

The Galiano Island Stewardship News

Winter 2009

a newsletter of the Galiano Conservancy Association, where the people of Galiano Island can share ideas, stories and perspectives on stewarding the land.

EXODUS!

The Chum Salmon Release

by Reiner Krueger

On a beautiful morning in June. I was awaiting the truck from Goldstream Hatchery on Vancouver Island. The truck was carrying our 10,000 Chum salmon fry, to be released into Greig Creek, which drains into Galiano's Retreat Cove. It didn't occur to me, until I saw the beat-up old Ford Bronco roar up from the ferry, just how excited I was for this to take place.

That morning, an elder of the Penelakut First Nation (of the Coast Salish Nations), and her son, made the trip over from Kuper Island to help the fish on their way. Florence James, being an incomparable storyteller, told us a legend from her people.

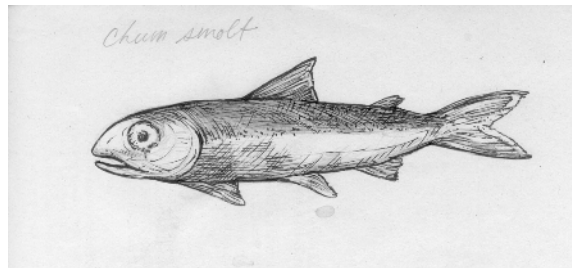
As she dipped a cedar bough into fresh cold water from the creek and washed it over the captive salmon fry, she told us about how the first salmon came into being. Legend has it that a special boy was born in a village of her people. Like all young sons, they need to be bathed by their caring mothers. So, one day, she took him down to the river and began to wash him in the cool, clean waters, bathing him with a cedar bough. Every time the bough touched his skin, the droplets of water from the river were turned into tiny salmon fingerlings. And so the first salmon were born into the waters of British Columbia.

With this story in mind and the ceremony completed, we began to haul our buckets brimming with fish out to the creek. The fish had been in a large oxygenated tub since early that morning and were eager to get into the stream.

We placed thousands of fish into Greig Creek, thousands of silver slivers darting around in big schools.

After all the fish were transferred, we took a walk down the length of the creek to clear any blockages that would have obstructed the fry on their run to the sea.

The creek is small, but it also has deeper pools that are shaded and covered with logs, limbs and other debris, offering the fry a place to hide, eat and collect themselves before the big push to the ocean. Unlike Coho, which spend their first winter in the creek, Chum salmon are not comfortable in river systems and will make their push to the ocean soon after their release, usually within two days.



In the following days we walked the creek to check the status of the salmon's push to the sea. Surprisingly, we were still finding salmon in the creek over a week later.

The longer the time spent in the creek, the more the stream should imprint on the salmon. The stronger the imprint, the more likely they'll return to spawn.

With the release of 10,000 fry, we hope to see spawning adults within five years.

Epilogue: More than a month later, an island kayaker, while out paddling the waters of Retreat Cove, noticed thousands of salmon fry swimming in a massive school all around her.

A good sign for the future Chum salmon run on Galiano!

Reiner Krueger works as an ecological restorationist and educator with the Galiano Conservancy Association

A vibrant winter beneath the Ocean

by Orissa Forest

Dropping - 30, 40, 50 feet and deeper - the light fades, but with the switch of a flashlight the greens transform into the true colours, much like a mid-summer day.

Beneath the gray-green surface the ocean; boulders, caves, and rock walls are vibrant. Red and purple sea urchins slowly move their feelers; yellow, white, orange, and purple nudibranchs creep slowly along walls and fish scurry into protected crevices and caves. And, not far from Galiano's southeast shore there is a glass sponge reef that is 9,000 years old.



Nannimo Nudibranch



Crescent Gunnels

This is Galiano's marine life.

The island is a collection of very different marine ecosystems, from sandy bottoms, boulder fields, and rock bottoms to rock cliffs and caves. The many ecosystems enable diverse marine life. Galiano, at the mouth of the Fraser River and bordered by two marine dumps and Vancouver's five sewage outfalls, has seen much change.

There is a need to look at how our marine life is being affected by our lack of understanding of the ocean.

And as fall turns to winter, the temperature may fall but the vibrant oceans are still waiting underwater.



Red Eye Jellyfish

Orissa Forest and Travis Beaulieu started the Ocean Currents project last summer to identify marine life and map the coastal marine ecosystems of Galiano Island.

They hope to expand the project to include an analysis of marine chemistry.

If you see them, and it's rare unless you happen to be under the water at the same time, ask them about the project and thank them for their immense contribution to understanding our delicate marine ecosystems.

Photographs by Orissa Forest

Ria's Native Plant guide to survival!

by Ria Okuda

Another summer is complete at the Galiano Conservancy and it is time to reflect and write about something that struck me this year. The answer... native plants! A full summer of identifying and learning about our smorgasbord of fascinating native species got me thinking: we have it all. If there were any need to survive off what exists right outside our door there would be absolutely no problem!

For starters the island is flourishing with Stinging Nettle (*Urtica dioica*). That green vitamin-C filled delight will make plenty of delicious meals. Stimulating your kidneys and bladder are just some of its wonderful properties. If while harvesting your lunch you happen to get stung, don't fret! There is plenty of English plantain (*Plantago lanceolata*) nearby to cool any itch. The results are in, I conducted an experiment to really test the capacity of plantain and it was a success. My poor subject stung both arms and applied chewed Plantain to one arm and left the other alone. As I expected the sting was gone in moments to the applied arm, while the control arm sting lasted much longer. Personally Plantain doesn't just stop at curing stinging nettle for me. I use it for any icky sting even mosquito bites are susceptible to the soothing relief of this miracle plant.

After a long day of nettle picking a nice cup of tea would be best. Our beautiful island is home to multiple medicinal and delicious teas. A personal favorite of mine would be Licorice fern root. If that doesn't tickle your fancy try Yerba Buena a very potent trailing shrub or maybe you would prefer a flowery drink, wild rose petals make a marvelous light drink.

On those nights you're feeling wild and want to mix up your diet try my recipe for a scrumptious all native salad. It may take a while to harvest but the base of this salad consists of miners lettuce mixed with wild sorrel. A fifty-fifty ratio is best. A dash of young Salal leaves; these will not only act as a delicious flavor but will also curb any hunger you may have after this small salad. Add a hint of young Grand Fir needles for a citrus spice. Add any amount of ripe native berries to sweeten up your salad. And last add a dash of chopped Sea Asparagus on top to create a nice salty seasoning. Mix and enjoy this all natural, organic, wonder!



Most certainly the most notable of our native plants, I believe is our variety of delicious berries. Make jams and jellies with native Strawberries, Blackberries, Salal berries, Huckleberries and of course my favourite, the elusive Thimbleberry.

All in all, we Galianoites are living the life; a beautiful island to call home and a variety of native plants to satisfy anyone's curiosity. If we ever get stranded on this rock, no one panic, we are surrounded by almost everything we will need to live a happy and healthy life.

On a final note these native plants need our help to stay alive and flourishing, work together and remove any exotic invaders trying to take over their habitats such as the devil plant incarnate, Scotch Broom.

This article was originally written in the summer of 2007, and has been included in this year's Stewardship News for everyone's enjoyment and information.

I know that when I first came to the island, I was constantly asking my colleagues at the Conservancy about what sort of food I could harvest from the land. I was surprised to learn that I could indeed have a venerable cornucopia of food harvested from wild sources.

Ria has produced a wonderful collection of recipes and ideas for any of us who might be interested in living on the "wild" side of things, food wise. Enjoy.

- R.K.

Fish in the Bucket, Kids in the Creek

Healthy Streams for Healthy Salmonids

by Reiner Krueger

As a newcomer to the island, I'm learning my way with the help of a bunch of kids who call this magical place home.

Today a throng of 9- and 10-year-olds from the Galiano Community School are clamoring for the Coho Salmon fry that are in the bucket next to my leg. These kids have raised these Coho salmon fry from eggs over the past couple of months, and now they're here to release them into Greig Creek.

The idea is to establish a permanent recurring Coho run to the waters of Greig Creek. The whole community can get behind the common purpose of creating a healthy and productive stream to support healthy and productive salmon.

The Galiano Conservancy Association has been working for a decade to restore this creek for the run we hope to establish today. We've removed old logging road bridges and built off-channel ponds. Those decaying bridges were



increasing the sedimentation of the creek, which posed a threat to salmon eggs buried in the gravels of the stream bed.

The ponds provide a rest area and temporary habitat for young salmon during storms. In the summer, the ponds act as a reservoir for the stream. Similar ponds have been constructed on Murchison Creek, which supports a resident Cutthroat trout population.

Through the years we have also planted vegetation within the riparian (streamside) zones of the creek and generally improved the habitat within and around the stream.

In the late 1990's, the Conservancy introduced over 1000 Coho salmon eggs to the creek, along with the addition of more fry and smolts hatched elsewhere. Every year the Conservancy and neighbourhood volunteers monitor Greig Creek, observing the survival and growth of the young salmon.

A notable difference between the salmon in these buckets and those of my native Ontario is that the Pacific Salmon is a keystone species. Or at the very least, I had never considered the salmon of Ontario to be a keystone species. The Pacific Salmon is integrally connected and



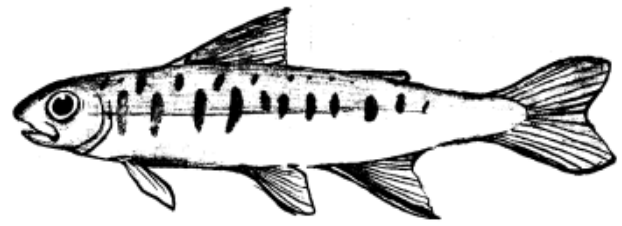
vital not only to the environment around it but also to the people who live along the shores of these salmon streams. These kids have grown up with the knowledge that the salmon is one of the most important organisms in the immense food chain that makes up the coastal zone in which they live.

During the spawning season, salmon serve as a swimming feast for bears, wolves, eagles and a multitude of other creatures along coastal rivers and streams. Fish are dragged from the water, consumed on land, and at times you can see piles of half-eaten carcasses all over the forest floor. Scavenging birds, small mammals, insects and microorganisms will then finally take a turn and convert the remains into the nutrients that are so vital to coastal forests. In time, these nutrients are recycled into other organisms, which will then feed the young salmon newly born into the creek.



I have learned what these children already knew: the cycle of life on the coast depends on healthy forests and streams to perpetuate the generations.

Thinking about the broader purpose of what we are doing today, the kids and I talk about the ecology of the salmon, and where would be the best place to release these little fish into the creek. We talk about where the fish would have the best chance of survival. We talk about riffles, runs and pools; over-hanging logs and trees; in-stream obstacles and shelter; and finally, good places for a small fry to eke out its existence. I have help. Some of the students have done this before. One tells me that he has taken part in the Coho release 8 years in a row, the full



Juvenile Coho Salmon

tenure of his time at the school. Finally, we divvy up the fish.

I watch them go, fish in little bags of creek water. They laugh and jump, argue that the kid before them got more fish than they did, but in the end all of the fish are in the creek, getting used to their new, albeit temporary, home.

Waiting, growing and hopefully remembering the creek that raised them.

I stand there, amid the enormous groves of western red cedar, thigh deep in sword fern, gazing down the length of the creek. I take a deep breath of the cool air under those cedars, thick with the aroma of a healthy forest, and smile.

Mission accomplished.

Whether these salmon come back is not for us to arrange; all we can do is raise them and release them, provide them with a healthy stream so that they in turn can grow up to be healthy and, we hope, return to this creek of ours.

I finished the day knowing more about salmon than when I started. My thanks go out to the students at the Galiano Community School. A special thanks to the teachers and parents who have taken the time to educate these children, and in turn teach this wayward Ontario lad about the importance of this magnificent organism, the Pacific Salmon, and its all too important role in our coastal ecosystem.

Room with a view

by Reiner Krueger

Walk out to a stream or a creek. Look down the line of the stream, from the fast flowing, shallow water riffles; through the steady main run; and find the pool that ends this aquatic equation.

If you stare deeply into the pool and concentrate, you'll likely see a caddis fly larva.

Caddis flies belong to one of the more diverse orders of benthic macro invertebrates in the world. Benthic macro invertebrates, or bottom dwelling animals without backbones, are integral in the dynamics of aquatic ecosystems. These animals often indicate the health of the water where they live. For example, some species of midges and worms are indicators of poor water quality, while other invertebrates, including some species of caddis fly, are indicators of healthy water quality.

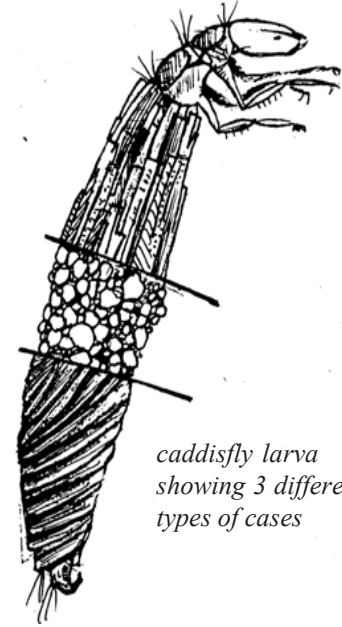
Caddis flies, for the most part, are “detritivores”, feeding mainly off of floating detritus (leaf litter, vegetation etc.). Some scrape algae off the rocks, and others actively hunt for their food.

Out of the thousands of species of caddis flies, found throughout the world, the three most commonly recognized suborders are defined by the way they use their silk.

The predaceous species use their silk to move around and hunt. A second group of species use silk to construct nets or tubes with which to catch food, or to anchor them in the stream. But by far the most commonly found, and identified, species are the ones that use silk to construct cases around their soft, vulnerable bodies.

These caddis flies, called so because of an old Shakespearean-era term for traveling vendors who pinned their wares to the outside of their clothes, construct their protective cases out of twigs, sand grains, shell pieces or other detritus held together by silk. Each species generally constructs a unique type of case. Some are exquisitely rendered homes for the larvae. Others look like nothing more than some clump of twig or leaf, or possibly just a little bit of sand.

If you look more closely, you'll find the head and part of the thorax coming out of the house when it's feeding. At the bottom of the case, you should be able to see the abdominal prolegs, with claw.



caddisfly larva
showing 3 different
types of cases

Finding these caddis flies in our freshwater streams and other aquatic environments is a good indication that our water is healthy and able to support a wide range of organisms.

So, next time you're rambling about your property on Murchison, Greig, Beaver or any one of the number of creeks here on Galiano, take a look into the water. You might just find an answer to our water quality questions, in the image of a small insect and its homemade masterpiece.

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Stewarding Your Land

Creating a Legacy for the Future

Are you interested in maintaining the ecological integrity of your property?

The Galiano Conservancy Association would like to work with you to help you pursue stewardship on your land here on Galiano Island.

Here's what we can offer.

After an initial conversation, staff will visit to walk the property and discuss your stewardship goals. During the visit, staff can point out any valuable wildlife habitat, and alert you to potential problems with invasive exotic species or land-use practices having a negative impact on the area.

Staff will provide you with a map of the property, including recent aerial photography, and recommendations for achieving your stewardship goals. If you choose to pursue recommended stewardship options, you will be invited to enter into a stewardship agreement with the Galiano Conservancy.

With a stewardship agreement, you are making clear your commitment to conserving streams, wetlands and riparian areas, groundwater, native plant species, wildlife habitat, rare or sensitive ecosystems and to minimizing the use of toxic chemicals, pesticides and fertilizers.

In turn, the Galiano Conservancy makes a commitment to provide you with expertise from staff members, mapping from our GIS facility and information from our library/resource centre.

In some cases, property owners have taken stewardship a bit further and have formalized their agreement through a legally binding conservation covenant.

Feel free to contact the Conservancy, and speak to any of our staff about scheduling a stewardship consultation.

For more information, phone:

250.539.2424



Soaring with Eagles

By Stefan Blum and Franziska Arbeiter

Hello Everybody!

We are Stefan and Franziska, two students from Germany passing our second practical term with the Galiano Conservancy Association.



We are studying forestry in FH-Weihenstephan, north of Munich, at a university of applied sciences. As we are in our sixth semester and already passed tests in subjects like zoology and animal ecology, botany, site ecology or soil science our target is to adapt our expertise to a practical purpose.

Since we came here in mid-February we were working on our main project, which is to do a mapping of bald eagle nest trees on Galiano Island. But we also contribute with the Education Program, assist in the Conservancy's restoration, where we are pulling trees over or – as one of our specific favorites - climb trees to cut the tree top. Recently we also started planning a treatment in a small section of the restoration site, which has been delivered to our responsibility. Before we could start there we had to do a lot of study, because the German forests are totally different to what we found here on Galiano.

The natural tree species in Germany would be Beech, but after centuries of human influence most of the Beech forests have disappeared and were often replaced by Spruce, because of its fast growth and profitability.

Many native tree species, like Fir, Larch and a lot of broadleaf tree species like Ash, Oak or Maple were left behind for monoculture Spruce plantations. That's why Spruce is the most common tree species in Germany at the moment though it originally only grows on higher elevations like the Alps or the Bavarian Forest.

This little ecological composition of tree species became a major concern in German forestry because especially the spruce isn't adapted to hot, dry summers as expected with climate change. Just yet there are a lot of problems in monoculture spruce forests with a bark beetle that develops well in warm weather.

Some foresters in Germany think the Canadian Douglas Fir is a good alternative to Spruce, due to its less claim of water, instead of planting natural tree species.

Not only the forests are different, but also the whole forest management system differs. There are three types of property situation in German forests. Either the forest is private, communal or the federal state is the owner (In Bavaria, where we're from, it's managed by a public corporation).

This public corporation called BaySF is subdivided into other organizations and these are again subdivided in forest districts. At the head of each forest district is a forest engineer (like Stefan and I will become), who is responsible for a forest zone of about 2000 hectares. Most of all foresters in Germany work for a long time – sometimes until they get retired – in this comparatively small sector. Consequently,



they know their forest like the back of their hand and establish a close relation. There are many advantages, but on the other hand there's hardly any forest without human influence.

That's why we enjoyed the atmosphere in the Canadian mature and old growth forests and discovered to us unknown plants. It was an exciting and informatory time that we enjoyed to the fullest here on Galiano Island.

Note:

Stefan and Franziska left Galiano Island, back in August to return home to Germany. Their contributions and efforts here at the Conservancy, which included a detailed mapping of Bald Eagle nesting sites for the island, are greatly appreciated. We've included this article that they left with us, and thank them dearly for their help and friendship.

The Galiano Conservancy Association publishes the *Galiano Stewardship News* to share ideas, stories, and viewpoints on stewarding the land. We welcome your writing, art and photography for use in upcoming issues.

We also welcome your comments on this issue and requests for more information. Please contact us:

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