

Stream to Sea Workshop Summary Cowichan-Chemainus-Shawnigan

Nov 8th 2016

Over 20 educators came together at the Vancouver Island Trout Hatchery to hear from local groups and individuals supporting nature and environmental education in the Cowichan-Shawnigan-Chemainus Area. A summary provided by each of the presenters follows. Please feel free to share this with other educators in the area. If anyone would like to be added to the Stream to Sea e-mail list (or has news to share via this list), please contact Christy at Christy.L.Wilson@dfo-mpo.gc.ca.

DFO Stream to Sea Program

- For details on all these programs and to access online resources, go to www.StreamtoSea.ca or www.aufildeleau.ca or contact Christy at 250-754-0330 and Christy.L.Wilson@dfo-mpo.gc.ca
- Storm Drain Marking Program – if you want to borrow the equipment and mark your neighbourhood storm drains with the painted yellow fish, please contact Christy. Best for smaller groups (eco-clubs, guides, young naturalists etc) but is possible for whole class if adequate chaperones/adult assistants. Weather dependent, you need a dry day (early fall or spring are the best times).
- Salmon Dissection – sign up for workshop (will run depending on interest) and carcasses. Contact Christy for more info.
- The Salmon In the Classroom (SIC) Primary and Intermediate curriculum have now been directly matched to the ELE (Environmental Learning and Experience) approved and created by the MC Ministry of Education. Ask Christy for a spreadsheet outlining how these curriculum link with the new Science Curriculum. Of course, you will find matches to other subject areas with the new Big Ideas BC curriculum as well. Find these resources in French and English on our website.
- All our online Science and Sustainability Lesson Plans support a variety of curriculum areas for Intermediate and Secondary grades. The SCI and other resources are also available to download on the DFO Stream to Sea website.
- New curriculum related to the Endeavour Hydrothermal Vents has just been released! This lesson meets learning outcomes for grade 4-8 as well as grade 11. Check it out at <http://www.oceannetworks.ca/endeavour-hydrothermal-vents-canadas-first-marine-protected-area>
For more info about this amazing ecosystem on the bottom of the sea, go to: <https://www.youtube.com/watch?v=XAkQxP9s7-g>
- For more info about the joint campaign by DFO and MERS (Marine Education and Research Society) regarding Leatherback Sea Turtles in BC (including a colouring page and an animated video about how to help these endangered species), please go to: <https://mersociety.wordpress.com/2016/06/01/leatherbacks-in-bc/>
- Scales and Tales (8 fun fact sheets about the salmon life cycle) are now available off of the Stream to Sea education page: <http://waves-vagues.dfo-mpo.gc.ca/Library/348899.pdf>

- School District 79 has copies of some of the DFO curriculum and resources (including salmon sock puppets) that district staff can borrow. All local educators (private schools etc) can borrow from Christy.
- To order stickers, posters, pins, key chains and a limited selection of hard copy curriculum contact Christy.
- DFO Watershed posters and a variety of colouring pages and handouts were given to workshop participants. Available to others upon request.
- Stream to Sea Newsletter/ Email Update – attendants providing email address will be added to this list and receive regular updates about local opportunities for education, events and volunteering related to the water world. Any groups wishing to advertise events and programs via this newsletter should contact Christy with as much advance notice as possible.
- Christy is sometimes available to do in-class presentations related to the watery world and I love helping with field trips whenever I can (I started my career as a biologist and love to show kids how to be biologists too). Please do contact me if you are looking for specific support for your watershed studies, from Stream to Sea!

Freshwater Fisheries Society of BC – Vancouver Island Trout Hatchery

Organization: Freshwater Fisheries Society of BC – Vancouver Island Trout Hatchery
Contact Name: Tristan Robbins – Hatchery Manager
Contact Email: tristan.robbins@gofishbc.com

Potential Support:

Vancouver Island Trout Hatchery stocks 50-60 lakes on Vancouver Island each year with rainbow and cutthroat trout. We occasionally meet school groups at local lakes (Fuller, Chemainus, Quamichan, Shawnigan etc.) so they can assist with a fish release. We start with giving a brief summary of who we are and what we do, and then we let individual students release the 15-20cm long trout via bucket. Once each student has had an opportunity to release a fish, we release the remaining fish via large release hose from the transport truck into the lake. We usually try to get a teacher and a few students in chest waders so they can get in the water and hold the release hose while the rest of the class watches.

Sometimes Tristan and his colleagues can provide field trips of the hatchery (he gave us a very informative tour on the night of this workshop) and arrangements can also be made for students who are interested in fish and fish culture to volunteer for a day (or more). Please contact Tristan to discuss these opportunities.

The Freshwater Fisheries Society of BC also runs Outreach Programs from May-August each year. Outreach staff are available to visit classrooms to educate students on ecosystems, fish species, fishing ethics, etc. For more information on our Outreach Programs please email viprograms@gofishbc.com.

Strawberry Isle Marine Research Society – Build-A-Whale Program

On behalf of this amazing program, Christy shared killer whale jaw bones and everyone learned first-hand why the teeth of offshore killer whales are so different from the resident killer whales (offshores mainly eat sharks and the sand-paper like skin on sharks wears the teeth of offshore killer whales down significantly)!

Build-A-Whale is a hands-on educational program connecting people to nature!

O120 is a female Offshore killer whale used to teach people about whales. In August of 1997 she was found floating 31 km off of Tofino, BC. No clear cause of death was found, though her heavily worn teeth and thin blubber suggest that she may have been an older animal. Now Build-A-Whale travels around the country as an interactive educational display where participants help to assemble her skeleton and learn about killer whale anatomy, ecology, and conservation! Build-A-Whale's new curriculum is designed for all ages. Details can be found online at <http://strawberryisle.org/research/build-whale> .

Contact Jessica Edwards (jessica.edwards@strawberryisle.org) for bookings or more information. There may be an opportunity to share travel costs for the program if you book with other schools, so please be in touch as soon as possible if you are interested.

Cowichan Land Trust

Streamkeepers - Wetlandkeepers - We can provide support to help you start a Streamkeepers or Wetland keepers group/club or complete Streamkeeping activities. This may include training, equipment, supplies such as plants, technical support, etc. We can also come out and do a Streamkeepers or Wetlandkeepers explorer field trip.

Storm Drain Marking Program - often provided in partnership with Bob Crandall and his water pollution prevention program. The yellow fish are there to remind us that storm drains on our roadways empty directly into local streams. We need to keep harmful things out of the storm drains. The fish are often painted by local residents and children who care about your local streams. Then brochures are handed out door-to-door in the community to explain the program.

Salmon Walks - often provided in partnership with other interpreters.

These program can be offered by the CLT at no cost, and a donation is always greatly appreciated.

Contact: Kai Rietzel kai@cowichanlandtrust.ca

Cowichan Estuary Nature Centre:

Experience the Estuary Grades K – 3: Mud Buddies In this program, students help “Eddy the Eelgrass” get to know his new home. He is a new transplant to Cowichan Estuary and needs a little help from the students to become familiar with his new habitat. Students are introduced to the plants and animals of

the estuary by visiting stations on intertidal mudflats, the estuary shoreline and the viewing tower. For younger students, the importance of estuaries and how to protect them is taught through hands-on exploration and games. Older students can try their hand at more difficult scientific activities such as utilizing plankton nets and microscopes to see first hand the base of the ocean food web (only available at high tide), designing and testing a hypothesis using shore crabs, and beach surveys. Program length: 60- 90 minutes

Grades 4 – 12: Estuary Explorers This program is scaled to appropriate content and challenge for the grade level of students visiting and desired learning outcomes. In this program we take a watershed focus and guide students through understanding how water systems are connected. An engaging modelling experiment will help students relate to the concept of watersheds and human use impacts upon their own watershed. We also learn about some of the interesting creatures to be found in our touch tank and salmon tank. The outside focus of this program is to expose the students to the abundance of life in the estuary through a variety of scientific techniques such as mud digs in the tidal mudflats, beach seines, plankton tows, and bird surveys. Traditional Aboriginal uses of the estuary are also be discussed throughout the activities. Through a combination of direct and indirect instruction, students will be guided to create their own meaning as to the importance of the estuary and its health. Program length: 90 minutes

Watershed Warriors: All Grades This travelling program is offered in partnership with the Cowichan Watershed Board. We engage students by exploring the riparian habitat of the Cowichan River, or a creek within walking distance of your school. Students will identify aquatic macro-invertebrates, fish, and amphibians caught in the river using scientific sampling techniques. Species diversity, niches, habitat dependence and the importance of connected habitats are discussed. Students may participate in a riparian clean-up after the sampling session. They will be introduced to the concept that the Cowichan River is the focal point of our watershed and that we depend on it for many reasons including: drinking water, water for agriculture and industry, fish for food and sport, entertainment and recreation, and tourism. *This program is seasonal; June and September are the best months. We will assess your local creek for suitability prior to confirming the program.

General Information:

Our school programs are scaled to grade level. We split the class in half, with one half doing outside activities and one half inside activities. Thus, activities we can do are dependent on the season, the tide, and the weather. Some program components are only available during a low tide, others are best suited to high tide. We are happy to work with you to find the right conditions for your desired class experience. All programs are outside and in the mud. Participants will need to bring boots, dress for the weather including rain gear or sun hats, and a change of clothes in case they get very muddy. We know the challenges teachers face with busing costs, and we are able to accommodate two classes at once. We can help set up a schedule that works for two class visits.

How to Book: Cost: \$8.00 per student. Teachers and parents/guardians are free. Contact Todd Carnahan through this online booking form <http://www.cowichanestuary.ca/programs/schoolprograms/>. For any questions about his presentation, contact Todd at todd@cowichanestuary.ca.

Cowichan Valley Docents

Genevieve Singleton reminded everyone that she and the Cowichan Valley Docents offer a variety of field trips to help students connect with nature. She showed off a fabulous salmon lifecycle necklace she made (ask her how to make with your students) and invited everyone to join her in a flashlight salmon tour after the workshop!

Cowichan Valley Docents offer a variety of nature programmes for Elementary Students (we also supply programmes for any age). Nature Walks, any seasons for all ages include a guided walk, with games, stories, and fun facts shared while exploring the natural world around us. Times are flexible and depend on volunteer availability.

If you desire a Docent presentation or field trip please contact Genevieve Singleton at twinflower4@gmail.com or at 250.746.8052 (email preferred).

Cowichan Lake Salmonid Enhancement Society (CLSES)

We (CLSES) do egg takes in Dec. and can sometimes accommodate class viewing of this process. We offer classroom enviroscape presentations in the new year (Jan.-April). We offer streamside planting opportunities for students in April and May. Ask about Storm Drain Marking (painting the yellow fish on the storm drains and education program that accompanies this) in May and June. Fry salvage all summer. Stream survey hikes in Sept. Oct. These are the activities we offer to students. Please contact me with any specific requests.

Thanks, Bob Crandall – CLSES

250-715-7074 rcrandall007@yahoo.com

Shawnigan Lake School

Activities that I could offer/support at our Hatchery and neighboring pond are:

1. Hatchery tour and release of fry to Hartl Creek (100 m from the hatchery)
2. intro/demo fin-clipping prior to fry release - dependent on the size of the rearing fry in the hatchery
3. pond dipping and sorting/ID'ing of benthic macro-invertebrates activity (equipment provided)

Note: 1 and 2 have a small window of time (usually mid-April to early May). 3 is possible from mid-April to early June.

There is no charge for the activities, but Shawnigan Lake School does not provide any transportation support. Timing of a visit would be coordinated around my teaching schedule. Contact: Scott Noble snoble@shawnigan.ca

Cowichan Valley Naturalists' Society

Eric Marshall provided information about his work with the Cowichan Valley Naturalists' Society and has provided this summary...

Members of our Society are knowledgeable on many aspects of natural history: e.g. marine organisms, birds, and flowers. Many of our members volunteer at the Cowichan Estuary Nature Centre when school classes visit. They also have worked with school classes on the Somenos Marsh Open Air Classroom. Current the Society is leading a project to bring back western bluebirds to the Cowichan Valley - over the past five years a some bluebirds have been brought up from Washington State each year. Many of these have successfully raised young and in 2016 close to 100 bluebirds have been seen in the Valley. They are being monitored by our members and some local landowners on whose land they are living in bird boxes. We hope that many of these birds will return in 2017. Members also work closely with our two Nature Kids Groups. For more information or to join, contact ERIC MARSHALL at ericmarshall@shaw.ca .

Cowichan NatureKids

NatureKids is a nature exploration club for 3-12 year olds and their families. There are two clubs in the Cowichan Valley – the Tuesday Homelearners Club and the Weekend Club. We meet with a Biologist, Scientist or Naturalist on the 4th Tuesday or 4th weekend of the month.

NatureKids helps children get outdoors to explore, play, learn about and take action for nature.

Upcoming Explorer Days include Salmon Walk/talk, nature hikes, All about Bumblebees Workshop, Frog surveys in the spring, Food Forest Nature Walk, Low Tide Day, Stewardship Projects. Past Explorer Days include sea kayaking, Great Canadian Shoreline Cleanup, bird watching, Bat Talk & Walk and fall frog surveys.

Schools are able to subscribe to "NatureWild Magazines" which come with curriculum guides for teachers.

NatureWILD is BC's only home grown nature magazine for children, it is produced by NatureKidsBC with contributions from some of BC's leading naturalists and biologists. In it you will find fascinating articles on BC's wildlife and ecosystems, stories about children taking action for the environment, along with activities, games and contests! NatureWILD is mailed to members quarterly. NatureWILD comes with your Family or School Membership or you can subscribe to NatureWILD.

Our new Curriculum Connections document links the content of each NatureWILD magazine to the new BC curriculum.

Consider incorporating the Curriculum Connections into your family's learning or classrooms - ideal for home schoolers, teachers, or nature lovers looking to get even more out of their NatureWILD. Members receive their digital copy in our quarterly newsletter that goes out shortly after NatureWILD arrives at your doorstep!

Check out www.naturekidsbc.ca and/or like us on Facebook at Cowichan Valley Clubs Naturekids.

Local volunteer NatureKids Leader, Boleyn Relova can be reached at cowichanvalley@naturekidsbc.ca or 250.217.0389.

Strong Nations Publishing

Strong Nations is one of the largest Indigenous book stores in North America. We are also a publishing house and have recently launched our new series, *From the Mountains to the Sea* which can be viewed on our website here: http://www.strongnations.com/store/item_list.php?it=3&cat=3422. The books in this series (as well as many related resources) are now available in French!

The first book in the *Mountains to the Sea* series is *We Live Here*, written to meet all the new BC curriculum Aboriginal Learning Standards for both science and social studies in Kindergarten. The second title is, *We Share the Seasons*, again meeting the same curriculum standards and targeting a grade 1 audience. Lastly, *We Are a Community*, again meeting the same curriculum standards and targeting a grade 2 audience. **All these books are open-ended and can be used to assist with exploring the Indigenous curriculum for any grade level, from pre-school through to Grade 12.** These (as well as related resources) are also **now available in French!** They have a variety of Strong Learner card sets also in French, such as this salmon set http://www.strongnations.com/store/item_display.php?i=6042&f=

Check out the newly released *Hideaway Cove*. This new book (available in hardcopy and paperback) that provides an excellent exploration of our local marine environment, with life-like illustrations that will draw your students into learning more about local ocean life! More info at http://www.strongnations.com/store/item_display.php?i=6259. A new companion set of Strong Learner Matching Cards will also help you with adding marine content to your lessons http://www.strongnations.com/store/item_display.php?i=6275&f=

Strong Nations also offers a variety of supports on our website: www.strongnations.com. Terri Mack is also available to consult with and can be reached at: 250-758-4287. We are located in Nanaimo, BC.

In appreciation,
Terri Mack

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The Marine Detective

Jackie Hilderling is “The Marine Detective” - a biology teacher, cold-water diver, underwater photographer, and humpback whale researcher living on NE Vancouver Island. She strives to increase awareness, connection and positive action for our life-sustaining cold, dark seas by revealing the mystery, fragility and wonder of the life hidden just under the surface. She is available for presentations on all from Bioaccumulation in Killer Whales, to Sea Star Wasting Syndrome, and Marine Biodiversity. Recent on-camera experience includes being featured on Animal Planet’s “Wild Obsession” series and in the BBC production “New threat to Canada’s Pacific humpback whales?” Recognition includes being the 2010 winner of the Vancouver Aquarium’s Murray A. Newman Award for Excellence in Aquatic Conservation. Dive into our local waters with The Marine Detective at:

www.themarinedetective.com www.facebook.com/the.marine.detective
www.mersociety.org/bios.htm

Ocean Networks Canada

Established in 2007 as a major initiative of the University of Victoria, Ocean Networks Canada (ONC) operates world-leading ocean observatories off the west coast of Canada and in the Arctic. A decade of real-time data on the physical, chemical, biological, and geological aspects of the ocean allows scientists, students and teachers around the world to explore complex earth processes and discover ocean mysteries.

By gathering data about our changing ocean, monitoring marine safety, earthquake and tsunami hazards and collecting images and sounds of marine life, ONC supports evidence-based decision-making and opens the door to our planet’s next frontier, the world beneath the waves. We invite you to get to know the ocean: www.oceannetworks.ca . Or contact Natasha, the K-12 Educator Coordinator, at tasharei@uvic.ca. Check out the wide range of educational resources and curriculum on the website, including a link to DFO’s new Endeavour Hydrothermal Vents Lesson Plan (meets learning outcomes for grades 4-8 and grade 11) <http://www.oceannetworks.ca/endeavour-hydrothermal-vents-canadas-first-marine-protected-area>.

Go Camp! Go Learn! Go Play! With RLC Park Services....Discovery is in our Nature!

RLC Park Services has long been a provider of outdoor (and indoor) experiential learning in parks and other nearby nature areas. We specialize in Salmon Biology and Ecology, Intertidal Studies, Forest

Ecology, and everything in between. As the operators of the Rathtrevor Beach, Goldstream and Miracle Beach Nature Houses, as well as many other Vancouver Island Parks, we specialize in programming that inspires connections to the natural world for schools (and other learning groups). We will get your students exploring, inquiring, dancing, laughing, competing and building without realizing they are learning the whole time. We are constantly adding more opportunities and fresh program ideas and are excited to launch a complete revamp of many of our programs to support the new BC curriculum in January 2017 so make sure to check back in with our website and social media throughout the year. www.naturehouse.ca and www.rlcparks.ca Also watch for our program advertising sent via email as well as SD79 internal mail. We are the Vancouver Island contacts for the Stream of Dreams Program (painting fish for your fence!), more info follows....

A brief “taster” list of our programs include:

Rathtrevor Beach Provincial Park Programs – from 1 hour to multi-day adventures including intertidal programs, forest programs and our most popular Survivors! Program

<http://naturehouse.ca/j333/index.php/inoursparksmid/rathtrevorbeachmid/rathtrevorbeachspring>

<http://naturehouse.ca/j333/index.php/in-ours-parks/sleep-overs?id=141&phpMyAdmin=d8Y,t1O7BBGqgcY5wtvqXo2I55f>

Horne Lake Regional Park – Outdoor Adventure Programs and Inquiry including Water Science, Canoeing, Wilderness Skills, Survivors, Learn to Fish camping AND we arrange Caving, Rappelling and more with our partners at Horne Lake Caves.

<http://naturehouse.ca/j333/index.php/inoursparksmid/hornelakeregionalparkmid>

Salmon Program Examples

<http://naturehouse.ca/j333/index.php/inourparks/goldstream/goldsteamfall>

In-School Programs – when transportation costs are prohibitive we can bring the park to you with one of our in-school programs or join you in a nearby nature space of your choice

<http://naturehouse.ca/j333/index.php/inschoolmid>

Naturalist for Hire – Our staff can join your class on a learning field trip as a nature guide

<http://naturehouse.ca/j333/index.php/hireanaturelist2>

Stream of Dreams: <http://www.streamofdreams.org/>

RLC Park Services Stream of Dream Providers write-up:

http://media.wix.com/ugd/b8fe70_29f4bbe3d0fe422b879eef9e4bfc0fa1.pdf

A few videos of RLC Staff at work:

Did You Know Zombie Salmon <https://www.youtube.com/watch?v=U11QcLJnxBM>

Did You Know Goldstream Beavers <https://www.youtube.com/watch?v=X6n0fWGcFAC>

Project Based Learning Example <https://www.youtube.com/watch?v=PlpxCSUw-vQ>

Yours in Nature,

Alli

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More Programs and Resources to check out!

<http://www.aitc.ca/bc/> - Agriculture in the Classroom Programs: Planting a Promise; Spuds in Tubs; Fresh to You Fundraiser

Children and Nature Network – Conference April 2017 Vancouver – Network created by Richard Louv author of Last Child in the Woods – Saving our Children from Nature Deficit disorder -
<http://www.childrenandnature.org/>

Classroom Energy Diet Challenge - <http://energydiet.canadiangeographic.ca/> - Deadline Jan 27th

David Suzuki – Great resources and events to get involved with 30X30 challenge -
<http://30x30.davidsuzuki.org/> Take me Outside day - <https://takemeoutside.ca/tmo-day/>

Great Canadian Shoreline Clean-Up - <http://shorelinecleanup.ca/> – Great Book to compliment beach clean-up activity - Somebody Swallowed Stanley by Sarah Roberts - <https://www.amazon.ca/Somebody-Swallowed-Stanley-Sarah-Roberts/dp/0992950503>

A European website discussing Ocean Literacy
https://platform.europeanmoocs.eu/course_from_abc_to_abseas_ocean_liter

“The Ocean is vitally important to Europe. The EU Member States have between them the largest maritime territory in the world (approximately 3.9M sq. km) and a coastline of some 100,000 km. Over 16% of Europe’s population lives by the coast, of which 85% is now developed. 90% of all EU external trade goes by sea and European ship owners control almost 40% of the world fleet. According to the EU Blue Growth program, the 'blue' economy represents 5.4 million jobs and generates a gross added value of almost €500 billion a year, with further growth possible. European seas contributed in shaping the history and economy of western societies, and the European lifestyles.”

The BC Girl Guides have an Ocean Aware Literacy Challenge: <http://bc-girlguides.org/web/Documents/BC/program/OceanAware.pdf>

Ocean Networks Canada resources for teachers:
<http://www.oceannetworks.ca/learning/resources/educator-resources>

<http://www.healthyoceans.org/home.html> Once Upon A Tide (the Ocean is calling to you)

<http://www.speakupforblue.com/sockeye-salmon-return-to-rivers-using-magnetic-field-during-migration> Interesting facts about migration.

BC Green Games is up and running for the school season --<https://www.bcgreengames.ca/>

Counting the Invisible Fish," Hakai Magazine, <http://bit.ly/1QXnfXz>.

Please share this summary with other educators your know! Anyone wanting to stay connected for future updates can me added the to Cowichan Stream to Sea e-list by contacting Christy Wilson at DFO. Christy.L.Wilson@dfo-mpo.gc.ca .