

StreamTalk

The newsletter for stewards of salmonids and their habitat • Volume 12 • Number 2 • Autumn 2005

Recovery efforts underway

Toxic spill hits Cheakamus River

Work has begun to try to restore salmon stocks in the Cheakamus River after damage resulting from a large spill of caustic soda. The spill occurred on August 5 when a CN train derailed 30 km north of Squamish and the contents of a rail car entered the river. The Cheakamus flows into the Squamish River, which in turn empties into Howe Sound. It supports chinook, coho, chum, pink and steelhead salmon, as well as resident trout and other fish.



Fish, insects and water samples are being collected to assist in planning and monitoring restoration efforts.

While Search and Rescue teams notified residents and issued public health bulletins, volunteers and DFO staff were attempting to assess damage to fish.

"I cannot understate the effect this has had on fish populations," said Caroline Melville, a member of Squamish Streamkeepers. "I would say a very high percentage of fish in the mainstem Cheakamus and lower Squamish are dead." Juvenile coho, chinook and chum, three age classes of steelhead, sculpin and lamprey suffered severely.

Thanks to the alertness of Carl Halvorson at the North Vancouver Outdoor School (NVOS), some fish habitat and important fish stocks were saved. Halvorson shut off intake valves that divert Cheakamus water to three restored fish-rearing channels located on the school property. He was tipped off by a contractor working on a stream restoration project at NVOS, who had been monitoring the railway's radio frequencies. Carl contacted DFO and it was decided to risk cutting off the water flow in an attempt to protect the juvenile fish from the worse effects of the caustic soda release. Post-spill observations showed that most of the juvenile salmon and trout on the NVOS property and on Squamish Nation side-channels downstream have survived the spill. DFO Biologist Matt Foy credits Carl with possibly "saving the coho stocks in the Cheakamus" with his fast reaction.

A steering committee and a technical advisory committee have now been formed to assess environmental impacts and projected cleanup costs. Members include CN, Squamish First Nation, B.C. Ministry of Environment, Environment Canada, Fisheries and Oceans Canada and the District of Squamish.

CN will be allocating funds to cleanup work once a plan is in place. In the meantime, the company has agreed to contribute \$250,000 to the Pacific Salmon Foundation in support of local restoration efforts.

CN is also helping to fund an initiative by DFO staff and Squamish Nation members, who have begun a special collection of eggs from returning adult

salmon. These will be hatchery-incubated to boost survival rates. DFO facilities such as the Tenderfoot Creek Hatchery will care for the eggs until they are ready to be released back into the Cheakamus River as smolts this spring.

Pink and chinook eggs will be collected from adults taken at NVOS, from Moody's Channel on the Squamish Nation Cheakamus Reserve and from nets set in the river itself. These two species had already entered the Cheakamus to spawn when the spill occurred.

Preliminary information suggests that adult coho and chum salmon that will enter the Cheakamus River later this year have not been significantly affected.

Linda Williams of the Squamish First Nations led a healing song during the announcement of recovery funds. She said the derailment was another sign that the Earth was out of balance. This type of accident raises awareness about the fragility of our ecosystems, and how better safeguards need to be in place to prevent such incidents on our waterways.

For pictures and more information, visit www.pskf.ca

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B.C.'s Rivers Day takes over the world

Did he know what he was setting in motion? Mark Angelo started BC Rivers Day in 1980. Twenty-five years later, it's gone global, with the announcement last June of World Rivers Day.

WRD complements the water-related efforts of the United Nations, which recently launched a 10-year initiative to raise awareness of water issues and to halve, by 2015, the number of people who are unable to reach or afford safe drinking water.

Millions of people and thousands of international organizations were expected to contribute to the first World Rivers Day on September 25. Here in B.C., where it all began, our communities were out in force.

The Gulf of Georgia Cannery National Historic Site of Canada and the Stream of Dreams Organization got together in **Steveston** and inspired visitors to paint 100 beautiful wooden fish. These have been attached to the cannery's fence as a mural that will raise consciousness about rivers and fish.



Volunteers plant and plan for Kanaka Creek's future.

The Kanaka Environmental and Education Partnership Society (KEEPS) of **Maple Ridge** called their event "Green Grass and High Tides." The day's activities included canoe tours, children's programs, stewardship displays, and the presentation of certificates to youth that participated in this past

summer's Catching Kanaka Spirit program. They launched the Community Ecosystems Restoration Initiative urban planting program, started by the District of Maple Ridge and being delivered by Ecosystem Restoration Associates and KEEPS as well as others.

The Fraser River Ecological Society of **Hope** organized a cleanup of Landstrom Bar and Croft Island Bar. Eight members collected 10 bags of litter that had been deposited by fishermen. This totals 27 bags collected since May 1.

Prince George's fifth annual Rivers Day Music Festival drew over 4,000 people. They enjoyed eco-friendly food, interactive displays, children's activities and booths run by community groups, First Nations, government and industry. Folk musician Raghu Lokanathan, country singer Ken McCoy and rock band Wide Mouth Mason entertained the throng. There was a showcase of First Nations entertainers including country and traditional music, rap and comedy. B.C. Lieutenant Governor Iona Campagnolo made a heartfelt speech about early river explorers and settlers and asked people to respect our environmental and cultural heritage. She wished the City of Prince George a happy 90th birthday and everyone had a big slice of birthday cake.

Over 700 people came to the Salmon Celebration, honouring the fish that once lived in the streams flowing into **Vancouver's** False Creek. Local groups who practice watershed stewardship and urban sustainability took part in a parade. People came in costume, made fish on sticks and ate smoked wild salmon. Twenty groups put up tables to showcase their work. First Nations groups danced, drummed and told stories and three First



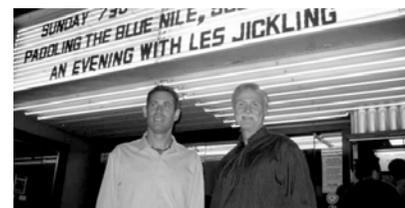
This unique celebration reminds city dwellers that streams may be flowing invisibly under their feet.

Nations canoes came from North Vancouver to join in the festivities.

Hosted by the local Steelhead Advocates Association, **Spences Bridge's** event took place in glorious sunshine on the Thompson River. Volunteers formed enthusiastic crews and cleaned up stretches of riverbank from the Highway 1 bridge to the mouth of the Nicola, plus several popular fishing spots. It was encouraging to see how many local teens showed up, taking pride in their river. Organizer Jim Ryan says, "We're a very small town with limited resources, but the good feeling generated by this event bodes well for even more success next year."

And where was Mark Angelo on his favourite day? He was with 150 volunteers at Thompson River Park in **Chilliwack**, taking part in a day of river cleanup, hot dogs, and inspiring speeches. Approximately 2.5 tonnes of garbage was collected.

And that's not all. That night Mark introduced a multimedia presentation about the Nile at the Ridge Theatre in Vancouver. Be it the Nile or the Chilliwack, rivers are precious, and ours to protect.



"Rivers are the arteries of our planet," says Mark Angelo (right).

Oceans Day

...Campbell River style

Our fourth annual Oceans Day was held in conjunction with Seafest, a celebration of ocean art and food put on by the Maritime Heritage Society. People learned all about our ocean-going heritage by touring a troller, gillnetter, seiner and tug. They sampled traditional dishes at food booths manned by the Homalco and Campbell River Bands. Kids (and some adventurous adults)

enjoyed the dunk tank and the Big Fish. Crabby Bob manned the touch tanks. It was a busy day! We unofficially counted over 1,400 people through our site. Thanks to our sponsors and the many people who bought lottery tickets and donated prizes. We are already looking forward to next year.



A budding marine biologist conducts a hands-on experiment.

...Bella Coola style

The weather cooperated on Sunday June 12 for the Bella Coola Oceans Day event at the government wharf. The event is aimed at increasing awareness of our oceans and their vital role in support of life on earth. It's also an opportunity to encourage safe boating, learn about marine life and generally have some fun.

The most popular attraction was the marine creature touch tank and aquariums. Many Bella Coolans were surprised to see the diverse and rich marine life we have nearby, when all they see at the wharf is the muddy or milky freshwater layer produced by the Necleetsconnay and Bella Coola rivers.



A prehistoric looking Brown Box Crab was the star of the touch tank.

You could get your face painted, put artistic talents to work on a Stream of Dreams wooden salmon cutout, and try out marine architecture with Junior Boat Builders. Or you could take part in the "web", the food web that is, where people were tagged as plankton, herring or killer whales. Prey and predators were linked together, and shown that when one link in this fragile and vital web is broken, everything unravels.

The Landlubbers Boat Relay included outfitting a boat and crew with safety equipment, taking on some water and getting rid of it. With young Chris Askey's crew this meant strategically baling it into the boat of the opposing Snootli Hatchery team. They then recovered a man overboard using a throw bag. A couple of teams charged away from the dock only to be abruptly reminded that they needed to untie the boat first.

The Nuxalk Fisheries Program put on an excellent display with pictures, maps and lots of great information about the programs they have undertaken. The Nuxalk and Bella Coola Fire Departments, with help from the Sooke Post, made a splash with their

demonstration of marine fire response.

Oceans Day could not have been such a success without the willing and enthusiastic support of volunteers, businesses and government personnel. "SEA" you there again in 2007.

Congratulations, Ted!

Port Coquitlam's 2005 Environmental Protection and Enhancement award was presented to Ted Wingrove at this year's Volunteer Recognition Tribute.

Ted Wingrove has been a dedicated volunteer with the Hyde Creek Watershed Society for eight years, serving as president for the last six. He visits the hatchery on an almost daily basis to ensure that everything is operating smoothly. He recognizes the importance of a healthy watershed and makes it a priority to share that information and education with others. He has worked diligently to grow the Hyde Creek Salmon Festival and raise funds for the Hyde Creek Education Centre so that others in our community can appreciate the value of environmental stewardship. His award is richly deserved.





Beating back the invasion

by Joanne Day

Sometimes a plant from another ecosystem finds just what it needs in your area. As it flourishes and spreads, it can crowd out native

plants. To humans, one green thing may seem as good as the next, but a caterpillar or chickadee may have food or habitat needs that only native plants can supply. Even insect pollination patterns can be affected. Before you know it, the local ecosystem is out of balance.

Streamkeepers know about this problem, as they work to protect or restore riparian habitat. They need to identify invasive species before they become too well-established, and replace them with beneficial locals.

The best time of the year to remove invasive plants is from August to April. If you are weeding out a herbaceous species, try to do it before it flowers. (Some of us wonder why it is that so often the species that must be removed is prickly, like blackberry, or downright nasty, like that giant hogweed which can raise a rash on your skin.)

Alien or native?

Tips for plant identification, and information about species that are native to B.C., can be found at the site of the Native Plant Society of British Columbia, www.npsbc.org.

If you have a suspicious-looking newcomer in your area, you may find it on one of these websites:

www.agf.gov.bc.ca/cropprot/invasiveplant.htm

<http://invasivespecies.blogspot.com>

www.ubcbotanicalgarden.org/weblog/cat_invasive_plants.php

www.weedsbc.ca

Field guides are usually organized by ecological zone, flower colour or structure. Other clues include distinctive scents, presence or absence of prickles, and the season at which it flowers. If you can't find your plant in a wildflower guide, it may be a garden variety.

Hardy and opportunistic, alien plants are often difficult to completely remove. Your best strategy is to understand how the species propagates, and be ready to replant with native species right away. Invasives love fresh dirt and open space.

For particularly thorny problems, you can get help from experts on the UBC Botanical Garden's online discussion forum.

Module 7 of the *Streamkeepers Handbook*, at www.pskf.ca/publications/Module07.pdf, contains a useful index of native species suitable for riparian re-vegetation projects. It will help you plan your project, prepare the site, and organize follow-up maintenance. You may be able to use cuttings or seeds, or you may need to buy or salvage plants. Check with your municipality to see if there is a development planned from which you can rescue native plants. The chickadees will thank you.



One of ours: a sword fern is salvaged from a development site by Mike Gosnell.

The North Shore Fish and Game Club

was recognized by DFO this spring for 25 years of involvement with salmon enhancement on MacKay Creek in North Vancouver. The group has maintained a creek-side incubation box throughout this period that was used for coho and then chum salmon in later years. In addition, they hold annual creek cleanups, monitor adults returning in the fall and participate in community events. This long-term commitment to the creek has made a noticeable difference. Well done!

Hey, we built a wetland!



by Lisa Helmer

Sooke's Glenairley Centre for Earth and Spirit wanted to create an organic vegetable garden on the land it leases from the Sisters of St. Ann. But in recent years there has been a severe water shortage on southern Vancouver Island. The solution? BC Wildlife Federation's Wetlands Institute event built them a wetland in just six days.

The event is held every other year in a different host community around the province. Professionals working in the environmental field from around North America come to learn – and to work. From July 3 to 9, this year's participants and instructors teamed up to create a new wetland. Their instructor was Tom Biebighauser, a wildlife biologist with the USDA Forest Service in Kentucky and author of *A Guide to Creating Vernal Ponds*. Tom showed participants how to design and build while taking a wide range of topographical and hydrological features into account.

The half-acre wetland was constructed in an open field. A pond, 11 feet at its deepest point, was excavated. It is held back by a dam that leads to a spillway emptying into Sooke Harbour. Native vegetation was planted around the edges to provide shade

and nutrient input. Wetland plants, many of which possess valuable pollution filtration properties, will be allowed to flourish, thus improving water quality.

Two other projects, with the participation of the local community, were completed during the Institute: Ayum Creek Regional Park Estuary Restoration, and Cowichan Estuary – Wapato: Harvesting for Health.

With the construction of the wetland, Glenairley is ensured a year-round flow of water, a reliable source of irrigation for vegetable crops, and much-needed wildlife habitat. The project provides an educational example of the value of wetlands for agriculture in terms of storing spring runoff water and providing nutrients. Other farmers will see that it makes economic sense to build and maintain a wetland.

The Wetlands Institute, along with the Puddle Project and Wetlandkeepers, is an initiative of the BC Wildlife Federation's Wetland Education Program. Visit our website at <http://www.bcwf.bc.ca/programs/wetlands>.



Leading the Way

by Edith B. Tobe and Caroline Melville

Workshop 2005 was held in Squamish over the May long weekend. Our theme, "Leading the Way," was in celebration of volunteerism.

There were over 50 presentations from all across the Pacific region, including Alaska. Topics included community involvement, habitat issues, fish culture and First Nations fisheries. There were activities for volunteers of all ages. There was never a dull moment, from Peter Donaldson's kick-off presentation of "Salmon People" on Friday to Mark Angelo's spectacular "River World" on Sunday. People headed home with renewed confidence that volunteerism is worth the effort. Thanks go out to all those who made the event possible and to DFO's Salmonid Enhancement Program and its hard-working staff. Special recognition goes to the Pacific Streamkeepers Federation without which this event would never have gotten such a positive reception and turnout.

Since 1991 a province-wide celebration has been held every other year to showcase local fisheries and recognize achievements in enhancement, watershed stewardship and conservation. We look forward to the next one in 2007.

A thousand cheers for Forest Grove

Forest Grove Elementary School in Burnaby has been awarded official Earth School status by Seeds Canada, an organization which helps teachers with environmental education initiatives. Over several years, students have completed 1,000 environmental projects, encompassing recycling (of just about everything), cleanup, anti-car-idling campaigns, green-themed art and writing, and raising and releasing salmon.



Have you checked **your** estuary lately?

Dr. John Chapman, a professor of fisheries and wildlife at Oregon State University, heads the Biological Invasions Program at the university's Hatfield Marine Science Center in Newport. He is asking for data from north-of-49 estuaries regarding the parasitic bopyrid isopod, *Orthione griffenis*. It infests the gill chambers of the blue mud shrimp *Upogebia pugettensis*. Preliminary studies indicate that the parasite may be interfering with shrimp reproduction.

As a food source for other animals and as water filterers, shrimp are vital to estuary health. Chapman and his colleagues are seeing a population explosion of the parasite, which they suspect has been introduced in bilgewater from Asian freighters. High school students surveyed the *Upogebia* in all estuaries in Lincoln County, Oregon, this summer as part of a Summer Natural Resources program. The crews found intense infestations in every estuary.

"Concern over 'crying wolf', or otherwise overstating the significance of new invaders is understandable," says Chapman. "However, initial reactions to the New Zealand mudsnail, *Spartina*, *Undaria*, milfoil, ivy, the green crab, the mitten crab, and to most nonindigenous aquatic species that became pests have mostly been too little too late. A better response may be to react to the data at hand, which says *Orthione* is an invader. A good reaction might be to encourage research immediately. Better knowledge would place managers and the public at greater advantage to decide what (if anything) can be done to prevent its further national and international spread, to learn from and to mitigate for its effects."



Oregon high school students found the parasite well-established in local estuaries.

Chapman says that little is known about *Orthione* in Puget Sound and the Strait of Georgia or along the coasts of B.C. and Alaska. Information on the distribution and timing of early sightings of this isopod in the northeast Pacific would help determine the source and rapidity of the infestation.

Photos of the blue mud shrimp and of the parasitic isopod can be seen at <http://oregonstate.edu/dept/ncs/newsarch/2005/Aug05/isopod.htm>.



Webster's Corner Elementary students explore riparian habitat.

Funding for KEEPS

by Ross Davies

Vancity has presented Kanaka Environmental and Education Partnership Society (KEEPS) with a cheque for \$8,290. The money will be used to support 2005-2006 environmental education programs.

KEEPS conducts programs for schools, Scouts and daycares. The Watershed Roadshow visits classrooms, where students learn about the reduction of household impacts, salmonid life cycles and predator/prey interactions.

Students also go into the field, visiting Bell-Irving Hatchery, Cliff Fall, or the 240th Street fish fence.

They learn to recognize the needs of salmonids and other watershed inhabitants. During a typical year, KEEPS completes over 100 sessions involving 3,000 participants – or more.

Our other funders specific to the education program in 2005 include the District of Maple Ridge, Maple Ridge Community Foundation, and BC Gaming.

Many thanks to our supporters and volunteers! For more information and photos, check out our website www.keeps.org

DFO supports Changing Currents

The Minister of Fisheries and Oceans, Geoff Regan, has announced a grant of \$10,000 to help Simon Fraser University (SFU) to address the future sustainability of the world's oceans.

"This funding will support the university's Changing Currents initiative, which is developing an action plan for the effective management of oceans," Mr. Regan said.

In February 2005, SFU held an international meeting to identify actions required for the future sustainability of oceans. A blueprint has been completed and can be seen at <http://www.sfu.ca/coastalstudies/changingcurrents.htm>.



SHaRP at 10: Successes and Challenges

For 10 great years, Surrey young people have had the chance to get knee-deep in stewardship efforts for their waterways. The City of Surrey started the Salmon Habitat Restoration Program (SHaRP) in 1996, employing students to work in enhancement and community education during the summer.

ShaRP has a proud history of accomplishments, starting in 1997 with enhancement work in Bear Creek and its tributaries. In 1998, more streams and creeks were undertaken. Water quality monitoring, Campbell River drainage inventory, and lowland stream reclassification were added to the program.

Public education work began in 1999, with emphasis on industrial businesses. A project to survey benthic invertebrates, such as caddisflies and leeches, was also introduced. The 2000 program focused on watershed rehabilitation and community stewardship development. Sensitive Habitat Inventory Mapping (SHIM) was begun.

The large 2001 program consisted of seven teams made up of 15 leaders and 28 students. They worked on enhancement and park trail construction and closure.



A plant-in at Cougar Creek

Water quality sampling, benthic invertebrate processing, and SHIM mapping of the Little Campbell River watershed was carried out. Community and industrial education brought SHaRP's message to residents and businesses. A new team was added to reach out to Surrey's rural landowners.

Funding for the 2002 program was reduced. One team carried out several large-scale plantings and in-stream enhancements. Another undertook agricultural fence construction and planting, while other participants designed an industrial education campaign and database covering McLellan and Bear Creek industrial areas.

This project was continued in 2003, along with community awareness work at public events and daycares. A media/public relations team organized high-profile SHaRP kick-off and wrap-up events, and got attention in local papers, television and radio. Teams conducted a water use survey of farmers in Cloverdale, and improved habitat in the Little Campbell River and Twin, Jenkins and Latimer creeks.

SHaRP 2004 continued to spearhead salmon conservation measures. A team worked to educate farmers about environmental issues specific to the Agricultural Land Reserve. Others marked storm drains and facilitated interactive games in day camps, to engage the public in environmental stewardship.

This year contractor Dillon Consulting Ltd. hired post-secondary students as leaders for each of four

teams: Watershed Enhancement, Agricultural Stewardship, Community and Industrial Education, and Media and Public Relations. The leaders supervised younger students for a summer of employment and hard, worthwhile work.

There have been many challenges to overcome in the past 10 years. Coordinators do not always know



how much work to plan, as many funding partners sign on late. The partners vary from year to year. Even finding office space is an annual challenge. Coordinators hunt down vacant facilities and used furniture. Computers are rented.

But despite the need to reinvent each year, the program continues to build on its success. Students don't just get summer jobs. They learn about teamwork, and leave with the satisfaction of knowing more about their own community, its waterways, and the importance of protecting them. They write press releases, educate farmers and businessmen, and gain invaluable experience in many more areas that will stand them in good stead in the future. And the waterways of Surrey benefit from their enthusiasm and muscle.



http://www-comm.pac.dfo-mpo.gc.ca/pages/release/p-releas/2005/nr047_e.htm

Geoff Regan, Minister of Fisheries and Oceans, has announced adoption of the *Wild Salmon Policy* and committed \$1.1 million to its implementation and related salmon science. Check this site for the news release and links to the full text of the policy.

http://www.psat.wa.gov/Publications/soundwaves/articles/sw_01.html

Sound Waves is the Puget Sound Action Team newsletter. This summer's lead story reveals serious trouble ahead for Puget Sound. Glaciers in the Cascade and Olympic Mountains are receding. Pacific Northwest temperatures are on the rise. Puget Sound waters are warming. These are among the key findings of a new report to be released in August on how climate change will affect Puget Sound.

<http://www.volunteersonline.ca/modules.php?name=News&file=article&sid=80>

A voluntary organization can be either a registered charity, a provincially incorporated non-profit or a federally incorporated non-profit. What is the difference? VolunteersOnline.ca has prepared a handy reference with the facts on taxation, setting up your organization, managing it and finding legal information.

<http://www.salmonopolis.ca>

A collaboration between the David Suzuki Foundation and the Sierra Club, and hosted by the Stewardship Centre for BC, this site has news, resources and action alerts for salmon stewards.

**Vancouver Aquarium
Marine Science Centre**

**Salmon Tales Field Trips for
Grades 2-7**

Discover the importance of Pacific salmon as your students migrate through the Aquarium's ecosystem-based galleries. Our hands-on interactive program complements B.C. Ministry of Education prescribed learning outcomes.

For more information contact
Sarah Allen, Curriculum Programs Coordinator
604-659-3500 sarah.allen@vanaqua.org

***Collapse: How Societies Choose
to Fail or Succeed***

By Jared Diamond. Published by Viking Adult.

Pulitzer Prize-winning author Jared Diamond's latest book points out lessons that archaeology and history can teach us in the present day. Great societies in the past have developed technologies and immunities that allowed them to dominate the world. Romans, Mayans and Egyptians all built astonishing cultures and empires; then they collapsed.

Diamond links science to history and reclaims from past disasters the lessons urgently needed to avoid a global meltdown of our own civilization. His work as a professor of geography at the University of California has expanded his career into evolutionary biology and biogeography. This book provides insights into issues that will be of interest to stewardship volunteers and educators committed to sustainable living.

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