

THE CREEK CRIER

PRINTED ON 100% POST-CONSUMER RECYCLED PAPER

SPRING / SUMMER 2007

A PUBLICATION OF THE PORT MOODY ECOLOGICAL SOCIETY
300 IOCO ROAD, PORT MOODY, B.C. CANADA, V3H 2V7

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Eelgrass Transplant in Port Moody Inlet

by *Jim Mattson*

On Friday, March 23rd, a group of volunteers that included Rod MacVicar, Ruth Foster (the executive of the Marine Educational Services Association (a.k.a. MEDUSA), Rob Butler, President of Pacific WildLife Foundation and volunteers from Burrard Inlet Marine Enhancement Society, Port Moody Ecological Society and the Pacific WildLife Foundation (about 15 volunteers in all) came together to collect and plant eelgrass in the inlet, just north of the Rocky Point pier.

The project was called "Sustaining Salmonids at Sea" and was proposed by Rod MacVicar and Ruth Foster. With funding from a grant from the Pacific Salmon Foundation and support of the Seagrass Working Conservation Group a subcontract was made to a group of divers from the Seachange Marine Conservation Society to plant the eelgrass on the bottom of the estuary.

Help was also enlisted from Dr. Cynthia Durance of Precision Identification, who oversaw the collection of plants from an approved harvesting site by the development area by Roberts Bank coal terminals, and later taught the group of volunteers how to prepare them at the Rocky Point pier. Cynthia Durance, one of the divers as well.

550 eelgrass plants were collected on March the 22nd, they were held in sea water over night and then prepared (weighted down with steel washers) and then planted in the bottom of the estuary at a depth of between 1 and 2 metres at low tide.

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Photo by John Middleton

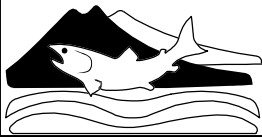


Photo by Ron Phillips

Cynthia Durance with eelgrass transplants (left). Healthy eelgrass (right) supports a variety of marine life



Publication of the Creek Crier is sponsored by Pacific Coast Terminals-
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THE CREEK CRIER

Spring / Summer 2007

We Need New Members!!

Summer is coming and we are sending off our salmon, but there is still plenty to do!

We need new members and volunteers. Jim would love to get some volunteers to assist with water quality testing in local streams. Dave is keen to sign people up for an occasional Saturday morning work bee at the hatchery...and he's been known to offer a pancake breakfast as enticement. You might even convince Eric that he could use some help feeding the fish. Over the next few months, we will have plenty of weeding, planting and other restoration work to do that might appeal to those with a green thumb. We plan to install some concrete slab floors in our outdoor classrooms and could use help from those with suitable skills and strong arms. Matt is always looking for interesting articles for our newsletter.

Noons Creek Salmon

COHO



Noons Creek coho weigh 3-5 lbs when they return to spawn in Fall. The males are a deep red with a prominent hooked jaw, while the females are darker with a deep red streak down the side. The fry emerge from the gravel in Spring and spend one year in Noons Creek. They leave for the ocean when they are 4-5" long, and spend 2 1/2 years following the currents before returning to spawn.



CHUM

Noons Creek chum weigh 5-10 lbs when they return to spawn in Fall. The males are dark grey with purple and yellow mottling, and have a slight hump and prominent teeth: the females are more torpedo shaped and are grey with a purple streak down the side. The fry emerge in Spring and head immediately to the ocean, where they spend 3 1/2 years before returning to spawn.

The Creek Crier is published quarterly by the Port Moody Ecological Society, 300 Ioco Road, Port Moody, B.C., Canada, V3H 2V7

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Submissions on any related topics are welcome! The editor reserves the right to edit for length, spelling and grammar. Reprinting of articles appearing in The Creek Crier is by permission of the editor.

The Port Moody Ecological Society engages in community-directed education fostering ecological awareness among all ages. We operate a hatchery and a water quality testing laboratory on Noons Creek in Port Moody, and conduct nature interpretation programs for elementary school students. We also offer work/study experience to interested high-school students.

New members are always welcome. Membership fees are:

\$5/yr. Student \$75/yr. Patron

\$15/yr. Individual \$150/yr. Corporate

\$20/yr. Family \$150 Lifetime

For more information about the Port Moody Ecological Society call the Noons Creek Hatchery at 469-9106.

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Check Out Our New Website!

www.noonscreek.org

**Get hatchery news, information, and the
Creek Crier online**



Eelgrass transplanting (continued from page 1)

In order to understand the importance of this event, it is necessary to have a look at the value of eelgrass in sustaining a healthy and productive marine environment:

Eelgrass plant size: Up to 4 feet (1.2 metres) in length.

Range: From Alaska to California along the Pacific coast and from Greenland to North Carolina along the Atlantic coast.

Eelgrass beds grow submerged or partially floating from the muddy or sandy bottoms in shallow bays and coves, tidal creeks, and estuaries. Eelgrass (genus *Zostera*) contains twelve species. *Zostera marina* is the common species of North America. Often taken for seaweed, it really is a blooming underwater grass, which spreads by rhizomes or roots. Most eelgrasses have ribbon-like leaves, about 1 cm wide. The flowers are enclosed in the sheaths of the leaf bases, the fruits are bladder-like and can float. Eelgrass grows in meadows that build up in the spring and summer and decay in the fall and winter.

Eelgrasses serve as a haven for crabs, scallops, numerous species of fish, and other wildlife, providing these creatures with habitat, nursery grounds, and food. The long blades of grass often are covered with tiny marine plants and animals.

Damage to eelgrass affects whole populations of fish, including threatened salmon, waterfowl, shellfish, and other animals, as well as the stability of our shorelines. Unfortunately over the past 70 years about 90% of all eelgrass throughout its range along the Atlantic and around 30% throughout its range along the Pacific coast has been destroyed.

Some scientists believe this destruction has been caused by human activities such as dredging and boat propeller scouring, and that the seabeds have been denied sunlight by increasing masses of algae (stimulated by nutrient pollution) as well as by increased levels of suspended sediments from land runoff.

The Port Moody Quiz!

Q: HOW MANY FISH-BEARING STREAMS RUN THROUGH PORT MOODY?

A: At least 13 fish-bearing streams run through Port Moody and empty into the Port Moody Arm of Burrard Inlet.

Q: HOW MANY SALMONID SPECIES LIVE IN PORT MOODY STREAMS?

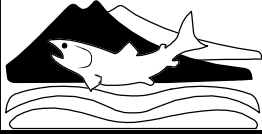
A: Two species of salmon (coho and chum) and one species of trout (cutthroat) are common residents of Port Moody's streams. Chinook and pink salmon from Indian Arm have also been known to stray into Port Moody, while sculpins and sticklebacks also inhabit our streams.

Q: HOW MANY HATCHERIES OPERATE IN PORT MOODY?

A: Two: The Mossom Creek Hatchery operates on the North Shore near loco townsite, and our hatchery, the Noons Creek Hatchery, operates just behind the hockey rink.

Q: WHAT DOES EVERY HATCHERY LOVE?

A: Visitors and volunteers! Come and see us sometime!



President's Message

by Elaine Golds

PMES members who were unable to attend our Annual General Meeting on February 21st missed a terrific presentation. John Reynolds from Simon Fraser University (and also a PMES member) delivered a fascinating talk on the many challenges of protecting species at risk when faced with competing interests such as commercial fisheries. Because of a number of other critical meetings held on the same evening as our AGM (regarding school closures, etc.), we had only about twenty people present. As you can see elsewhere in the newsletter, the "new" Board of Directors elected at our AGM is a slight re-arrangement of our old Board. I am delighted to have this hard-working and experienced team volunteering on behalf of the Ecological Society for another year.

Volunteers at the hatchery have been very busy throughout the spring trying to undo some of the damage from the winter storms and floods. We really appreciate the many hours of work put in by Eric Olsen, Dave Bennie, John Dunn and Pat Nicol to repair the plexiglass fence and predator net around the rearing pond and remove some debris from Noons Creek, our wetland and hatchery site in general. Once again, City staff members have helped immensely with some of the work requiring heavy equipment.

The bed of Noons Creek at the hatchery has been totally transformed by winter storms. Fallen trees created barricades that trapped debris flowing downstream during heavy rains. We now have a good load of new gravel and the creek bed is much higher than before. Overall, this is expected to be quite beneficial. It's all part of a natural, dynamic cycle as Noons Creek gets reworked by natural forces. However, not all the debris has been good. Just downstream of the pedestrian bridge, the City worked to remove fallen trees in the Creek that were creating a flood risk around the hatchery. One section of our boardwalk almost floated away during a recent heavy rainfall event. This has now been repaired.

One of the first of the winter storms dislodged the screen covering our intake pipe just above the loco Road bridge. The intake quickly became plugged so Eric rigged up an emergency system (or two, as things turned out) to ensure water flow to the eggs and rearing pond. Thankfully, a few sunny days this spring reduced the creek flows sufficiently for Eric and his team to work on the plugged intake. Now, regular flows have been restored to our rearing pond and side-channel habitats.

We hope to undertake more debris removal later this year. This will require heavy equipment use during the Fisheries "window" (i.e., when work can be done in salmon habitat without harming salmon) in late August/early September. To fund this, we have applied to Environment Canada's Environmental Damages Fund for a grant. In addition, we have applied to the Port Moody Foundation to purchase native plants. These trees and shrubs will be planted by volunteers around the wetland once the fallen trees have been removed and the wetland restored. While there are no salmon in this wetland, it leads directly downstream to fish habitat and provides food to fish in the form of insects; thus, the wetland is considered to be fish habitat.

Once again, we are looking for volunteers from the community to help us with the planting in the fall. In addition to planting, we need to remove invasive plants that are taking over areas around the hatchery site. For the most part, this work will be done outside of the bird-nesting season, i.e., not before late summer. If you are interested in rolling up your sleeves (or down, as the case may be, to hack away at the blackberry) and helping with restoration of the hatchery site, please contact me!



How Your Purchase of Coffee Can Help or Hurt the Planet

by Elaine Golds

There seems to be little but bad news about the environment these days. Sometimes, the problems we face - such as global warming - seem insurmountable. It's hard to believe the actions of individuals can really make a difference especially when governments seem so inclined to do nothing but procrastinate. In fact, individual actions can make a huge difference. One of these is as simple as purchasing the right kind of coffee.

Coffee beans, which come from a shrub that grows in the mid-elevation tropics, is one of the main exports from the so-called third world countries. In fact, coffee is one of the world's most traded commodities, second only to oil; it accounts for nearly half of the exports from tropical countries. Thus, it's critically important that we pay a fair price for this coffee so that coffee growers in poorer countries can make a decent living. Since 1989 when international coffee agreements collapsed and production expanded, competition has now pushed the price of coffee below the costs of production. By 2001, the price paid to coffee producers fell to less than a third of the price paid in the 1960s. If you haven't noticed a drop in the price you pay for coffee, this is because the many middlemen and big corporations are making more money than ever. However, you can ensure that small growers receive a decent price for their coffee (about 2-3 times above the current market price) by purchasing coffee grown and obtained through co-ops that are certified as "fair trade". Although this reason alone should provide sufficient rationale to purchase fair-trade coffee, there are many other benefits as well.

Expansion of coffee production has resulted in many tropical forests being converted into coffee plantations. This has caused loss of critical habitat for many species including some of the birds that migrate to North America each summer to nest. However, the traditional method of growing coffee, the one still used by small farmers, provides excellent bird habitat. The coffee bush is a shade-loving shrub so small farmers typically grow coffee under larger nut-producing trees. This also allows them to maximize the use of their small land holdings. Such mixed-farming practices also means farmers can avoid the use of harmful and expensive pesticides. Scientific studies have shown that these shade-grown organic coffee farms are almost as valuable as natural tropical forests for many wild species. An additional benefit to the farmer is that birds prey upon insects that are crop pests. The extensive root systems found on these farms help to prevent soil erosion on steep hillsides. Growing coffee this way is surely a win-win situation all around. These farmers truly deserve a fair price for their product.

The situation on large coffee plantations stands in striking contrast. There, sun-loving coffee shrubs have been specially bred to grow in a monoculture. These coffee bushes require the application of pesticides because they are grown under less than ideal conditions. Large coffee plantations are usually owned by distant landowners who pay a pittance to peasants who often work under the hazardous spray of pesticides. In Guatemala, Rigoberto Menchu's baby brother died from exposure to pesticides sprayed on coffee plantations while their mother worked in the field carrying the baby on her back. Menchu, whose poignant books are available in local libraries, lost several other members of her family while fighting for justice for farm workers. Is this the kind of coffee you want to support with your purchases? Don't you want your java to be just?

Purchasing fair-trade, bird-friendly (i.e., organic, shade-grown) coffee also helps to combat global warming. Organic soils store more carbon than non-organic agricultural fields. Nut-producing trees sequester carbon in their trunks.

(continued on page 6)



Hatchery Report

by Nancy Aichberger and Matt Townsend

Coho from the 2005 brood year, numbering about 21,000, are readying themselves for their great ocean journey. This number may be a slight overestimate, as the minks had a few meals in our pond this winter, and a trout or two always manages to sneak in and get fat off of the coho. The gate to the coho pond will be opened in the coming weeks, and these smolts will be on their way to Noons Creek and the ocean at the end of May or early June.

The rough winter weather was tough on our coho eggs. Water flow to our egg trays was stopped twice: first by the blockage of our hatchery intake, then by a power outage which stopped our temporary pump. As a result, we have only 17,000 coho fry from the 2006 brood year. These are now swimming and eating, and will be put in the coho pond after its current residents leave and we get a chance to clean it out.

The Fall chum return to Noons Creek was excellent, with at least 100 fish passing the hatchery. We now have approximately 75,000 chum fry from the 2006 brood year. We will be releasing 40,000 at the Fingerling Festival, and the remainder will be released into Schoolhouse South Creek in the weeks following the festival. All of our fish are going to be blessed before they leave in a multi faith blessing.

As mentioned in the previous Creek Crier, the heavy rain storm in January sent boulders rolling down Noons Creek. The high flows bent back the metal grate over the hatchery water intake, resulting in gravel filling up the intake pipe and completely blocking water flow to the hatchery. Our volunteers picked a day in April when the flows were low to clear out the intake. It turned out that the gravel didn't penetrate the intake pipe very far: in fact, the high flows may have blasted out some sand that was packed further down the pipe, because now the intake is cleared and the flow to the hatchery is better than it was before January!

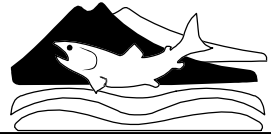
During the last 6 months many problems have arisen. Besides the wind and water damage, the hatchery has been tagged on all four sides with spray paint. We also suffered a major break-in, where one of our giant sliding doors was pried off, and the lock to the storage shed was cut. This resulted in the loss of our emergency generator, chain saw and bolt cutters. A few days later the shed was broken into again. We now have a heavy-duty lock on the shed, and our alarm company has spent many

Purchasing Coffee (continued from page 5)

In contrast, pesticide production, shipping and application consumes fossil fuels, produces greenhouse gases and causes pollution. It's amazing that a simple decision about the kind of coffee you drink can have so many ramifications.

When our family started drinking fair-trade bird-friendly coffee in the early 1990s, it was impossible to find it in local stores. Today, many of the more environmentally aware grocery stores carry this type of coffee. In addition, you can also purchase it at the local Wild Bird Store (on North Road, soon to be moving to Newport Village in Port Moody). Now, we have just created another reason to purchase this coffee – your purchase can help to support PMES! Thanks to Kathy Heisler, our Secretary, we have fair-trade coffee and other products available for sale from the Level Ground Trading Company in Victoria.

(continued on page 7)



Laboratory Director's Report

by Jim Mattson

This year's activities in the water quality laboratory in the Noons Creek Hatchery has involved a continuing course of testing activities to determine any excesses of possible pollutants in the stream water for Noons Creek and the surrounding salmon-bearing streams that flow into the Port Moody Inlet. We have noticed a slight increase of ionic pollutants over the past year. For example, total ammonia/ammonium ion concentrations in creeks that drain watersheds that support dense housing have increased from a usually immeasurable trace amount to measurable concentrations of between 0.10 ppm (parts per million) to 1.20 ppm. This has caused us some concern, for the data that we used for reference that indicated tolerance levels of pollutants for salmonids indicated that amounts of ammonia that exceeded 0.006 ppm (6×10^{-3} ppm) were lethal. When calculating the amount of free ammonia in the ammonia/ammonium ion equilibrium concentrations that we found, it was determined that the actual concentration at that pH and temperature was between 1.8×10^{-4} ppm and 2.0×10^{-3} ppm, still within the tolerable range. However, the fact that the ammonia concentration is increasing is giving us some concern.

Along with the increases in ammonia concentration, we have found similar increases in the phosphate and nitrate ion concentrations. These ions, although not toxic in themselves, tend to cause an increase in algal growth in the streams, thus reducing the amount of available dissolved oxygen. We have also noticed that with the flood rains encountered this fall and winter, siltation has also been a problem. This is especially true where ongoing excavation for building construction is occurring. We try to perform these and other water quality testing on the six salmon-bearing streams draining into the Port Moody inlet on a weekly basis. We publish these results on our website (<http://www.noonscreek.org>) under the menu item "Water Quality Lab – Operation".

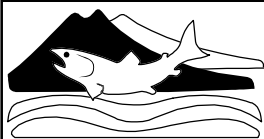
We would like to express our appreciation to the number of volunteers that have helped us this year in water quality testing process during this past year: Eric Olsen, Stacey Carter, Carrie Hightower, Douglas Chan and Amanda Brewer.

Purchasing Coffee (continued from page 6)

This company purchases coffee from around the world and roasts the beans in BC. Purchasing these products will help to provide small family farmers with a living wage. Buying coffee from Central and South America will enhance habitat for North American migratory songbirds. Purchasing products from Africa will protect habitat there. A portion (approximately 25-30%) of your purchase will be directed back to the Port Moody Ecological Society. Remember, if coffee is shade-grown and organic, it's bird-friendly even if it doesn't say so on the label.

Given the wide variety of fair-trade coffee products now available you should have no problem finding the type of coffee that best suits your tastes whether it be light or dark roast, decaffeinated or natural, ground or whole bean. Fair trade coffee always comes from high quality beans derived from the Arabica coffee strain. You may pay a little more for this coffee, but it's very much worth the slight increase in price.

Once you become accustomed to purchasing fair-trade environmentally-friendly coffee, think about applying these same principles to other food purchases. Fair trade tea and chocolate is now available in some local stores. Purchasing organically-grown produce is not only healthier for your family but also for the farm workers who produce the food and for the environment in general. Grocery shopping consumes a large portion of our household budget, so I gain some comfort in knowing that our organic and fair-trade food purchases are helping to provide a healthy environment and living wage to farmers around the world.



PORT MOODY ECOLOGICAL SOCIETY

RETURN TO: P.M.E.S. Attn. Membership
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Phone/Fax 604-469-9106 E-mail hatchery@noonscreek.org
SOCIETY NUMBER S27189

MEMBERSHIP APPLICATION

MEMBERSHIP DUES

- \$5.00/year Student
- \$15.00/year Individual
- \$20.00/year Family
- \$75.00/year Patron
- \$150.00/year Corporate
- \$150.00 Lifetime

All donations are gratefully received. We are a Canadian Registered Society and as such Donations in excess of \$10.00 qualify as Income Tax Deductible. If you would like a tax receipt, please forward your cheque with a note clearly stating that you wish a Tax Deductible Receipt.

Please indicate which volunteer activities are of interest to you.

PUBLIC EVENTS

- FINGERLING FESTIVAL
- GOLDEN SPIKE DAYS (ANNUAL)
- SPECIAL EVENT DISPLAYS
- HATCHERY HOST (WEEKENDS, MAY-NOV.)

COMMUNICATIONS

- CITY COUNCIL MEETINGS (MONTHLY)
- NEWSLETTER ARTICLES
- NEWSLETTER DISTRIBUTION
- TELEPHONE

NATURE EDUCATION

- CHILDREN
- ADULTS

HATCHERY WORK

- FISH FEEDING
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- TRAIL/ENVIRONS MAINTENANCE
- POND CLEANUP
- STREAM CLEANUP
- DIG SPAWNING CHANNEL(S)

WATER QUALITY TESTING

- REGULAR CREEK TESTING
- DATA ENTRY

I would appreciate periodic phone calls regarding upcoming events YES NO

Name _____

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City _____ Postal Code _____

Telephone _____

Day time

Evenings

E-Mail / Fax