

*British Columbia*

# Organic Grower

## Indigenous Food Sovereignty

**Journal for the Certified Organic Associations of BC - Summer 2016**  
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of thriving organic farms*

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## ***Tsawwassen First Nation Farm School***

*Growing community  
and good food.*

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## **BC Organic Grower**

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### **Letters & submissions:**

Please contact:  
Darcy Smith, Editor  
[editor@certifiedorganic.bc.ca](mailto:editor@certifiedorganic.bc.ca)

Advertising (rates & copy) & non-member subscriptions (\$20/year plus GST) to:

COABC  
202-3002 32nd Ave  
Vernon, BC, V1T 2L7  
Phone: 250-260-4429  
Fax: 250-260-4436  
[office@certifiedorganic.bc.ca](mailto:office@certifiedorganic.bc.ca)  
[www.certifiedorganic.bc.ca](http://www.certifiedorganic.bc.ca)

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On the Cover: Penny Lefort shows off a beautiful carrot bunch at the Tsawwassen Farmer's Market. Credit: Jean-Philippe Marquis

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# Editor's Note

By Darcy Smith

To kick off our Summer 2016 issue I, and the COABC, wish to acknowledge and honour the ancestral, traditional, and unceded Aboriginal territories across BC on which we live, work, play, and farm, particularly the Secwepemc, T'Sou-ke, Tsawwassen, Syilx, Metis, Dane-zaa, and Nlaka'pamux, whose words, lands, and farming projects appear in these pages. To acknowledge traditional territory is to recognize its history reaching beyond colonization, as well as its significance for the Indigenous Peoples who lived and continue to live upon this territory, whose practices and spirituality are tied to this place, and who continue to steward the land.



At heart, the principles of organic farming are about protecting the environment and ensuring we have strong, sustainable local food systems. We share these values with the people and projects from various First Nations in this issue. And yet, we have much to learn from them.

We also have much to give to First Nations: honour, respect, and acknowledgement of their rights and the injustices they've faced, as well as their essential role in promoting a healthy environment – and above all, the space, both ideologically and physically, to share their stories and shape our collective lands.

What follows in these pages, our Indigenous Food Sovereignty issue, is another step down that shared path. You'll find unique and innovative projects, such as T'Sou-ke Nation's Ladybug Gardens (page 28), Stswecem'c Xgat'tem (SXFN)'s community garden program in Williams Lake (page 24), and the Tsawwassen First Nation Farm School, a learning space, farm incubator, and community hub (page 16).

For a deeper dive into First Nations food sovereignty, you'll hear from Syilx community leader Pauline Terbasket as she recounts the Okanagan Nation Alliance's efforts to restore Scwin (Sockeye salmon), an important cultural touchstone and food source, to the Columbia River in the face of historical and present day challenges (page 6). Turn to page 13 for a look at Nicholas Peterson's exciting research on using native plants in land reclamation.

You might notice a shift in our major feature, Farmer Focus. Now called Organic Stories, in future issues you'll see more characters popping up from across the organic sector (plus plenty of farmers, of course!). For our inaugural Organic Stories, Sage Birley dives into the rich alluvial soils of the Peace Region (Dane-zaa) to explore the history and future of organic farming in the region (page 8).

And, for everyone at the mercy of wireworms (I think we're all in the same boat here), Todd Kabaluk has filled over 2,000 words with what — from what I can tell — just skims the surface of his knowledge on the topic. Stay tuned for future updates on this pesky critter.

In the spirit of making space for a multitude of voices, I'd love to hear from you — reach out with your thoughts, letters, and story ideas at [editor@certifiedorganic.bc.ca](mailto:editor@certifiedorganic.bc.ca). As well, be sure to visit us at our new online home:

 [bcorganicgrower.ca](http://bcorganicgrower.ca)



## Celebrating 25 Years

Pro Organics is proud to represent BC organic producers and to be celebrating our 25th year of supporting local, organic, sustainable farming.

Today, as it was 25 years ago, our mission remains the same: Promoting the growth and integrity of organics from field to table.



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## Senate Standing Committee on Agriculture & Forestry

By Carmen Wakeling

I had a very interesting opportunity recently to present to the “Senate Standing Committee on Agriculture and Forestry.”

I was privileged to be there with other representatives from across the Western Provinces: Becky Lipton, Executive Director of Organic Alberta; Kate Storey, President of Manitoba Organic Alliance; Terry Tyson, Prairie Organic Grain Initiative; and Marla Carlson, Executive Director from Sask Organic.

As the first speaker, I gave an overview of organic certification, the principles of organic, and some stats showing what our awesome province is doing. I also touched on the areas we see as needing support in BC.

Here are some highlights of the seven minute presentation:

The Organic Sector is one of the fastest growing agricultural sectors in Canada and worldwide. With over 700 certified organic operations across BC, and lots of room for growth, BC’s organic production is primed to take its place in the international market.

BC is well positioned to reach Asian markets, but many of our organic producers are not export ready. Our hope is that the government will support domestic growth, in turn facilitating the expansion of organic businesses into the export market.

By asking the government to invest in BC organic, we aim to do a few things that will lay the foundation for a vibrant future export market in the organic sector

Our asks included:



Photo: Sara Dent :: farmlove.org

- Create data that will allow participants to identify market opportunities and fully understand economic impacts and areas for potential growth.
- Help facilitate the transition to organics by providing the tools needed to make the transition less overwhelming and help in managing potential risk in giving up what is known for a new way of producing food.
- Build capacity to establish the volumes required to fulfill opportunities (especially with National and International buyers) that are essential to the long term supply.
- Develop infrastructure such as processing hubs dedicated to organic production, collaboration in distribution, and help in reaching international markets.
- Research and Development funding specific to Organic Production.
- Collaboration at all levels. We know that by working together we can make a bigger impact.
- Provide information to industry groups and individuals about funding opportunities.
- Support all agriculture to understand more our impact on climate change, and provide information so we can be better partners in reducing or reversing climate issues. Organic producers are leaders in this area.
- Take into account the impact GMO release in Canada has on organic

(and conventional) international markets.

By working together locally, provincially, nationally, and at international level we will build robust food systems that will not only help facilitate export but will be capable of feeding our nation healthy, high quality food while caring for the planet!

There was push back on the list of needs for the industry but we reminded them we were asking for fair treatment and that although many of these initiatives are under way collaboration is always important.

I have to say it was so great to get to know the members of the Western Canadian Organic Organizations and start to look at ways that we may be able to collaborate among ourselves to continue to build a strong organic community in this country.

Full transcripts will be available shortly.

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## FarmFolk CityFolk's Feast of Fields

Experience the Harvest, Gourmet Style

Feast of Fields is a four hour wandering gourmet harvest festival that highlights the connections be-

tween farmers and chefs, field and table, and between farm folks and city folks. With a wine glass and linen napkin in hand, guests stroll across a farmer's field, traveling from tent to tent (sometimes through the barn, past the tractor, or around the chicken coop) listening to live music and tasting gourmet creations from BC's top chefs, farmers, fishers, ranchers, food artisans, vintners, brewers, distillers, and other beverage producers.

**Okanagan:** Sunday, August 14th, 2016

**Vancouver Island:** Sunday, August 28th, 2016

**Metro Vancouver:** Sunday, September 11th, 2016

Find more info and get tickets :

🔗 [www.feastoffields.com](http://www.feastoffields.com)

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## National Organic Week

September 17-25

Planning is underway for organic events this fall. As the 2015 Organic Week Road Show was well received, COABC will host another tour this year. Previously, the road show featured sessions such as 'Certification Made Easy' and 'Get Ready to Grow, Value Added.' If you have presentation ideas or would like to host a session in your community please contact Eva-Lena at: [assistant@certifiedorganic.bc.ca](mailto:assistant@certifiedorganic.bc.ca).

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## Save the Date!

### 2017 Conference

The COABC 2017 Conference will be held on February 24-26 in Nanaimo. Locations, presenters, workshops, and registration information will be announced later this fall. Stay tuned!

## Young Agrarians Launches New Land Matching Program

Looking for land? Have land you'd like to see farmed? Young Agrarians is excited to partner with the City of Surrey to pilot a land extension service in 2016 based on Quebec's successful Banque de Terres program. The pilot's hands-on matchmaking service for farmers and landowners will focus on the Fraser Valley, with the Young Agrarians digital resource map offering a way for farmers and landowners to connect across the province.

### The Matchmaker service will:

- Support more new and young farmers to access tenured land agreements to start viable farm businesses
- Connect and support young and new farmer readiness with business planning and farm extension services
- Educate landowners and new farmers about legal agreements, and provide a final lawyer reviewed contract between parties
- Ensure that existing farmland continues to be farmed
- Support governments to meet regional agricultural planning goals

To see if the pilot program is right for your farm project, or if you've got land to list, reach out to [land@youngagrarians.org](mailto:land@youngagrarians.org) - and be sure to visit the new and improved Young Agrarians resource map this summer at [youngagrarians.org/umap](http://youngagrarians.org/umap)!

*Young Agrarians is a partnership with FarmFolk CityFolk*

## Finding Common Ground 2016 Summit

In May, the Sustainable Food Systems Working Group hosted a Summit that included a range of participants with a variety of perspectives on the BC Food System. Attendees were asked to build relationships, draw upon their knowledge and help craft tangible next steps that would move the province towards a more local and sustainable food system.

The COABC EDO and members of the organic community took part in the two day summit and provided input into a number of recommendations that will be submitted to the Ministry of Agriculture by the Sustainable Food Systems Working Group.

*Finding Common Ground was generously sponsored by the Real Estate Foundation, Vancity and the Vancouver Foundation.*

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## BC Agriculture Council (BCAC) Update

The BCAC Board has embarked on a mission to create a public trust campaign. The initial planning stage was brought to member association representatives in April. COABC representatives attended the general meeting and supplied feedback on the presented discussion paper. After lengthy discussion, the council was asked to create a more inclusive campaign that would build upon the common ground among members. This process has started with a steering committee meeting to provide input for a draft a strategic plan. This plan will be presented to the BCAC membership this summer.





# Return of the Salmon



*Photos: (Top) Pauline Terbasket, Executive Director of the Okanagan Nation Alliance releases Okanagan Sockeye Fry into Shingle Creek as part of a ceremony to restore salmon. (Above) An Elder prepares to cook fish on an open fire. Credit: Okanagan Nation Alliance*

*By Pauline Terbasket*

*In January 2016, I had the opportunity to present to the Young Agrarians 3rd Okanagan Winter Mixer conference. I presented on our Syilx Salmon Recovery efforts and shared our successes and yet constant challenges respecting Indigenous Peoples and food security.*

*There are so many angles from which this story can be told, so I briefly and humbly shared mine, both personally and as an executive director of a Tribal Organization. It is our Chiefs' office that is the primary driver of all our work "for the Peoples, lands, and resources", collectively. I also want to acknowledge and respect the presentation that preceded mine by Nicholas Peterson, a Nlaka'pamux farmer of Nicola Valley Produce and leader of his community regarding the work his family is undertaking to grow their own foods so they are able to have a sustainable livelihood and future in the Nicola Valley Region.*

“ We have, like the salmon, remained resilient, persistent and determined to be leaders in this work by feeding our peoples and lands.”

Scwin, Nsyilxcen for Okanagan Sockeye salmon, have been a primary food mainstay of the Syilx Peoples and central to our cultural and trading traditions between Indigenous Peoples throughout the Interior of British Columbia and Northwest United States. These salmon annually migrate up the mighty Columbia River to spawn in the Okanagan watershed, where they are a cornerstone species, feeding humans, bears, birds, among others. After spawning, they turn brick red, decompose and further fertilize the river and lands, contributing to the terroir of the region.

Fraught with negative consequences rooted in our shared history of colonization and the reeling impacts of being alienated from our lands and resources, Indigenous Peoples have overall suffered immensely – as have their foods. In addition to this common past shared by all Indigenous Peoples, by the early thirties International Water Agreements had been launched leading to the building and expanse of hydro-electric developments on the Columbia River over our territories.

Over the course of the 20th century these developments garnered for the Columbia the dubious designation as one of the most dammed river systems in the world. Along with a host of other environmental disruptions and damages, these dams made it impossible for fish passage, devastating the annual Sockeye salmon runs to near extinction, and as such deeply undermining regional Indigenous food sovereignty and food systems.

The recovery of our salmon story mostly has been framed as a “negotiation of salmon mitigation and re-introduction to the Okanagan sub-basin” which has entailed over the course of the last 20 years a process of initiatives undertaken by the leadership of the Syilx Peoples in partnership with governments and numerous other agencies including projects that involve: research, modeling, brood stock assessment, habitat restoration, and water and temperature flow monitoring of this system, etc.

No one spoke outright of it being about “Indigenous food sovereignty and food security.” However, the underlying cause for our people was the ability to access and protect our traditional food source. Because of our plight, First Nations in Canada have legal protections to address injustices through the court system and now have legally entrenched rights for the use of our salmon for food, social and ceremonial purposes.

This is readily understood but not outwardly spoken because we know as Indigenous Peoples it is fundamental to our cultural, social, economic, and political way of being. It should not have to be explained. Our inherent knowing of our connection to our food systems is need-

ed in addressing the underlying issues impacting Indigenous Peoples. Like the salmon, it is our responsibility to respond to our own needs for healthy, culturally adapted Indigenous foods. We have, like the salmon, remained resilient, persistent, and determined to be leaders in this work by feeding our peoples and lands.

## Return of Salmon, Rebirth of Culture

While this work moved forward, so did the revitalization of our language, ceremonies, and customs:

kt cp’elk’ stim’ is an Nsyilxcen term that roughly translates as “to cause to come back.” With the guidance of our elders and sacred teachings, all seven Okanagan Nation’s member communities and the Colville Confederated Tribes have great conviction in their determination to have the Sockeye salmon return.

In 1996-1997 the Okanagan Nation Alliance (ONA), under the long standing leadership of the Chiefs and Councils of our member communities and the Colville Confederated Tribe Business Council (CCTBC), formally undertook their responsibilities and obligations to their lands, waters, and peoples to restore the Okanagan Sockeye salmon back to the Columbia River systems. In 2014, more than 600,000 Sockeye salmon returned, of which a fraction is carefully harvested to feed the people. Our leadership remains resolved to continue the work and commitment required to return salmon to the reaches of the Upper Columbia.

As Scwin journey back to the Okanagan to spawn we not only see the rejuvenation of a fish species, but the revitalization of Indigenous food sovereignty. A myriad of Syilx cultural practices, including the Salmon Feast, enable snxa?l’iwlem (honouring the sacredness of the river) while reinforcing strong cultural-spiritual ties between Syilx communities and the Sockeye salmon.

During fish harvest certain parts of the salmon are returned to the river of origin, with the backbones/fish heads distributed to the community for fish soup. Portions of fish are given as offerings to eagles and owls, again reinforcing strong reciprocal bonds within the broader ecosystem. As such, these salmon are central to a wide range of connections between generations, communities, humans & non-humans, terrestrial and aquatic species, and transboundary watersheds within Canadian and American sovereigns including Indigenous Tribes along the Columbia River systems.

This brief encapsulation and acknowledgement of centuries old cycles of nature, sacred worldview, intertwined with human interaction, pattern, intelligence, adaptabil-

*Continued on page 12...*





# THE POTENTIAL FOR ORGANICS In the North Peace Region



*Photos: (Top) Leslee Jardine Stands in a field that is the site of her 1 acre organic certified market garden and her partner Colin Meek's freshly seeded Sun Flower and Hemp Crops in the back ground. (Left) Photo from last years Paddle for the Peace, an annual event celebrating the Peace River and raising awarress for its protection. The event happens July 9th this year! (Right) Fresh blooms in Leslee Jardine's orchard overlooking the peace river. Photo credits: Sage Birley*

*By Sage Birley*

Three years ago I returned to my family's organic farm to help my father. I had just completed three years of schooling in Vancouver and as a young activist I was dealing with my first severe cycle of burnout. Oddly enough, it was that burnout that led me back to the farm. After learning about environmental destruction and the concerning state of the world while struggling to do anything that created any meaningful change, I began to see organic farming as one of the best examples of environmental sustainability and stewardship.



“ You have to be connected to your soil, to the plants, and the people that buy that product, because those people are in need of that connection too.”

I have had the privilege of interviewing and learning from a variety of organic producers in the Peace Region. I've toured their farms and picked their brains learning more with every conversation. One of the most important questions I ask farmers is always "why organics?" A recent conversation with current President of the Peace River Organic Producers Association (PROPA) struck a particular chord. Jerry Kitt is a mixed operation organic farmer producing primarily meats near Goodfare, Alberta. He has been a member of PROPA since its second year in 1990, and he explained to me that, with a background in ecology and zoology, he had always believed in organics.

"Once you start going back and working with natural systems, things just flourish; I think that is what people are realizing," he said. "You have to be connected to your soil, to the plants that grow on it, and the people that buy that product, what ever it is, because those people are in need of that connection, too. You just have to feel good about the food that you produce and you eat." Over the years, Kitt has gained a wealth of knowledge and a sense of community from being a part of PROPA: "Knowing you are part of a bigger picture, seeing land that is being farmed in a sustainable manner while

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“At times I feel hopeless; but then I think of growers around the world and I am comforted to know that soon they will be waking up and getting to work doing their little part to grow a brighter future.”

watching families continue to grow on the farm creates a really positive vibe.”

Kitt has been selling organic meats at local farmers’ markets for around 24 years. He stressed that customers did far more than just support his business “I think of the people that used to come visit me 20 years ago and buy organic food. They carried their little kids up to my booth and I’d show them pictures of the farm and now 20 years later they are all adults and they are coming with their children. I feel really good about that. I’m helping that family grow, nourishing them the best I could and they come back beautiful people and continue to support what I do.”

He added “organic farming has made my whole life really worthwhile. If I was on my deathbed and I looked back at what I’ve done, I would feel good about what I did, all the families that I fed and that have grown up healthy and wiser. For me, organic farming was the wisest choice that I ever made in my life.”

### New Organic Farmers in the Peace Region

The recent downturn in the fossil fuels industry has been extremely difficult for many people throughout the BC and Alberta Peace. Meanwhile, food prices continue to rise and farmers continue to age out, threatening food security further. In considering the opportunity he saw for young people in organics Kitt stated, “I think that it offers long term security, it offers a sustainable source of income, and organic farming creates community. I think there are a lot of young families out there that live on farms who are looking towards organic production as a means to be able to generate an income, and feed good people. For them, their whole future is based on organics.”

Recently I have been working with a community of young market gardeners whose futures are tied to organic farming – but in the BC Peace Region that future is under threat. Leslee Jardine and Colin Meek are first year organic farmers working hard to demonstrate what the

Peace River Valley is capable of. Jardine is operating a small one acre market garden while Meek grows organic sunflowers and hemp.

Jardine, age 24, has been gardening since she was three, and has been operating her own garden for the past four years. After selling extra produce to coworkers, she got the push from supportive community members to take the plunge into fulltime market gardening.

Jardine explained that she and Meek, “were both in the oil and gas industry for a while and decided that we just didn’t like the way that was going and what our government was doing. Then the whole decision about Site C being approved pushed both of us to change.” Jardine went on to explain that Meek is a third generation organic farmer and had been planning on taking on the family farm but the Site C approval “made us want to go hard and show everybody what the Peace River Valley can do and what is at stake.”

With the construction of the Site C Dam looming in the distance many farmers including Jardine and Meek’s operation are currently under threat of being flooded.

### Saying “Yes” to Food Security

According to Wendy Holm, a professional agrologist who looked at the agricultural impacts of the Site C Dam, the Peace River Valley could feed one million people annually. Jardine, Meek and others are determined to demonstrate that. “I want the Peace Valley to be saved, preserved, and thanked I guess. I just don’t think people appreciate what you can get from this valley, and what is at stake. This valley is one in a million.” Jardine is happy to be a part of a small community of growers banding together to demonstrate the alternative future that could be grown in the Northern BC Peace Region. “I don’t believe there will ever be a loss of jobs when it comes to farming. Food is one of the only things that people really need. You can survive without so many things but you can’t survive without food. We can only grow this market, just imagine if all the farmland in the Peace region was utilized to its full potential,” said Jardine.

The unique micro climate of the east to west valley, the rich alluvial soils, and abundant irrigation opportunities means that the Peace River Valley is capable of producing crops that cannot be easily produced elsewhere in North Eastern BC. Jardine along with other market gardeners in the river valley have successfully grown various melons, squash, and corn along with a wide variety of heritage vegetables that cannot be found in a typical grocery store. So far the community has been extremely supportive. Jardine is constantly bombarded with encouragement and questions about where to buy her vegetables and already began signing up her first customers for vegetable boxes last August.

I’m honored to be a part of a community of young growers that is fighting to preserve an incredible valley with



## Learn More



Agrologist **Wendy Holm's** blog **Holm on Food: An Agrologist Writes...** has many postings with her views on the Site C Dam:

🔗 [holmonfood.blogspot.ca](http://holmonfood.blogspot.ca)

**The Wilderness Committee** has an overview of efforts to curtail the Site C Dam project.

🔗 [wildernesscommittee.org/sitec](http://wildernesscommittee.org/sitec)

You can read the petition at **Stop Site C** here:

🔗 [stopsitec.org/about](http://stopsitec.org/about)

**Write your local MLA** about your views on Site C:

🔗 [eg.bc.ca/learn-about-us/members](http://eg.bc.ca/learn-about-us/members)

their hands in the soil and their arguments on display on farmers market tables. "Farming is a way to create change and this summer is going to be an eye opener for so many people who just don't know what we can grow in this valley. This valley is priceless and you just can't replace what it can provide," stressed Jardine.

Jardine and others aren't saying no to Site C. They are saying yes to a future where young people can make a living while turning the Peace River Valley into a leader of Northern food security. Jardine echoes a sentiment of many young growers when she said "before, we weren't doing anything, we weren't making any change, or hav-

ing an impact, but I feel like with farming and young people getting into farming we are deciding that we aren't sticking with the norm, we are helping people and we are feeding people by using what we have around us in nature."

At one time the Peace River region was largely self sufficient and now I'm thrilled to see people taking the lead in demonstrating that it could be a reality again. As I write this in my cabin at my garden, seven kilometers down river from the Site C construction site I can hear equipment working in the valley. My thoughts go to Leslee Jardine and Colin Meek who currently have equipment doing test drilling for BC Hydro on their property, a few meters from their field and home. At times I feel hopeless; but then I think of them and other growers around the world and I am comforted to know that soon they will be waking up and getting to work doing their little part to grow a brighter future. 🌱

🔗 Instagram: **@sagebirley**

*Sage Birley is an agricultural journalist, 4th generation farmer, and 2nd year market gardener living on his family's 101 year old, now certified organic, farm in North Eastern BC's Peace River Region. As an activist and a community developer, he sees sustainable agriculture as the ultimate way to grow the change the world needs.*

# Organic Grocer

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ity, and wisdom must continue if we are to sustain our life on this planet.

Last year our Scwin felt the direct impact of climate change. The 2015 salmon run incurred devastation with increased water temperature and lower water levels inhibiting the vast majority of Scwin returning to spawn. We know this will become more frequent as our world evolves. So as our Scwin have taught us, we must like never before not let these challenges deter us (like the dams) from our responsibilities to each other as neighbors, farmers, harvesters, sowers of seed, hunters, innovators, and relations.

Like the salmon we will persevere, be resilient, and be determined to overcome adversity. 🌱

 [www.syilx.org](http://www.syilx.org)

*Pauline Terbasket is a member of the Syilx Nation, and registered member of the Lower Similkameen Indian Band. She has led her community and her Nation as a council member of her local band and most recently as the Executive Director of the Okanagan Nation Alliance. A strong advocate for social change and food sovereignty, she has committed herself to tackling difficult issues confronting the prosperity and wellness of Indigenous People.*



Pauline Terbasket speaking at the Young Agrarians Okanagan Mixer January 2016. Credit: Sara Dent  
[www.farmlove.org](http://www.farmlove.org)

A black and white advertisement for Nature's Fare Markets. The background is a close-up of several large, fresh carrots. In the upper center, there is a circular logo with an apple icon and the text "NATURE'S FARE MARKETS". Overlaid on the carrots in a large, white, cursive font is the text "Live well. Live organic." At the bottom, in a smaller white font, are the locations "Kamloops · Kelowna · Langley · Penticton · Vernon · West Kelowna" and the website "www.naturesfare.com".

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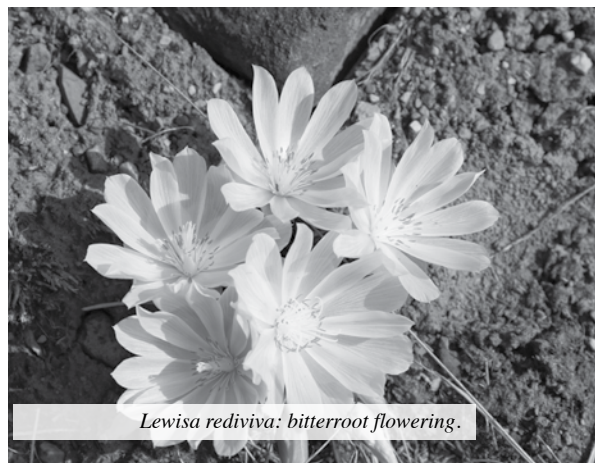
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*By Nicholas Peterson (all photos: Nicholas Peterson)*

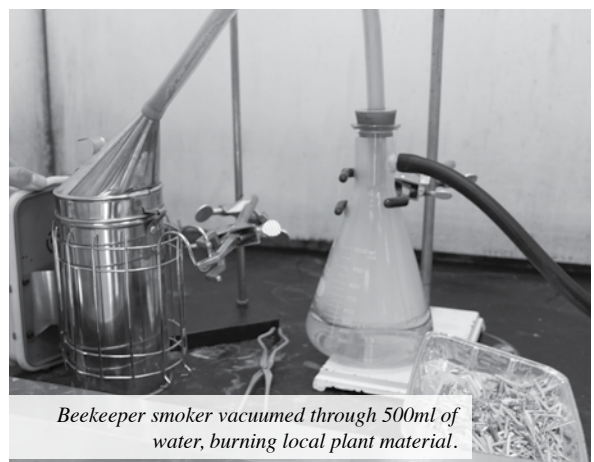
“ In order to restore disturbed sites to their natural, pre-disturbed condition, which should be our goal, there is a great need for a more abundant, consistent, and higher quality supply of native seed.”

I feel a deep connection to the land, a feeling that spans not just a couple generations, but millennia. With a First Nations heritage from the Nicola Valley, it's impossible not to recognize that I am at the very place where my ancestors gathered, living on the same land they too survived upon, especially as I take my own family to gather foods and medicines. Growing up with a relationship to this place, and an understanding of being stewards of the land, organic farming seemed to be a logical fit, both for raising my family and for my own lifestyle.

With my love and knowledge for farming, I can't help but see the importance of filling knowledge gaps to ensure beautiful and productive grasslands for future generations. Observing land disturbance through mining, pipelines, and transportation corridors, I didn't feel in my heart that best practices for reclamation were being used.



*Lewisa rediviva: bitterroot flowering.*



*Beekeeper smoker vacuumed through 500ml of water, burning local plant material.*

Species	Common Name	Life Form
<i>Achnatherum hymenoides</i>	Indian Ricegrass	Grass
<i>Achnatherum occidentale</i>	Stiff Needlegrass	Grass
<i>Achnatherum richardsonii</i>	Spreading Needlegrass	Grass
<i>Allium cernuum</i>	Nodding Onion	Forb
<i>Allium geayeri</i>	Geyer's Onion	Forb
<i>Amelanchier alnifolia</i>	Saskatoon	Shrub
<i>Arnica latifolia</i>	Mountain Arnica	Forb
<i>Balsamorhiza sagittata</i>	Arrow Leaved Balsamroot	Forb
<i>Berberis aquifolium</i>	Oregon Grape	Forb
<i>Calamagrostis rubescens</i>	Pinegrass	Grass
<i>Calochortus macrocarpus</i>	Mariposa Lily	Forb
<i>Claytonia lanceolata</i>	Western Spring Beauty	Forb
<i>Crataegus douglasii</i>	Hawthorne	Shrub
<i>Erythronium grandiflorum</i>	Glacier Lily	Forb
<i>Festuca campestris</i>	Rough Fescue	Grass
<i>Fritillaria affinis</i>	Chocolate Lily	Forb
<i>Fritillaria pudica</i>	Yellow Bell	Forb
<i>Gaillardia aristata</i>	Brown Eyed Susan	Forb
<i>Juniperus scopulorum</i>	Rocky Mountain Juniper	Shrub
<i>Lewisia rediviva</i>	Bitterroot	Forb
<i>Lomatium macrocarpum</i>	Large Fruited Desert Parsley	Forb
<i>Lomatium nudicaule</i>	Barestem Desert Parsley	Forb
<i>Prunus virginiana</i>	Choke Cherry	Shrub
<i>Poa secunda</i>	Sandberg Bluegrass	Grass
<i>Pseudoroegneria spicata</i>	Blue Bunch Wheatgrass	Grass
<i>Rosa woodsii</i>	Prairie Rose	Shrub
<i>Shepherdia Canadensis</i>	Soopolallie	Shrub

Government and industries will continue to impact and disturb natural areas, no doubt about it. This leaves an urgent and constant need for land reclamation to not only help mitigate the negative impacts of such disturbances, but also to restore stable and resilient ecosystems and the beneficial ecosystem services they provide<sup>2</sup>. After land disturbance, agronomic seeds are typically used in restoration and the disturbed areas become swathes of land that to me are an eyesore on the landscape.

In order to restore disturbed sites to their natural, pre-disturbed condition, which should be our goal, there is a great need for a more abundant, consistent, and higher quality supply of native seed<sup>1</sup>. Demand for the use of native plants in restoration is increasing and due to the current and growing need for native seed there is a lack of supply. As well, there is a lack of research on seed storage methods, seed viability, and germination success of native plants. Native species are often expensive and difficult to obtain in large quantities<sup>1</sup>.

Fortunately, there is exciting research happening on native seeds around the world – including our own back-

yard. Currently, my research is focused on a masters thesis (Use of Native Seed of British Columbia's Interior Grasslands: Seed Storage & Germination Trials Using Smoke Application on First Nations Traditional Foods and Medicines). I am exploring seed germination with the aim of filling some of the knowledge gaps on breaking seed dormancy in native plants, especially through testing the effects of smoke on seed germination.

Fires are — and always have been — a part of the local natural history. Fire has also been used as a land management tool by First Nations to help ensure abundant and healthy food sources<sup>6</sup>. Many seeds have evolved to inherit specific characteristics that not only allow them to survive fire, but to break dormancy and germinate based on cues caused by wildfires<sup>5</sup>. Seeds of many species appear to respond positively to the application of smoke<sup>3,4,5,7</sup>.

The main objective is to increase the germination success of native species, which in turn will hopefully increase use of native species used in reclamation and restoration projects. Knowing that many projects are proposed years





before initial construction, we can collect and stockpile seed from the very natural areas that will be affected by scheduled projects, before they are disturbed. This assures best genetic appropriateness and local plant adaptability to the area when it comes time for rehabilitation.

Species selection for the germination trials was difficult. Deciding to use many First Nations foods and medicines, I reflected on childhood gathering and consulted with local First Nations elders and wisdom holders. I asked if there were species of particular importance and ones that they continue to harvest and use today.

Grasses are the dominant species in a grassland but because of my interest in cultural importance I knew there had to be an emphasis on the forbs. The forbs are a large and important part of the food and medicine crops harvested by First Nations. Coincidentally, forbs have a considerably larger knowledge gap in seed research with little to nothing found on certain species.

I am grateful to Thompson Rivers University for the opportunity to do research and to further my education. I have high hopes of seeing more native seed used in future restoration and reclamation projects. My intention is that this research will further the practical application of these techniques in restoring ecosystems, while encouraging farmers, backyard gardeners, and anyone who manages land to include native plants in their ecosystems. 🌱

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*Nicholas Peterson is a farmer at Nicola Valley Produce ([www.growinggarlic.ca](http://www.growinggarlic.ca)) with his wife Vileena and five children, specializing in gourmet garlic cultivars. He is a member of the Lower Nicola Indian Band in Merritt, BC, and was elected Councillor in 2013. Nicholas is currently working on his Masters of Environmental Science from Thompson Rivers University, exploring Native Seed Germination for land reclamation and restoration. Nicholas has always had a passion for growing plants and learning more about his natural surroundings. He loves learning and applying the principals taught to him through his First Nations heritage.*

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# Tsawwassen First Nation **FARM SCHOOL**

## Towards a Restorative Model of Food Security

*Photo: Sarah Lang harvesting pole beans. Credit: Jean-Philippe Marquis*

*By Corine Singfield*

In the mist of bustling development in South Delta, a not so little Farm School has been developing on the traditional territory of the Tsawwassen First Nation (TFN). Emerging from a partnership between the Nation and the Institute of Sustainable Food Systems at Kwantlen Polytechnic University, the TFN Farm School is now well into its second season of operation.

The primary mandate of the TFN Farm School is to train a future generation of land stewards who appreciate good food and where it comes from, and understand its role in fostering community and culture. Participants are immersed in a model of food security that is both restorative and holistic while deriving knowledge and cues from the wisdom inherent to the Coast Salish lands we stand on.

Farm School runs three days a week from Thursday to Saturday. Students are exposed to the mentorship of professional farmers, tradespeople, and teachers with specific skillsets and knowledge relating to the successful operation a small farm. Courses range from Market Crop Production to Livestock Management, Beekeeping,



*Richard Grant washes carrots headed for market  
Credit: Jean-Philippe Marquis*

Carpentry & Welding, Business Planning, Soil and Plant Science, and Indigenous Food Systems, etc.

Students are currently busy building a giant chicken coop on wheels, installing solar panels, caring for the orchard,



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building herds and flocks, growing healthy organic veggies for a CSA and a handful of farmer's markets, and planning for native plant hedgerows, medicine gardens, a smokehouse, and pizza oven.

After completing a full growing season of learning as a cohort on the farm, participants are eligible to start their own micro farm business on the farm. Fifteen acres have been set aside for incubator farm plots. Incubator farmers can keep their parcels for up to three years. During that time, they can hone their skills while benefiting from the continued support of farm staff, the use of shared tools, and shared market outlets.

The Farm is much more than a market farm that trains farmers. It is a hub for the community. Youth and elder groups alike frequent the farm. Feasts, events and workshops are hosted regularly. Indigenous values of trade, reciprocity, relationship, and gratitude are observed at the farm and everyone is welcomed.

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A new exciting partnership with Vancouver Native Health's Tu'wusht Project has allowed us to join efforts to facilitate the participation of urban aboriginal people from Vancouver in the TFN Farm School. Tu'wusht brings participants two days a week to spend time on the

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*Photos: (Top) TFN Farm School feast October 2015. (Middle) Ruth Adams giving a blessing at the first TFN Farm School feast. (Above) Mabel Williams transplanting basil in the greenhouse. (Below) Visiting with the pigs. Credit: Jean-Philippe Marquis*

farm, meet new people, and share food and stories. A new social enterprise called Tu'wusht Trading will distribute Indigenous grown, prepared, and harvested foods. The TFN Farm School is proud to be a pilot farm in this great initiative.

Many things are left to be built and accomplished at the farm still and it provides endless learning opportunities and feelings of accomplishment. I love to see the pride of Farm School students when they give tours to newcomers: "there was nothing here and now there is an orchard and a place to sit in the shade. You should have seen it when it was just mud". 🌿

The TFN Farm School will be fully certified organic with BCARA this summer. For more info please go to:

 [www.kpu.ca/tfnfarm](http://www.kpu.ca/tfnfarm)

*Corine Singfield is the Farm Manager and Farm School Coordinator of the TFN Farm School. Corine has been farming for 15 years in different places in BC. She joined the ISFS team at KPU in 2014 after living on her mixed farm in Bella Coola. She loves all parts of farming but sometimes wishes that tractors and irrigation would stop breaking so she could prune tomatoes all day.*



# WIREWORMS



**Is There Hope for Protecting Our Crops?**  
**Know your pest to make the best control decisions.**

*By Todd Kabaluk, Research Biologist*

**T**he wireworm as a crop pest is receiving increased attention. Many farmers who have never had a problem are now reporting infestations. Those who have an infestation report that it is getting worse. Why?

Explanations include the deregistration and disappearance of persistent insecticides that used to provide long lasting control; the increase of cover cropping and crop rotation – practices that enhance biodiversity, but also wireworm habitat; and possibly climate change if it is extending the egg-laying period of wireworm adults (click beetles). While conventional farmers are well served by a national system for pesticide registration, the companion system for organic pest control products is scaled according to the size of the industry. In other words, the registration of new pest control products for organic farmers is infrequent compared to those for conventional farming, so creative approaches to controlling this pest are necessary.

Conventional and organic farming seem to be on slow but intersecting paths. It's been said, "in the future we won't be talking about organic or conventional farming; it will all become good farming practices". This optimistic statement is a testament to the hope that all agricultural practices will become congruent with environmental stewardship, and that products and practices developed for conventional farming will, in time, increasingly apply to organic agriculture and visa versa.

*Photo above: Wireworms are yellow-orange larvae averaging about 1.5 cm in length and are present in the soil year round, with a 3-5 year life cycle. Emergent adults (click beetles) are observed crawling on the surface (and flying on Vancouver Island) from late March – June (BC coastal areas) and late April – June (inland). Credit: Todd Kabaluk*

One currently shared practice is that of integrated pest management (IPM), whose stepwise components consist of tolerating acceptable pest levels, the practice of preventative cultural and mechanical controls, monitoring pest levels, and the application of a control product, usually a biological control for organic growers. It is essential that these components be preceded with understanding the biology of the pest, and every farmer with an existing or potential wireworm problem should understand its biology to make intelligent pest control decisions.

## Wireworms 101

We all need to know what the larvae (wireworms) look like. They are in the soil from 3-5 years, increasing in size as they transition through growth stages (instars), after which they pupate during the summer and turn into adults (click beetles), largely unseen within the soil. At any time in the spring and fall, the soil can contain a mix of small to large wireworms, pupae, and beetles.

Overwintering beetles emerge from the soil the following spring (late March – June near the coast; late April – June further inland) and are active on the surface as they feed, seek mates, and lay eggs. They do not damage crops. If you put a click beetle on its back, it will snap its body to flip itself upright – a diagnostic characteristic.

In BC, beetles are mostly confined to crawling, which limits their dispersal, although a few will fly. Vancouver Island is an exception, as enormous numbers will fly during a few of the warmest days of April and early May. Similarly unusual is that Vancouver Island beetles have been observed active at the surface in late September / early October.

At any time in the soil, wireworms will range in size from tiny, just a few millimeters long for those recently hatched from eggs, to the largest, which reach up to 28 mm long as they approach transition to adult click beetles. Wireworms feed heaviest in the spring, and again in the fall. Mid-summer, they are less active but may feed more heavily if weather is cool and moist, or if the crop is irrigated. What attracts wireworms to plants is the carbon dioxide produced by roots and tubers, and by fruit in contact with the soil surface.

In the soil, wireworms will eat almost any underground part of a plant and even crawl up through the stems of corn. Damage to plants can be divided into three categories: whole plant loss, yield loss, and cosmetic damage. Whole plant loss occurs when seedlings or tender transplants are killed by wireworm feeding. A corn seedling can be killed by a single wireworm eating through the primary root or hypocotyl. A few wireworms can weaken a tender transplant to the point that it cannot take up enough water to survive, or chew through the stem just below the ground. Yield loss occurs when plants are better established, but their harvestable yield is suppressed as it compensates for wireworms feeding on the roots (e.g. corn, cole crops, other younger but established transplants). Cosmetic loss is particularly problematic because while the plant can remain healthy, the feeding damage on the harvestable parts makes them unattractive to consumers (e.g. potato, carrot, beet, asparagus). Increasingly, wireworms are even infesting fruit in contact with the soil e.g. tomato, melon, strawberry, pepper, eggplant).

Let's now look at managing wireworms from the standpoint of IPM, appended with a few other ideas. The first component of IPM asks if existing pest level can be tolerated. If not, this component can be extended by asking if there is another crop that might be grown that can withstand the level of pest infestation e.g. forage, shrub or tree fruits, herbs planted as hardy transplants.

## Mechanical and Cultural Controls

Regarding the practice of cultural/mechanical controls to contain or reduce existing wireworm levels, apply your knowledge of their biology, integrate it with the particular cultivation requirements for your crop, and innovate

a range of solutions. Take potatoes as an example: knowing there is a lull in wireworm feeding activity mid-summer, you can try planting and harvesting early to escape a degree of cosmetic damage caused by wireworm feeding on new tubers (note that potato seed tubers can withstand heavy wireworm feeding).

Drawing on knowledge that wireworms are attracted to carbon dioxide from plant roots, you can try seeding sacrificial rows of wheat to attract wireworms in advance of, or together with planting so the cash or food crop might experience less feeding pressure. This has been shown to work well with newly planted strawberry.

Knowing that beetles are laying eggs in the spring and early summer might warrant periodic light cultivation throughout that period to kill eggs, young larvae, and beetles – between rows if cropped, or throughout the field if planting can be delayed. If you had a winter cover crop, you may want to time tillage in order to disrupt beetle activity and egg laying. Temperature models are being developed that will help predict click beetle activity to optimize the timing of these steps.

While not congruent with good farming practices, repeated cultivation beginning in the spring and continued throughout the summer would be expected to reduce wireworm populations. Continuous cropping i.e. not rotating with a grass, forage, or cereal crop, might reduce beetle egg-laying sites and input of new larvae into the soil. Continuous cropping and associated tillage would kill a certain number of young larvae and eggs, and over time, further reduce wireworm levels. But if you do plan to rotate your crops, there are reports of brown mustard and buckwheat that, grown over one or two seasons, act as a natural fumigant to reduce wireworm populations. Research on the use of this crop for wireworm control is in progress.

Field flooding has been shown to be effective at reducing wireworm populations but is questionable as a sustainable practice as it would also kill the larvae of beneficial ground beetles and other soil insects. Wireworm survival is significantly reduced when flooding is carried out for around 10 days at warmer soil temperatures (10-20°C). Wireworm survival increases at cooler temperatures, with two months of flooding required when soil temperature is around 5°C.

Wireworms are attracted to the carbon dioxide emitted from ripening tomato, melon, strawberry, pepper, and eggplant in contact with the soil surface and will penetrate the fruit, causing cosmetic damage. Using plastic mulch has not provided much relief, as wireworms will punch through the plastic to enter the fruit. Depending on crop value and labour availability, growers could benefit from staking plants to keep fruit off the ground or putting an impenetrable material between fruit and the soil.

Recently, Agriculture and Agri-Food Canada in Prince Edward Island has discovered that light attracts click beetles, and a special trap, the NELTTM developed for



monitoring and control purposes. A desirable attribute of the NELT is that it also attracts the egg-laying females, and the large scale control of females would be expected to reduce the wireworm population. The NELT is being tested in PEI and other locations in Canada. Contact Christine.Noronha@agr.gc.ca for more information.

## Wireworm Monitoring

Can you monitor for wireworms to predict if they will be a problem? You will probably already know if you have a problem or not, but apart from that, for the most part these techniques will indicate if there is a problem, but aren't reliable for indicating that there isn't a problem. Always regard a field planted to grass for more than two years as suspect, especially if you are in an area known to have at least some wireworm problems. There are numerous instructions available online for a variety of wireworm baiting methods that use germinating wheat seed or rolled oats to generate attractant carbon dioxide.

The number of wireworms attracted to the baits can indicate problem levels. If there are 'many' (one wireworm per bait trap would be 'many'), you have a problem. If there are few or none, it is uncertain whether it is dry and/or warm/cold soil or timing that is responsible for the lack of catch. The bottom line is: regard a high catch as a problem, regard a low catch with suspicion. More reliable monitoring techniques are being studied by a number of researchers.

What about monitoring click beetles as representatives of the underlying wireworm levels? This can be quite fuzzy, and although there have been many studies on this, few if any have made the connection in a meaningful way. Part of the reason is that the number of beetles caught will only represent the number of wireworms that transitioned to adults from the oldest larvae the previous year. If there were few older larvae, the catch will be low, but there could still be many younger larvae in the soil. Regardless, click beetle pheromones are available and highly effective in attracting male beetles. Their real value is discussed later.

## Pest control products

The last component of the IPM is the application of a control substance. With the exception of insect parasitic nematodes, any substance claiming pest control needs to be registered with Health Canada and the road to registration is arduous and expensive.

A word about nematodes: a lot of current literature says they are not effective. However, one organic farmer in the Gulf Islands claimed that he controlled wireworms with nematodes by using a particularly virulent species and applying them in high concentration through trickle irrigation at night using cold water – all of the right conditions for the survival of this delicate microorganism. The virulence of this nematode strain was further confirmed in lab tests at Agriculture and Agri-Food Canada in Agassiz.



*Photos: (Top) Wireworms will enter fruit in contact with the ground, even penetrating plastic mulch that is permeable to attractant carbon dioxide produced by the ripening fruit. Click beetles (centre) and wireworms (bottom) infected with the insect pathogenic fungus Metarhizium. The strain specific to wireworms was discovered by Agriculture and Agri-Food Canada and is being developed as a biological insecticide. Credit: Todd Kabaluk*

Because nematodes are expensive, they would only be recommended for a high value crop – in his case, baby organic potatoes. For more details, contact Cable Bay Farm and Agricultural Service ([www.farmtransplants.com](http://www.farmtransplants.com)).

Some other promising products applied with novel techniques are coming to light. Many years of research using the insect fungal pathogen *Metarhizium* are starting to show results. Applied either as a broadcast or with an attractant carbon dioxide-generating granule, the application of *Metarhizium* is showing a significant reduction of wireworm damage to potato. Wireworm control would be further enhanced with new techniques combining Me-

*Continued on page 30...*



# \*\*\* ORGANIC \*\*\* *Wild Crop Opportunities*



*Photo: Wild morels  
Credit: Moss Dance*

## **CAN/GSB 3.71: Wild crop (plante sauvage), plants collected or harvested in their natural habitat. 7.6 applies**

*By Marjorie Harris BSc, IOIA VO, P.Ag.*

Over 150 edible and medicinal plants, berries, and mushrooms are listed in BC bush crafting books as growing in our forests. Forest foraging for mushrooms, berries, and herbal teas is a fairly common activity and yet the opportunities for Certified Organic Wild Crop marketing appears to be under developed within the COABC community.

The Canadian Organic Standards are designed to provide oversight on wild crop harvest management practices in addition to the traditional full scope of organic integrity protection methods. Taking the next step to organic certification could be beneficial for the forest foraging industry by increasing consumer confidence in wild cropping in a number of important areas such as environmental conservation and product purity.

### **✦ SUSTAINABLE HARVESTS**

To ensure wild crop harvests remain sustainable, harvesters must provide written documentation of conservation practices, demonstrating harvesting methods that will:

- preserve the native biodiversity
- minimize disruption of the ecosystem
- avoid habitat erosion
- provide for continued propagation of the crop
- retain diversity in the regional gene pools

As well, a map of the harvest area must be verifiable with identifiable boundaries

Purity of the wild crop is preserved through preventative pre-harvest and post-harvest measures, ensuring that sources of contamination are not compromising the wild crop before and during harvest. This is especially important because plants and mushrooms can hyper-ac-



accumulate heavy metals. Ferns and mushrooms tend to hyper-accumulate arsenic from their environments. Also, mushroom and berry pickers have been warned not to use toxic bug repellent as it has been detected transferring from the pickers skin to the mushrooms.

Post-harvest prevention of co-mingling, clean storage, use of food safe water, food safe handling and packaging, sanitizers, and cleaners must meet the PSL requirements.

As with all certified product, quality assurance of the certified organic wild crop is verified through audit trail documentation records of all input activities, materials used in production, storage, packaging, and changes to the production operation. Record systems will accurately identify the origin of certified products and track the distribution and marketing of those products.

Consumer awareness of the protective measures taken for certified organic wild crops in conservation and sustainability methods, as well as measures taken to ensure the organic integrity and purity of the wild crop may instill greater confidence in the market place for this industry. 🌱

Marjorie Harris BSc, IOIA VO, P.Ag.  
marjorieharris@telus.net



Photo: Rob the Forest Forager preparing for Morel mushroom harvesting. Credit: Marjorie Harris



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# ROOTED IN RELATIONSHIPS

## COMMUNITY & MARKET GARDENING AT SXFN



By Erica Nitchie (P. Ag.) Susan Smith (P. Ag.),  
Ministry of Agriculture

Stswecem'c Xgat'tem (SXFN) is a northern Secwepemc nation First Nations community located in a relatively remote area on the east side of the Fraser River. SXFN has a unique history, as they were originally two separate bands – Dog Creek and Canoe Creek. After severe losses to their populations due to disease in the late 19th century, the two bands eventually joined together and were referred to as the Canoe Creek band. Approximately 250 people currently live in the community; which, on the map, is split between the centers of Dog Creek and Canoe Creek with some rural residences scattered around and in between. Although only 85 km southwest of Williams Lake, a good part of the drive is over a windy and bumpy but very beautiful dirt road overlooking the dry, arid landscape above the Fraser River.

Erica Nitchie, BC Ministry of Agriculture, First Nations Business Development Agrologist, has been working at building relationships with community members and spends much time tapping into interest in growing agricultural activities in remote communities such as the SXFN. At one such brainstorming session in the Fall of 2012, community members expressed an interest in putting some of the community's agricultural land back into



Photos: (Top) Stswecem'c Xgat'tem Community Harvest Day.  
(Above) Petax produce box, Sept 2015. (Facing page) Overview  
of the Stswecem'c Xgat'tem (SXFN) Community/Market Garden.  
Photos: BC Ministry of Agriculture

intensive vegetable production to develop a source of fresh vegetables closer to home. In remote communities, it is not uncommon that vegetables purchased at retail are in less than ideal shape after a long, hot drive back from town.

A short time later, after putting shovels into the ground at various sites, looking at water resources and other advantages and disadvantages regarding agricultural production, a site known as Spring Gulch was identified as feasible for small-scale vegetable production. The four



acre piece is located partway between Dog Creek and Canoe Creek, and was previously a hay field that had been sitting fallow for over a decade. The community had formerly used it to grow large gardens, and the last time there had been intensive production on the site was in about the late 1970s.

The following Spring, with seed funding from the band and the Cariboo Chilcotin Aboriginal Training Employment Centre, a community member with a tractor was hired to disc the ground and get it prepared; by early June, it was planted with potatoes, carrots, beets, turnips, and rutabagas. Since then, things have been going strong and improving each year.

Lessons have also been learned along the way. For instance, last year, the widest variety ever of crops in the short history of the garden was planted with the warm fall weather supporting high yields. By autumn, rows and rows of produce were ready to harvest with Swiss chard, kale, and summer and winter squash particularly noticeable in the field. Because there was less interest within the local community for these vegetables, they were not moving. After some discussion with community members and a quick mass of emails to a few key office buildings in town, a “Box of Vegetables Delivery Blitz” to Williams Lake was carried out to solve the problem.

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The SXFN now operates the garden under the brand, Petak Produce. The name was chosen through meetings facilitated by the Ministry of Agriculture’s Taking Produce to Market program. “Petak” is the Secwepemc word for “potato”, the main crop grown in the garden. The garden operates as both a community and a market garden with produce distributed to elders and sold through the band office to community members. Through the growing season, the market garden employs three community members, and the produce is sold through the South Cariboo, Williams Lake, and Oliver Street Farmers Markets, as well as the nearby Gang Ranch. In the future, they are looking to do regular, bi-weekly deliveries to a central location in town.

Each year, the community hosts a harvest day that includes schools from the Dog Creek and Canoe Creek communities, elders, staff, and the community at large. People take home whatever they harvest, or put it towards what will be stored in one of the two community root cellars for use over the winter. Last year, on harvest day, there was moose meat cooked on a portable grill, as well as soup and salads.

The community of SXFN has worked together to seek out funding from various agencies and groups to support

### Stswecem’c Xgat’tem First Nation

“There are currently 745 registered members in this Secwepemc nation, with a shared vision of becoming an economically and politically self-sustaining community living Secwepemc culture, language and traditions in a healthy and safe environment.

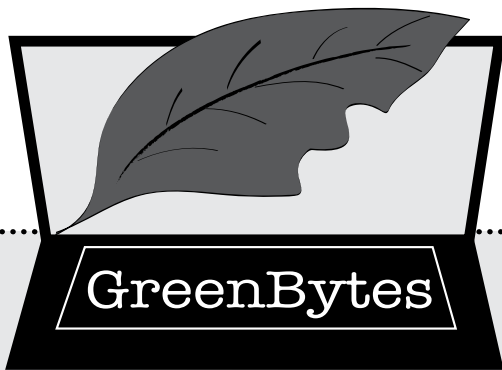
To this end, SXFN is one of four politically allied Secwepemc bands that form the North Shuswap Tribal Council, currently negotiating a modern treaty. There are 17 bands that form the greater Secwepemc nation.

The landscape of the traditional SXFN territory is dramatic: expansive plateaus, deep valleys and stretches of green and arid land ideal for agriculture use. Thispow wow territory has been shared with some of Canada’s largest cattle ranches since the 1800s. The community of Dog Creek sits directly across the Fraser River from the infamous Gang Ranch, which was once the largest ranch in Canada.”

~ From the Stswecem’c Xgat’tem website.

 [canoecreekband.ca](http://canoecreekband.ca)






## BC Food Systems Network Gathering


The 18th annual BC Food Systems Network Gathering will be July 15-17, 2016 in Syilx Territory at the En'owkin Centre near Penticton, BC.

This year the theme of the Gathering is *Reconciling Cultures and Re-connecting Foodscapes*. The Gathering will be an opportunity for various cultures to come together with the Syilx and other Indigenous people to explore together what it means to truly reconcile with the first peoples of the land and water. The gathering will also explore what it means to reconnect with and honour the foodscape: the lands and waters that are so vital to our food systems and community well-being. Find out more:

 [bcfsn.org/annual-gathering](http://bcfsn.org/annual-gathering)

the garden (i.e. wages, training, and some supplies). Each year, the SXFN has taken the lead in organizing, including finding employees, sourcing seed, preparing the land, tending crops, thinning, weeding, irrigating, and harvesting. This is the first year that the garden is being run under an economic development limited partnership, a separate entity from the band administration. The advantages of this lie in more efficient management of the garden, easier tracking of financials, and more timely decisions.

Erica's role has been to fill gaps and provide information and assistance as needed. For example, one year scab reared its ugly head in the potato crop and required some management. Field trips have been organized and have been very successful at building networks, realizing possibilities and sharing information on what works and what doesn't. Local market gardeners have also come out


to do field day workshops. The SXFN is now well into this year's planting. Crops this year will, again, be mainly focused on vegetables that the local community eats, with some others mixed in for variety and for sale via periodic deliveries to town. 

*Susan Smith, P. Ag. is Industry Specialist, Vegetables and Organics with the BC Ministry of Agriculture.*

*Erica Nitchie P.Ag. lives in Williams Lake and works as a First Nations Business Agrologist with the BC Ministry of Agriculture. She works throughout the province, supporting First Nations in developing and strengthening endeavors in food production and agriculture business*

### For More Information

For more information, or if you have ideas for a project, please contact Erica Nitchie, BC Ministry of Agriculture, First Nations Business Development Agrologist. She is located in Williams Lake and can be reached by phone at 250-398-4502, or by email at:

 [erica.nitchie@gov.bc.ca](mailto:erica.nitchie@gov.bc.ca)



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# WUI,CIST CEN,TOL:

## Teaching Them Together



*Credit: T'Sou-ke Nation*

## Growing with the T'Sou-ke Nation at Ladybug Gardens

*By Christine George*

Our T'Sou-ke Nation Ancestors foraged for medicines, seafood, fruits and berries, teas, weaving materials, and more. Over the past 10 years, we have re-introduced foraging and gathering medicinal teas, fruits, berries, and seafood, using our traditional territories - which span from the Metchosin Border all the way to Jordan River and beyond the Malahat to the Cowichan Valley - as a "natural classroom" to teach others.

Today, we forage for many of the same things as we are trying to revive the traditions our Ancestors passed to us. We gather medicinal teas, fruits and berries, seafood, and traditional plants and herbs. On occasion, we gather plants, restore them in our community gardens, and then return them to their natural habitat to flourish.

### Ladybug Gardens

Ladybug Gardens, our community garden and greenhouse project, has become a big part of educating and encouraging a healthy lifestyle since we founded the garden in 2003. We grow fresh affordable foods for our membership, supply medicinal teas, and conduct outings to forage for Traditional Indigenous foods. Through all of these activities, we protect our environment the best

we can, ensuring our foods are safe (plants, wildlife, and seafood).

Ladybug Gardens is the name chosen by the first garden crew workers. There are many ladybugs in our greenhouse area, hence the name. The greenhouse started with garlic and strawberries and now we grow everything from A to Z, including Indigenous fruits we gathered and traditional medicinal teas.

### Sharing Traditions

Our goal is to create awareness amongst the garden members regarding a better, healthy lifestyle through participation and teachings that increase knowledge of their culture and traditional ways. As well, we hope to lessen the severity of illness by introducing healthy foods from our gardens and traditional medicines gathered from our Traditional Territories and restored at our gardens.

Our members are encouraged to learn traditional methods of food production and preparation, from food gathering and growing to processing and storing, in order to create food security. We also invite our neighbours to participate to learn our culture.

Throughout the year we host many gatherings for seafoods, Indigenous foods, and traditional medicines. We have been working very hard to ensure our youth get the best teachings about their culture, heritage and traditional ways of life. Our youth-engaged outings events are called “WUI,CIST CEN,TOL” meaning “teaching them together” in our SENCOTEN language. Youth participate in hikes and gatherings to learn their culture and traditions, enhancing their sense of belonging by way of:

- Outings for plant identification and gatherings for teachings, uses & restorations in their natural habitat
- Food foraging for fruits and seafood and traditional food preparation
- Language practicing on hikes and gatherings
- Youth leadership by way of older youth mentoring the younger ones on outings and hikes
- Cultural practices during outings and hikes by way of prayers and blessings with Elders
- Continued support for our youth through work experience at our gardens in the summer

## Sustainability and Community Go Well Together

As well as leading youth in gathering and growing food, Ladybug Gardens aims to increase the quantity of food production and continue to provide more native plant species to introduce to its members. The farm currently has one employee and a volunteer coordinator, and we hope to create more jobs while encouraging volunteerism with our Youth, young families, Elders, single parents and the less fortunate, bettering their everyday life. All watering at Ladybug Gardens is done by hand and using recycled rainwater as part of our mission to conserve this valuable resource.

We view the T’Sou-ke Nation as a progressive, sustainable community that respects the land and practises giving back to Mother Earth as she provides for us. When we see the smiling faces of the people who receive our product – that is all the reward we need. 🌱

*Christine George, the co-ordinator of Ladybug Gardens, is a member of T’Sou-ke Nation and has been growing food since she was taught by her granny Blanch and mother Eunice when she was small.*



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tarhizium and pheromone to attract and kill adult beetles during rotation years. Targeting both larvae in the soil and beetles on the ground represents a comprehensive approach to wireworm biocontrol and manages the entirety of the population. This research is currently being pursued by Agriculture and Agri-Food Canada.

Beetle-attracting pheromones, previously only available in liquid form, have recently been formulated as granules by Agriculture and Agri-Food Canada. This formulation offers new possibilities for broadcast application to disrupt beetle mating by confusing males in finding females – a technique used to successfully control other insect pests. Pheromones are also being tested for mass trapping click beetles, and the effect of this technique on resulting wireworm populations in the soil should be available in a few years.

Some organic amendments have been shown to protect crops from wireworm damage. Composts are suspected of simply diverting wireworms from the crop due to their high carbon dioxide production. One product, the digestate/frass/poop of black soldier fly larvae, has been shown to be toxic to wireworms, but its inconsistent efficacy in the field may be related in part to its production of carbon dioxide that competes with – and distracts – wireworms from the plant. While other components are repellent, it is unclear how these competing effects can result in plant protection.

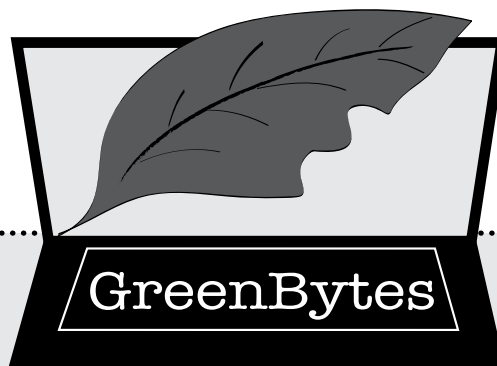
Diatomaceous earth on its own has not been shown to protect crops from wireworm damage, although it has increased efficacy when combined with biological agents targeting other pests. While neem possesses wireworm anti-feedant properties, its registration in Canada is highly unlikely.

Be aware that any substance claiming pest control needs to be registered with Health Canada. Agriculture and Agri-Food Canada's Minor Use Pesticides Programme and the Pesticide Risk Reduction Programme have processes that are ready to serve organic farmers. It requires organization on the part of organic growers to advocate for products to their provincial Minor Use Coordinator (BC Ministry of Agriculture). These products can potentially acquire a provincial registration, or be tested for registration on a national scale by Agriculture and Agri-Food Canada. Grower organization is the key to acquiring registrations for pest control products.

While the development of pest control products is largely carried out by research institutions and supported by grower organizations, farmers can contribute their ingenuity to developing novel control techniques once they understand the biology and life cycle of wireworms. While some fundamental pest control principles apply, the range of techniques can vary as widely as the cultivation methods for the crop being grown and creative style of farmers. 🌱

*Todd Kabaluk is a Research Biologist in Integrated Pest Management with Agriculture and Agri-Food Canada. His areas of expertise include pest monitoring, biological control of field insect pests using microbial insecticides and other bio-based materials, and host-pathogen ecology. He is currently deep in the development of a comprehensive approach for wireworm biocontrol, so stay tuned for further results from his research. For more info on his wireworm research, please reach out by email:*

✉ [Todd.Kabaluk@agr.gc.ca](mailto:Todd.Kabaluk@agr.gc.ca)



## John Navazio Seed Production Workshops & Field Days

With FarmFolk CityFolk

July 19-20: Nanaimo  
July 21: Chilliwack

John Navazio is currently manager of Johnny's Seeds Plant Breeding Program and a former plant breeder at Organic Seed Alliance in Washington State. He is also author of the Organic Seed Grower.

John specializes in organic seed production and has long been a great resource for BC seed growers. We are happy to have John returning to BC to help support the growth of BC's seed industry.

John will cover a number of important seed production topics and take us on a number of walks to observe crops in the field.

Questions? Email Chris:

✉ [chris@farmfolkcityfolk.ca](mailto:chris@farmfolkcityfolk.ca)

## ORDER FORM

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Contact Name: \_\_\_\_\_

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Certification Body & No.: \_\_\_\_\_

Date Ordered: \_\_\_\_\_ Date Required: \_\_\_\_\_

### PST Exemption (for packaging materials)

- ☐ Option 1:  
BCAC Farmer ID #: \_\_\_\_\_ Expiry: \_\_\_\_\_
- ☐ Option 2: PST Number: \_\_\_\_\_
- ☐ Option 3: Certificate of Exemption  
Farmer exemption: 0458FILL.pdf  
Other enterprises exemption: 0490FILL.pdf  
or request the appropriate exemption form from the office.

Item	Units	Unit Price	Quantity Discount	Quantity	Total
Stickers 1" round	1000 pc roll	\$13.50	10 rolls \$120.00		
Stickers 1 1/4" square	1000 pc roll	\$13.50	10 rolls \$120.00		
Twist Ties 10" (15,000 per case)	1000 pc	\$13.00	Full Case-\$165.00		

The packaging materials above are only available to COABC Certified Organic members and are PST exempt for qualifying enterprises (see above).

Have you signed a Consent to use Official Marks Declaration Form (July 2006 revision)? Y/N Are you Certified? Y/N

With which products will you be using the packaging materials? \_\_\_\_\_

Promo Materials: available to everyone	Member \$	Non-member \$	Tax		
Bucket Hats size M or L *	\$15.75	\$15.75	PST taxable		
Ball Caps	\$13.10	\$13.10	PST taxable		
Natural T-shirts (Plain) S * or XXL	\$5.00	\$5.00	PST taxable		
<b>NEW!! COABC T-shirts</b> Designed by Brian MacIsaac Men's size S-XXL & Ladies sizes S-L	\$17.85	\$17.85	PST taxable		
Organic Tree Fruit Management	\$19.95	\$25.95	No PST		
Western Canada Organic Directory	\$6.00	\$6.00	No PST		
Sub-total (before taxes and shipping):					

\*Limited quantities available - please contact the COABC office for availability

GST # 887782431

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Minimum charge of \$10.00 per order for any promo and/or packaging materials

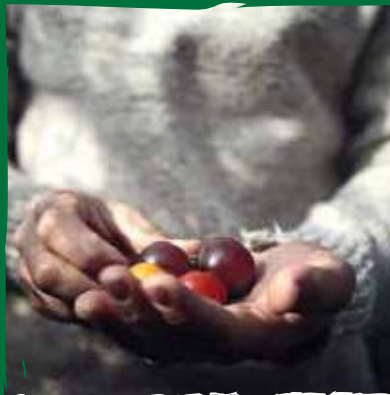
GST will be added to postage amounts

Rates vary and will be calculated at the office

An invoice will be sent with your order. Postage and applicable taxes will be added to your invoice.

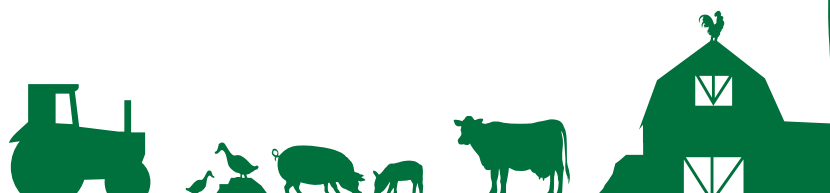
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