StreamTalk

The newsletter for stewards of salmonids and their habitat • Volume 12 • Number 1 • Spring 2005

No rest for the dedicated in the

Eastern Fraser Valley

by Mark Johnson, Community Advisor

It has been an interesting and active first few years for fisheries stewardship and salmon enhancement in the eastern Fraser Valley. The future of the fish and the environment in this beautiful area depends on people working to do the right thing. It has been my pleasure to become associated with many dedicated individuals, both volunteers and employees. All have my admiration and respect.

The two small fish production facilities, Abbotsford Ravine Park Salmon Enhancement Society (ARPSES) and Skowkale First Nation in Chilliwack, continue to operate and release quality fish. ARPSES also provides a great egg-take experience for all Salmonids in the Classroom students in Abbotsford. The group has done well in their work to ensure safety for crew and fish despite regular acts of vandalism. They have had significant turnover of volunteers but continue to recruit good people to keep things running smoothly. Now in its 26th year of operation, the Skowkale group has seen good returns of coho and chum to the Little Chilliwack River.

For the past two years, the Chilliwack River Action Committee has focused on the Tolmie Slide bank stabilization project, a huge undertaking that will need another summer and thousands more dollars to complete.

The Cultus Lake Sockeye Recovery Strategy's activities have required a tremendous effort from many. In all my years with DFO, I have never been involved in an operation that has had such cooperation from all departmental sectors. This has been accomplished with the assistance of the Cultus Lake lab, stock assessment and enhancement crews.

A new organization, the Chilliwack Vedder River Cleanup Coalition, has organized groups to adopt sections of the river to keep clean. The team has really done a great job of putting together this long-term river protection program.

Tailgate, anyone? The Chilliwack Vedder River Cleanup Coalition with a good haul.

The Chilliwack Watershed Planning initiative is starting to take shape thanks to the establishment of a new watershed coordinator position with the Fraser Valley Regional District and the solid groundwork laid by stewardship coordinator Tom Cadieux. Small new projects are starting up throughout the valley in Abbotsford, Chilliwack and Hope. I'm especially excited about a couple of new contacts I have made with the agricultural community.

On the north side of the river, the Hatzic Lake Streamkeepers are keeping a channel clear into Draper Creek and were rewarded this year with strong runs of coho and chum.

Mission of Streams has a team exploring the possibility of a trail through the commercial lowlands of Mission. It would be a nice addition to the city and includes restoration of portions along Lane Creek.

The Fraser Valley Bald Eagle Festival committee is gearing up for a big celebration this November as it will be the 10th annual festival.

As you can see, people in the valley are busy, and this is only a sample. Environmental progress in our watersheds is made by those willing to make a long-term commitment and work cooperatively. In the eastern Fraser Valley, as in communities throughout BC and Yukon, volunteers, local agencies and interest groups and DFO employees are working together to make a difference.

In this issue:

Fisheries and Oceans Canada | Pêches et Océans Canada

Canada

The Wild Salmon Policy

Fisheries & Oceans Canada

Those who care about the future of salmon should be interested in a new approach to salmon conservation proposed by Fisheries and Oceans Canada. The approach is outlined in a draft *Wild Salmon Policy*, which DFO has been presenting to interested groups.

In early March, DFO hosted a forum where representatives of a broad range of interests – including the Pacific Streamkeepers Federation and the Salmon Enhancement and Habitat Advisory Board – discussed the policy and provided recommendations. The Department is reviewing this feedback, as well as other written submissions, before presenting a final policy.

The draft policy proposes a fundamental shift in the way salmon, their supporting habitat and dependent ecosystems are managed. The *Wild Salmon Policy* is founded, first and foremost, on the need to safeguard genetic diversity within each salmon species. It commits to achieve this by protecting groups of wild salmon that if extirpated in B.C. would unlikely recolonize naturally in a human lifetime.

For the first time, the policy sets clear objectives for salmon biodiversity, develops comprehensive strategies for achieving these objectives and describes actions to anticipate and address future pressures on wild salmon. The policy commits to regular monitoring to determine the status of wild salmon, habitat and ecosystems to assess performance.

StreamTalk readers will be interested in the policy's proposal to build in ecosystem considerations in planning and decision-making. The policy recognizes in a tangible way that maintaining the well-being of the ecosystem is inseparable from maintaining the future of wild salmon.

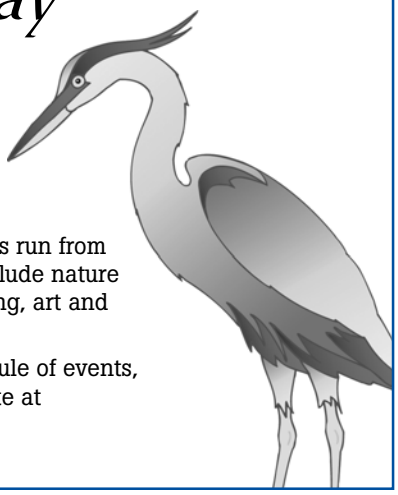
At the same time, the policy proposes to integrate harvest and fisheries management with land and water use management and salmon enhancement. This marks another new way of doing business. This should foster more effective decisions that consider all major factors that influence salmon health.

Another key element of the policy is the need to reform the institutional process for decision-making. Tough choices are unavoidable in managing salmon and cannot be made by governments or scientists alone. A clear process to weigh and consider social, economic and biological benefits and risks is required. That's why the policy recommends involving a broad range of interests to ensure that decisions on these difficult issues reflect societal values.

The Department recognizes that no matter how strongly it is committed to the policy's implementation, success will depend on constructive cooperation among all levels of government, interested groups and individuals. This includes salmon stewards and streamkeepers, as well as First Nations, developers, fishing sectors and environmental groups. The conflict and competition that have often characterized salmon conservation must give way to collaboration and a shared commitment to achieving the goal of this policy.

If you haven't already reviewed the draft *Wild Salmon Policy*, it is available on the DFO website at: **http://www-comm.pac.dfo-mpo.gc.ca/pages/consultations/wsp/default_e.htm.**

Birds on the Bay



Join in our annual celebration! Help us raise public awareness of Boundary Bay's local and international significance. Our bay is a vital ecosystem for migratory and wintering birds and the conservation of biodiversity. Exciting weekend events run from late January through early May and include nature walks and talks, kayaking, bird watching, art and free family fun.

For further information and a full schedule of events, please visit the Birds on the Bay website at www.birdsonthebay.ca or call the info line at 604-536-3552.

Joining in to WIN

by Joanne Day

The Fraser Basin Council's Caring for Ecosystems Award honours stewards of the environment and natural resources. In November 2004, Mission's Stave Valley Salmonid Enhancement Society (SVSES) shared the award with BC Hydro, whose Water Use Planning Program embodied a collaborative, sustainable approach to operations in its hydroelectric facilities. The very sharing of this joint award is symbolic of how the SVSES works in Mission. It is famous for its partnership approach to problem-solving.

For example, four years ago the SVSES organized a meeting about a wetland area north of Highway 7, off Silverdale Creek. Rich Chapple, then with the Pacific Salmon Foundation, assisted; and Ducks Unlimited, the Land Conservancy of BC, Genstar and the municipality came to the table. After several attempts to protect the land, Ducks Unlimited and the District of Mission reached an agreement to purchase all 107 acres of the wetland in January 2005 for $1.2 million. The area is now safe from future development.

Many of the field activities of the SVSES are carried out by an environmental team of students known as the E-Team. This is a joint project of the SVSES and School District 75. For the past two years, students aged 13 to 16 years have taken water quality samples and studied oxygen and pH levels on Silvermere Lake. Their research has led to awareness of the presence of invasive species such as bass and sunfish. A grant of $24,000 has been secured from the VanCity Environmental Action fund in order to continue a study of the invasive species into 2005, under the guidance of provincial biologist Jim Roberts. Techniques being used include trapping, gut analysis, catching and releasing all salmonids and documenting their presence. Several spawning streams flow into Silvermere Lake, so that once the young salmon leave their natal stream they have to run a two-km gauntlet of hungry bass. It is important to document how many salmon are surviving.

Students on the E-Team survey bass and sunfish populations in Silvermere Lake.

For the past 25 years, 10 elementary schools in the district send students on field trips to the SVSES project to participate in brood stock capture and egg takes. More than 6,000 students have participated in environmental education and stewardship with the SVSES.

Many thanks are due to the volunteers who make all of this possible. Jim Taylor is at the hub of all this activity. He organizes and runs the E-Team activities. George Donatelli, Philip Little, Terry Taylor, Rosanne deMontbrun, Paul Holmgrean and Tom Cadieux are directors of the society, devoting many hours of their time to the SVSES and to sister organizations.

The group enjoys the work they do and the partnerships they have formed over the years. Well done, and congratulations on the award!

Workshop 2005

With the May long weekend fast approaching, the countdown is on! Your registration package is included in this issue of *StreamTalk.* Make sure you send your form in early to ensure your choice of workshops. Bring a display or poster to share; meet fellow stewards from around B.C.; enjoy a wonderful dinner/ dance at the Totem Hall in Squamish. This is your best chance to meet others with common interests and learn more techniques and tips to aid you in your stewardship efforts. See you in Squamish!

Streamkeepers Update

Coalbed methane produced water
Coming to your local stream?

By Susan Rutherford, Staff Counsel, West Coast Environmental Law

Heads-up, streamkeepers around the province. Coalbed methane development may be coming to your community and with it, potential impacts on local streams and fish.

What is coalbed methane (CBM)? It is gas that is formed when organic material is converted into coal. It is found wherever coal is found, and it is molecularly bonded to the coal surface by the pressure of overlying rock and surrounding water.

Coalbed gas fields that the B.C. government would like to see developed lie in B.C.'s northeast (near Fort St. John), the northwest (Klappan–Groundhog, Telkwa, Coal River and Tuya), the southeast (Crows Nest, Elk Valley and Flathead), south central (Bowron River, Hat Creek, Merritt, Princeton and Tulameen) and Vancouver Island (Comox, Nanaimo and Suqush).

The potential environmental impacts of CBM development are diverse, and include disturbances and potential harm to land surfaces and water bodies, as well as contributions to air emissions and climate change.

Of greatest concern to streamkeepers are the potential disturbance and degradation of water bodies. Typically, CBM operations involve tens to hundreds of closely spaced wells to make the development economic. Normally, however, drilling into a coal seam is not enough to make the gas flow; usually, developers must first "de-water" or pump out the water in the coal seam, in order to release the pressure that keeps the gas trapped. While it's not clear how much water is present in B.C. coal seams, in Wyoming's Powder River Basin the average CBM well pumps out an average 15,000 to 20,000 US gallons of produced water per day!

CBM produced water can be highly saline, and may contain heavy metals – both of which may contaminate the receiving environment.

B.C. is proposing to allow surface discharges of produced water to streams and land through the setting of standards under a Code of Practice. West Coast Environmental Law has reviewed the proposed standards with a technical consultant, and is concerned that the standards offer insufficient protection for salmon and other species, and will allow stream degradation and negative cumulative effects. Discussion papers on this issue are on our website.

David Thomas

This treated coalbed methane produced water entered the headwaters of the Elk River. Bioassays conducted with rainbow trout fry frequently showed this water to be lethal to fish.

Streams may also be impacted by CBM road and well construction, including potential alteration of drainage patterns, triggering of landslides, increases in stream sedimentation and bank erosion, the creation of barriers to fish passage, and alteration or destruction of aquatic habitats.

What can streamkeepers do? Out in the field, watch for signs of CBM development. In particular, beware of pipes that appear to be transporting produced water for discharge into the stream. In the Elk River area, streamkeepers learned after the fact that discharges had been made into the river that had contaminant levels high enough to harm native rainbow trout.

What else can you do? You can tell all levels of government you:

- are very concerned about produced water impacts on streams and fish;
- prefer deep well injection as the most sustainable mode of disposal;
- want to be consulted about safe disposal of produced water;
- want to be notified what discharges are going to be made and where, and you want access to the monitoring data;
- want mandatory environmental assessment of any proposed developments; and
- want companies to make realistic security deposits (currently companies must deposit only $7,500).

For further information, please visit our website: http://www.wcel.org/issues/ogm/.

"This course was awesome!"

by Lisa Mose

The Pemberton Wildlife Association, a member club of the BC Wildlife Federation (BCWF), hosted a tremendously successful course in October 2004. "In an effort to involve youth, the BCWF has created the Youth Puddle Project," says president Dave White. With assistance from local WEP trainer Lisa Helmer, the group used global positioning system (GPS) technology to map One Mile Lake.

One Mile Lake is an important fish and wildlife habitat in the area. The project was geared towards identifying wetland functions of the lake, and mapping their GPS waypoints. Youth have used the map to communicate the importance of wetland habitat to the Pemberton community.

They had the satisfaction of contributing to the One Mile Lake Master Plan, which aims to create a balance between recreational, social and environmental values. "This is a prime example of where our youth, conservation-minded community members and BC Wildlife Federation clubs can participate in land-use planning processes," says Lisa Mose, WEP Coordinator.

The training got great reviews and helped instill a sense of ownership and pride over the local natural environment. One participant said, "This course was awesome! I have been introduced to so many new and interesting things. To use the GPS in wetlands and to be able to produce a map from your observations is amazing!"

The Puddle Project is made possible through funding from the Habitat Conservation Trust Fund and the Canadian Wildlife Federation. If your group is interested in receiving this training, please email wetlands@bcwf.bc.ca or phone 604-291-9990.

New challenges, new opportunities

by Roberta Cook

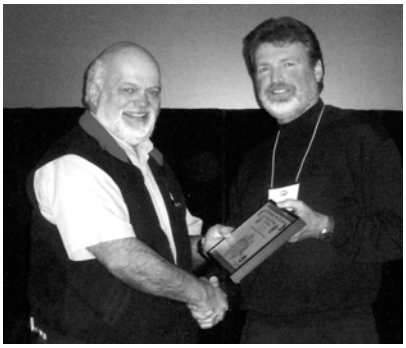
The Northwest Fish Culture Conference took place in Victoria from December 7-9. This year it was co-hosted by the Freshwater Fisheries Society of B.C. and Fisheries and Oceans Canada. The theme was "New Challenges, New Opportunities," and discussions were lively and productive among the 324 people who attended.

Keynote speakers were Don MacKinlay, a biologist with Oceans, Habitat and Enhancement Branch, and Don Peterson, president of FFSBC. Thirty-five talks covered a wide range of topics, including:

- promoting recreational fisheries;
- hatchery reform at a low-tech facility on Orcas Island;
- using ultraviolet light to control disease;
- semi-natural rearing of chinook; and
- a simple isolation incubator for specialized rearing of eggs.

Several posters were on display and an evening was set aside for discussion. ZoAnn Morten's poster, for example, was about the effective use of hatchery fish in restoring salmon runs in urban streams.

Two people were inducted into the Northwest Fish Culture Hall of Fame. Hugh Sparrow worked on fish culture research for provincial hatcheries. Jim Van Tine is known to many as the first manager of Quinsam Hatchery. He was a great mentor to his staff, worked closely with several researchers on fish culture problems and promoted public education and habitat restoration, especially in the Campbell River estuary.



Brian Pearce (right) inducts Jim Van Tine into the Northwest Fish Culture Hall of Fame.

Some lucky people won door prizes, including a lovely silver sea monster pendant donated by community advisor Joe Kambeitz.

Abstracts and some complete papers are available on CD on a first-come, first-served basis. Please contact Roberta Cook at 604-666-2879 or cookr@pac.dfo-mpo.gc.ca.

IDEAS FOR EDUCATORS

Getting more out of every lesson

by Joanne Day

Teaching across the curriculum involves combining more than one subject area at a time in a lesson plan. Not all students learn at the same rate, or even in the same manner. Some are visual learners, while others benefit from a tactile or audio lesson. There are eight different multiple intelligences identified in learning, and stewardship education can benefit by adapting classroom instruction to cover several of them in a lesson.

For example, Holly Arntzen's *Salish Sea* CD and handbook and her latest work, *Cycle of Life/Recycle*, combine music and environmental lessons to teach about sustainability and the ecological footprint. These are complex topics, presented in a familiar way through story and song. Combining more than one subject in a lesson can enrich the learning experience within the all-too-short hours of a school day. Introduce concepts about art and stewardship at the same time, and you may be giving students more leisure to take in the important details of both.

Slow down the lesson and focus on one or two key messages that you want the students to take to heart. Use a smaller, more familiar concept to lead to larger themes such as sustainability or stewardship.

Consider the water in the student's own body. Humans can survive for up to a month without food, but without water they are in peril in a mere three days. The lesson connects the necessity for water in the body to the larger issue of water availability on the planet. Step by step, students reach the greater concept that all life relies on the availability of fresh clean water. When astronauts travel to other planets in search of life, what do they look for first? The presence of water. The mission to Mars found that water existed on the planet approximately 3.5 billion years ago. The water is now gone on Mars, and there are no signs of life.

Teaching across the curriculum is regularly used by educators to develop skills in such diverse topics as values and citizenship, reading, writing, drama and critical thinking. For ideas on combining and adapting lessons for different groups, contact Joanne Day at 604-666-6614 or dayj@pac.dfo-mpo.gc.ca.

In this physics lesson, students at Nanoose Bay Elementary learn that to float an object must be less dense than the liquid around it. A raw egg placed in fresh water is denser than the water, so it sinks. In salt water, the egg has less density than the liquid, hence it floats. Applying this principle to salmon biology, the teacher can ask, "Why do fish float?" and lead into a discussion of the swim bladder of the Pacific salmon. Salmon are denser than water, but they have small balloon-like bags inside their bodies. They take air into the bag until they are buoyant enough to neither rise nor fall in the water. Then they use their fins to manoeuvre up or down in the creek.

Register now for the Cleanup!

The Great Canadian Shoreline Cleanup, presented by TD Friends of the Environment Foundation, is a great activity for student groups and community groups alike. It is one of the largest environmental action programs in Canada, collecting tons of garbage plus valuable data to help create a safer habitat for wildlife.

Cleanup supplies, educational materials and support are FREE.

To get involved, choose a site that is convenient for your school or important to your community. Pick a date between September 10 - 18, 2005.

For information and registration visit **www.vanaqua.org/cleanup**

Project Highlight

From sheep to salmon

Remaking Colony Farm's sheep paddocks using an ecosystem approach

by Chris Mehuys

An exciting salmon enhancement project at Colony Farm Regional Park in Coquitlam is truly a team effort. Major funding has been made available through BC Hydro's Bridge Coastal Program. It is being coordinated by Fisheries and Oceans Canada in conjunction with the Douglas College Institute of Urban Ecology (IUE), the Greater Vancouver Regional District, the North Fraser Salmon Assistance Project and the Colony Farm Association.

Fisheries and Oceans has begun work on the first phase of construction for a new salmon rearing channel. It is approximately 300 metres in length, gently meandering from an existing slough into an old field that was once used as sheep paddocks.

The collaborative nature of this project has been instrumental in assuring the work is beneficial to the local ecosystem as a whole. Fish were one of several species considered during the design process. Large rock piles and sandy beach areas have been strategically constructed to enhance snake and turtle habitat. Large woody debris provides shelter and food for fish, insects, birds, and other wildlife. Because the site was originally a field, it was decided to leave a significant area unplanted to help preserve the original habitat and the wildlife that use it.

The IUE has been contracted to design the planting component of the project, which calls for some 700 native shrubs and over 100 native trees. More than 15 species have been chosen to increase the plant diversity of the site. The selected species are ideal for planting within riparian zones and many are already growing throughout Colony Farm Park close to the project site. Included are salmonberry, red osier dogwood, black twinberry, red elderberry, Pacific crabapple, black hawthorne, and Pacific ninebark. The design has been developed with nature in mind, calling for a non-linear approach within the riparian zone.

Salmonberry

By planting in "clumps" or "copses" comprised of mixed shrubs and trees with grass areas between, the site will not only be accessible for maintenance, but will also blend the old field habitat naturally with the new riparian area. Other species such as alder, cottonwood, and willow are likely to fill in naturally over time. As the new plants mature they will provide shade for the channel, keeping the water temperature cool – essential for the salmon.

This project is a great example of how an ecosystems approach towards development, if done correctly, can alter land use with a minimal impact to the surrounding environment. It is definitely worth a look if you are visiting Colony Farm.

A generous application of elbow grease is making these old fields a rich habitat for wildlife and native plants.

Salmon @ Site-ings

http:///www.vancouver.reuses.com

The Recycling Council of British Columbia (RCBC) has announced its latest initiative to promote waste reduction and divert material from landfills: the Vancouver Reuses web site.

This is a nonprofit free-to-use web site where businesses, groups or individuals in the Lower Mainland can give away, sell or trade used or surplus items they would otherwise throw away. Items may be priced at up to $99. Illegal items, hazardous materials and animals are excluded from the listings.

To list a garage sale, swap meet or other event, click on the "Post Listing" icon at the top of the page.

RCBC is Canada's oldest recycling council. It is a widely respected, nonprofit, multi-sectoral environmental organization whose members include individuals, local governments, non-profit groups, small businesses, and corporations large and small.

Climate change sites for teachers

http://www.climatechangenorth.ca/

This site has materials for K-12 that were developed for the Yukon, Northwest Territories, and Nunavut. It has an extensive list of lesson plans, including one on the One-Tonne Challenge suitable for grades 3-6.

http://www.epa.gov/globalwarming/kids/

This American site explains climate change in simple language. It features games, resources for educators, and online quizzes.

http://www.gvrd.bc.ca/education/curriculum-resources.htm

This link has a list of curriculum resources available from the Greater Vancouver Regional District.

http://adaptation.nrcan.gc.ca/posters/teachers/guide_e.asp

Natural Resources Canada has prepared a series of posters and associated lesson plans to teach about climate change in different parts of Canada.

http://wlapwww.gov.bc.ca/air/cad/

Find information and activities about British Columbia's Clean Air Days of recent years, on this site from the Water, Air and Climate Change Branch of the BC Ministry of Water, Land and Air Protection.

Reader's Corner

Fostering Sustainable Behavior – An Introduction to Community-Based Social Marketing.

by Doug McKenzie-Mohr and William Smith.
New Society Publishers

As environmental educators and volunteers in the stewardship community, how can we work towards long-lasting change? Doug McKenzie-Mohr is an environmental psychologist researching ways to identify and remove barriers that prevent people from engaging in sustainable behaviours.

He explains how to then design and evaluate an effective public education program in your own community. This book offers insight into human nature and what steps need to be taken before life-long changes in public behaviour can be achieved.

Help us save trees and postage. Receive StreamTalk by e-mail. Please contact Joanne Day at dayj@pac.dfo-mpo.gc.ca, with the subject line "StreamTalk by e-mail."

StreamTalk

is published for Stewardship and Community Involvement

Oceans, Habitat and Enhancement Branch

Fisheries and Oceans Canada

Suite 200, 401 Burrard Street
Vancouver, B.C., Canada V6C 3S4

Editorial Director:
Carrie Mishima
Design and layout:
Jennifer McKim Stone
Information Coordinator:
Joanne Day
Phone: 604-666-6614
Fax: 604-666-0417
E-mail: DayJ@pac.dfo-mpo.gc.ca

Postal No. 40063830