FREE MAGAZINE

Tread Lightly and Listen to the Land

Issue 8, 2013

THE FOOTPRINT PRESS

Passages from Silverdale, Mission, Abbotsford and beyond.

Message from the Editorial Committee

Cover photo: Juvenile Bald Eagle, Bruce Klassen

This issue of the Footprint Press celebrates the mighty Fraser River, one of the richest and most biodiverse rivers in the world, whose bounty sustained First Nations people for millennia. The Fraser is home to at least 80 species of fish including the iconic wild salmon, endangered White Sturgeon, and Eulachon. Over 2 billion juvenile salmon travel down the Fraser to the ocean, making it the largest salmon-producing river along the Pacific coast. Not surprisingly, the Fraser's tributaries, including the Harrison and Stave rivers, boast one of the largest populations of wintering bald eagles in the world as they congregate to feast on the fishy abundance.

But all is not well with this mighty river. In the last 100 years, human development, dredging, pollution, and other human impacts have destroyed almost 90% of the Fraser's wetlands. Despite the importance of the river's large shallow tidal flats, which are essential feeding areas for juvenile salmon, large scale dredging has occurred without assessment or compensation necessary to sustain the biological function of this critical habitat. Plans to transform the Fraser into a large vessel-shipping channel will have disastrous consequences. Fish populations have already plummeted so rapidly, that a federal commission was called to investigate the collapse of the Fraser's Sockeye salmon. The specter of oil spills, emerging from Enbridge's plans to create extensive pipeline systems within the Fraser's northern headwaters and Kinder Morgan's plans for expanded pipelines in the lower Fraser watershed, represents a call to arms for many citizens, fearful that such spills could decimate the entire ecosystem.

While some claim that harvesting of the Fraser's gravel beds, removal of woody debris, and dredging create an important water highway, we at the Footprint Press ask a simple question: Do you want to live in a world with eagles, bears, orcas, wild salmon, and the multitude of species that depend on them? If your answer is "yes", come join our writers' journey down the magnificent Fraser River.

Footprint Press

To the Fraser's Fish

and so they begin
where their journey ends hearts beat
young salmon awaken.

Angela Zimmerling
Abbotsford

Salmon Spawn, **Chrissy Courtney,** UFV

Seasons of the Bald Eagle

Southeastern British Columbia has the largest gathering of bald eagles in the world – both in wintering congregations and in nesting density. However, there are seasons of plenty and seasons of none!

The nesting season begins in October when the territory holders return from their northern migration. They do a little nest repair, and a little mating upon return from what we believe are separate fall journeys, and then spend November through January defending the nest territory and visiting nearby salmon runs for the social buffet season. By the end of January and through February, serious efforts are put into nest repair or building, finally adding in the mosses and grasses to make the soft nest cup into which the eggs are laid.

The first egg laying usually starts in the last week of February and carries on through March. Two eggs are the average but about ¼ of the nests produce 3 eggs and, only occasionally, 4 eggs. Incubation, the covering of the eggs by either parent to generate enough heat to cause embryo development, starts with the laying of the first egg. Each egg is laid about 3 days apart. The eggs hatch after about 35 days of incubation. While one parent sits on the eggs, the other parent goes off to feed. The much larger female, however, usually sits during the long nights and during cold storms.

Since the eggs are laid 3 days apart there is usually a 3-day separation between hatchings. When food is in short supply this can mean that only the first hatched chick, which is 3 days stronger than his siblings, demands all the food. This ugly process is an adaptation to having at least one young survive when food is scarce, rather than all young starving equally. So far we are fortunate in our urban and suburban areas (where we have cameras on several nests), that food is more abundant and we have not had to witness a chick starve to death as often happens in the wilderness.

The chicks are voracious eaters and the time from hatching to being full sized and making their first flight is only 12 weeks. After 4 to 7 days of constantly flying over the newly fledged young to offer protection, the parents migrate north. The newly fledged young, who have probably had few meals since fledging, now spend another few days flying about the nest territory calling for food but to no avail. About 4 to 6 days after abandonment by the parents, the juveniles now head north on their own.

Our west coast eagles are birds of the salmon. Their fledging, abandonment by the parents, and now the initiation of their northern migration, is timed to match the great availability of dying spawned-out salmon carcasses along our coast. Young eagles have no ability to hunt and are totally dependent upon finding something to scavenge or some other predator from which to steal. After a million years of evolution as a very successful scavenger and hunter,

our bald eagle has learned where and when food is most easily attained. And throughout the salmon rivers from California north through southeast Alaska, the spawning season has changed, as the glaciers retreated and made more salmon rivers in the newly exposed northern valleys. The salmon spawn earlier in the north. By July there are dead spawned-out carcasses on the riverbanks of Alaska and northern BC. Then two separate issues drive the eagles south. First, our more southern nesting eagles may have flown 1000 to even 2000 miles northward to find this dead fish banquet. Then, as the summer turns into fall, the more southern rivers get filled with the early fall rains, which provide enough water for salmon spawning. Progressively southward, the rivers begin to team with spawned-out salmon. This is perfect timing. The early northern salmon runs have either now been eaten out by the bears, gulls, wolves and eagles, or the approaching winter chill is freezing any late salmon carcasses under ice. So gradually, through October and November, the northern food supply availability diminishes and the eagles move southward. Now is when our rivers should be teaming with spawning salmon. The eagles pour in for the major feasts of November through December. In most years, in particular those tributaries of the Harrison-Chehalis complex, we have late runs of Coho salmon still arriving fresh from the sea into December. This can extend the buffet for some smaller number of eagles into January and even February.

Viewing this incredible world-class event of the salmon spawning and the eagle feasting has become an international nature fest. The Hancock Wildlife Foundation, with support from the Department of Fisheries and Oceans, Ducks Unlimited, the Stsâ€™ailes (i.e., Chehalis) First Nations, and the Fraser Valley Bald Eagle Festival, have teamed up to present underwater live streaming cams of the Chehalis salmon and two HD cams on a tower in the center of the Chehalis Flats, to view the feasting and resting eagles. These cams give an incredible live view of this foraging mass of eagles. Sometimes eagles sit on the tower 3 feet from the 35x magnification lens - an “inside the eyeball view”! These spawning salmon runs attract eagles from September through February.

Then the nesting season begins again. The resident eagles, those nesting in the lower Fraser Valley area and specifically those nesting along the Harrison River, have to tolerate 5,000 to 10,000 eagle intruders invading their territories for the temporary salmon feasts. Several live streaming cams are located in local eagle nests. See the Harrison Mills nest located right on the Sandpiper Golf Course overlooking the heart of Harrison Mills, the Chehalis Flats. Down the road is the Mission Nest and other nests with cams are located throughout the lower mainland. These live cams give an awesome and intimate view of the eagles laying and hatching their eggs, rearing young and the dramatic moments of the young making their first flight – the fledge.

Thus, the seasons of the eagle for southeastern BC extend all year except August and September, when the eagles have temporarily flown north to the early salmon runs.

David Hancock,
Eagle Biologist

Hancock Wildlife Foundation live cams: http://www.hancockwildlife.org/index.php?topic=cam-sites
Fraser Valley Bald Eagle Festival: http://fraservalleybaldeaglefestival.ca/

Enbridge Oil and Fraser Water don't mix

Dear Enbridge,

Your TV ad prompts me to write. It depicts a tanker sailing over a smooth, sunny ocean. A seagull banks toward vigilant helmsmen in the pilothouse, welcoming them to this serene, pristine world. Where's the teapot and cups singing "Don't worry, be happy?"

Enbridge, your imaginary world can't disguise the truth. The Gateway Pipeline spells disaster at the coast and en route through 785 watercourses in the Upper Fraser River Watershed. According to *Pipelines and Salmon in Northern BC* (Pembina Institute, 2009), five major salmon streams could be impacted by an oil spill. River systems like the Stuart are directly connected with the Fraser. The Salmon River meets the Fraser near Prince George. Any oil spilled here will show up downstream. West of Mission is tidal. Northern Indians whose lives revolve around salmon would suffer worst, but fishermen on the Pitt, Alouette, or Stave Rivers would curse slicks that traveled 500 miles or more.

I'd be upset, too. I have fond memories of the Fraser, and it's lower arteries. Let me share some to help you understand why folk like me won't tolerate your pipeline.

As a 10-year-old in North Vancouver, I ate a lot of fish called eulachons. I ate them like candy. Squamish Band men claimed they had thick hair because they ran eulachon grease through it but it didn't work for me. Eulachon oil fueled lamps 100 years ago. There's fewer fish now for the seals that sun bathed on log booms where the Coquiltlam and Fraser Rivers meet. I don't want oil to kill them.

Douglas Island sits in the Fraser near the Port Mann Bridge. I've canoed around it and watched bald eagles in cottonwood trees when the first sockeye swam upstream. The lives of salmon and eagles are intertwined. Oil would kill off both.

Sturgeon, another Fraser River treasure, are prehistoric fish covered with plates instead of scales. These bottom feeders – bitumen sinks - come up the Fraser into the Pitt, and Harrison. One giant, housed in a pool at Inch Creek Hatchery near Mission, was named Arnold Sturgeon-ator by the staff. My grade six classes visited Arnold on trips to Weaver Creek's world famous spawning channel. Salmon access Weaver via the Fraser. Busloads of tourists would photograph gasping sockeye with oil soaked gills, if any got that far.

Kilby Park rests on the Harrison River where it meets the Fraser. I've watched 50 pound spring salmon clear the water here and slap down again. I've canoed downstream, slipping silently past deer and black bear that depend on an ecosystem free of oil.

Enbridge, I have fond memories of the rugged Lilloet River at the north end of Harrison Lake, and onward to Lilloet Lake. Salmon swam up the Fraser to get here. In the 1980s, I visited the Lillooet Band's annual fish camp in August. Men net the fish and women fillet them before they're wind dried. Wood fires line the beach. Kids play as blowflies howl around their heads. The scene hasn't changed in centuries, but bitumen could end it.

Enbridge, here's a lighter memory. In 1976, MLA, George Mussallem claimed the Fraser River was "… one of the cleanest in North America." He hoped to silence "radical environmentalists" who insisted towns and industry were using the Fraser as a toilet. Mussallem drank a glass of Fraser River water in front of a camera crew. I laughed recalling Mark Twain's advice to drink from the Mississippi. "Stir it first," he advised, because nutrients - "that could grow corn in a man's stomach" - were all in the sludge at the bottom. That was before bitumen.

Here's some closing words from the Save the Fraser Declaration, a document created in July 2012, and endorsed by 100 indigenous nations in BC. "Water is life for our people and for all living things…The Fraser and its tributaries are our lifeline. We will not allow our fish, animals, plants, people, and ways of life to be placed at risk." *Idle no More* is their follow up.

Enbridge, bitumen mixed with Fraser River sludge isn't a fit drink for man, and there are already too many stressors on wild BC salmon. Help us build a real, "path to our future." Abandon the idea of a pipeline through the Fraser River Watershed.

Tight lines,
Jack Emberly,
Maple Ridge

Environmental risks of the Kinder Morgan Trans Mountain pipeline to the Lower Fraser River Watershed

Many years ago my neighbourhood, which bordered on what is now the Gloucester Industrial Park just north of the freeway and 272 Street, acted to protect the headwaters of a local fish-bearing stream by forming the West Creek Preservation Group. We had been told by Department of Fisheries staff that West Creek, and nearby Nathan Creek, could be harmed by parking lot run-off as well as industrial pollutants. Both creeks flow directly into the Fraser River and are very important spawning grounds for salmon due to their close proximity to the Strait of Georgia. West Creek empties into the Fraser River just east of Ft. Langley and directly across from Albion.

Fortunately, the community remains vigilant and both creeks, and others, are now protected by the Glen Valley Watershed Society. This vigilance by local residents is even more crucial today than it was in the late 1970s as there may be increased threats to the ecosystems of a number of watersheds (and aquifers) from plans to expand the Kinder Morgan Trans Mountain Pipeline. The pipeline has been transporting petroleum products from Edmonton to Burrard Inlet since 1953

and crosses 98 streams and rivers over its 1150-kilometer route. Because it was built in 1953, there were no environmental assessments done by the National Energy Board. The Trans Mountain Pipeline enters the Fraser Valley at Hope and travels close to the Fraser River until it enters Chilliwack, where it takes a turn to the south, close to the Vedder River, and through the rural farming community of Yarrow.

In April 2012, the City of Abbotsford received a staff report regarding the proposed expansion of the Kinder Morgan pipeline's approximate 42 kilometres stretch through Abbotsford. The pipeline has a 30 metre wide right of way and travels through areas of Sumas Prairie, Sumas Mountain, Matsqui Prairie, Mt. Lehman, and Bradner. The report states that "The Trans Mountain Pipeline right of way through Abbotsford traverses a variety of land uses and features, including productive agriculture lands, sensitive terrestrial and aquatic habitats (including habitats that support populations of species-at-risk), recreation areas, and residential neighbourhoods." The report recommended that a letter be sent to Kinder Morgan per a 2011 Union of BC Municipalities' resolution. Council agreed that "Additionally, the letter should emphasize the City of Abbotsford's expectation for Kinder Morgan Canada to undertake public consultation with the community prior to the commencement of detailed engineering, environmental, and socio-economic assessments, to ensure concerns will be identified and addressed."

The need for assessments is crucial, as the current 59-year-old pipeline did not have environmental scrutiny that is now required by the National Energy Board Part III. The only assessment that was ever done on the Trans Mountain Pipeline was completed in 2006 when the section traversing Jasper National Park was expanded. The ENVIRONMENTAL SCREENING REPORT Pursuant to the *Canadian Environmental Assessment Act* (CEA Act) TMX – Anchor Loop Project, contains a number of references to fish habitat and the Fraser River. The report recognized the importance of the Fraser River to BC and to Canada, and its national proclamation as a BC Heritage river (pg. 7). Rare wildlife species, such as the Bull trout, listed in both Alberta and BC, were found to be widespread throughout both the upper Athabasca River and upper Fraser River watershed (pg. 15). Numerous adverse environmental effects from expansion of the pipeline were listed including sediment and silt entering watercourses, erosion of disturbed areas proximal to water bodies, deterioration of aquatic ecological integrity, blockage of fish passage during migration periods, fish and aquatic organism mortality, destruction of fish eggs, temporary or permanent alterations in water flow, loss of potential food, and harmful impacts to fish habitat from the pipeline installation and access (pg. 25). The Department of Fisheries and Oceans further determined that pipeline crossings will likely result in the harmful alteration, disruption or destruction of fish habitat (including riparian vegetation) from the pipeline installation and access in several river systems including the Fraser River (pg. 48). The report concluded that future expansions would likely be subject to review under the Canadian Environmental Assessment Act. However, significant changes to the Navigable Waters Protection Act in the most recent Federal government's Omnibus Bill 45, have since limited regulatory oversight of the fisheries to stocks that are of "human value". Limiting the scope of regulatory oversight in this manner could result in negative impacts to many fish in the creeks that flow into the Fraser River.

The recent Cohen Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River addressed threats from oil spills as well and stated "… I have several concerns about post-emergency mitigation and long-term monitoring of the impact of marine spills." (Commissioner Cohen Pg. 50).

Future spills are to be expected, judging from Kinder Morgan's own admission of 78 spills in this aging pipeline since 1961. There have been two spills here in the Fraser Valley since Kinder Morgan purchased the pipeline from Terasen Gas in 2005. On July 15, 2005**,** approximately 210,000 litres of crude oil were released into the area surrounding the Sumas facility in Abbotsford, making its way into Kilgard Creek on Sumas Mountain. It took 7 days before the spill was located and clean up started. On January 24, 2012, it was reported that a pipeline rupture at the Sumas Tank Farm in Abbotsford occurred spilling approximately 110,000 litres of tar sands crude (bitumen), which is now being transported by the pipeline. People living in the area reported odours, nausea, headaches, and fatigue.

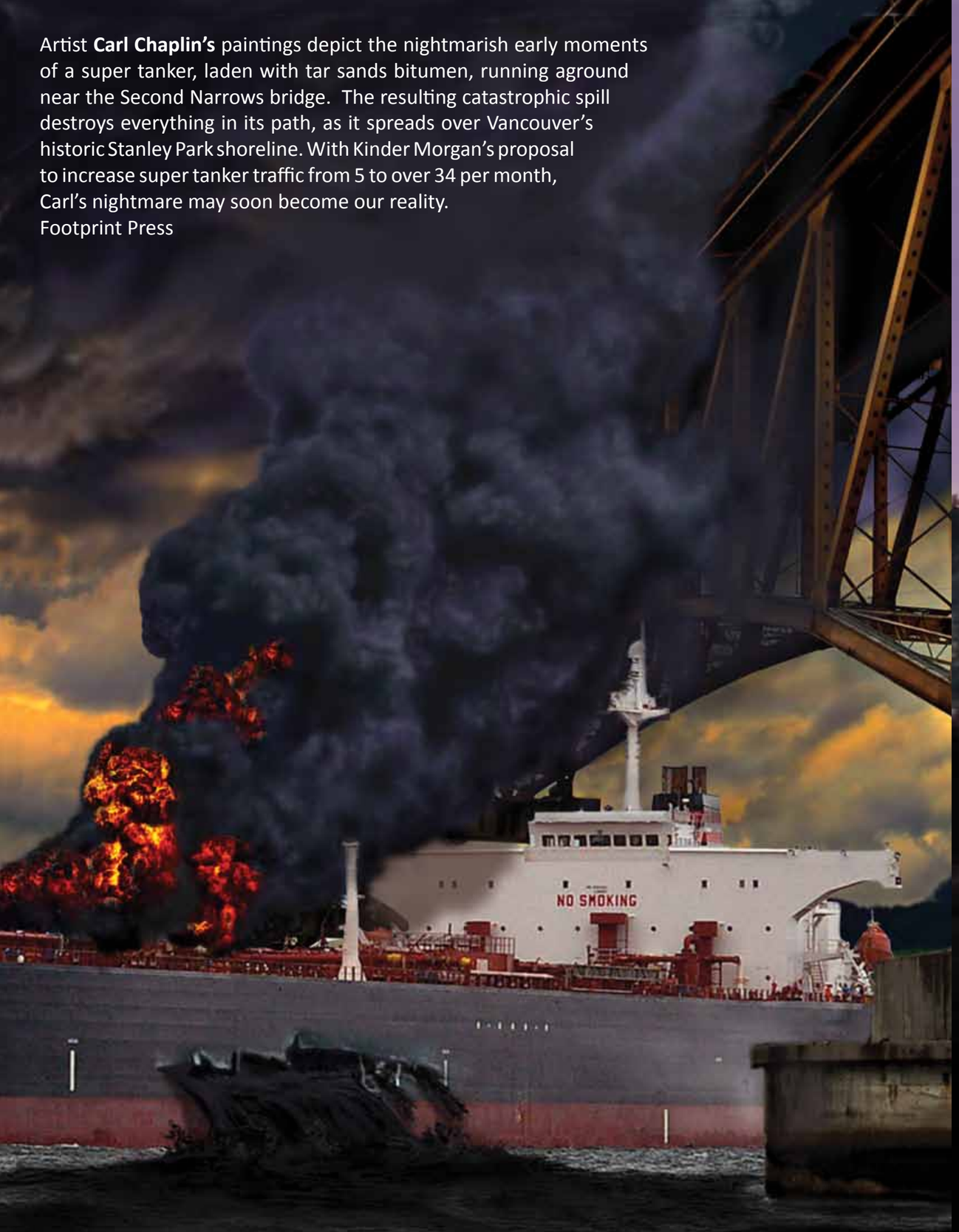
Even the former Port of Vancouver CEO, Chris Badger, admitted at a recent meeting in Vancouver that only a small amount of any / all spills are ever recovered: "Those figures are right, you're going to get fifteen per cent of a spill recovered, there's no two ways about it," Badger said. "That's why not having it is the best thing to do," he said, to clapping and agreement. "Not having a spill," Badger quickly clarified. These recovery statistics are not acceptable, as the pipeline travels over two aquifers in our communities, under school playgrounds, near fish bearing streams, and over farmland that is worth over $2 billion / year in economic activity in the Fraser Valley.

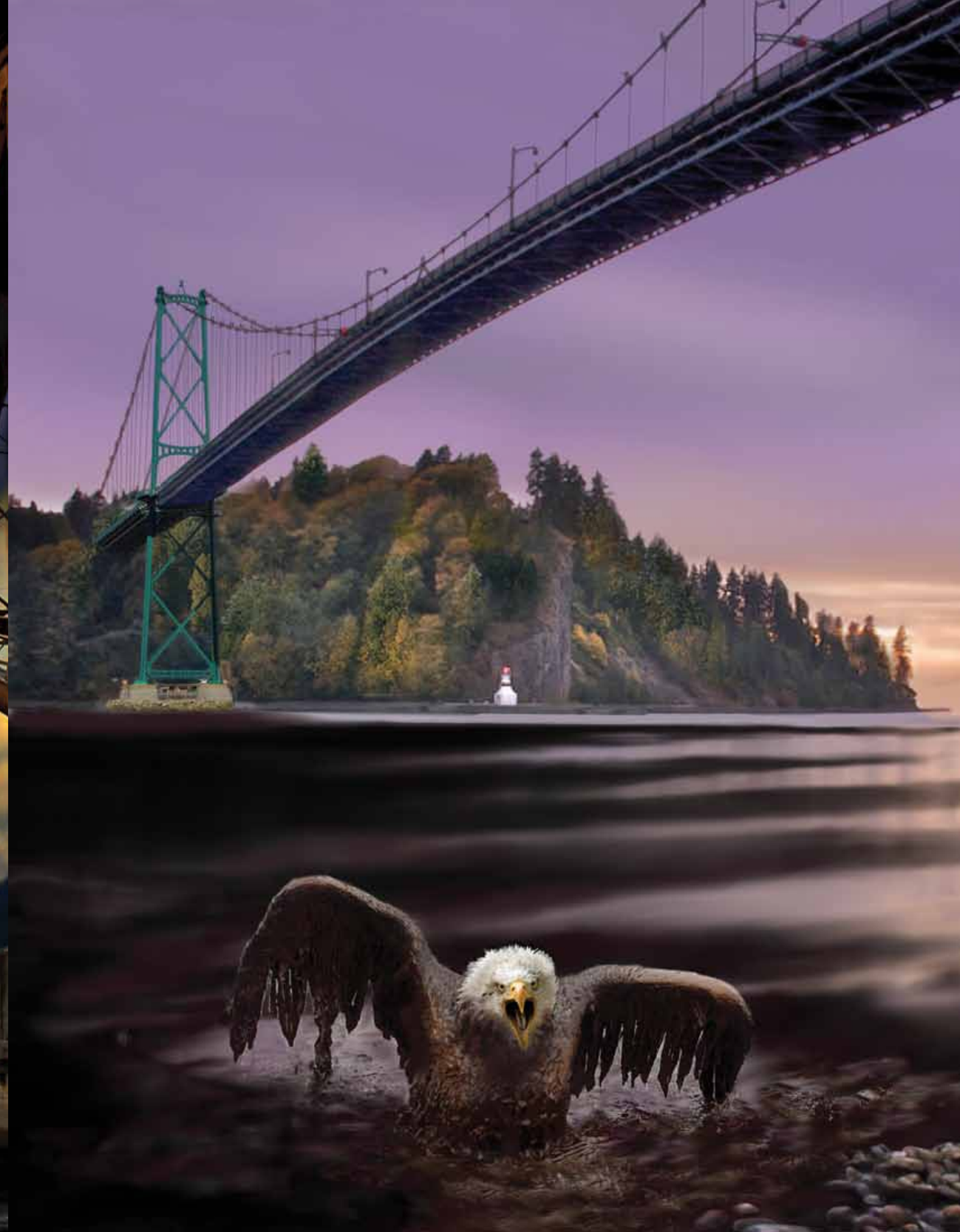
While future spills are to be expected, the cost of clean up of such spills can be enormous. For example, in 2010, 20,000 barrels of diluted bitumen were spilled from the 42-year-old Enbridge pipeline into the Kalamazoo River. The river was closed for more than a year, and after costing more than $700 million US, is still not cleaned up according to the US Transportation Safety Board.

According to the National Energy Board report of the Jan. 2012 spill at the Sumas Mountain tank farm, Kinder Morgan staff ignored three alarms over six hours. At the recent "public information meetings" Kinder Morgan Trans Mountain pipeline staff were at a loss for words when residents asked why the "emergency response" assurances posted on their "information" boards did not represent the reality of both the 2005 spill into Kilgard Creek nor the 2012 spill at the Sumas Mountain tank farm. When there are so many risks to human health and the environment from toxic diluted bitumen, silence from those responsible is not acceptable.

Lynn Perrin, Abbotsford
For more information visit: www.pipe-up.net

Artist **Carl Chaplin's** paintings depict the nightmarish early moments of a super tanker, laden with tar sands bitumen, running aground near the Second Narrows bridge. The resulting catastrophic spill destroys everything in its path, as it spreads over Vancouver's historic Stanley Park shoreline. With Kinder Morgan's proposal to increase super tanker traffic from 5 to over 34 per month, Carl's nightmare may soon become our reality.
Footprint Press





Getting to know our local Species at Risk: The Dinosaur Fish

Lurking through the River's murky depths, like a ghostly apparition cloaked in mystery, is the original Ancient Mariner. Through countless millenia, this dinosaur fish has cruised through our mighty Fraser River, scouring the muddy bottom in search of food items.

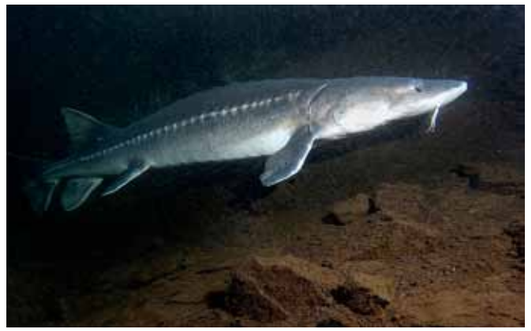
Scientifically named Acipenser transmontanus, this native B. C. fish, is more commonly known as a White Sturgeon, a member of 5 species of sturgeon in Canada, and also one of 21 sturgeon species known worldwide. Considered one of the oldest existing fish, much has yet to be learned about the White Sturgeon, which has the ability to live in both fresh and salt water.

The Fraser River's White Sturgeon population is ranked as the world's largest. It is also found in 2 other large rivers, the Columbia River in B. C.'s Kootenays, and the Sacramento River in California. With headwaters beginning close to McBride, B. C., a stable, but small population of White Sturgeon is found in upper portions, above Yale, of the nearly 1000 mile long, dam-free Fraser River. The lower Fraser River from Yale to the Georgia Straight estuary, where the Fraser River meets the ocean, boasts approximately 60,000 of this species.

The Fraser's White Sturgeon habitat consists of several sturgeon holes, where some fish dwell in, or stay close to the same hole, month after month. These holes, found at the bottom of the slowly moving areas of the River's tributaries and estuaries, are located from Hope, downstream to the brakish water of the River's mouth.

Considered North America's largest freshwater fish, the White Sturgeon has a long, grey, pale olive, or gray-brown, scaleless body, with a white belly. On the bottom of the wedge-shaped snout, below the mouth, are 4 sensitive, whisker-like barbels, useful to stir up the River's muddy floor in search of food, and capable of seeking out suitably-sized prey. Below the long, shark-like snout is a very large, extendible, toothless mouth, incapable of seizing and securing large food items, and with taste buds covering the outside of it. Several, armour-like bony, protrusions (scutes) adorn the dorsal, lateral and sides of its slender body. Internally, the sturgeon has been described as cartilaginous, having a bony, shark-appearing structure and corresponding tail, in a body exceeding 6m, and some weighing 600 kilos or more, largely unchanged over the eons.

Having a long lifespan, one of well over a hundred years, this leviathon is unlike other fish, in that, its growth is slow, and dependent on the water temperature. For example, females attain a 2m length in approximately 25 years. In fact, this sturgeon is considered to be one of the only animal species that continues growing throughout its life.



While young sturgeon eat a variety of foods, including invertebrates and small fish, the larger ones generally ingest salmon and eulachons. Both species are preyed upon during 2 different times of the year; the eulachon during their April to May spawn, and the salmon, during their July migration. Possessing both an excellent sense of smell and taste, this bottom feeding sturgeon also eats food drifting in the River's currents, including salmon parts, salmon eggs, dead fish, sewage and other toxic materials. When food becomes scarce, it may enter shallow water in search of fresh water clams. However, feeding amongst larger fish stops when baromic pressure drops, returning when the pressure stabalizes.

Migration for this fish begins in April, when the larger sturgeon leave the upper Fraser River, Harrison Lake, and Pitt Lake areas, entering the ocean, awaiting the annual arrival of eulachons upon which they ferociously feed. This results in increased sturgeon growth. At the times of prey fish migration and/or spawning, travel for many of these sturgeon involves freely moving up and down the Fraser. However, some larger sturgeon may, at some time during their life, travel to the ocean, visiting other rivers, and estuaries along the way, before returning to their river of birth, during fishing and spawning periods.

Most local White Sturgeon spawning locations are upstream of Chilliwack or Hope, in fast water, below rapids, and in gravelly rocky areas. Beginning in late Spring and early Summer, spawning occurs when the female sturgeon attains a 2m length, releasing 400,000 brown eggs, while the larger and older fish, release close to 4 million eggs. Upon the dispersal of her roe, 1 or 2 sturgeon males swimming beside the spawning female, release their milt, (sperm). This "broadcast" spawning allows only low odds of egg fertilization in the fast flowing Fraser's current. Many of the sticky eggs are carried along in the River's current, sinking and attaching to debris, some fertilized, most, not.

Spawning activity consists of breaching, rolling, and possibly, changes in annual patterns, movement, and river migrations. Though it remains a mystery of how often the female sturgeon spawns, it is believed that they do not spawn yearly, but are known to spawn in intervals of up to 12 years, with the younger ones spawning every 3 to 6 years. Unfortunately, few of the older and larger female White Sturgeons, considered of utmost importance in sustaining their population, remain in the Fraser River system.

Incubation of the spawned, fertilized eggs, occurs in about a week, depending on ideal conditions, including water temperature, and lack of predation. At the appropriate time, the small, tadpole-like larvae emerge from the egg, and begin swimming. These hatchlings, with yolk sac still attached to their 1cm body for the first 12 to 14 days of their lives, are very weak. Swimming from the River's rocky bottom, to be carried many kilometres downstream, each is dispersed to appropriate areas along the way. About 25 days later, yolk sac absorbed, the small larvae feed on almost microscopic River prey and plants. Twenty to 30 days later, the tiny larvae metamorphose (change) into fry, or '"young of the year"', and approximately 50 days after their hatch, the 3cm to 5cm long White Sturgeon have developed fins, barbells, and scutes.

The juvenile stage is reached when the sturgeon is 1 year old and around a 10cm length. At this point, the small Sturgeon begins earnestly feeding on insects, smaller fish, and crustaceans, attaining a 15 to 30cm length by the end of their first year; the size reached is dependent upon abundant, nutritious food availability, and on warmer, water conditions. Growth rate of about 7 cm each year continues until a length of approximately 120cm is reached, whereupon growth gains are slowed every year. At this age, the "juvies" are very active, covering large distances within, and outside the lower Fraser River, possibly entering the Strait of Georgia, and even beyond.

When adulthood is reached, males are the first White Sturgeons to mark that transition at 12 to 18 years old, while females enter that final stage at about 25 to 30 years, attaining a longer body length compared to the smaller males'.

Over the past 10,000 to 13,000 years, when humans entered B. C., the Fraser River White Sturgeon has faced many difficulties in their quest for survival. Aboriginals inhabiting the area, conducted a sustainable, subsistence fishery. This was followed by the European-Canadian arrivals, who began commercial fisheries of many different fish, including the River's White Sturgeon, forever changing the balance of this giant fish. Commercially, White Sturgeon meat, and its roe, caviar, is considered a worldwide delicacy.

The abundance of White Sturgeon has declined in both quality and quantity. This fish feeds on not only the organic food items, but ingests inorganic ones, like paper mill wastes, including dioxin used in paper bleaching, PCBs, used in many synthetic products, and mercury, the usual toxin commonly found in fish flesh. Though the Fraser River is without the threat of dams, other dangers to the White Sturgeon population exist in numerous forms. These include deteriorating water quality, riverflow patterns, and water temperatures, lack of appropriate habitat, human population increases in the lower Fraser River area, overharvesting, particularly in the past, and dredging, gravel extraction, dyking and channelization. The latter threats, are particularly evident on the lower Fraser River. A recent newspaper article in the Mission Record, (November 1/12), reported plans to engage in scuffle dredging of gravel in the Fraser River. Considered by some to be the "last truly wild population of this species in the world", and given that the Species at Risk Act, (SARA), and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), report that the Fraser River White Sturgeon is now considered "endangered", the future of this prehistoric animal relic is in a precarious balance.

Government-appointed White Sturgeon protection programs appear to be currently lacking. However, thanks to organizations like the Fraser Valley White Sturgeon Conservation Society, a nonprofit, charitable, volunteer group, of which Rick Hansen is an Honourary Chair, a mandate has been established to protect the great dinosaur fish, and its habitat. Please refer to the various websites, or library resources, dedicated to providing information on conservation efforts to protect the Fraser River White Sturgeon, and contact your local MLA encouraging governmental protection of this valuable, prehistoric fish. Your help is invaluable!

Val Pack,
Mission

The political landscape of gravel mines

The community of Lake Errock is set around an idyllic lake near Mission in the Fraser Valley. However, towering over the community is a massive gravel pit. The current pit operated for decades until all the gravel was extracted in November 2011. In recent years the site came under the control of large corporate interests after which the pit's activities increased and the scar on the landscape grew dramatically.

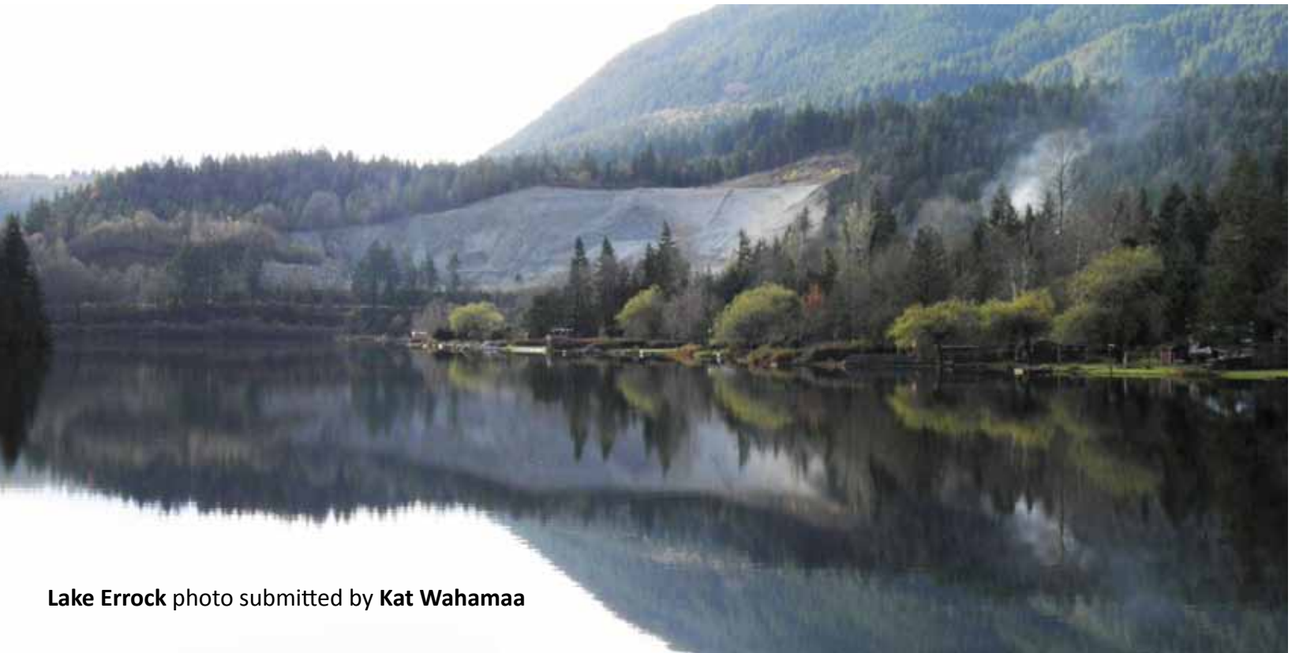
In January, 2011, in a small notice in the back pages of a Mission newspaper, a contractor for the corporate interests quietly announced his plans to expand the pit. The community was opposed and expressed concerns about air pollution, water pollution, threats to the drinking water supply, traffic, noise, effects on local businesses, lowering of property values, and the sheer ugliness of the pit.

Gravel pit applications are increasing all across the Fraser Valley. Independent environmental assessments are not carried out, and as a result, residents of the region are being exposed to unknown consequences, such as exposure to potentially toxic dust, which travels long distances, and for which there are no known safe levels of exposure. There is plenty of gravel in BC that is not in close proximity to where people live, but it is cheaper for the industry to extract it nearer to where it is used - Vancouver - and major highways.

From experience, the people of Lake Errock know that gravel pits make extremely bad neighbours. The Ministry of Energy, Mines and Natural Gas is responsible for mines, but has proven to be unable or unwilling to enforce regulations. Resident's complaints are minimized and ignored.

Since the recent application for expansion of the gravel pit, Lake Errock residents have discovered that the permit granting process for gravel pits is designed to guarantee approval. The only studies used to make the decision are commissioned by the gravel company which sets the parameters and chooses who carries out the studies. The studies do not include impacts on their neighbours. There is no process in place to prevent a proponent from withholding an unfavourable report and subsequently seeking a different contractor in hopes of a more favourable report.

Ministry officials and politicians accept these studies without question, as if funding bias could not affect the findings. Funding bias occurs when the conclusions of a study favour the outcome the funding agency wants. The gravel industry's reply to this issue is that by suggesting there may be bias in these studies, critics impugn the professionalism of the study contractors. In other fields of endeavour, professionals are aware of funding bias and take steps to avoid it, or account for it.



Lake Errock photo submitted by **Kat Wahamaa**

On July 25th 2012 the gravel company held a required public meeting on their application. The contracted companies informed the audience of their long-term relationships to the gravel industry and sat shoulder to shoulder with them at the head table. They appeared to be a group of professionals who make their living assuring that mines are approved.

At this meeting the community learned of a blatant and egregious acceptance of inappropriate methodology in which a sound assessment engineer forewarned the pit office of the imminent testing. Notifying the operator would enable the operator to take steps to mitigate the noise level. However no one in the industry or in the provincial government saw any problem with this methodology.

Dust produced by the pit has been a major complaint of residents. Beyond the possibility of silicosis (a type of cancer) from this dust, there are concerns about the impact on respiratory health generally. Lake Errock is surrounded by mountains and the dust has very few places to go. It is worse during dry weather, but when it rains the dust runs into the lake. If spraying water was used to mitigate the dust, that would also enter the lake. The pending proposal aims to use the current site as a staging area for crushing rock and loading trucks, both activities of which, stir up dust.

The permit applicant's studies do not address the dust problem. Community efforts to have the provincial government take action to assess and address this problem have been fruitless. The Ministry of Environment does not respond, the Fraser Health Authority replied that they would investigate on a number of occasions, though there is no evidence of any action at all. WorkSafeBC has no jurisdiction over mines and the Ministry of Energy, Mines and Natural Gas has taken no action. The occupational health manager at the ministry admits that, over all the years the Lake Errock pit operated, no tests were ever done to determine the contents or the level of dust. She haplessly explained that every time the ministry sent "Ministry Occupational Hygienists to the mine in order to conduct such monitoring . . . there was no mining activity occurring on those days" (October 23, 2012). This excuse is not credible especially as one of the ways to monitor dust over a community is to leave canisters at various distances from the pit and collect dust for analysis over a period of time.

Fraser Valley residents are facing an unending expansion of poorly monitored gravel extraction with undetermined, uninvestigated negative impacts on the air quality and the waterways of the valley. The provincial government, and the pit operators, pay no heed to residents' concerns. Obviously no one wants to live near these noisy, polluting scars on the landscape. Even former junior mines minister, local MLA, and gravel pit booster, Randy Hawes admitted in an email to me, "If I lived in Lake Errock I too would likely be opposed to any further aggregate operations" (July 18, 2012). So why is it that communities across the valley are being ignored? Is it that corporate interests have hijacked our political landscape to an extent where common sense and concern for fellow citizens are overwhelmed by an insatiable desire for corporate profit at any cost?

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THE FOOTPRINT PRESS

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