

# StreamTalk

The newsletter for stewards of salmonids and their habitat • Volume 21 • Number 1 • Spring 2014

## A transformation completed

by Angus Glass

Over a period of nearly two decades, several disused agricultural fields, together with an abandoned equestrian ring, have been transformed into prime fish and wildlife habitat along the Coquitlam River. The final stage of the project included planting a brand new riparian forest and improving existing streamside habitat in two locations – at Colony Farm and Coquitlam River Park.

The planting was coordinated by the Watershed Watch Salmon Society and the Kwikwetlem First Nation, with funding from the Fish and Wildlife Compensation Program (FWCP) in the Coastal Region.

“This is the type of ‘on-the-ground’ work we like to support,” said FWCP manager Patrice Rother. “The end result will be a much richer ecosystem that will benefit the four species of salmonids using these waters and the wildlife inhabiting the riparian zone. In addition, the project was effectively delivered by local community members and First Nations working alongside DFO.”

The FWCP is a partnership between Fisheries and Oceans Canada, BC Hydro, the Province of B.C., First Nations, and the public to conserve and enhance fish and wildlife impacted by the construction of BC Hydro dams.



The gravel stockpile, rocks, and roots at Oxbow Pond were removed. Then 25 metres of topsoil were imported and planted with shrubs and trees to help stabilize the bank and provide shade. Photo: Watershed Watch Salmon Society.

Previous restoration work, under the direction of DFO, included the creation of Oxbow Pond tidal channel in Coquitlam River Park. Major tidal channels were also constructed at Colony Farm that have been very successful in recreating the former tidal floodplain along the Coquitlam River.

The most recent component of the project – the riparian planting – was conceived and implemented by Tanis Gower and Tony Matahlija on behalf of the Watershed Watch Salmon Society.

“The Kwikwetlem First Nation has been central to the success of this project,” said Gower. “It has supported, and been a part of, the work at every step along the way, including providing a committed and dedicated field crew to clear the sites and plant the trees.”

At Sheep Paddocks in Colony Farm, the crew first removed or controlled grasses that were choking out other species; previously a

small number of trees were out-competed in a sea of reed canary grass, limiting biodiversity. The team then created a new riparian forest measuring 5,700 m<sup>2</sup> – about the size of a Canadian football field. New trees and shrubs planted in the upland area included Sitka spruce, black cottonwood, and Nootka rose, while in the tidal zone other shrubs and wetland species were used.

“The Sheep Paddocks project provides excellent habitat for juvenile salmonids and native fish, including coho salmon, chinook salmon, coastal cutthroat trout, rainbow trout, three-spined stickleback, and brassy minnow,” said Matahlija. “Both coastal cutthroat trout and brassy minnow are Blue-listed (species of special concern) in B.C.”

Upstream at Oxbow Pond, the field crew brought in topsoil and then planted

...continued on page 2

### In this issue:

- Taking school to the creeks in Maple Ridge ..... 3
- Coquitlam's stream protection bylaw ..... 5
- Wildlife sightings etiquette .. 6
- Boots on the beach ..... 7

## Eggs for the islands

by Don Lowen

In January, community advisor (CA) Shona Smith accompanied me to Saltspring, Galiano, Saturna, and Pender islands, delivering salmon eggs to school projects. This tour annually affords the CA and me (as education coordinator) the opportunity to



visit volunteers operating island-based enhancement and restoration initiatives. But there's more to this year's story.

For most of the 27 years that I've provided eggs and technical support for Gulf Islands classroom incubation projects, the Saanich Conservation and Protection Branch office has provided the ride in a DFO patrol vessel. This year, Parks Canada staff asked to contribute to Stream to Sea program activities in Gulf Islands Marine Park. They transported Shona, me, and over 60,000 salmonids, in one of their welded-aluminum sea trucks (landing craft).

At each port of call, a teacher or project coordinator met us to receive a batch of eyed Goldstream eggs, courtesy of the Howard English



Hatchery. We also delivered 60,000 Goldstream chum eggs to the Saturna Island Enhancement Group's instream incubation project on Lyall Creek. While I visited Saturna Island School, Shona helped the group's co-founder, Rick Jones, load the infiltrator.

This year's journey brought smiles to the faces of many students and teachers. En route, Shona seized the opportunity to solidify long-standing community partnerships, and we accepted Parks Canada's invitation to begin a new one.

Many thanks to everyone who made the tour such a success!

To learn more about Stream to Sea education activities and resources, go to [www.streamtosea.ca](http://www.streamtosea.ca). For more information on the Gulf Islands Marine Park, [click here](#).

Rick Jones and Shona Smith load an in-stream infiltrator, which acts as a very large artificial redd. The structure provides protection to the eggs while allowing water – and therefore oxygen – to flow through it. Photos: Sybilla Helms.

...from page 1

trees and shrubs to increase shade, habitat complexity (including large woody debris), terrestrial food matter, and nutrients for the salmonids. In addition, beaver protections were installed at both locations, with nearly 500 m of permanent fencing used.

An archaeological reconnaissance, undertaken by the Kwikwetlem First Nation, was part of the work, and a small archaeological site located at Sheep Paddocks was left unplanted to avoid future disturbance of the artifacts.

“The partners did a great job working together,” concluded Rother, “and this habitat restoration project will benefit fish and wildlife for many years ahead.”



### Workshop 2015 is incubating!

Planning has begun for the SEP Community Workshop of 2015 in Port Alberni. Keep an eye on the [workshop website](#) for further developments. Meanwhile, you can find photos from the last one on Bowen Island and from other great workshops of the past.

# Taking school to the creeks... and the streets!

by Ross Davies

From the outside, Samuel Robertson Secondary School in Maple Ridge looks like any other high school. It's when you look beyond the walls of the classrooms that things become very different.

The Kanaka Education and Environmental Partnership Society (KEEPS) first became involved with the then-new school in January of 2006. Spencer Creek, a tributary of Kanaka Creek, flows through Albion Park, across the street from the school. The tributary had been suffering repeated heavy sediment events originating from upstream land alteration. The Science 8 classes began regular creek visits, which included water quality monitoring. Results were made public, and various levels of government were quick to respond. Within a year, the District of Maple

Ridge had completely revamped their sediment control bylaws and Spencer Creek's water quality steadily improved.

Since then, the students have augmented their stream monitoring with activities such as invasive plant species removal, fish presence assessments, and wildlife monitoring as they explore the Science 8 curriculum in nature's outdoor classroom. Students also visit the Kanaka Creek fish fence every spring and fall to observe both juvenile and adult salmon.

An event of note is the annual Walk for Habitat, when over 150 sign-carrying students and staff take



The Walk for Habitat sends a message to Maple Ridge: be as environmentally aware and proactive as your young people! Photo: Ross Davies.

to the local streets in an attempt to raise awareness about habitat issues.

We are extremely fortunate to have this ongoing partnership with Samuel Robertson Secondary School.

## The ripple effect **When students help care for their local watershed, benefits flow beyond the classroom**

by Lisa Fisk

Children have a natural curiosity about the world around them and an instinct to care for the environment. Schools can play an important role in helping to maintain the vitality of watersheds by engaging students in understanding the dynamics of their local water ecosystem and caring for it.

Stewardship activities such as stream monitoring, ravine clean-ups, storm drain marking programs, and classroom hatchery programs involve students in constructive action while learning about their watershed. As a cornerstone of the community, schools extend learning beyond the classroom by raising awareness about local water issues. For example, schools may create murals and artwork to celebrate a watershed, map a lost creek that flows through the community, or design a nature guide that explores the history of local salmon populations.

### **Evergreen's Watershed Champions Program**

This program supports schools in learning about

and caring for their local watershed. Hands-on activities and webinars help educators explore the local watershed with their classes. To recognize classes that take action, there is the RBC-Evergreen Watershed Champions Award – composed of eight regional \$2,500 awards and one national \$3,500 award – for public elementary and middle-school classes across Canada, Kindergarten to Grade 9.

We value collective efforts to care for our watersheds. The award encourages schools to connect with local experts and stewardship groups.

The deadline for award applications for activities in the 2013-2014 school year is April 18, 2014.

For more information about the RBC-Evergreen Watershed Champions Award or to access lessons and webinars, visit [evergreen.ca/watershed](http://evergreen.ca/watershed).



"Hey, what's THAT?" Photo: Thomas Ferguson.





## A shortage of memory

by Zo Ann Morten

My memory is full... and I don't mean my computer, where for a few bucks you can buy another terabyte. I've read that some scientists think we humans use only 10% of our brain. Add age-related shrinkage and I think I may be in trouble. For years I have been able to take in new information and bring it to top of mind as needed for meetings, teaching, and learning. Thankfully, a lot of what I do I have done before. What I need to know is in my memory bank and I can do updates as needed. But where I am having problems is in the new consultative processes.

Having stream- and fish-related interests for 30 years and working for the Streamkeepers Federation, we are invited to take part in a variety of consultations. This fall the wave of requests was like the tidal bore in Truro.

Changes to acts, regulations, licencing, watershed reports, strategic plans, and legislation came to the public for input. Many people who have spent their whole careers working on these issues are no longer employed in these fields, so their replacements and some NGO types joined with First Nations and citizens to review and recommend changes. This happened all over the province and sometimes at the national level.

So there we were, sitting around tables, determining roles, scope of the task (not easy), who will chair, how often to meet.... This got easier as it became routine. Then the learning curve kicked in. Sometimes it went smoothly; the meetings ended up being an information overview resulting in recommendations to a process that in all likelihood was already past the final draft stage. I think those at the table got a better understanding of how the new process will "move forward" (I've taken to counting how many times this phrase is used). But other times it was overwhelming: things used to be like

this, now they are like this, but until xyz happens we won't know exactly how it will all play out. Confused? I know I am.

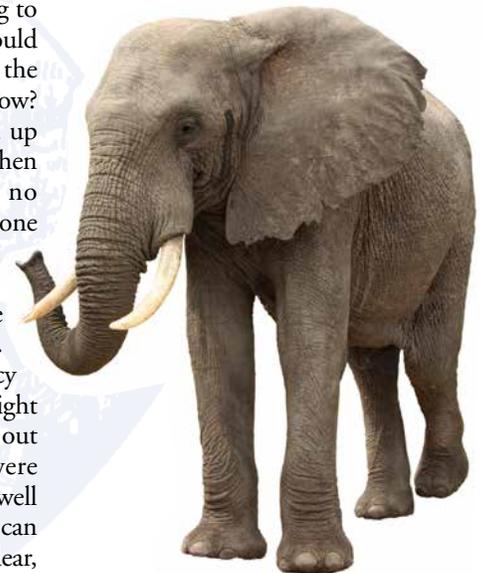
Then came changes to the *Water Act*. Wow, this is huge. This new act will replace one written in 1909. And so we read the proposed act, went to meetings, watched the video blog, posted comments online, and read the "thank you for commenting" letter. Now we wait till spring to see if anything we recommended is in the final act.

I wonder if we'll remember what we asked for? I wonder if people reading my comments understood what I meant? I wonder if I understood the proposal? I watch the rain falling as I write and wonder who "owns" this rain, this water? How are we going to divvy it up in the future? If we could somehow catch it before it hits the ground, what rules would we follow? I wonder how the rules will hold up in times of shortage. Fish too – when there are lots of them, there's no problem. In the fall of 2014, everyone will pat themselves on the back and stakeholders can high five on the riverbanks as they harvest from the bounty returning from the seas. And at this same time the new policy and protocols will be coming into light and people will be trying to figure out what the words mean. What were these acts put in place to do? Is all well with the environment, so that we can take more and protect less? Oh dear, I've gone down the black hole again. Oh, yes, memory, and the lack thereof when I need it.

Last night as I reviewed another strategic plan I came to realize that I would need to read it, memorize it, and complete the attached survey as to which option I would prefer and who should be accountable for what. I can't do this. I can't memorize 30 pages of strategic plans, make the links needed between acts, legislative process, and the judicial system. I don't know when, where, and how one piece of legislation relies on another. I don't know how to protect an endangered species when it is being eaten by another endangered

species.... I just don't know – and I've run out of memory.

What I do know is that local knowledge of what is happening in our streams will be more important than ever. Interested local people have caused decision-makers to take note of the environment in new and exciting ways. Partnerships have formed between local groups, business, industry, and all levels of government. Regular people have made connections to those who have a better understanding of the new rules. Our landscapes are changing but stream creatures haven't changed much. Their needs remain the same; pretty basic really: cool, clean water flowing freely every minute of every day. This I can remember, and this I will strive to retain for them.



So for the new year I will cut back on meetings at tables and leave it to those who are already familiar with processes and legislation. I will spend the time outside with those who are on the ground exploring, counting, lamenting, exclaiming, experiencing, rejoicing. Ah, the cloud lifts! I will work more on the PSkF data entry tool to ensure that what is being revealed in the streams will be available to those stuck in meeting rooms. I will share photos of streams and fish, bugs and grandkids so we can all remember who we are doing this for. I will reserve my memory banks for your stories and I will share them.

# A commitment to watercourse protection

## Coquitlam's Stream and Drainage System Protection Bylaw

by Caresse Selk

Coquitlam, home to over 138,000 people and fast becoming a vibrant regional urban centre, formed a new Environmental Services Division within its Engineering and Public Works Department in 2010. The goal is to better integrate the city's environmental services within its overall business objectives.

Positioned to experience significant growth – the population is expected to reach over 220,000 by 2041 – the city is committed to managing its future in a sustainable manner. Environmental Services includes solid waste management, recycling and waste diversion, water conservation, climate action, energy conservation, urban wildlife management, environmental stewardship, and environmental outreach and education.

Significant recent accomplishments includes hiring Environmental and Worksite Bylaw Officers and adopting a new *Stream and Drainage System Protection Bylaw No. 4403, 2013*. The bylaw strengthens the city's ability to address erosion and sediment control

(ESC) issues related to construction projects. It is especially important given the current growth within the city.

The development and implementation of the new bylaw was a complex and well thought out process with input from consultants, developers, builders, city staff, and the general public. The new bylaw is proactive, requiring developers and builders to implement and maintain ESC measures before an issue occurs. Although the new bylaw is stricter than the previous one and has more requirements for environmental and stream protection, feedback from developers has been generally positive. Developers and builders who previously had been implementing environmentally responsible practices are pleased to see that a higher standard has been set for all sites, while builders unfamiliar with ESC practices are satisfied with the guidance and education they receive from the municipality. Importantly, the bylaw and supplementary materials provide clear ESC standards and leave little room for interpretation.



Monica Woods samples a sediment detention pond at a work site in northeast Coquitlam. Photo: Kelly Prystupa.

There have been countless success stories in Coquitlam that deserve recognition. Many sites, both large and small, have implemented innovative and robust ESC measures that stand up to the heaviest rains. Coquitlam is proud of its streams and rivers that bring back salmon each year and the city is committed to working with developers, builders, and residents to keep this habitat healthy and thriving.

For more information on the bylaw, visit [coquitlam.ca/esc](http://coquitlam.ca/esc).

## These are Caring Canadians...

(WE knew that already!)

Created in 1995, the Governor General's Caring Canadian Award recognizes individuals who volunteer their time to help others and to build a smarter and more caring nation. We are delighted to have two Salmonid Enhancement Program volunteers, Zo Ann Morten and Edith Tobe, recognized with this award in Victoria this January.

Also, two of 2013's National Recreational Fisheries Awards have been presented to winners in B.C.

James MacCarthy received his award in February from the Honourable Gail Shea, Minister of Fisheries and Oceans.

Affectionately known as "Mr. Coho", James has worked tirelessly to protect and restore threatened salmon stocks and streams. He and colleagues in Vancouver's Coho Society of the North Shore have involved citizens – especially young ones – as stewards of their local streams, and raised awareness among community leaders and political and business decision-makers.

The other award was presented to the Les Dowding Memorial Volunteer Hatchery of Tahsis, in recognition of members' contributions to the restoration of spawning beds and the raising and releasing of



Edith Tobe (left) and Zo Ann Morten. Photo: Pat Morten.

significant numbers of chinook fry. Their enhancement of recreational fisheries and efforts towards fisheries conservation will benefit many generations to come.



# Enjoy wildlife sightings – but keep your distance

In light of the number of whales appearing recently in Howe Sound and possible conflicts with boaters, it may be a good idea for us all to review the *Marine Wildlife Guidelines for Boaters, Paddlers and Viewers*.

In particular, there was an incident in early September near Squamish. A number of vessels closed in on a pod of seven orcas, including a calf. One boat reportedly came within 20 feet of them, forcing the whales to turn around twice.

Orcas are protected from harassment under the *Species At Risk Act*. Earlier this year, a boat operator was fined \$7,500 for an incident near Quadra Island. Legislation is pending in Ottawa to make the guidelines enforceable by law, extending protection to other species as well.

The [guidelines](#) can be consulted online. To summarize a few of them:

## Whale watching

- Be cautious and courteous approaching marine wildlife-activity areas.
- Slow to less than seven knots and avoid abrupt course changes within 400 metres or yards of the nearest whale.
- Keep clear of the whales' path.
- Do not approach whales from the front or from behind. Keep to the side, moving parallel to the direction of the whales.
- Do not get closer than 100 metres/ yards to any whale.
- Stay on the offshore side of whales when they are close to shore.
- Limit viewing to a recommended maximum of 30 minutes.
- Do not swim with, touch, disturb, or feed marine wildlife.

## Porpoises and dolphins

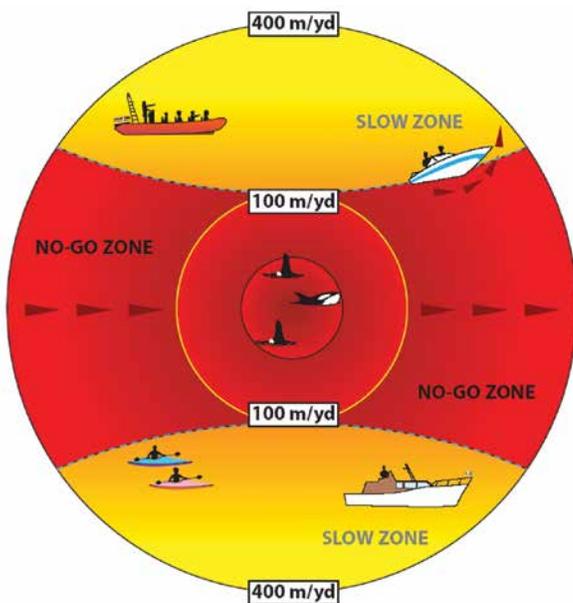
- Do not drive through groups of porpoises or dolphins to encourage bow- or stern-riding.
- Avoid sudden course changes if they choose to ride the bow wave of your vessel. Hold course and speed or reduce speed gradually.

## Seals, sea lions, and birds

- Be cautious and quiet around haul-outs and bird colonies, especially in breeding, nesting, and pupping seasons (generally May to September).
- Reduce speed; minimize wake, wash, and noise; slowly pass without stopping. Stay 100 metres/yards away from any marine mammals or birds.
- Move away at the first sign of disturbance or agitation.

## If you are concerned...

If you see a potentially sick or stranded animal, or want to report a marine mammal disturbance or harassment, call DFO at 1-800-465-4336.

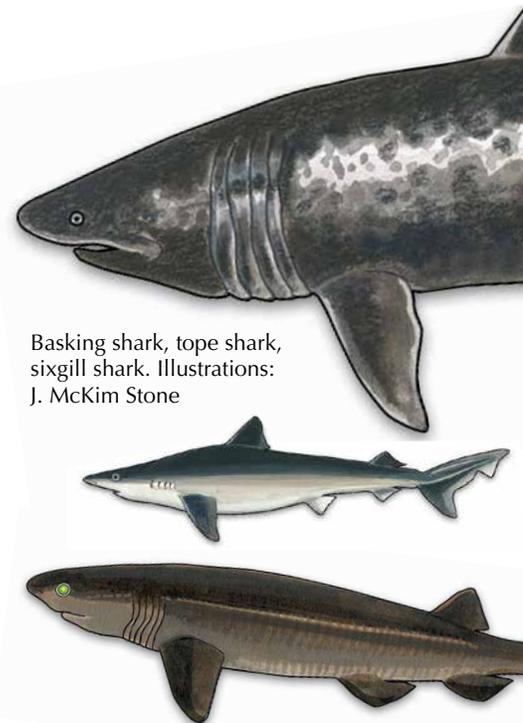


## Help scientists collect essential data

When you are at sea for work or recreation, keep an eye out for whales and sharks. Your sighting, together with a photo and other data, is valuable to researchers monitoring populations of vulnerable species.

The BC Cetacean Sightings Network is a conservation and research program of the Vancouver Aquarium, in partnership with DFO. They collect sightings of all cetaceans (whales, dolphins, and porpoises) and sea turtles from British Columbia and surrounding waters. Complete the [online form](#) or call toll-free: 1-866-I-SAW-ONE (1-866-472-9663).

DFO is collecting data on sharks, especially the basking shark (listed as “endangered” under the *Species at Risk Act*), and the bluntnose sixgill shark and tope shark (species of “special concern”). Report using the [online form](#), or call toll-free: 1-877-50-SHARK (1-877-507-4275).



Basking shark, tope shark, sixgill shark. Illustrations: J. McKim Stone



## Boots on the beach

### Protecting forage fish – a critical element in the salmon cycle

by Ramona de Graaf

Volunteers are the backbone not only of streamkeeping projects but also of the BC Shore Spawners Alliance (BCSSA), a project of the Sea Watch Society. Working together, our goal is to secure a healthy environment for salmon. We need to raise awareness about the importance of surf smelt and Pacific sand lance, two abundant forage fishes in our coastal waters.

Have you ever seen surf smelt leaping at high tide? On the very pebble or sand shorelines we like to walk along, surf smelt, capelin, and Pacific sand lance spawn high up near the log line. Herring eggs can be found on vegetation from mid-intertidal to deeper waters.

#### DID YOU KNOW?

**Chinook and rockfish diets are mainly composed of feeder fish, with sand lance making up at least 50% of the adult chinook diet. Chinook are a critical food for resident orca populations. From little fish, big fish grow!**

Chinook and coho salmon are heavily dependent on smelts, sand lance, and herring. Without these critical forage fishes, many predator species would suffer, from salmon to killer whales. Protecting the salmon circle of life includes protecting marine nearshore habitats critical to sustaining their prey.

A healthy spawning beach for surf smelt and sand lance has an intact marine riparian buffer zone, overhanging shade vegetation, a mix of pebbles and sand, and clean water. Shade from shoreline vegetation keeps surf smelt eggs moist in summer. Removing shoreline vegetation increases temperatures in the spawning gravel; on hot summer days these precious eggs can't survive.



Volunteers with trainer Wen-Ling Liao, learning how to monitor Taylor Beach in Metchosin. Inset: Surf smelt embryo. Photos: R.C. de Graaf.

Hardening and altering shorelines can degrade or destroy surf smelt and Pacific sand lance spawning habitat. Seawalls block sediments from reaching the beach, while wave scouring removes pebbles and sand. Boat ramps and breakwaters interrupt sediment flow along beaches until these areas become starved of fine sediments.

Insects blown by winds from shoreline vegetation are critical for young salmon growth. Removing vegetation reduces key prey for juvenile salmon and can reduce surf smelt populations. Vegetated marine shoreline buffer zones function much like streamside riparian zones, providing wildlife migratory corridors, food sources, and nutrients that stimulate marine plankton growth.

Due to the high importance of shoreline habitat and a lack of comprehensive mapping of these critical fish spawning and rearing habitats, action is urgently needed. The BCSSA and Emerald Sea Biological have been engaging citizen scientists to help monitor beach spawning and offer training and other resources. Streamkeeper groups are already a big part of these teams. Perhaps your group would like to join in on all the fun at the beach! To learn more or find out how you can take part in a forage fish monitoring project, contact Ramona de Graaf at [foragefish.bc@gmail.com](mailto:foragefish.bc@gmail.com) or visit "Friends of Forage Fish" on Facebook. Let's keep the salmon circle connected!

### Does DFO need to review your group's next project?

The *Fisheries Act* requires that projects avoid causing serious harm to fish unless authorized by the Minister of Fisheries and Oceans Canada. This applies to work being conducted in or near waterbodies that support fish that are part of or that support a commercial, recreational, or Aboriginal fishery.

As of November last year, there have been changes to the *Fisheries Act*. Visit the [Projects Near Water](#) webpage for:

- Self-assessment advice
- Guidance for requesting a project review or authorization
- Contact information for project triage and reporting a violation
- Measures to avoid causing harm to fish and fish habitat
- Other documents, including the Fisheries Protection Policy, guidance on offsetting, pathways of effects, etc.



## Fire at Mossom Creek

by Sandie Hollick-Kenyon

On December 11, 2013, Mossom Creek Hatchery burned to the ground. Coho parr in round tubs survived but all the coho and chum in incubation were lost, along with a few coho adults in holding. Water lines to the rearing tubs were secured and the parr survived.

Though the hatchery is gone, the memories gathered over the past 36 years remain and this group will rebuild. Since the fire, volunteers have been working on plans and designs for a new building. You can follow their progress at the [hatchery website](#).



The hatchery was totally destroyed. At the moment, headquarters is a construction trailer delivered to the site by the City of Port Moody. Photo: Ruth Foster

## Salmon Site-ings

### [Salmonids OUTSIDE the classroom](#)

General Brock Elementary School is sharing the Salmonids in the Classroom experience with all of us in this entertaining blog.

### [West Coast Nature](#)

Hans Boerger has created an elegant venue for articles and photos featuring the beauties and wonders of our coast.

### [Tank Setup Tips](#)

Check out these videos by Michael Moynihan of Nanaimo's North Cedar Intermediate School. He has tips on how to set up a classroom salmon-rearing tank, using a system either with gravel or without.

## Nile Creek Enhancement Society launches website

NCES members value thriving ecosystems in local streams, as well as the marine environment of the Strait of Georgia and the Salish Sea. They operate a hatchery for pink salmon. Other projects include bull kelp forest restoration, eelgrass mapping and monitoring, and public education.



*Nile Pinks* by Bruce Muir is just one of the exquisite works featured on the new website as a fundraiser.

With the launch of their new website, NCES is also promoting their "Paintings, by the Numbers" fundraiser. A \$500 ticket will entitle you to choose from 60 superb paintings during a draw on April 26. Visit <http://nilecreek.org/> for details.

To receive StreamTalk by e-mail, please contact Joanne Day at [Joanne.Day@dfo-mpo.gc.ca](mailto:Joanne.Day@dfo-mpo.gc.ca) with the subject line "StreamTalk by e-mail."

### **StreamTalk**

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[Find past issues here.](#)

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**Canada**

