the shells out from the deck boards.

Moving to what is now called West Kelowna, I was lucky to spend my high school years walking or running the trails on the grassy west-facing slopes of neighboring Kalamoir Park at the volcanic base of Mt. Boucherie, with Okanagan Lake nearby for a dip. I also had a Social Studies class called Regional Studies where we were introduced to concerns with the loss of agricultural lands and the formation of the new Agriculture Land Reserve. We did field trips to Knox Mountain looking at the striations on the top where glaciers had overtopped the valley. I also got to spend a summer there doing Parks projects for the City of Kelowna, but can't say I truly appreciated the grasslands there at the time.

GCC Display, Women's Day 2023
PHOTO: Wendy Gardner

My true interest in agriculture came about hitching around New Zealand for four months after a bit of a wasted year at Okanagan College. Farming was everywhere and the wide-open fields on the South Island seemed open for tramping. I had always appreciated food production but came back with a new appreciation for the value of grazing animals.

So, after upgrading those college science courses and getting calculus out of the way, I headed off to UBC to be an Aggie in the Rangeland

Resources Program headed up by Dr. Michael Pitt, an early leader with the GCC. Not a whole lot of grasslands to wander in Vancouver, but I got to spend two rewarding summers killing knapweed with the old Forest Service weed crews. We moved our little trailer to Vernon, Chase, Princeton and Merritt, covered some beautiful country, and met lots of ranchers and Range staff on the way. There was also the two-week Range Field School at Riske Creek where I was introduced to the Chilcotin and learned about issues like forest encroachment from Ross Fredell and Fred Knezevich. I was also a student member of the Society for Range Management (SRM) and fondly remember being the van driver for a snowy trip to the SRM Winter meeting in Wenatchee.

Government restraint in 1983 led to centralization in the Forest Service and a dearth of Range jobs, so I spent a couple of years in the wholesale trade with Buckerfields. I was lucky enough to travel the whole of BC's central Interior and got to appreciate grasslands from the Kootenays to the Cariboo. A lack of potential Range jobs in the hometown led us to pack up our young family and move to Kamloops where I met many local ranchers in my years at Agri Supply working for Jay Ross. As a young Agrologist, I was also fortunate to meet Alastair MacLean, Al Van Ryswyk, Alf Bawtree and other pioneers in grassland research and extension in BC who have been honoured in previous issues of *BC Grasslands*. Of course, as the new Agrologist in town, I was also nominated to be our local BCIA President on a year where we were hosting the Provincial AGM.

After a couple of unsuccessful attempts at employment in Range in Kamloops, I got hired in 1990. Jim White assigned me the south zone in Kamloops District, from Pritchard through Stump Lake to Hat Creek, covering some of the more diverse and challenging grasslands in the area. It was trial by fire, dealing with major ranch subdivisions, landfills, mines, cows stepping on trees, trees crowding out cows, new parks, new *Forest Practices Code*, wildfires, and many of the other issues covered in this magazine over the years. I had the pleasure of working with a diverse group of ranchers, First Nations, and other key interest groups - in the pickup, on horseback, by ATV and sitting around the kitchen table. These are my roots on the grasslands and I wouldn't have changed a thing. Perhaps one day I'll have the opportunity to write the next chapter with more career details, including my introduction to the GCC. Until then, if you want to pass on your grassland story, we will look to publish it in a future issue.

Grasses and Sagebrush
PHOTO: Olsen Imaging

Loving the Grasslands fundraiser

Amanda Houze

Our first *Loving the Grasslands* Fundraiser was a success! With your support, over $22,000 was raised to help our work: education and community outreach, conservation, restoration and stewardship of British Columbia's grasslands.

This funding will make the following projects and initiatives possible:

- Undertake Friends of Lac Du Bois Stewardship projects and other stewardship projects across BC;
- 2023 *BC Grasslands* magazine;
- create a grassland education video series;
- Laurie Guichon Grasslands Memorial Interpretive Site invasive plant projects and school tours;
- develop a *Grassland Primer for Land Use Planning*;
- develop target objectives for grassland burning;
- improve awareness of grasslands and the work of the GCC through outreach events across BC;
- develop priority areas for grassland protection to meet global '30 x 30' goals;
- update BC grassland mapping to provide important information for planning;
- develop a business case for a native seed bank;
- assess how invasive plants in grassland impacts species at risk, carbon storage and First Nations traditional use plants;
- build partnerships with organizations to support grasslands;
- create, with Thompson Rivers University, grassland-specific curriculum for BC schools.

A Message from GCC Chair, Bob Haywood-Farmer:
"We'd like to extend a thank you again to our sponsors, those who donated auction items and volunteers who planned the event. Each one of you helped make this fundraiser a success. We look forward to hosting you again."

THANK YOU TO OUR SPONSORS

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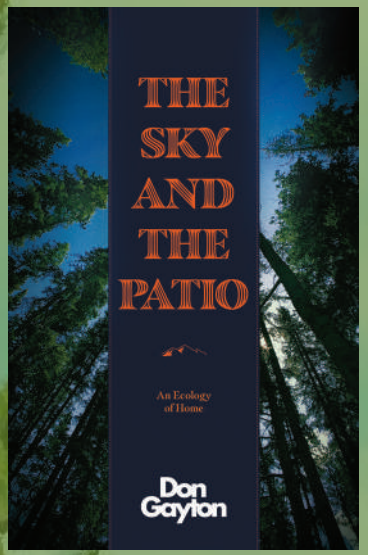
- Kamloops Thai Massage
- Teck Highland Valley Copper
- Quail's Gate Winery
- Amanda Houze

Loving the Grasslands Fundraiser Event
PHOTO: Heather Richardson

The Sky and the Patio

A Book by Don Gayton



In 22 engaging essays, Summerland, BC writer **Don Gayton** fuses the personal with the ecological to portray the geography and the natural and human history of his adopted Okanagan Valley homeland.

The ***Sky and the Patio*** describes the patterns made by iconic native species and the non-natives reshaping their world.

Draft resister and professional ecologist by training, Don Gayton registers the complexity and interconnectedness of every living thing in his environment—from the rivers and lakes to the plants and animals—and the human settlements along the Okanagan, Similkameen, and Columbia watercourses shaping his backyard.

Annual Report 2022

Bob Haywood-Farmer, Chair
Grasslands Conservation Council of BC

Governance and Capacity

Grasslands Conservation Council of BC (GCC) started the 2022-23 fiscal year in search of new leadership and hired Mike Dedels as General Manager in July of 2022 to build and expand on the GCC work, priorities, and funding as outlined in the *2022-2026 Strategic Action Plan*. With additional funding secured for stewardship projects, the GCC was challenged to implement projects while continuing education and outreach initiatives. With the dedication of active Board members, and significant in-kind contributions from other agencies, the GCC completed extensive work with the Friends of Lac du Bois. The workload involved with coordinating multiple projects funded through multiple parties highlighted the need for the GCC to develop more in-house capacity for project management.

With funding from the Ministry of Land, Water and Resource Stewardship the GCC produced a comprehensive document on the *Past, Present and Future of the GCC* highlighting past achievements and outlining where we could go with additional capacity. The GCC had numerous discussions with governments, industry and foundation funders on increasing capacity. The GCC also held its most successful fundraiser in February, realizing over $22,000 which can be used to help secure other funding. As we move into a new fiscal year, Mike Dedels' position has been renamed Executive Director and he has been working with Board members on a fundraising plan.

Education and Outreach

Through the support of our members and the Community Gaming Grant, the GCC expanded on a very active outreach program to bring awareness of the importance and value of grasslands and their stewardship.

Sonya Rokosh was contracted by GCC to provide outreach to a variety of audiences and support the Board in reaching a broad audience through indoor and outdoor events and webinars. Over 700 people were reached with events held in the Thompson, Nicola, Cariboo, and Okanagan regions. The GCC attended fairs, markets, conferences, classes and rodeos in Summerland, Kamloops, Williams Lake, Revelstoke and Merritt. Our Executive Director also participated in the B.C. Cattlemen's Association (BCCA) booth at the PNE and enjoyed introducing many of the agriculture show attendees to the grasslands of BC.

The Laurie Guichon Memorial Grasslands Interpretive site (LGMGIS) hosted Merritt Nature Kids as part of the Thompson-Nicola Invasive Plant Management Committee weed pull challenge.

GCC hosted a "Grasslands as Teacher" webinar series this winter on a variety of grassland topics including Grasslands 101, How Grasslands Enhance Your World, Burrowing Owls, and Environmental Education in the Grasslands. There were over 176 participants on the Webinars with another 274 views on the BC Grasslands YouTube Channel. Check it out and subscribe to see the webinars, plus short videos that have been completed. Many thanks to the Thompson Nicola Conservation Collaborative (TNCC) for helping to promote and facilitate these webinars.

Through the efforts of Director Heather Richardson, the GCC e-news and social media platforms continued to see increased engagement. The statistics for the outreach through social media are as follows: 826 e-news subscribers, 1288 Facebook followers, 1315 Instagram followers. A new Linkedin site was also set up in the fall and has already garnered 224 followers among the professionals and organizations on that network. Social media is used to promote events and spread GCC and other organizations' technical and popular grassland information. Heather has also worked to create some short reels for social media use, including "What is an Oak Meadow Ecosystem?"

The GCC again produced an engaging magazine titled, *Grasslands: Resilience Champion in a Changing Climate*, thanks to the efforts of Director, Toni Boot. This was distributed at our numerous outreach events. We also partnered with BC Cattlemen's Association to include BC Grasslands with their Beef in BC Magazine. This enabled 1200 additional copies to go out to BC Cattlemen's Association members who steward so much of BC's grasslands.

The GCC also produced new swag in the form of stickers, tee shirts and bike socks to increase public awareness of the Council and of grasslands.

Reaching out to the public and service clubs to initiate interest in grassland conservation was also a primary goal over the past year. The Executive Director spoke to seven Rotary Clubs in Kamloops

Short-eared Owl
PHOTO: Glenn Dreger

and Penticton, reaching over 150 business owners and professional people. Traditional media was also used to get the word out about grasslands. The GCC had a full-length interview on the CBC Kamloops Daybreak show in January with an audience of approximately 16,000. The Watershed Sentinel published a piece on our webinar series that can be found at: https://watershedsentinel.ca/articles/grasslands-as-teacher/

There was also outreach done with conservation, resource management groups and local governments. The Executive Director met with the Okanagan Conservation Collaborative Program (OCCP), Central Okanagan Regional District (CORD) and had discussions with numerous others to discuss potential partnerships. GCC also had one article in Beef in BC and presented "speedy sessions" at the Invasive Species Council of BC (ISCBC) Forum in New Westminster.

Lastly, but of great importance, the GCC moved forward with developing relationships with First Nations. Skeetchestn and Tk'emlúps te Secwépemc First Nations were both involved with Friends of Lac du Bois meetings and field trips. A grasslands presentation was given to the Citxw Nlaka'pamux Assembly, and Kamloops area First Nations were all invited to attend our "Loving the Grasslands" event as guests. The GCC also attended a First Nations event at Phillips Lake with Neskonlith Band elders. Increasing First Nations outreach will be a major initiative for 2023/24.

Stewardship and Protection

With $25,000 in funding from Environment and Climate Change Canada (ECCC) Priority Places, $5,000 from the Habitat Conservation Trust Fund (HCTF) and $3900 from the Park Enhancement Fund (PEF) the GCC worked with the Friends of Lac du Bois on planning events to determine Priority focus areas and to develop a plan for invasive species management in the Lac du Bois Grasslands. Several projects were developed and implemented, including demonstration chemical and mechanical treatments on Spotted knapweed, biocontrol enhancement on Toadflax and Spotted knapweed. Compiling invasive plant inventories, planting bunchgrass on disturbed sites, planting bunchgrass into sites occupied by crested wheatgrass and working with the Kamloops naturalists to control Reed Canarygrass in wetlands, are other initiatives GCC has undertaken this year. With the help of ISCBC Stronger BC teams there was also an inventory of New Invaders through much of the east side of the Protected Area. These projects all involved considerable in-kind contributions with a total value of close to $50,000 and were led by Director Dennis Lloyd. The participation of First Nations, range experts, naturalists and GCC volunteers is highly valued.

On the Laurie Guichon Memorial Grasslands Interpretive Site, a Letter of Inquiry to the McLean Foundation resulted in funding of $15,000 to advance invasive plant control. One of the main concerns there is to ensure that control does not result in an increase in Cheatgrass. Control methods, including post treatment seeding, are being reviewed in the coming year.

Across the province there are many other local groups, such as the Friends of Churn Creek and Friends of Black Mountain working on grassland stewardship. The GCC actively engaged with many of these groups and will be looking to enhance partnerships over the coming years.

Science and Research

The GCC is working with the Ministry of Water, Land and Resource Stewardship, Ministry of Forests and Canadian Forage and Grassland Association (CFGA) on mapping projects including updated mapping of BC's grasslands to show losses since 2015 and cover areas not well represented previously.

Policy

GCC Directors met with Heather Wiebe and Kathryne Cunningham of the Ministry of Water, Land and Resource Stewardship to reinforce the value of grasslands and review the potential GCC role in new Landscape Management Planning processes among other government initiatives. The GCC looks forward to developing this relationship, and working with the other resource Ministries.

Grasslands Conservation Council of BC
BALANCE SHEET as at March 31, 2023

March 31, 2023 with comparative information for 2022.

	March 2023	March 2022
Assets		
General Bank Account	80,426	21,453
Gaming Bank Account	36,172	41,552
Etransfer bank account	8,030	-
Investments & Term Dep	5,470	30,470
Accounts Receivable	8,750	-
GST Receivable	1,198	790
Prepaid expense (insurance)	600	600
Total Assets	**$140,645**	**$ 94,865**
Liabilities & Net Assets		
Current liabilities		
Accounts payable	-	2,711
Deferred Revenue (Gaming 23-24)	25,411	30,000
Deferred Project Funds	40,551	540
Net Assets		
Unrestricted Net Assets at beginning of the ye	61,616	91,536
Net income (- loss)	13,067	29,922
Unrestricted Net Assets, end of year	74,683	61,614
Total Liabilities & Equity	**$140,645**	**$ 94,865**

Director

Director

Auditors' Report: We have examined the books and records of the Grasslands Conservation Council of BC and found no significant errors. We conclude that these statements fairly represent the standing of the Council as at March 31, 2023.

Dennis Lloyd *Michael Dedels*

April 30, 2023

HELP US PROTECT BC'S GRASSLANDS
BECOME A MEMBER OF GCC

~ Donate Today ~

Print and mail or apply online:

bcgrasslands.org/membership

Merritt rangelands
PHOTO: J. Leekie

The *Grasslands Conservation Council* relies on a strong and diverse membership to ensure it can uphold its mission of keeping the grasslands of BC intact and healthy.
We encourage you to keep your membership with our organization up-to-date.
We also accept memberships and donations through Canada Helps (www.canadahelps.org/en/)

MEMBERSHIP: ❑ 1 year individual membership - $35 ❑ 1 year corporate membership - $250

NAME: _____

ADDRESS: _____

PHONE: _____ EMAIL: _____

DONATE: I would like to make a donation of: $ _____

TOTAL: (Membership + Donation) $ _____

All donations over $25/yr will receive a tax receipt. The $35 annual membership fee to the Grasslands Conservation Council of BC is not tax deductible.

Payment: Cheque or money order - payable to Grasslands Conservation Council of BC
Mail to: P.O. Box 3341, Kamloops, BC V2C 6B9

Signature (REQUIRED):

_____

Date: _____

We value our members and supporters, and are committed to rewarding your support with increased member services.

❑ Please add me to the email notification list.

❑ Please remove me from the email notification list.

The GCC is a registered charity in Canada (Charitable Registration Number: 870042777RR0001).

Help keep BC's

GRASSLANDS *Forever*

for you

for your children

for your grandchildren

Consider a gift to the Grasslands Conservation Council as part of your annual giving. We are the only not-for-profit Society in BC that is dedicated to the conservation of BC's grasslands. 100% of our resources go to projects that work towards sustaining our precious grasslands.

Your contribution to GCC will help continue needed outreach, stewardship and research activities. Together we can ensure that the diverse grasslands of BC and the biodiversity they support are here for future generations. Learn more about GCC and our projects at: **www.bcgrasslands.org**

Mariposa Lily
PHOTO: Mike Keefer

Monarch Butterfly on Arrowleaf Balsamroot
PHOTO: Charles Knowles

Western Bluebird
PHOTO: Derek Roberts

Grasslands Conservation Council of British Columbia

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