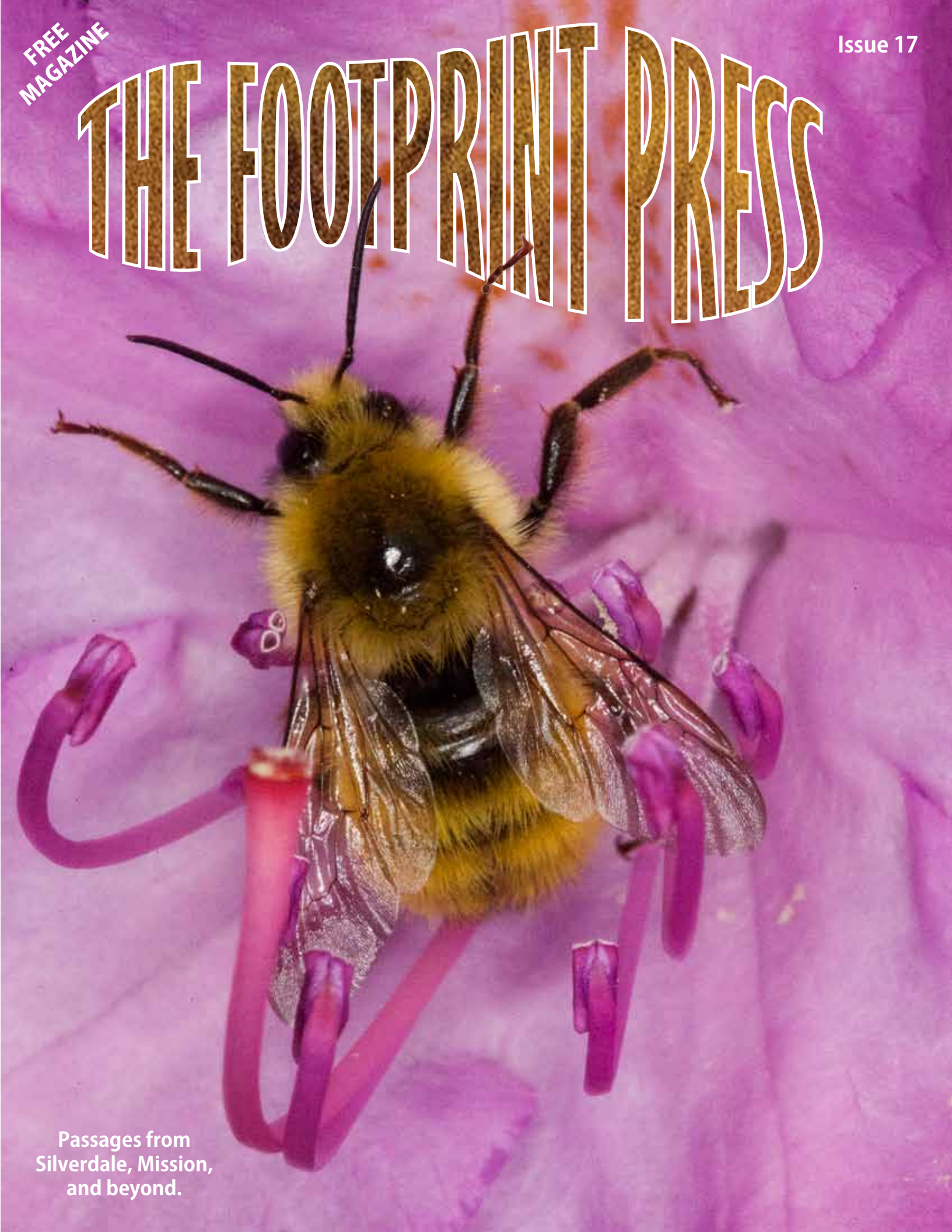
FREE MAGAZINE

Issue 17

THE FOOTPRINT PRESS



Passages from Silverdale, Mission, and beyond.

Message from the Editorial Committee

Fire, Water, Air and Earth are the building blocks of nature. Each element is essential for our existence, but each also has great destructive power, especially when the natural system is out of balance.

Water is the cleanser and healer. It rejuvenates and nourishes the bodies of all life on the planet. Water cleanses the landscape every year in the form of the spring freshet, and its rivers and streams allow for a massive influx of nutrients in the bodies of wild salmon.

Fire is the creator and destroyer. An essential part of natural systems, fire spreads biodiversity and restores balance to disturbed areas. Fire purifies and rejuvenates the landscape, and is necessary for the fertility of entire ecosystems.

However when unleashed, fire and water can be so powerful that there is often little we can do to prevent them from consuming everything in their path. And as the earth warms, fire and water are increasingly becoming forces of nature that cannot be denied.

Scientists tell us that global temperature records are being broken daily.
This change of climate has come on so fast, that numerous species and ecosystems cannot adapt to it. Entire forests have been ravaged by heat related pestilence. The spring snowmelt is coming earlier and earlier, which devastates wild salmon battling lethal river temperatures. And as the salmon go, so too will the eagles, the bears, the orcas, and all who depend on them. Even the timing of human-based agricultural systems has been altered, and populations of bees and other pollinators, necessary for many crops, are plummeting.

We must learn the lessons fire and water are teaching us. Climate impacts have begun. It is time to face reality.

Responding to climate change realities cannot mean doubling down on infrastructure such as bitumen carrying pipelines. It cannot mean the business-as-usual destruction of climate-regulating forests, or turning productive salmon rivers into highways to service destructive industrial activities.

What we need is a new, Earth-friendly economy, in which the natural world and human beings can thrive together- an economy in which mass over-consumption and materialism are replaced with stewardship and respect for the land, and science and wisdom, not profit, leads the way. What we build from the receding floodwaters and the ashes of past mistakes is up to us.

Fire photo courtesy Mike Stefiuk KEEPS.

Cover photo- Bumblebee, Bruce Klassen, Silverdale.

TROUBLE ON THE FRASER RIVER AT MISSION: IN THE WATER AND ON LAND

The lower Fraser River, from Hope to the Strait of Georgia (Salish Sea), comprises one of the most extra-ordinary North Temperate freshwater stream ecosystems in the world. However, it is under increasing threat by human activities and, unfortunately, the political and development communities, the mainstream media, and the agencies that have oversight of this landscape facilitate this.

The lower Fraser River can be divided into two major sections: the upstream gravel reach starting at Hope, and the downstream sand reach starting at Mission (Figure 1). Both have distinctive characteristics in regards to their ecosystem values and nuances, the dominant ones being the differences in substrate composition (upstream—gravel vs. downstream—sand) and morphology (upstream—steep gradient and wandering, multiple channels vs. downstream—shallow gradient and one or two channels). It is these complex physical features, and interplay with the great flows and their variation, that have facilitated the evolution of such incredible biodiversity in the lower Fraser River.

THE UPSTREAM GRAVEL REACH

The gravel reach's extraordinariness is characterized by the fact that more species of freshwater fish rear, spawn, migrate through, or undergo all three life histories, in this habitat, than any other freshwater ecosystem in British Columbia. The gravel reach is also spawning habitat for one of western North America's largest salmon populations. Every two years Pink Salmon, numbering up-to-and-over 10 million fish, spawn here. Also, its large side channels are the primary spawning habitats of the White Sturgeon (Figure 2) population that lives between Hope and the marine environment, as well as hundreds of thousands of Chum Salmon. Most of these critical side channels were isolated from the main flows in the early part of the 20th century and are still continually under threat due to impacts associated with riparian (the area along the water's edge) development and gravel mining.

The gravel reach also provides upstream passageway for millions of adult salmon each year, and a downstream highway, and rearing habitat, for over a billion juveniles heading out to sea each spring. In particular, this rearing habitat includes a year-round home for high densities of juvenile Chinook Salmon, which love to live along the large gravel-bar habitats that this stretch of the river provides. Many other game and non-game species also use these habitats year-round.

We also must not forget that fish are not the only organisms that live in-and-along the banks of the gravel reach. There is a myriad of other vertebrate and invertebrate animals and exceptional plant communities as well, many of them classified as species at risk. Indeed, prior to European settlement, the Mission area and the eastern Fraser Valley was the home, and breadbasket, for numerous First Nations peoples, and this was largely based on the biological richness of the lower Fraser River and its associated floodplain. In short, the ecosystem attributes for this part of the Fraser River were, and still are, exceptional.

THE DOWNSTREAM SAND REACH

The downstream sand reach, from just upstream of Mission to New Westminster (Figure 1), is also remarkable in regards to its ecosystem attributes. Many fish-species rear here as well as countless other plants and animals that are adapted to large-river conditions and the adjacent floodplain.

It is probably safe to say, unfortunately, that the damage to the ecosystem values by humans, post-European settlement, have probably been far greater in the sand reach than in the gravel reach. This is especially so when one considers that the sand reach goes all the way downstream to large centers of human populations and its longer history of modern development. These communities have extensively drained, diked, cleared and hardened the banks of this part of the stream. Many of these remaining ecological attributes continue to be under extreme pressure from development.

Nevertheless, for the Mission area sand reach, there remain some outstanding values. As an example, at the bend of the Fraser River, just above Mission, there is a large reverse current that is known as the Hatzic Eddy (Figure 1). This is a critical living environment for White Sturgeon (Acipenser transmontanus) (Figure 2) and probably has more Sturgeon of any species and any population anywhere across Canada. Some of these lower Fraser River fish are known to reach greater than 13 feet and can be over 130 years of age, true underwater Jurassic Park dinosaur-like monsters.

Current estimates by the Fraser River Sturgeon Conservation Society suggest that there are about 45,000 adult and sub-adult fish in the lower river. However, multiple lines of evidence show a significant decline in recruitment of young fish into the population, suggesting an impending and profound collapse of this species in the lower Fraser River should these population trends continue (Figure 3). It is not known exactly why lower Fraser River White Sturgeon appears headed for a crash, but there are a number of theories, all of them hotly contested. Habitat changes to the lower Fraser River may be implicated in this observation of declining numbers of juvenile White Sturgeon.

THE MISSION AREA AND ITS FRASER RIVER HABITATS

Within the Mission area there are some notable issues that have unfolded, or are in the process of doing so, that have negative implications to the ecological health of the lower Fraser River.

Perhaps the most striking, and longstanding, has been the extreme harm to the riparian and instream habitats at the confluence of the Fraser River and the Hatzic Slough (Figure 4). This area has been damaged extensively as a result of the loss of the shoreline vegetation, as well as the disruption of the watercourse for log movement (i.e., dredging, tug traffic).

Of note, in the early 1990's the Hatzic Slough was assessed for White Sturgeon utilization, both up-to and upstream of the pump station. It was determined that some of the highest densities of juvenile White Sturgeon in the lower Fraser River were found in the outer Hatzic Slough during the spring freshet. The activities on this landscape represent a level of violence to the environment that is third world in its nature. There are further proposals to affect this location even more egregiously by constructing a barging facility to transport aggregate. The damage to the White Sturgeon ecosystem would involve dredging the outer perimeter of this sensitive habitat in order to get the gravel on to the barges.

Another issue at Mission relates to the increasing erosion along the banks of the main-stem Fraser River and its islands in the Mission and Abbotsford/Matsqui areas. In recent years it has been noted that a number of "erosion cells" have been forming along the left bank of the Fraser River on the Abbotsford/Matsqui side of the stream (Figure 5). The local governments view these as potentially negatively affecting the flood dykes via bank losses. The action by the local government has been to riprap the stream edge causing damage to ecologically sensitive and important habitats (Figure 5). The benefits to protecting the dike this way are, however, questionable.

In addition to the damage caused by bank hardening via rip rapping, concerns are also made regarding the apparent refusal by the agencies to require a riparian buffer strip of vegetation in the stream-side area along these eroding banks on the Fraser River, both to protect the structural and ecological integrity of the shoreline (Figure 5). Intact vegetation along streams, such as the lower Fraser River, helps mitigate erosion rates and provides critical habitat for some of the most bio-diverse landscapes in our province.

While the erosion on the south bank at the Matsqui part of the stream has been of concern to local Abbotsford government, what seems to have gone unnoticed by the agencies (but not the locals) is the seemingly rapid increase in bank erosion at other locations in the nearby areas, and downstream of Hatzic Eddy. Over the last 10 years Ridgedale Bar, a formerly large lens of sand on the south bank of the river, and immediately around the corner of the stream from Figure 5, has largely disappeared. This bar had been stable for as long as the author can remember (~50 years), except until recently when it largely disappeared over the last 10 years. Further observations by others in the area suggest that the bank under the Abbotsford-Mission highway bridge (on the Abbotsford side) has eroded severely, the Fraser Pacific property on the Mission side is disappearing, and the main-flow side of Crescent Island are also experiencing exacerbated bank-erosion rates.

The question arises as to why these "erosion cells" in Abbotsford/Matsqui, and bank losses to other nearby locations, are now occurring? Why have there been accelerated rates on the south bank and north bank, of the Fraser River materializing within this general area only within the last decade or so?

Sturgeon Paddle - **Peter Gong**

A comparison of the UBC Geography series of air-photo maps for this sub-reach of the Fraser River (see link at end of article), from 1928 to 1999, show that the "erosion cell" features only show up after the 1991 aerial pictures were taken. The first time that they can be seen are on the 1999 maps. The onset of these features is coincidental with the large-scale aggregate mining that is now occurring on Sumas Mountain. Much of this aggregate material is transported by tugboat and barge.

Large vessel traffic on streams throughout the world are known to often exacerbate erosion of stream banks via wake and waves. Personal observations by the author of this article are such that, at times, I have seen large waves created by these tugboats traveling to-and-from the Sumas Mountain quarries that can apparently exceed a meter in height. The likely effect by gravel-tug traffic is this seemingly accelerated erosion of banks in the Mission area. Even disregarding the environmental effects, the cost of rip-rapping the lower Fraser River banks to the taxpayer is enormous, and in the millions. This issue is environmentally and, from a dyke-maintenance and flood-protection perspective, important enough that boat-traffic erosion needs to be investigated.

Figure 1.

The lower Fraser River showing locations of both the sand and gravel reaches and the transition between the two at Mission, BC. Yellow oval denotes critical habitat for White Sturgeon in the lower Fraser River comprising, possibly, the most-dense numbers of any population or any species of sturgeon in all of Canada.

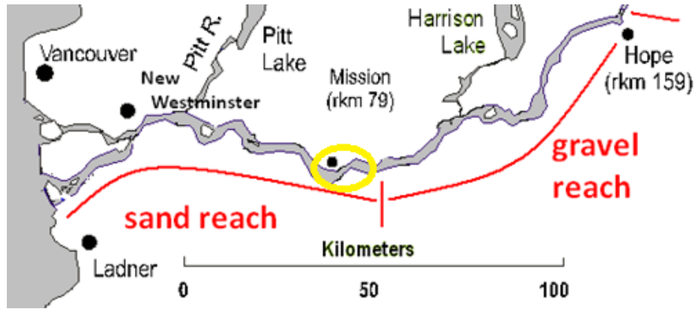
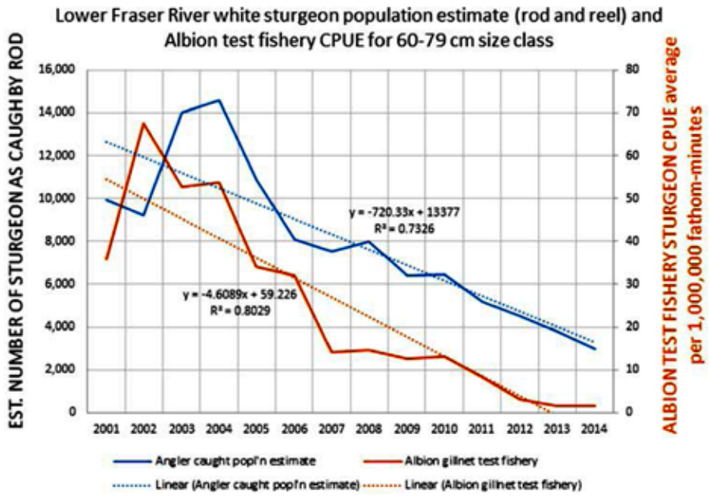


Figure 2.

A photograph of an echo-sounder echogram taken in the winter at Hatzic Eddy showing the high density of White Sturgeon and the importance of this habitat and its critical nature for this species in the lower Fraser River.

Figure 3.

Decline in catch rates and numbers of juvenile White Sturgeon in the lower Fraser River.



FRASER POLITICS

In an even more egregious tone, there is now a call by the mayor of the local government of Mission to turn the Fraser River into an industrial highway, and this would be accomplished by wholesale channelization of the stream to Hope. The mayor's position is to take the river, and essentially strip-mine it, in order to facilitate industrial activity.

In a recent Special Council meeting, open to the public, these positions were made known and were recorded in a CAUSS summary, as follows:

Mayor Hawes argued that even though DFO has stated that removal of gravel will not reduce the risk of flooding, re-channeling the river would improve the safety of logging ventures upstream. He stated that they need to re-channel the river, and side cast the aggregate, to cause the river to "self scour". He states that they would like wing dams to move the current down river, which he also says is good for fish. He claims the river is "not controlled" and is "attacking the dikes". Therefore "putting the channel back into the river is important for "safety". Some counselors even stated that an increase in barge traffic in the river would reduce logging truck traffic and therefore would be a "green" enterprise!

Assuming the above quotes are correct, the statements by the Council and Hawes have no known environmental, hydraulic, or economic merit, based on the large body of information that has been accumulated over the last several decades. It is disturbing that such gross misinformation and environmentally destructive scenarios that have no basis in science are being disseminated by our local governments and politicians.

Nevertheless, maybe somewhere, somehow, in the local community and at higher levels of government, common sense will prevail, and these destructive proposals can be seen for what they are, and people will rally around the protection and restoration of this amazing watercourse, the lower Fraser River.

Dr. Marvin L. Rosenau, B.Sc., M.Sc, D.Phil.
Instructor in the Fish Wildlife and Recreation Program (FWR) at the British Columbia Institute of Technology (BCIT).

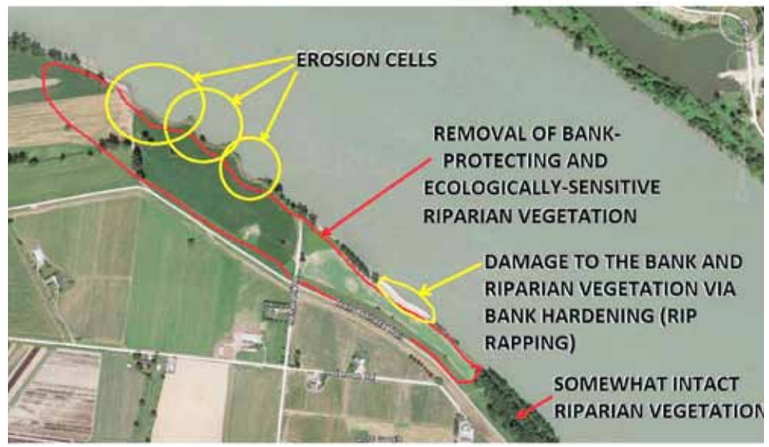
UBC Geography series of air-photo maps
http://ibis.geog.ubc.ca/fraserriver/reports/morphatlas_all.pdf

Figure 4.

Extreme damage to the instream and riparian habitats of outer Hatzic Slough at its confluence with the Fraser River (outlined) due to continuing industrial activities. In the early 1990's the outer Hatzic Slough was assessed for juvenile White Sturgeon rearing during spring freshet flows, and some of the highest catches were recorded near the pump station of any off-channel areas that was assessed.

Figure 5.

Erosion cells along the Abbotsford/ Matsqui bank of the Fraser River just upstream of Hatzic Eddy. Note the loss of riparian vegetation along the perimeter of the river which is likley to exacerbate erosion, in addition to loss of ecological integrity. The action taken by local government is to riprap the bank, further damaging the ecological function of this portion of the Fraser River with dubious benefits to dike protection.



The latest buzz…

The amazing small creature, Bombus occidentalis, more commonly known as the Western Bumble bee, is a member of approximately 800 wild bee species, and 1 of about 250 genus Bombus species on 4 continents. It was one of Western Canada's most common and widespread bumble bees before 1970, but sadly, this is a status it no longer enjoys.

Found throughout most of Western North America, Canada has the distinction of providing 30% to 40% of the Bombus occidentalis' global range, most of which live in B.C.

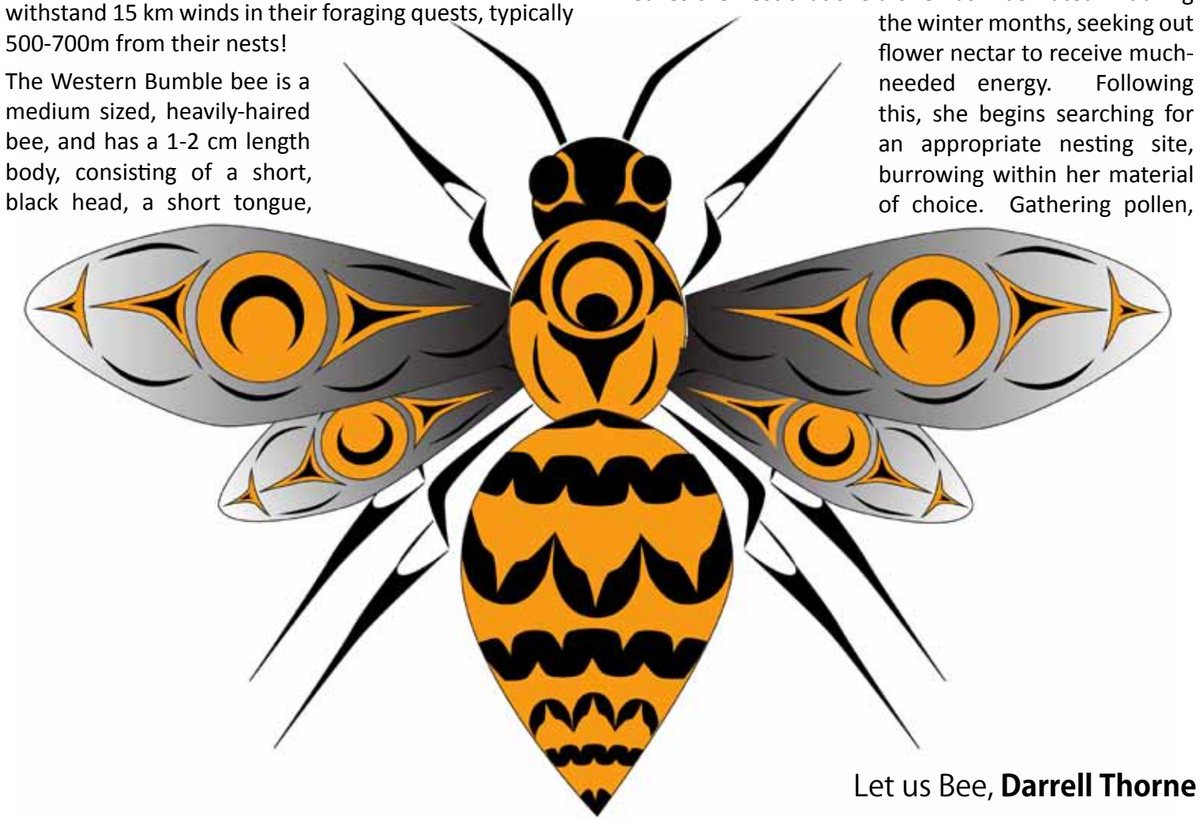
Western Bumble bees are eusocial, living in "large, social colonies", and are ground nesters, choosing abandoned rodent, or other small animal burrows, decayed wood hollows, or even bare ground, for their nests. They live in areas presenting floral and preferred nesting opportunities in a variety of habitats including mixed forests, meadows, farmlands, urban parks, and gardens. Since they are a species capable of tolerating relatively cooler temperatures by "shivering" to keep warm, they can range from sea level to astounding 3800m elevations, and are even able to withstand 15 km winds in their foraging quests, typically 500-700m from their nests!

The Western Bumble bee is a medium sized, heavily-haired bee, and has a 1-2 cm length body, consisting of a short, black head, a short tongue, and a thorax. This bee has a yellow-haired band fronting the thorax and wing bases, and a distinct white colour on the tip of its abdomen. An individual's sex is determined mainly by the numbers of abdominal segments. The females, consisting of the larger-sized Queen bees and Worker bees, have 6 abdominal segments, wider, heavier hind legs, with each leg displaying a usually evident pollen "basket", and a stinger. The males, similar in appearance to the females, show various colour patterns, are slightly smaller, and have no stinger.

Three "castes" form their society: the reproductive Queen, female nonreproductive workers, and reproductive males, (i.e., drones). Their lifespan is a short, annual one, with only one generation of offspring produced.

Referred to as "generalist" foragers, and able to forage for longer hours at lower levels than honey bees, this bee uses a unique method of "buzz pollination" to extract pollen from floral sources, returning to the nest, and regurgitating both pollen and nectar into it. Both products provide critical carbohydrate and protein sources for the colony of up to several thousand individuals.

From April to May, the Western Bumble bee queen leaves the nest that she alone has hibernated in during the winter months, seeking out flower nectar to receive much-needed energy. Following this, she begins searching for an appropriate nesting site, burrowing within her material of choice. Gathering pollen,



Let us Bee, **Darrell Thorne**

she transports it back to the new nest, mixing it with her body's secreted wax, forming cell mounds to lay her first brood. Sitting on her nest, keeping the eggs and herself warm by "shivering" her muscles, she sips from shaped "nectar pots" until her offspring hatches a few days later, nourished from the stored pollen and nectar. Completing their metamorphosis into adult female worker bees, they accomplish varied divisions of labour in, or outside, the nest, by guarding, cleaning, foraging nectar and pollen from the flowers, or later, by tending the eggs. By early summer, the queen usually remains confined to the colony nest. As late summer approaches, non-worker offspring is produced, either reproductive females to become new queens, or reproductive males, whose only job is to feed on nectar, and attempt to mate with the new queens by hovering above the nest. In early autumn, the old queens, along with their workers, and the drones, die. Newly-mated queens then begin feeding on pollen and nectar, storing the energy within their bodies as fat, helping to nourish them in their underground abodes over the remainder of fall, throughout winter, and into spring, when they establish new colonies.

This bee faces many threats from natural predators, including certain flies, spiders, raccoons, skunks, bears, and other mammals. It is also host to two species of adult female "Cuckoo" bumble bees, which often enter the colony's nest, sometimes killing the queen, and laying their own eggs, which are unknowingly cared for by the colony's worker bees. The Western Bumble bee is also a host to parasites, the most notable being the Nosema bombi, a deadly killer of this susceptible bee species, and widely thought to result from infected commercial honey bees used to pollinate greenhouse plants.

But multitudes of controllable, completely unnecessary human-caused threats also exist, including the use of "agrochemicals", (i.e., pesticides), especially neonicotinoids, extensively, and continually used in agricultural, aquaculture, golf course operations, and in residential use. Further, human housing, commercial, and industrial developments, forestry practices, wetland drainages, and general habitat destruction also create extreme habitat havoc. Coupled with these dangers, is the rapidly changing climate, involving severe weather patterns and temperature changes, and the fragmentation of habitat and flight paths.

Beginning in the 1970s, a decline was noticed in the numbers of these once prevalent bumble bees. Later, during the mid-1990s, a further sharp decline of more than 30% of their populations and nesting sites, became alarmingly evident. Locally, in the 1981 to 1982 berry field records of the Fraser Valley, the relative abundance of this species dropped significantly, while even more alarming accounts of 2003 to 2004, revealed a decline in their numbers from 33.3% down to 0.7%!

In May 2014, COSEWIC, (Committee On The Status Of Endangered Wildlife In Canada), listed Bombus occidentalis as Threatened. Yet, despite COSEWIC's ranking, and the critical importance of this rapidly disappearing bumble bee, (and other wild bee species), no legal protection exists in Canada for this subspecies in the threats faced, or in the protection of its nests or habitat sites.

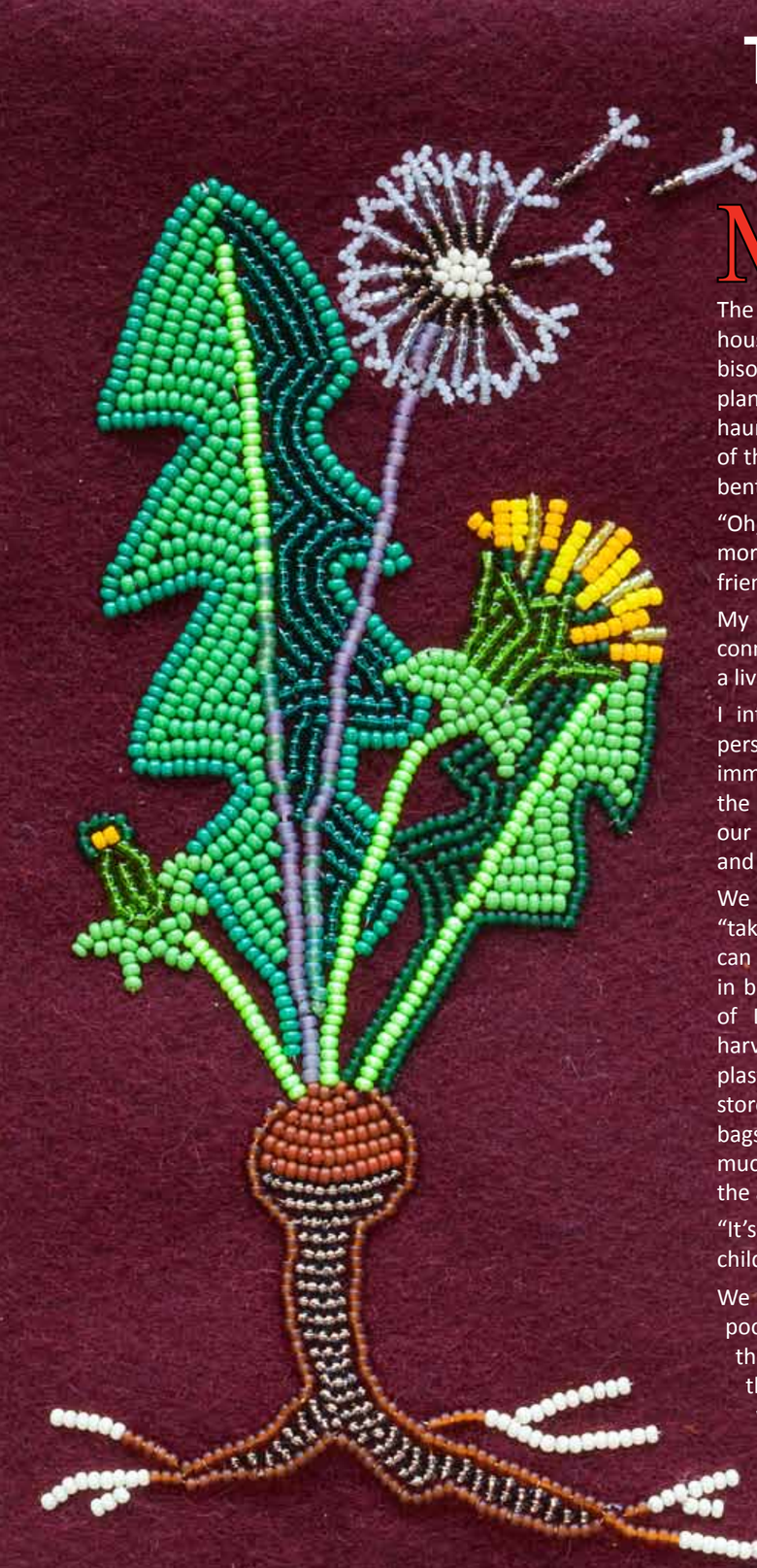
This bee and other pollinators, provide significant, and critical contributions to our Earth, and its inhabitants, by pollinating an estimated 3/4 of flowering plants, and in excess of 30% of our food sources, which adds millions of dollars to our economy. Yet despite these crucial services, there is a dismal lack of local, provincial or federal protection of the Western Bumble bee, and other pollinators. However, some non-governmental organizational help has been given to assist bumble bees, and honey bees, by creating wild bee hotels, rooftop honeybee hives, and pollinator gardens in parks and schoolyards. In Toronto, the David Suzuki Foundation, and a few other forward-thinking global organizations, have created pollinator pathways, helping to diminish pollinator-fragmentation.

As interested public supporters of these bees, and other pollinators, these are some of the selected and effective actions we can take: Use public pressure to demand immediate, and critical government support, at all 3 levels, to discontinue use of toxic pesticides, closely monitor commercial honey bee greenhouse operations, establish Smart-growth developments, encourage farmers to create pollinator-friendly farming techniques, and establish flight pathways. We can request plant nurseries to refuse the sale of pesticide-treated seeds and plants, buy/grow organic foods, create pollinator-friendly gardens, and establish sunny, pollinator-friendly patches of undisturbed, bare ground in our yards. Upon finding a large queen bee, offer her a sheltered place to hibernate, along with a nutritious mix of sugar water.

The decline of the Western Bumble bee is critical, and can't be under emphasized. If bumble bees continue to disappear, we very much risk ecological turmoil. After all, most of Earth's living beings, including humans, depend on their life-giving pollinating abilities in some way. Let's look after them, so they can look after us!

Western Bumble bee (B. occidentalis)
Photo courtesy **Rich Hatfield**, Xerces Society

Val Pack, Mission
Bumble bee ID:
www.bumblebeewatch.org



The Maligned Dandelion

My potted Dandelion sat in the centre of the floor; a tiny, weary teacher in a pretty yellow hat.

The children ran up the stairs of the big white house in Historic Fort Langley like a small herd of bison. I invited them to sit in a circle around the plant. They'd no sooner plunked down on their haunches, onto the hardwood floor, when one of the children leaned forward, reached out and bent the stem of the plant.

"Oh, stop!" I exclaimed and then questioned in more gentle tone, "why did you do that to my friend?"

My job that morning was to help the children connect in a way that they could see the plant as a living being with gifts to give us.

I introduced myself as a Métis artist, and a person of the land. I explained how, since time immemorial people have relied on the gifts of the plants and the animals as a way to sustain our own lives. We talked about how the animals and the plants both give people food.

We even debated a bag of Doritos! Does it "take life" to make a bag of Doritos, so that we can sustain ours? The children were engaged in breaking down all the steps of making a bag of Doritos; watering and growing the corn, harvesting and processing it, manufacturing the plastic bags to hold it, transporting them to the store, stocking the shelf, and finally selling the bags of Doritos to people. They weighed how much the bag of Doritos supported life verses the amount of life-energy it took to make it.

"It's better to just grow food in your garden," one child decided. The group agreed unanimously.

We turned our attention back to my friend; the poor maligned Dandelion. This time, however, the children looked at it as a living being with the capability of supporting life. The children were quick to point out that bees like Dandelions, and need them for collecting nectar. I shared with them the various uses of Dandelions. When the leaves are young, we can harvest them for our salad. In the fall, we can harvest the roots, roast them and grind them to enjoy a healthy coffee-like drink that is so good for our liver, blood and bones. We can even harvest the flowers and make Dandelion fritters that taste just like mini donuts, if you sprinkle them with cinnamon and sugar!

Then, much to the children's delight, I opened a jar of Dandelion Jelly, spread some on rice crackers, and we celebrated, as a new energy filled the space.

My heart soared as I witnessed two of the children, sitting on their knees, leaning in, and talking to that tiny teacher in the yellow hat.

Lisa Shepherd, Métis Artisan.
http://lisashepherd.ca/

I create culturally inspired artwork which celebrates the Art of "The Flower Beadwork People". The past, the present and the future reverberates along my thread.

Dandelion Jelly

Pick at least 10 cups of dandelion blossoms (no stems) where you know they have not been sprayed.
Snip off the base of each flower using scissors until you have 4 cups of just yellow petals.
Pour boiling water over the petals. Let this sit until it reaches room temperature or overnight if possible. When this has brewed you will have a darkish yellow dandelion "tea".

Strain the "dandelion tea" through a coffee filter or jelly bag to remove all petals. Add additional water if needed to measure the correct amount of liquid for your recipe.
-3 cups dandelion tea
-4 ½ cups sugar
-2 tbsp lemon juice
-1 box powdered pectin

Put the dandelion tea, lemon juice, & pectin into a large saucepan. Bring to a boil. Add the sugar and bring back to a boil. Continue boiling for 1-2 minutes. Remove from heat and fill sterilized pint or ½ pint canning jars, leaving ¼ inch of headroom.

Process in a boiling water bath canner for 10-15 minutes

The zero-emissions cycle ride

It was 6 years ago, when I set off on my "zero-emissions" cycle ride across Canada, deeply aware of the slow moving but inevitable disaster of climate change that humanity seemed unwilling to face. In spite of the threat of rising temperatures and seas, and increasing frequencies of droughts and forest fires, appropriate action did not seem to be happening. It was also 6 years ago that the BP (British Petroleum) Deepwater Horizon gulf oil spill disaster unfolded. Would this be the disaster that woke us from our collective slumber?

On that first afternoon of my ride, as I made my way through the back roads of the Fraser valley, not really sure if I would actually make it past Hope, I had plenty of time with my own thoughts and doubts. However smelling the hay drying in the farmer's fields made me happy. The thought of the bounty that nature provides year in and year out should fill us all with joy all the time, not just when we head off on some crazy mid-life crisis adventure. Can we really have an impact simply by burning fossil fuel? We abuse the natural world in so many ways, I pondered, yet its resilience is astonishing. Then my rational brain kicked in. How can the rapidly increasing levels of CO2 in the atmosphere, caused by our burning of fossil fuels, not have an effect? Not only are we at levels not seen for millions of years, we reached these levels at an alarming speed and show little intention of slowing down the rate at which they increase. Temperature and CO2 are inexorably linked, so temperature will follow as CO2 surges ahead. I pressed on.

The next day I was awoken before daybreak by a passing train. Was it a train full of coal? Was it destined to be burned half a world away and not register in Canada's carbon tally? That was the start of my longest day, which also happened to be the longest day of the year. Leaving Agassiz at 5:30am, feeling remarkably lively was a pleasant surprise. Still feeling strong as I reached the peak of Allison pass later, boosted my ego. "I can really do this", I thought. As another camper van passed, towing a home around the country for pleasure, it occurred to me that cycling across Canada might be easier than persuading the world to give up fossil fuels.

Later, past Manning Park, as I pondered a good spot to pitch my tent in a dreary and lonely campground, the drizzle turned into a light rain. But then I saw in the distance a small patch of blue sky and bright sunshine.

Well, if the road was to follow the Simalkameen River I would basically be heading downstream all the way into the sun drenched town of Princeton. Sure enough the cycling was easy as the road dropped with the river for some distance, but then came the surprise announcement at the side of the road “Sunday Summit Ahead”. When it seemed like I might not make it, and the road turned unbelievably difficult, I found new reserves of energy. At that point, there was no stopping. All I could do was to keep going forward. In our battle with climate change, we will face disheartening surprises like the Kinder Morgan pipeline, but we must fight on if we are to reach our goals. Princeton was clear and dry that night, but it was too late to be sunny. I hope we are not too late for future generations.

The BP gulf disaster was an opportunity for humanity to say, “No new fossil fuel infrastructure!” The immediate damage to the environment should have been the alarm bell. I am amazed that 6 years later, a progressive federal government that professes to “get climate change” is still making the case for adding pipelines, and our provincial government is making the case for a whole new LNG industry that they claim will somehow help to reduce global CO2 emissions. Clearly we all need to shout out that we have no time left to waffle on this issue. The fossil-fuel-burning era must end as soon as possible. We must stop building more hazardous infrastructure. Our resources must be diverted to renewable energies so that we can start shutting down existing fossil fuel systems.

Neil Smith, Mission

“Whenever I see an adult on a bicycle, I have hope for the human race.”

~ H.G. Wells

Fire dragon photo courtesy Mike Stefiuk KEEPS

Organic is a human right

Pear trees with leaf spot disease on left whereas Jadam-managed trees on right remain healthy

Organic farming is becoming increasingly about high-investment and high-tech production, using special and expensive inputs, practiced only by some agro-elites, and benefiting only a few rich customers. Organic "food" is a basic human right. It is not a demand for luxury. It is a desperate run away from toxic harm, a conscientious effort to oppose nature-destroying systems, and a struggle to live humbly and normally. Organic "farming" is the basic tool of farming that any person willing to live off the land should be able to grasp. Nowadays, organic farming is becoming more complicated. You need money to farm, special education, and training, which in the end is not always effective.

Go back to nature. Nature has done well, far better than humans, and for a longer time. Learn from nature and you will realize that organic was the only way life prospered on the planet. That, is how farming should be.

However, many methods of organic farming miss this point. Take crop rotation for example. I have not seen one single voice in the huge world of organic agriculture that objects to this practice. All hail this as good. Leaving fallow is far better, except that pressure for productivity inhibits them from doing so.

Go out to the forests, mountains and valleys. Behold the lush green that is just breathtaking. This vitality spreads and covers the earth's surface without fertilizers or pesticides, becoming stronger and healthier every year. Why is it that when humans cultivate a crop, its yield drops and disease creeps in after a few years, whereas in nature, the same plant grows over and over in the same spot for thousands of years, with its life-energy growing ever so powerful? Why can a farm never be like a forest?

It is because humans harvest the yummiest and most nutritious parts of the plant and never return to soil what has been removed. Humans take all; that is why.

Smart people analyzed the components of plant food and came up with chemical fertilizers. Putting aside the commercial motive behind this, this idea itself is erroneous, for human-analyzed and concocted food will never be the same food that the plant has been eating for millions of years. Smart scientists may invent the best vitamin pills, but a baby would never thrive on supplements alone.

"Return what has been removed" is the basic principle of Jadam fertilization. Un-marketed fruits and crop residues are must-return items, so are human excretions, which are another changed form of the harvested fruits. But what are we taught? Unsold fruits are destroyed "to prevent spread of disease". Crop residues are eliminated "for field sanitation". Human excretion, a resource long treasured by all ancient agricultural civilizations, is "waste", and an expensive one too, that needs treatment facilities.

To more fully replace what has been lost through harvest, bring in wild grass and fruits and turn them into plant food. They grow everywhere and are free. Bring in food scraps from restaurants and markets. To supplement minerals, bring in seawater to your soil. Vancouver is absolutely blessed with the ocean. You can become self-sufficient in fertilizer if you understand what fertilizer is. Jadam promotes the use of liquid fertilizer where the ingredients have been broken down by microbes in leaf mold.

All this costs nothing. But what is happening now? Farmers say they cannot farm because they cannot afford to buy fertilizers and pesticides.

Bring in microorganisms to break down organic matter so that they turn into plant food quickly. Again, don't buy them from shops. Microorganisms that have been living for generations after generations, longer than the longest of human immigrants of this land, are teeming in your soil.

Go out to a healthy forest, collect leaf mold, and propagate the microbes in it. Do not buy propagating machines or expensive microbe food. Boil potatoes and blend them, mix into a large volume of water, add some sea salt for minerals, put in leaf mold, and start culturing at above 18 degrees Celsius. When bubbles reach a peak after 2-3 days (faster when warmer), that water will be holding an astronomical number of microorganisms. Apply this diluted to your field, repeat, and you will have all the subsurface workers you need. This is called JMS (Jadam microorganism solution).

These are just some methods in Jadam organic farming. Jadam also has methods for making a natural wetting agent, disinfectant, pesticide, and fungicide. With all these, you can go organic but at a very, very, low-cost – around 1/50th of conventional farming. If organic farming costs more for the farmers and consumers, it is way too impractical and imperfect.

We have strayed too far from a natural way of life. Energy we use, and emissions we make, are changing the climate at a global scale. Let us purify our minds of greed first, spread a culture of minimum consumption, and speak up against climate change and other forms of exploitation of nature and people. Organic farming, after all, is restoring the nature both within, and around us.

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Who will decide the fate of the Fraser River?

On March 18/16, members of CAUSS attended a Special Council meeting between the District of Mission, newly elected MP Jati Sidhu, and MLA Marc Dalton. A large portion of the meeting was devoted to discussing the District's concerns regarding the Fraser River. The District lobbied for federal and provincial money to expand the District's sewer pipeline to increase our community's capacity for more growth. Mayor Randy Hawes argued that rechanneling the Fraser river would improve the safety of logging ventures upstream. Some counselors even stated that an increase in barge traffic in the river would reduce logging truck traffic and would therefore be more environmental! CAUSS provided Dr. Marvin Rosenau, award winning researcher and instructor, with a summary of statements made at the meeting (see his scientific analysis page 4).

Dr. Rosenau's analysis confirms that the Fraser River is not merely a water highway to service logging and gravel ventures. It is an incredibly valuable and productive ecosystem. The true value of the Fraser is it's exceptional biodiversity. The river, and its associated tributaries and wetlands, support several enormous wild pacific salmon runs, as well as the roar of life that follows the salmon every year, during the spawn. The spawn nourishes the largest gathering of Bald eagles anywhere on the planet (David Hancock, FPP Issue 8). It is the reason that the Fraser remains one of the last strongholds of the ancient, but now endangered White Sturgeon, who scavenge the spawned out salmon (Val Pack, FPP Issue 8). The salmon are also the lifeblood of entire populations of local Orcas, bears, swans, the forests, and virtually all of the life in the Fraser valley, and are integral to the way of life of First Nations people who have always lived on the river (Eddie Gardner, FPP Issue 13).

So why then do governments keep lobbying for controversial and potentially damaging dredging and other flood protection measures on the Fraser, while at the same time approving development in hazardous areas? While turning the Fraser into a large industrial canal may benefit barge traffic, such a vision will not support the life of the river. Fortunately, there is a way to improve flood protection without sacrificing the Fraser's bounty. Church (2012) strongly argues the need to re-naturalize the river's flood plain, in order to restore the capacity of the river to absorb rising waters, and restore the bioproductivity of the river, especially returns of salmon and other fish species. These sentiments have also been echoed by Dr. David Suzuki (FPP Issue 10).

"…The most comprehensive solution in the long term, for public safety, for economic value, and for the enhancement of the environment of the Fraser Valley, is a solution that most nearly preserves the natural features of the river…In such an approach there would be no need to remove any gravel from the river except in very exceptional circumstances. Such a solution requires the re-establishment of an adequate channel zone for the river. This would involve increasing dyke setbacks, where feasible, to allow a channel zone of at least 1500m width, re-opening side channels, and 'naturalizing' the river banks, to include forest planting and removal of riprap wherever feasible. It would entail designating land within the dykes as riparian reserve. This would not mean abandoning all use of land within the dykes, but it would require the land to be dedicated to interruptible activities such as recreation, wildlife reserves, and certain agricultural activities. The riparian floodplain is part of the river: it will be wise to respect that fact." (Church, 2012).

The "problem" of the Fraser River, is not the natural processes of the river. It is not the melt of the snow pack. It is not the disposition of gravel beds, essential to the life cycles of many species of fish and other wildlife. It is not the spring freshet- a yearly renewal process that has been occurring for thousands of years (Marvin Rosenau, FPP Issue 10). The problem with the Fraser River, is that despite its power and functions, we have chosen to build and develop in its floodplain area. No amount of "save harmless" insurance clauses, dikes, dredging, or wing dams are going to change that fact. The truth of the Fraser, is that the more we develop in its floodplain, the more we will eventually pay.

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THE FOOTPRINT PRESS

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