

FEBRUARY 2019

SITELINES

Landscape Architecture in British Columbia



Fraser Watershed Initiative

Fraser Watershed Restoration Conference 2019 | Reconciliation with Indigenous Peoples and Mother Earth | A Global Game Changer: What Restoration Means to Canada and the World | Restoring Terrestrial Habitat | Post-fire restoration and the need to address the risk from the next disturbance | The Heart of the Fraser | Protecting the Lower Fraser River | LACF Update

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The Fraser Canyon, Photo: cmh2315fl, Flickr

FRASER WATERSHED Initiative

By Justine Nelson, Coordinator
Fraser Watershed Initiative

The Fraser Watershed Initiative (FWI) is a multi-year effort to restore the Fraser River, its tributaries and the land, wildlife and people in this vast area.

The Fraser River is the longest remaining free-flowing river on the Pacific Coast of the Americas, at just under 1,400 kilometres. The 225,000 square kilometre watershed represents one quarter of British Columbia, including the majority of BC's "heartland" or "interior." It is the most productive salmon producing watershed on the planet, and one of North America's most biologically diverse watersheds. ►

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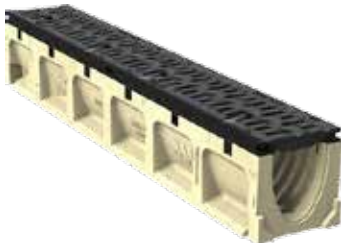
Cover photo: A view of the Fraser River along the Coquihalla Highway. Photo credit: Craig Sheppard, Flickr

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There is an ecological and economic crisis in BC's interior forests, precipitated by the cumulative effects of historic development, including the managed depletion of forest resources known as "fall-down," the dramatic climate change-related impacts of the mountain pine beetle epidemic and recent catastrophic forest wildfires. These and other ecological impacts are exacerbating the stresses on salmon and a myriad of terrestrial and riverine species, such as moose, caribou, and other species at risk, impacting cultural practices, recreational activities, and employment in local communities.

The FWI is working towards creating a \$500 million restoration fund, to initiate the largest restoration project in Canada – Restoring the Fraser Watershed. A multi-year project that will require the involvement of people across sectors and throughout the watershed. The FWI offers a path forward to address identified threats. By bringing together Indigenous & Non-Indigenous decision-makers, local community, conservation and philanthropic leaders in a dialogue around watershed restoration, collaborative government-to-government land-use planning, fire-hardening of local



The endangered woodland caribou in its natural habitat. Photo credit: Bubbag5 Flickr

communities and conservation of critical habitats and cultural treasures.

The Fraser Watershed Restoration Conference 2019 will be held at the Thompson Rivers University Conference Centre in Kamloops, BC on April 24 & 25, 2019. The conference will bring together; Indigenous leaders, industry experts, government representatives, academics, community officials, and

conservationists from British Columbia and across North America, who are interested in advancing watershed restoration and reconciliation with First Nations thought-out the watershed. The conference has been designed with First Nations participation and insight to ensure that traditional knowledge and indigenous rights are integrated into all focus areas. **51**

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Fraser Watershed

RESTORATION CONFERENCE 2019



Image above: Sockeye Salmon in the Adams River, within the Fraser Watershed.
Photo credit: KSI Photography, Flickr

Image below: Cariboo region of British Columbia. Part of the Fraser Watershed.
Photo credit: Tjflex2, Flickr

The Fraser River is the most productive salmon producing watershed on the planet, and one of the most biologically diverse in North America. It covers one quarter of British Columbia, and has been the unceded, untreated home to almost 100 Indigenous Nations for over 12,000 years. Despite the watershed's significance to communities, industry, and cultures, there is an ecological and economic crisis in BC's interior forests. This past summer we saw this crisis surface again in catastrophic wildfires, with smoke from BC making its way across the continent. These fires, along with climate change, development, and other ecological impacts are exacerbating the stresses on salmon and a myriad of terrestrial and riverine species, such as moose, caribou, and other

species at risk, impacting cultural practices, recreational activities, and employment in local communities.

The Fraser Watershed Initiative's **Fraser Watershed Restoration Conference 2019** will be a two-day event at Thompson Rivers University Conference Centre in Kamloops, BC on April 24 & 25, 2019. The conference will bring together, Indigenous leaders, industry experts, government representatives, academics, community officials, and conservationists from British Columbia and across North America, who are interested in advancing watershed restoration and reconciliation with Indigenous Nations throughout the watershed.

Indigenous people have been guardians of the Fraser Watershed for thousands of years,

maintaining ecosystem health for generations. Over the past 150 years, Indigenous people within the Fraser Watershed have been alienated from their territories and their traditional role as guardians. As Bev Sellers, former Councillor and Chief of the Xat'sull First Nation states, "Restoration is reconciliation".

Restoration of land and waterways within the Fraser Watershed, is necessary for reconciliation. Reconciliation, means in part, the honourable resolution of land claims and the return of vast tracks of the Fraser Watershed to the sovereignty of Indigenous governments. The governments of Canada and British Columbia have committed to advancing reconciliation and pursuing government-to-government land use planning as a vehicle to advance these negotiations.



“The Fraser Watershed Initiative has a broad and daring goal, to ‘heal and protect’ the entire Fraser River, its tributaries, and the land, wildlife and people it supports.” – Fin Donnelly, MP for Port Moody-Coquitlam and Chair of the Rivershed Society of BC

Fin Donnelly explains that, “The Fraser Watershed Initiative has a broad and daring goal, to ‘heal and protect’ the entire Fraser River, its tributaries and the land, wildlife and people it supports. We are working toward a future where salmon flourish in rivers, communities have job opportunities that align with their values, and important ecological and cultural spaces are preserved, throughout the Fraser Watershed.”

This will be achieved by bringing together Indigenous & Non-Indigenous decision-makers, local community, and conservation and philanthropic leaders in a dialogue around watershed restoration, collaborative

government-to-government land-use planning, fire-hardening of local communities and conservation of critical habitats and cultural treasures.

The Fraser Watershed Restoration Conference 2019 is the beginning of an exciting watershed wide initiative that will conserve, protect, and restore the Fraser Watershed.

The conference will include presentations and panel discussions envisioning ‘landscape-scale’ watershed restoration projects that offer the potential to:

- Advance Indigenous reconciliation,
- Provide short-term employment relief,
- Develop mid and long term sustainable employment strategies,
- Aid in the recovery of forests and habitats of species at risk, including salmon, steelhead, caribou, etc.
- “Fire harden” at-risk forest communities,

- Contribute to climate change adaptation and mitigation, and
- Enable a future forest industry.
- These presentations will be stepping stones to action, as now is the time to heal and protect the mighty Fraser River and its watersheds.

“We all want a healthy community and environment, but we are at a time where the cumulative impacts of our actions are threatening this desire. We must come together and act to protect these lands for future generations. The Fraser River is our lifeline, as it is for the salmon, eagles, bears and all the other species we share this land with”, says Jacinda Mack from the Secwepemc and Naxalk Nations. **51**

If you are interested in working to restore the Fraser Watershed, registering to attend, or to learning more, visit www.restorationconference2019.com

RECONCILIATION

with Indigenous Peoples and Mother Earth

Bev Sellars, Former Councillor and Chief of the Xat'sull (Soda Creek) First Nation



Image above: Sockeye Salmon in the Adams River, within the Fraser Watershed. Photo credit: KSI Photography, Flickr

Image next page: Tsilhqot'in Nation member fishing. Photo credit: Tsilhqot'in National Government

There are “94 Calls to Action” that the Truth and Reconciliation Commission put forward for all Canadians to help repair the damage done by the horrific residential school system. The schools, however, were only part of the racist government policies that caused

complete chaos in Indigenous communities. It is obvious now that these policies were designed not to help the Indigenous peoples but to remove them from the land and its valuable resources. This alienation from Mother Earth has been the most damaging, not only to Indigenous Peoples, but to all people. *Reconciliation of any kind must first begin with reconciliation with Mother Earth.* Indigenous people traditionally knew that the land and waters supply us with everything we need to survive. If we respect the natural laws of the lands and waters, they will take care of us forever. It is unfortunate that the teachings of Indigenous peoples were not embraced. As a result, we have two competing economies in the Americas.

The Indigenous economy comes from the land. It swims in the waters, and walks and grows on the land. A law that is common among Indigenous Peoples is that our actions today must ensure seven generations ahead have a healthy environment. “All My Relations” at the end of a prayer by Indigenous peoples is like “Amen” to Christians. “All My Relations” includes all the animals, the water, the trees, and as one Elder put it, “even the rocks.” It is vital to understand that everything in nature is alive and connected.

The other economy is the monetary economy brought by the newcomers to the land. They believed that you have to conquer the land. ►



This has been done in a destructive manner that violates the natural laws and pollutes the environment. We cannot make decisions about one place thinking that the footprint covers only that one place. And we must stop giving resource-extraction companies free passes on environmental laws. All governments have to start looking at the global environment and start thinking in terms of the seven generations to come.

It is important to remember that every human being *must* at one time have had this connection to Mother Earth. Everyone needs to look into our history to rediscover their own connection. The distance we have moved away from that connection to the land has allowed us to pollute our environment. Greed morphs into a fatalistic attitude when money is involved. People are blinded to their own destruction and even condition themselves to accept it. If we do not reconcile with Mother Earth, we will destroy ourselves and other life on this planet. Some think that they can act as the Creator and change the natural laws of the land. They are wrong. The destruction has already begun, and from all reports, it looks like we have a short window of opportunity to change direction.

It has been said that there are only two things in life that are certain: death and taxes. I say there are three. Just as others in other parts of the world love their homelands and many refuse to leave, Indigenous Peoples will always remain connected to their home territories. Some may come and go from the territories, and some may abandon their ancestors' beliefs, but it can be guaranteed that there will always be Indigenous People standing up for Mother Earth, reconciliation or not. Our holy lands are here. *If we all work together to reconcile with Mother Earth, it would follow that reconciliation in other forms will follow. That is the only way we will all survive.* ⁵¹



Tree canopy within the Fraser River. Photo credit: BC Forest Service

A GLOBAL GAME CHANGER:

What Restoration Means to Canada and the World

Andrew Wu, Senior Research Analyst, World Resources Institute

Canada's vast area of forested land — 347 million hectares, an area larger than India and the third-largest forest area on Earth — gives it a significant voice in the international restoration community. And while the ambitious global Bonn Challenge already seeks to bring 350 million hectares of degraded land back to health by 2030, Canada's leadership making a significant commitment to landscape restoration would be a game-changer.

The Fraser Watershed Initiative, working to develop a \$500 million landscape restoration fund in Canada, has great synergies with the Bonn Challenge. With 57 existing pledges and supporting regional initiatives, including AFR100 and Initiative 20x20 in Africa and Latin America respectively, it's clear that restoration — transforming degraded land into healthy landscapes — is becoming a global phenomenon. Nations, states and coalitions are mobilizing political and financial capital because they recognize the many benefits restoration can provide, from carbon sequestration to improved

biodiversity and better livelihoods. Canada can bring something special to the table.

Canada's commitment could show the way on large-scale restoration, with important implications for international climate leadership. Natural climate solutions, particularly restoration, can keep enough climate-warming carbon out of the atmosphere to provide about one-third of what's needed to keep global temperature rise below 2 degrees C compared to pre-industrial levels. Canada's Federal Environment Minister Catherine McKenna has already acknowledged the



Stein Valley Blowdown Pass, BC. Photo credit: Peter Nuska, Flickr

carbon sequestration opportunity from forest and landscape restoration. Now, the Canadian government needs to unlock this opportunity with political and economic support through initiatives such as the Fraser Watershed Restoration Fund, shining the spotlight on restoration as a viable path towards a sustainable future.

Done properly, restoration makes environmental, social and economic sense. Restoring lands by reducing forest fuel loads is common in the U.S. West as a means of reducing fire risk and encouraging biodiversity — a practice relevant for Canadian forests ravaged by drought or insect infestations. Given the large role of extractive industries in

Canada's economy, restoration, in the form of mine reclamation, offers promise in re-establishing the health and productivity of these previously forested lands. And with the forest industry directly employing nearly 210,000 people in 2017, including over 12,000 jobs in indigenous communities, there is a clear economic incentive to ensure the forest resource base is sustained, a goal in which restoration plays an important role.

World Resources Institute (WRI) is committed to spurring restoration efforts worldwide. WRI works to improve enabling conditions for restoration, as well as inspire government ambition and commitments for restoration. The organization's research provides the

knowledge and tools needed to implement restoration on the ground, including business models for restoration, monitoring tools, and restoration economics and finance.

The Fraser Watershed Initiative represents a huge opportunity to further the restoration movement in Canada. With WRI's support, the Canadian government can position itself as an international leader on restoration, pledging to the Bonn Challenge and investing in programs such as the Fraser Watershed Restoration Fund. ⁵¹

World Resources Institute is a global environmental thinktank focused on sustainable development. For more information, visit wri.org

RESTORING TERRESTRIAL HABITAT

Sāt`atqwa7 – The River

Kim North Silviculture,
Rivershed Society of BC - Silviculture,
Agriculture and Restoration Specialist

You can make a difference.
Degraded and damaged land
brought back to life by community

Thirteen years ago an abandoned and highly degraded 15 hectare site at the confluence of the Fraser and Seton Rivers was overrun with invasive plant species, compacted roads crisscrossed the site, illegal dumping and mud bogging were the current uses, and the land was not valued by the community as the important cultural and ecological site it could be. ►

Left: Before photo of restoration project.
All images: Kim North

But volunteers from the Sekw'el'was community and the Lillooet Naturalist Society believed we could do better. Our idea was to increase fish and wildlife habitat while also promoting the importance of healthy, functioning habitats and creating a change in the way our community understood and cared for the land. But how? The partners had no experience in ecological restoration; just a strong desire to make a difference.

Today, from those small beginnings, the S'at'atqwa7 site's biodiversity has increased to support many wildlife species, including important species-at-risk. As well, the Sekw'el'was community now owns and operates an award winning native plant nursery and environmental company that provides ecological and ethnobotanical services to government, industry and NGOs. The diverse business now employs over 20 St'at'imc community members in work that continues the long tradition of indigenous land management, while creating scientific opportunities and economic benefits to the community today.

The Fraser Watershed Initiative's aim is to create these same opportunities by empowering communities and providing the resources necessary to undertake restoration and conservation works throughout the Fraser River watershed in a coordinated effort that addresses cumulative impacts that threaten the health of The River. As Chief Michelle Edwards noted, restoration of the land has allowed our community to "honour the past while looking to the future".

How did we get started? We learned that for restoration to be successful, it was essential to have an understanding of the dynamics of the ecosystem we were hoping to restore; therefore, the first two years included research into best practices, mapping and identification of impacts on the land, identification of reference sites and development of restoration prescriptions to guide efforts. Community consultation and environmental education was key in developing a sustainable restoration plan. Networking with numerous organizations, local schools, businesses and individuals allowed a diverse range of options to be explored and ensured "buy-in" from the community. Funding was secured and work began in earnest.

Right: During photo of restoration project.



Bottom: After photo of restoration project.



Over the next five years, restoration works included decommissioning and decompacting of old roads and industrial laydown areas, removal of long buried asphalt, clean-up of garbage and industrial dumping grounds, adding structure and micro-habitats to the site through the use of logs and boulders, removal of invasive plant species and revegetation with native plants. To ensure the genetic integrity of the plants used on the site we started up a native plant nursery that allowed our crews and volunteers to harvest seed and propagate plants locally. From a flat compacted industrial site we have been able to create a functioning diverse habitat that supports numerous wildlife, including several species-at-risk. At the same time our youth have become stewards of the land. They have assisted in invasive plant removal, planting out of native trees, shrubs,

wildflowers and bunchgrasses, and continue the ongoing research and monitoring of the site necessary to make adaptive management decisions that ensure the success of the restoration works into the future. We now host numerous environmental education events and activities that support stewardship efforts on the site and across St'at'imc Territory.

We believe we have made a difference. By intentionally initiating recovery of this ecosystem to ensure its health, integrity, and sustainability, we have enhanced biodiversity and hope our efforts ensure ecosystem resilience in the face of future environmental challenges. The Fraser Watershed Initiative will help us along the path of sustaining the diversity of life on Earth and re-establishing an ecologically healthy relationship between nature and our diverse cultures. **SL**



Post-fire restoration

and the need to address the risk from the next disturbance

Bob Gray, AFE Certified Wildland Fire Ecologist, R.W. Gray Consulting Ltd.

British Columbia has just experienced back to back fire seasons that have no historic precedence. And the likelihood of similar fire seasons due to climate change is very high. Fire seasons are getting longer, which means more area burns and at higher severity. There is a tendency to view recently burned areas, especially areas where most of the trees are killed, as a lower priority for management. This is not always the case. For a landscape that burned in a crown fire in the back end of a remote watershed, the need to apply post-fire management to that impacted area is likely low. However, if the area that just burned is close to a community or other high societal value, the need to intervene is very high

Disturbances such as wildfire are often closely linked to other disturbances as well as subsequent wildfires. Some disturbances such as insect epidemics, or drought, create conditions for large-scale, high severity fire. Large areas of dead and dying trees provide the fuel that gives energy to the mega-fires we've been experiencing over the last two decades. Post-fire, numerous disturbances can impact the likelihood of future fires as well as the pace and scale of ecosystem and societal recovery. Flood, unfortunately,

follows fire. Sites that have experienced high severity fire often develop a layer in the soil that is impermeable to moisture percolation. The result, in the event the site is impacted by a summer convective storm or heavy spring rain, is mass failure and erosion. Areas of mixed- and high-severity fire also become home to large populations of insects that are attracted to burned areas. In many cases these insects, mostly bark beetles, can kill off large numbers of trees that survived the fire. A third disturbance is timber salvage. This is the process of harvesting trees impacted by the wildfire before they lose their value – which is typically a narrow window of two years.

All of the post-wildfire disturbances listed above generate forest fuels; dead wood on the forest floor that can subsequently support a future fire. It was long thought that it would take years and possibly decades for conditions to develop to support a subsequent fire or reburn. Recently, fire researchers and managers have found that is not the case. Areas of Kootenay National Park that had a historical fire return interval of >170 years (the average interval between fires burning the same area), are now experiencing fire return intervals of <20 years. Climate change



Top left: An area that has burned three times in the last two decades – historically it only burned on average every 150 years.

Images on right: Post-wildfire erosion and sedimentation.

All images: Bob Gray

is certainly a strong driver of this phenomenon but so too is available fuel.

Accepting that wildfires will become more frequent with changing climate, our post-wildfire management has to focus on aggressive fuel management — especially in areas of high societal and ecological value. If we employ timber salvage the focus needs to be on removing as much of the dead wood — regardless of economic viability — as is possible. Salvage should also focus on strategies to disrupt post-wildfire insect infestations. The long-term goal is to create conditions where we minimize the likelihood and potential severity of the subsequent disturbances — which are sure to come. Unfortunately, this is the goal that should have been pursued across large areas of BC before the wildfires. **SL**

The Heart of the Fraser: a Key Salmon and Sturgeon Habitat Under Threat of Development

Dr. Marvin Rosenau, B.Sc., M.Sc, D.Phil. BCIT Rivers Institute



Every spring hundreds of millions of young salmon make their way down the Fraser River, through the Fraser Valley, and on downstream to the Pacific Ocean to further their rearing in marine environments before they come back as adults. Indeed, in some years the numbers of these small migratory fish in the lower Fraser River exceeds one billion juveniles. Many of these young salmon stop and rear for a protracted period-of-time, between Hope and Mission, and use the rearing habitats in this area to grow larger in order to enhance their survival rates once they get to sea (Figure 1). Many other species of organisms—fish and non-fish—also use this ecologically-rich environment as a home during the spring-time of the year for rearing, nesting,

reproducing and other basic aspects of life. The area extent of this key habitat fluctuates from year-to-year depending on the volume of the spring freshet and this is due to the inter-annual variation of snow volume falling during the previous winter and the rate of melting.

This part of the Fraser River, from Mission to Hope, is often referred to as the “gravel reach” by river scientists but the term “Heart of the Fraser” is a name now used by advocates who want to protect its unique ecosystem attributes (Figure 2). Around the world, large-river floodplain areas such as found in the Heart of the Fraser have become an increasingly-rare ecosystem type as humans continue to develop around our waterways

throughout our planet, and we are fortunate to have what still remains here in the Lower Mainland of British Columbia.

During the spring-time of the year the Fraser River is in flood due to snowpack-melting, much of which occurs in the interior of the province where the greatest portion of this watershed resides. The large freshet volume of water normally increases by about ten times over that of winter flows. This spring and early summer flooding-discharge routinely and normally spills over its banks and across the landscape at this time of year.

Historically these flooded areas of the lower Fraser River comprised vast wetlands, from





valley-bottom-to-valley-bottom, from Hope and on downstream to the Salish Sea. Unfortunately, many of these historically flooded areas have been lost due to human development since the period of intensive European settlement starting in the late 1800's. It has been estimated that greater than 90% is no longer available to natural ecosystems due to diking, draining and armouring of the large islands, wetlands and channels within the Heart of the Fraser. Nevertheless, spring overbank-flooding still occurs on many of the remaining-undiked large islands in the Fraser Valley portion of the Fraser River watershed and these features continue as critical habitats for many species including some that are salmon, but the remnants are now also under threat.

Currently, there remains around five large island groups, between Hope and Mission, that still function as ecological floodplains. With the recent sale of these properties over the last several years, from forestry interests to agricultural concerns, many of these habitats are now also under threat due to recent tree removal. The intent of this activity is to accelerate farming development on these floodplain habitats. Three island areas that are now rapidly being cleared include Strawberry, Carey and Herrling islands (Figures 2, 3, 4). This activity is now being undertaken even though there is a clear understanding of the importance of the islands and its major and minor channels, as well as its riparian areas for salmon spawning and rearing. Note that the large back-channels on the lee-ward side of these islands comprise

critical White Sturgeon spawning and/or rearing habitats as well.

A major issue that has recently arisen in regards to these islands is that there are now landowner proposals, and submitted applications for approval, to put bridges to both Carey and Herrling islands. These bridges are very costly to the property owners and, if approved, will pave the way for further development on the islands. This would include diking, ditching, draining and other infrastructure improvements, in order to recover such investments, and which are incompatible with floodplain ecosystem functioning. Such development would spell the end of this exceptional environmental attribute and a major aspect of the Fraser River salmon ecosystem and productivity. Over the last year, both the provincial and federal governments have been extensively lobbied, by advocacy groups to not allow this development to happen. We are awaiting answers.

Figure 2 The Heart of the Fraser comprises the area outside (on the river side) of the dikes between Hope and Mission as outlined by the red perimeter line in this figure. Map includes the locations of Strawberry, Carey and Herrling islands within the Heart of the Fraser, formerly used to grow cottonwood pulpwood, and now recently sold to agricultural interests. These are now being extensively cleared for farming (Figures 3, 4). Dr. Marvin Rosenau

Recently there has been a move afoot to approach the landowners to see if they will sell these properties. Because of the cost and the environmental issues, both

Figure 3 (Bottom facing page) The Heart of the Fraser comprises the area outside (on the river side) of the dikes between Hope and Mission as outlined by the red perimeter line in this figure. Map includes the locations of Strawberry, Carey and Herrling islands within the Heart of the Fraser, formerly used to grow cottonwood pulpwood, and now recently sold to agricultural interests. These are now being extensively cleared for farming (Figures 3, 4).

Figure 3 (image top left) Extraordinary damage to the floodplain ecosystem on Strawberry Island at Nicomen Slough, Mission. This island has recently been cleared of its vegetation, the critical riparian (stream edge) trees have been destroyed, and lower-water cross-island channels filled in.

Figure 4 (image top right) Clearing of Herrling Island with the subsequent destruction of freshet wetlands and riparian areas. The proposed bridge-crossing location can be seen in the bottom center of this figure.

All images: Dr. Marvin Rosenau

the senior and federal governments have been approached to see if they will contribute, along with private interests. There has been an attempt to involve First Nations in these efforts with the expectation that the lands will be co-managed by the local aboriginal groups should they be secured for conservation.

At this point, we are now in a wait-and-see mode in order to determine if these critical landscapes will be protected for future generations. Should the landscapes not be protected, it will, ultimately comprise a catastrophic impact to the Fraser River watershed from which it will not recover. **SL**

We need to act now.
Marvin L. Rosenau
January 2019

Protecting the Lower Fraser River — PACIFIC SALMON FOUNDATION

Public concern in British Columbia has continued to grow for struggling Southern Resident Orcas and their need for more Chinook salmon — their primary food source. The issue was recently compounded when the Committee on the Status of Endangered Wildlife in Canada released a report revealing that almost half of Chinook populations in Southern B.C. are at risk.

In British Columbia, habitat in the Fraser River is absolutely vital to Chinook and other species of salmon. Indeed, a study examining feces from southern residents found that of the Chinook sampled in their diet, 80 – 90% came from the Fraser River. We know that protection and restoration of habitat and vegetation, particularly in the lower Fraser is critical, because young Chinook use the habitat en route to the Strait of Georgia. That's why, Chinook and lower Fraser habitat have been a focus of the Pacific Salmon Foundation since inception with \$11 million granted to 530 habitat projects with a total value of \$41.5 million after community leveraging.

Keeping habitat in the lower Fraser healthy for salmon can be challenging, because it also happens to be the most densely populated area of British Columbia. Fortunately, there is a network of stewards supported by PSF donors. Here are some of their stories:

WHO: Kanaka Education and Environmental Partnership Society (K.E.E.P.S)

WHERE: Kanaka Creek/Maple Ridge

WHAT: Research has shown that Harrison Chinook are a favoured stock of Southern Resident Orcas. "We know that Harrison Chinook use lower Kanaka habitat to feed on their way to the Fraser, because we work with students and volunteers to do fry surveys every Spring. We do a lot of invasive species removals and we're working with Watershed



Image top: Project partners conduct the first Winter seine to assess winter fish populations. Photo credit: FVWC-NCox

Image middle: A teacher and students release salmon fry raised in their classroom.

Image right: Students conduct fry surveys. Photo credit: Ross Davies/K.E.E.P.S

Watch to allow flows into the Katzie Slough so oceanbound Chinook can access the area for resting and feeding.” Ross Davies, Program Interpreter, K.E.E.P.S

WHO: Fraser Valley Watershed Coalition (F.V.W.C.)

WHERE: Fraser River Floodplain/ District of Hope

WHAT: Getting bigger faster can help young Chinook survive when they reach the ocean. But, extensive development along the Fraser has greatly limited off-channel habitat where juveniles can pull over and fuel up on their journey downstream. “With our partners, we’re converting an old gravel pit into functional salmon habitat — an area roughly the size of 91 hockey rinks. Currently, Chinook that enter the pit are becoming trapped when Fraser River flows recede, with many dying from lack of water, reduced oxygen and food availability, and from predators like invasive carp which are also found in the pit. This project will create a permanent connection that will let Chinook freely move in and out of the pit and allow them to “bulk up” on insects that fall from trees and shrubs.” Natasha Cox, Program Director, FVWC

WHO: Stave Valley Salmonid Enhancement Society

WHERE: Silverdale Creek Wetlands/Mission

WHAT: Farming practices in the Silverdale Creek Wetlands have stripped the habitat of its natural diversity and function by flattening the landscape, planting canary grass to support cattle, and stocking ponds with invasive large mouth bass for fishing. “These bass gobble up anything that swims by, including juvenile salmon. Over the past decade, our volunteers have worked closely with the Fraser Valley Watershed Coalition to create stream channels for salmon, plant different types of vegetation and allow the system to flood and drain like it did 10,000 years ago. Now the native fish can migrate before the system drains, and the trapped bass are getting eaten by birds. So many Fraser wetlands have been filled in to create industrial parks, but this is a 112 acre area that’s being restored for salmon.” Jim Taylor, volunteer and founder, SVSES SL



LANDSCAPE ARCHITECTURE CANADA FOUNDATION
FONDATION D'ARCHITECTURE DE PAYSAGE DU CANADA

LACF

Update

The Landscape Architecture Canada Foundation (LACF) celebrated its 30th Birthday in 2018. It is a national charitable organization established in 1988 by members of the Canadian Society of Landscape Architects (CSLA). Back then, it was a big idea for a very small profession, but with some hard work, dedicated people and generous donations over the years, the idea grew and is growing still. In just over three decades, Landscape Architects and like-minded friends donated over a million dollars to the LACF with every donated dollar being put to use to advance the core values of the profession of landscape architecture. It’s a legacy to be proud of.

LACF’s vision is for universally rich, resilient and sustainable landscapes for the betterment of humankind. LACF’s mission is to promote and advance the ideals of the profession of Landscape Architecture through research, communication and scholarship as a means to make positive and legacy contributions to our natural and built environments and to sustainable and thriving communities. To realise this mission, LACF has developed an exciting core program of activities and established win-win partnerships with like-minded people and organisations that are helping us build a stronger Foundation. Thanks to our fundraising champions and our

supporters, LACF continues to invest in: ground-breaking research that builds knowledge; our scholars and future visionaries of the profession and communication initiatives that teach and inspire.

LACF is the leading source of scholarships for landscape architecture students in Canada and our two-tiered scholarship program is growing strong. Our scholarships recognize superior academic performance, promote leadership, and encourage original and creative design work and research. LACF scholarships and bursaries support students with financial awards so that they can focus on developing their unique potential because we want to attract the brightest and best to our Canadian LA programs. LACF distributed \$14,500.00 in scholarships to Canadian students in 2018 and aims to increase this amount to \$25,000.00 per year from fully endowed scholarship funds for both our national and regional awards. Investing in our LA students now is an investment in our shared future.

Last July, the LACF board voted to establish a new \$10,000 national scholarship named in honour of Frederick Gage Todd, to be awarded for the first time in 2020. This scholarship competition, open to Canadian LA students, will provide an extra-significant recognition based upon merit. ►

Scholarships and Bursaries

National

LACF Frederick Gage Todd Scholarship - \$10,000

British Columbia

LACF | UBC Scholarship in Landscape Architecture - \$1,500.00

BCSLA Robillard | LACF Scholarship in Landscape Architecture - \$1,000.00

Alberta

LACF Andre Schwabenbauer | NAIT - \$1,000.00

LACF | Calgary - \$1,000.00

Saskatchewan

SALA | LACF Academic Award - \$1,500.00

Manitoba

LACF Andre Schwabenbauer | University of Manitoba MLA - \$1,000.00

Ontario

LACF | Toronto MLA - \$1,000.00

LACF | Guelph MLA - \$1,000.00

LACF | Guelph BLA - \$1,000.00

LACF IFAPC Alain Lamontagne Scholarship in Landscape Architecture - \$1,000.00

Quebec

LACFIFAPC Bourse d'étude du 50e anniversaire de l'AAPQ - \$1,000.00

Atlantic Provinces

Peter Klynstra Memorial Scholarship - \$1,000.00

Atlantic Landscape | LACF | Dalhousie Scholarship - \$1,000.00

LACF provides funding for research initiatives that subscribe to the principals of the Canadian Landscape Charter and that



Previous page: Colonization by mosses and weathering by the elements, Willamette Falls Oregon Photo credit: Emilia Hurd and Julia Smachylo

Above: 2017 LACF | UBC Scholarship in Landscape Architecture – Taylor Boisjoli receives award from Jane Durante

2016 LACF | UBC Scholarship in Landscape Architecture – Peter Kreuk presents the inaugural award to Caylee Dyck Photo credit: LACF

Images Courtesy LACF



correspond with the vision and mission of the Foundation. Through the increasingly popular Annual Grants & Bursary programs as well as through Special Project funding, LACF has invested close to \$500,000 in research initiatives over the last 30 years, many of them with a unique Canadian focus. Expanding research into areas that explore the fundamental ideals expressed through the profession of landscape architecture and by communicating these results widely, LACF aims to increase the capacity of landscape architects and others, to create a better and more resilient future for all.

Landscape Architects concur that awareness and understanding of the profession by the general public and other design professionals is an ongoing challenge. To meet this challenge, LACF funds innovative communication initiatives that promote and advance the understanding of profession

and the values it upholds. Projects may document the past or reflect the expanding role landscapes play in providing social, cultural, ecological and economic benefits to society. An important aim is increase awareness and support projects that communicate what landscape architects as designers, policy makers, educators, practitioners, activists and ultimately, stewards of the land, do and why they do it.

The BCSLA and CSLA communities have been a cornerstone of support for the many projects funded by LACF over its 30-year history. Make an annual contribution of \$100 or more to become an LACF member and join the growing number of people who share in LACF's vision for universally rich, resilient and sustainable landscapes for the betterment of humankind.

Visit the LACF website <https://lacf.ca> for more information on our programs. **51**

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