



Sunshine Coast Conservation Association *Newsletter*

Summer 2015

Issue 26

PO Box 1969

Sechelt, BC

V0N 3A4

www.thescca.ca

Federal Court Rules in Favour of Wild Salmon

by Linda Williams

The long-awaited decision in Alexandra Morton's lawsuit (2013) against the Department of Fisheries and Oceans (DFO) and Harvest Marine Canada, Inc., has finally been handed down in federal court. On May 6 Justice Donald J. Rennie ruled the DFO needs to err on the side of caution in regulating fish farms.

The outcome was preceded by more than twenty years of research and effort by independent biologist Alex Morton to keep salmon farms located away from BC's wild salmon migratory routes to prevent the spread of fish farm diseases and disease agents, including sea lice.



Sockeye salmon surge by as a Dolly Varden waits to binge on their eggs.
J Armstrong photo

As far back as May 24, 1994 her correspondence with the Federal Minister of Fisheries and Oceans about this issue, copied to BC's Minister of the Environment, was discussed in the BC Legislature: The "DFO knows that placing diseased fish in the water for enhancement purposes is very dangerous to wild stocks and it is not allowed. Thousands of publicly owned enhancement fish have been destroyed in hatcheries to protect wild stocks. Why, then, are the fish farmers allowed to put diseased fish in the water and grow them out on migration routes of weakened stocks that DFO is trying to enhance?"

Instead of shooting the messenger, which has been the traditional federal response, Justice Rennie concurred with Morton that the Minister of Fisheries and Oceans does not have the authority to delegate to the aquaculture industry the Minister's duties and responsibilities to protect and conserve fish. Justice Rennie not only ruled that Marine Harvest Canada's licence conditions were in conflict with the *Fishery (General) Regulations (FGRs)*, he ruled that the Minister cannot create licence conditions that would sidestep or nullify the regulations.

The FGR's prohibitions against the transfer of diseased fish and disease causing agents to the marine environment apply equally to Minister Shea because Ministerial discretion is also

dictated by the FGRs. Justice Rennie admonished Minister Shea for making "unsupported statements of science", explaining that assertions cannot be made without evidence. With respect to permitting the transfer of Piscine infected smolts to the marine environment, the judge said, "The Minister is not, based on the evidence, erring on the side of caution."

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Government to Defend Glass Sponge Reefs

by Marina Stjepovic

For over five years the SCCA has been raising local awareness and seeking protection for the glass sponge reefs in the Strait of Georgia. We are excited to report that the Department of Fisheries and Oceans (DFO) has introduced mandatory fishing closures over the reefs.

Last year the SCCA attended two stakeholder meetings along with several other conservation groups, commercial and sports fishers and First Nations. The goal was to try to reach consensus on how to protect the nine reefs of the Strait of Georgia and Howe Sound. During the consultations the DFO agreed to voluntary fishing closures over the reefs.

On June 5, 2015, we received word that fishing closures would become mandatory. This means that all bottom contact fishing will be prohibited over the reefs and within a 150 metre buffer zone that surrounds them. As of April 1, 2016, all aboriginal communal licenses that are issued will also prohibit bottom contact fishing activities within 150 m of the glass sponge reefs.

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SC Wildlife Project Enriching Local Habitats

by Michelle Evelyn

Now in its 9th year, the *Sunshine Coast Wildlife Project* continues its work to conserve, restore and enhance wildlife habitat and take direct action to ensure the survival of local species at risk. We are particularly busy right now with several exciting habitat enhancement efforts.

Through our Shoreline Naturalization Program we are helping local and regional governments, stewardship groups and private landowners to improve freshwater and oceanfront shorelines on public and private property by providing free expertise, technical advice, native plants and labour.

To date we've completed habitat enhancement at eight locations that include the shorelines of estuaries and salmon-bearing creeks, freshwater lakes, wetlands and oceanfront properties. The shoreline naturalization sites include White Tower Park and Georgia Beach in Gibsons; Cooper's Green Park and Redrooffs Trail in Halfmoon Bay; Garden Bay Lake and Lily Lake in Pender Harbour plus private properties in Egmont and near Smuggler's Cove.



Community volunteers assist with shoreline naturalization at Lily Lake
David Stiles photo

For each site, we conduct a shoreline assessment then make a detailed planting and enhancement plan and map. Once the plan is approved, we carry out the enhancement: removing invasive species, planting native vegetation, and adding habitat structural diversity with the assistance of teams of community volunteers.

Four more shoreline naturalization sites are in progress. In total, we have improved 12,500 square meters of shoreline habitat! We have funding in place for several more sites and residents are invited to nominate additional shoreline naturalization locations.

Our Homes for Wildlife Program allows community members to aid wildlife by installing and monitoring wildlife homes on private properties and in community parks and wilderness areas. A variety of homes is available including owl nest boxes, bat houses, swallow nest boxes and mason bee houses. You can purchase a ready-made box or build a wildlife home by purchasing one of our kits, with all materials and easy construction instructions included.

Those feeling extra handy can build a wildlife home from scratch using one of the templates on our website. Once your home is built, install it following our recommended best practices, send us a photo of the installed home and commit to monitoring the project. If you do, the Wildlife Project will reimburse you for the cost of the kit or materials.

In the Clowhom watershed at the head of Salmon Inlet the installation of the Clowhom Dam in the 1950s flooded the lower valley causing substantial wetland loss and degradation. The remaining wetlands adjacent to the reservoir are significantly impacted by dramatic, unnatural and unpredictable variation in water levels due to hydro activities. These fluctuations limit the reproduction and recruitment of wetland wildlife including amphibians, fish, invertebrates and birds.

To mitigate these problems we are working to restore the wetlands by creating stable habitats that are not subject to the same deleterious effects experienced by areas directly connected to the reservoir. Water bodies of various sizes will be constructed in areas adjacent to those currently being affected. These wetlands are being designed to provide a diverse mixture of habitats to support the greatest diversity of wildlife species.

In addition to these habitat enhancement efforts, we continue our ongoing wildlife research, population assessment and monitoring to identify occupied sites and critical habitat for a wide variety of species. These include turtles, amphibians, owls, goshawks, swallows, snakes and bats.

We are excited to have discovered new occupied sites for key species at risk on the Sunshine Coast, including Western Toad breeding ponds and Western Screech-Owl nesting groves. At each of these sites, we are working to evaluate threats and develop conservation and management plans.

For more information about the *Sunshine Coast Wildlife Project*, please visit us on Facebook www.facebook.com/coastwildlife and visit our website www.coastwildlife.ca



The Wildlife Project has discovered new breeding sites for the blue-listed Western Toad
Michelle Evelyn photo

Aquatic Invasive Species Regulations in Effect

by Margot Grant

More than eleven years after a House of Commons committee urged the federal government to bring in regulations to counter the threat of aquatic invasive species, they were finally announced and came into effect on June 17, 2015.

The regulations make it an offence under the Fisheries Act to transport aquatic invasive species (AIS) like Zebra and Quagga mussels and Asian carp into Canada, across provincial borders and between ecosystems within a region. Import, possession and release are also prohibited. Fines and imprisonment are possible.

The BC government introduced aquatic invasive species regulations in 2013 but they had no effect on species entering across national and provincial borders. The new federal regulations address that problem. They cover the use of live bait, the aquarium and water garden trade, live food fish and canal and water diversions. The prohibitions do not apply to vehicles, vessels or aircraft engaged in emergency, search and rescue or firefighting operations.

Aquatic invasive species compete with native species when introduced to aquatic ecosystems where they historically do not belong. Without predators, they thrive and threaten biodiversity, ecosystems and water quality.

There are approximately 133 different aquatic invasive species in British Columbia, including Eurasian watermilfoil, purple loosestrife, parrotfeather, largemouth bass, red eared slider turtle, rusty crayfish and American bullfrog.

Three boat inspection teams with two members each will try and keep aquatic invasive species which are not yet present from entering B.C. These teams will be based in Nelson, Invermere and Penticton. Critics have called six officers to guard BC's borders against these species "woefully inadequate." However, border officials with the Canada Border Services Agency will also be trained to inspect and detain boats suspected of transporting invasive species like Zebra and Quagga mussels from other countries.

Through a combination of enforcement, boat inspections and education, boaters are urged to always clean, drain and dry their boats before launching into another waterbody. Last year, the Clean Drain Dry message was shared at more than 1,000 events in more than 115 communities across BC, reaching more than 34,500 boaters, youth and members of the public.

"This year alone, a boat heading to Penticton, another heading to BC from Lake Mead and two coming from the Great Lakes were inspected and needed to be decontaminated for mussels," said Gail Wallin, executive director of the Invasive Species Council of BC.

Under the new regulations, there is a Canada-wide ban against Zebra and Quagga mussels, and four species of Asian carp (Grass, Bighead, Silver and Black carps) unless they are dead and eviscerated.

Zebra and Quagga mussels (Dreissenidae family) are rapidly invading North America. Currently, they are not present in BC "Having regulations is really, really important," Wallin said.

According to the BC Ministry of the Environment, Zebra and Quagga mussels "could cause serious impacts on lake rearing salmonids species such as sockeye salmon that depend on planktonic food sources in their earlier life stages." In addition, the Ministry says, they would likely also significantly impact threatened native mussels in BC like the Rocky Mountain Ridged Mussel.

Zebra and quagga mussels are relatively small, ranging in size from 1 mm to 3 cm as fully grown adults. Their shape resembles a propeller blade. Native mussels are much larger and have a different shape.

Another distinguishing feature is that native mussels cannot attach to solid surfaces, but zebra and quagga mussels can, often forming clumps. Because they attach to boats, they can enter BC on vessels from infected areas.

The watercraft does not need to be in the water to carry Zebra or Quagga mussels. These species can survive for extended periods out of the water; the microscopic free-swimming larvae can survive for up to twenty-seven days in standing water in boats and other equipment.

The regulations also list fourteen species which are indigenous to parts of Canada but may be subject to control and eradication activities in areas where they do not originate naturally and may cause harm.

For example, the Yellow Perch (*Perca flavescens*) and the Walleye (*Sander vitreus*) are valued for fishing in most of central and eastern Canada but represent a significant risk to native species in BC.

In the future, other aquatic invasive species, including plants, invertebrates and vertebrates, can be added to the regulations when necessary.



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Solar Cooperative Gets Underway

by Gayle Neilson

Sunshine Coast Community Solar is a project of the Gibsons Green Team and Sunshine Coast in Transition. Its purpose is to promote solar power as renewable energy. When the group began it was primarily interested in developing a solar demonstration project (community based solar farm). This grew to include educating the public, the bulk buying of solar panels and connecting with other solar groups.

The steering committee networked with government and local businesses. When it discovered a lot of interest, a workshop was held in March. About 200 people attended.

Team leader Joanna Zilsel gave a summary of the current solar initiatives in BC and the challenges to overcome. She highlighted potential solar options for our community. Julie Clark, the SCRD Sustainability & Education Coordinator, gave an overview of how a solar cooperative aligns with the SCRD's 'We Envision' sustainability plan.



Solar Farm on Widby Island Photo courtesy of Gord Bishop

Lee Ann Johnson facilitated the discussion and answered questions about forming a co-op. Matt Hutchings, Dennis Olson and Wayne Slingerland (local electrical contractors with experience in alternative energy systems) explained the current issues and answered questions. Many of these pertained to rooftop solar photovoltaic (pv) installations. These panels have gradually come down in price. BC Hydro has made it fairly easy to feed back into the grid.

In response to community input the steering committee has set up groups to work on a solar demonstration project, bulk buying club for solar panels and other conservation possibilities like LED lights. There is also interest in solar hot water heaters and solar powered street lamps. If you wish to be involved contact Joanna at j_zilsel@dccnet.com.

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Glass Sponges a Hit in Local Classrooms

by Cindy Harlow

During the months of April and May, members of the SCCA were busy educating students from Langdale to Halfmoon Bay about our local glass sponge reefs. Marina Stjepovic, Naomi Fleschhut, and Cindy Harlow shared their knowledge and passion about sea sponges with students from kindergarten to grade 7.

Each presentation was very well-received. The students were quite often enthusiastic and engaged. Many of their questions and comments were thoughtful. The program evaluation gave the volunteers insight into the learning and what the students wanted to know more about.

The children were amazed that the glass sponge reefs were so close to us for so long without us knowing about them. They were fascinated that this animal flourished in

the Jurassic Era and that the sponges are water pumps that develop into reefs by growing on top of one another. People wanted to know more about the fish that live around the glass sponges and how pollution affects the sponges. They were also curious as to whether there were more organizations like the SCCA in our area.

This project allowed the SCCA to use a "place-based" education model. Its goal is to connect classrooms to communities, sharing ideas about how society, industry and cultural traditions interact with the natural ecosystems. This knowledge can foster empathy for all living systems and encourages our youth to participate in environmental campaigns.

A leading author on place-based education, David Sobel, believes that, "a grounded or rooted learner stands within the world, acting on its many elements, rather than standing outside looking in, acting in large measure as an observer..."

The SCCA is grateful to the Toronto Dominion Bank's Friends of the Environment Fund for making it possible to take the glass sponge reef presentation to our local schools. Whenever we invest in our children we build a better tomorrow.



Children examine the remains of a glass sponge with Cindy Harlow Naomi Fleschhut photo

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Elphinstone Park Expansion Long Overdue

by Gayle Neilson

Shortly after moving to the Sunshine Coast in 1982, I heard about the disastrous flooding caused by logging on Mount Elphinstone. Being busy with work and raising a young family, I did not pay much attention to it or the short-lived Elphinstone Local Resource Use Plan that the Ministry of Forests peremptorily ended without disclosing the details.

Fast forward to 1994 when the Elphinstone Living Forest (the first ELF) was formed. It proposed setting aside a 1500 hectare (ha) area of crown land as a park, protected from further logging. To build support for the park, ELF took thousands of people into the area on weekly walks.

In 1995, Rick O'Neill and Adrian Belshaw of ELF were given just two days by the Ministry of Forests to come up with 120 ha for preservation within the total 1500 ha. Heartbroken, they nevertheless identified three small parcels totally 139 ha even though, in Rick's words, "One large area is better than smaller areas as far as habitat is concerned." They hoped that some time in the future the three smaller pieces could be joined to form a larger park.



Intact forest on Mount Elphinstone Gayle Neilson photo

The eastern-most section was chosen because of its high biodiversity values and big Sitka Spruce. They selected the middle section for its high concentration of old-growth trees and the western section because it was next to Wilson Creek. Twenty years later, not one additional hectare has been preserved. Much more of the area has been logged.

Elphinstone Living Forest has dissolved, but another ELF, Elphinstone Logging Focus, is fighting to protect this forest. Rick O'Neill is concerned that continued logging is detrimental to the remaining biodiversity, particularly fish bearing streams, amphibians, and mushrooms that depend on a mature forest. ELF recently hired renowned biologist Wayne McCrory to study the natural values of the area. A public meeting was held June 10th to review his findings.

McCrory reported that the biodiversity values are very high, including numerous old-growth Douglas-fir trees, critical old forest winter range for Roosevelt elk, rare plant communities of snow bramble and a broad leaved variety of rhododendron (*Rhododendron macrophyllum*). There is also a macrofungi (mushroom) diversity of some 165 species (including the rare scented night mushroom, *Tricholoma apium*), and eight amphibian species whose life cycles and habitat needs are not well understood.

There is little protected forest at low elevations so the conservation of this area is more urgent than ever. It would have the additional benefit of the carbon capture and water retention that an intact forest provides.

The SCCA supports protecting the whole area (which McCrory actually determined to be over 2,000 hectares) as a Class A park. Because only 3% of the land on the Sunshine Coast has been set aside for parks compared to 12% province wide, this would help redress the imbalance.

There is wide public support on the Sunshine Coast for the park expansion. It falls within both the shíshálh (west of Roberts Creek) and Skwxwú7mesh (east of Roberts Creek) Nations. Their input is imperative. To view the complete McCrory report go to www.loggingfocus.org

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Federal Court Rules in Favour of Wild Salmon

At the centre of the judicial review, Piscine Reovirus (PRV) was first identified in Norway in 2010 and in BC in farmed Chinook salmon tested in 2011 and 2012. The PRV strain in wild BC Cutthroat and Steelhead trout and wild Chinook, Sockeye, Coho, Chum and farmed Atlantic salmon likely originated in Norway in about 2007. PRV may cause deadly Heart and Skeletal Muscle Inflammation.

Citing subsection 22(1) of the FGRs, which stipulates that a licence condition cannot conflict with the regulations, Justice Rennie ruled that Marine Harvest Canada's 3.1(b)(ii) and (iv) licence conditions are not consistent with the FGRs and gave the industry four months in which to become compliant. BC salmon farmers have until September 2015 to stop placing diseased fish and fish disease causing agents into the marine environment.

The federal government is expanding its plans for the salmon farm industry in spite of the 18 month long, \$37 million Cohen Commission's recommended moratorium on new fish farm tenures along BC's salmon migration routes.

The DFO and Marine Harvest have also filed notice that they plan to appeal Justice Rennie's decision. Alex Morton is left wondering why they are going to try to resurrect unlawful licence conditions that allowed the transfer of infected fish to the ocean. It certainly begs the question: Is BC's farmed salmon industry dependent on diseased fish?

On May 29, 2015, Morton's 108,000 signature petition calling for a stop to the salmon farming industry expansion was tabled in the BC Legislature. More than 100 BC associations (including the SCCA) and businesses have also signed a letter supporting the petition.



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Conserving Howe Sound in 2015

by Ruth Simons, Executive Director, Future of Howe Sound Society

From the mountains to the ocean, conservation efforts are underway in Howe Sound and the Sea to Sky corridor to protect the recovery of Howe Sound. The Squamish River Watershed Society, with the help of a \$150,000 grant from the National Wetland Conservation Fund and Pacific Salmon Foundation, is restoring a former log sort area back to a natural estuary at the head of Howe Sound. Since 2007, about 70% of the Squamish River Estuary has been designated a Wildlife Management Area under the Provincial Wildlife Act. The society is working with the province, the district, Fisheries and Oceans Canada and the Squamish Nation on the restoration project.

The Squamish Nation declared in October that they would pursue marine planning for Howe Sound. In partnership with Vancouver Aquarium and David Suzuki Foundation, they hosted a knowledge sharing workshop in April. It brought together over seventy people who currently work in the Howe Sound marine environment and was an excellent first step in gathering and sharing data between agencies.

Squamish Nation values the information and through this shared information will try to protect important areas of Howe Sound. An example of this is protection of the rare sponge reefs that have been documented by the Marine Life Sanctuary Society. The Province is considering extending the Halkett Bay Marine Park off Gambier Island to protect the reefs. There are many more joint initiatives, such as the Sea to Sky Marine Trail, new recreation sites being launched this summer and work underway to protect the hiking trails on Gambier Island.

At the same time, large scale industrial projects move along the assessment process. By August this year we will have a good idea of what conditions will be recommended by the environmental assessment office on the Woodfibre LNG project near Squamish. Our Provincial Ministers will then decide what risks are acceptable in order to advance the LNG export goals. The project requires federal approval and it is unclear if that will happen before the federal election this fall.

It is anticipated that the Burnco Gravel Mine environmental assessment will take place this summer. The McNab Valley where the gravel mine is proposed has many freshly logged patches and clearings for the Box Canyon run of the river project that has been under construction. No new information has come forward about Metro Vancouver's proposed incinerator project but the site near Port Mellon is still a possibility.

The cumulative impact of all these projects is not yet known. According to the B.C. Auditor General's recently published report called "Managing the Cumulative Effects of Natural Resource Development in B.C.", key elements of the government's plan for managing these effects are missing. This report validates the concerns that the Howe Sound Society has been raising about reindustrialization of Howe Sound when there is no comprehensive land and marine use plan in place. Howe Sound region is one of the few areas of the province without a plan, yet is a highly prized area for tourism, recreation and the film industry with its proximity to the large urban area of Metro Vancouver.

We will continue to up the noise and raise awareness about the importance to Save Howe Sound – we hope you will join us at the third annual S.O.S! Rendezvous on the water July 11th. This year My Sea to Sky organization and Concerned Citizens of Bowen have organized an 11:00 AM start near Bowyer Island along the proposed LNG tanker route and will travel to the 2:00 PM Save Our Sound Rendezvous at the north end of Gambier Island. Please check our website and join us to enjoy the sounds of Brothers in Farms from the coast.



Brothers in Farms Perform at a Save Our Sound Rally
Joshua Hergesheimer photo

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Government to Defend Glass Sponge Reefs

Similar reefs that were widespread during the age of the dinosaurs were long thought to be extinct. They were rediscovered in Hecate Strait (south of Haida Gwaii) in 1987, and the Strait of Georgia in 2001. Locally, the reefs are situated near the Sunshine Coast, Galiano Island, Hornby Island, Parksville, Gabriola Island, West Vancouver, Howe Sound, near the mouth of the Fraser River and in the middle of the Georgia Strait.

These unique and rare reefs are considered to be global treasures. They filter vast amounts of sea water and provide critical nursery grounds for various deep-water species such as spot prawns, rock fish, crabs and rare bivalves.

Now that these new fishing closures are in place the threat from bottom contact fishing, which has damaged considerable parts of the reefs over the past century, should be greatly reduced. The SCCA looks forward to working with the DFO and fishers to ensure the long term protection of these amazing ecosystems. It hopes to see our community take a stewardship role.

The SCCA would like to thank its members, other conservation groups, local elected officials, researchers and individuals who took action, signed our petitions and voiced their concerns to the federal government.

Old Growth Strategy for the Sunshine Coast

by Linda Williams

Old Growth Management Areas (OGMAs) are defined as areas which contain (or are managed over the long term to replace) “structural old growth attributes” (big, old trees). Old-growth retention has been regarded by the government as one of the most effective ways of conserving biodiversity at the landscape level.

According to the Forest Practices Board’s special investigative report on BC’s OGMAs, over 400 species of vascular and non-vascular plants and animals in BC rely on old-growth forests for at least part of their life cycle. In addition to its ecological importance, old-growth is a vital cultural resource, spanning the centuries, encompassing biological, spiritual, aesthetic and other social values.



Subtle beauty in an old growth forest Jacqui Boonstra @ Flickr

A Forest Practices Board (FPB) inquiry confirmed that the lack of a coordinated and uniform approach to tracking and monitoring old-growth was “a significant problem” in BC. Equally disturbing was that even though the government has the means to do so (the Forest and Range Evaluation Program) it has still not assessed the effectiveness of OGMAs in meeting government objectives. The FPB reported that, “Significant gaps in government’s oversight of old-growth, including tracking and monitoring, were found in this investigation and fifteen years after planning commenced, government has not yet started to assess if its objectives for old-growth retention, namely to conserve biodiversity, are effective.” The report warned that “effectiveness monitoring provides the critical link for adapting to current or future conditions such as climate change.”

Second-growth stands now occupy the vast majority of BC’s productive forest land. Most remaining old-growth forests in the province are currently found on low-productivity sites at higher elevations, or on rocky mountainsides and in bogs. In parts of southern BC only a small proportion of the original productive old-growth forest remains and the status quo is resulting in its liquidation through the forest tenure and licensing system. This is resulting in pervasive and ongoing losses to ecosystem integrity and biological diversity.

Recent BC land use planning risk assessments found that the levels of old growth retention required to ensure low risk to biodiversity and ecological integrity are higher than BC’s currently set retention targets. New, effective old-growth retention targets will need to be determined based on reducing the risk to biodiversity, not on limiting impacts to short-term timber supply, as in the past. Ultimately a system of Old Growth Reserves will be required, with the reserved old-growth, or old-growth recruitment, fully protected (under the Land Act) from forestry, mining, gas exploration and road building.

The Sunshine Coast’s last productive old-growth is being converted to immature forest stands. Lower elevation, higher productivity forests are particularly vulnerable and are currently being logged, and in some cases re-logged to maintain an overinflated Annual Allowable Cut (AAC). This is at the expense of all other forest provided resources including clean water and local jobs.

Old-growth logging in forests that are already known by government to be critically endangered must stop. New cutting permits and licenses in these stands should not be issued. In those areas without adequate remaining old-growth, mature forest stands will need to be recruited from advanced second growth to minimize further biodiversity losses. In some cases it may also be necessary to cancel existing cutting permits or timber sales in mature representative stands in order for critical old-growth targets to be met in the shortest time possible.

On the Sunshine Coast where little lower elevation old-growth was protected under BC’s Protected Areas Strategy, significant portions of the forest land base are being managed for minimum old growth retention and higher levels of risk to biodiversity. All remaining low and mid-elevation old-growth stands on the Sunshine Coast (Natural Resources District) should be identified and reserved. In forests where old-growth retention targets will not be attainable, the next oldest stands need to be identified and reserved as potential old-growth recruitment, pending a comprehensive Old Growth strategy dedicated to conserving local biodiversity.

On February 11, 2015 the government announced the designation of 567 old-growth management areas, totaling 18421 hectares, within five landscape units located in the Sunshine Coast Natural Resources District. Some of this area had already been protected within existing provincial parks, wildlife habitat areas and ungulate winter ranges. These “new” OGMAs were all selected by the forest industry which protected its interests by eliminating from consideration as OGMA any opportunities it saw to log.

The SCCA’s eight page submission during the 60 day consultation period outlined extensive concerns about the selection criteria and the amount of area proposed for OGMA designation in the five landscape units. Although the SCCA was thanked in an email for “the considerable effort...obviously taken”, its concerns were nevertheless completely dismissed: “However, we do not anticipate making any revisions to these plans as a result of your comments.”

New Thermal Coal Plans Still Face Opposition

by Laura Benson, Campaign Director, the Dogwood Initiative

Over the past year, the fight to stop new export facilities for American thermal coal in BC has intensified and grown. Organizing in communities across southern BC has delayed by more than two years the proposal to bring eight million tonnes of coal from mines in Montana and Wyoming through BC at Fraser Surrey Docks (FSD) and Texada Island. The project faces an increasing number of hurdles and FSD is beginning to take desperate measures to try to keep its proposal alive.

In May, FSD announced that it now wants to build a full-on coal port on the Fraser River, loading eighty coal tankers a year. This proposal is meant to mostly replace the plan to barge coal to Texada Island and transfer it to ships there. But FSD is keeping the door open to doing both direct ship-loading *and* barging in combination or keeping barging as a “back-up” option. Surrey and New Westminster could end up with a new coal port in their midst. This may not, however, get the Sunshine Coast and nearby island communities off the hook from the impacts of giant barge-loads of US coal. A bad proposal just got worse.

The provincial Ministry of Energy and Mines plus the federal port authority approved permits for the proposal last year. Nevertheless, meaningful public consultation or credible health and environmental assessments have not been completed. Public and political opposition to the proposal continues to grow.



Open-bed coal cars en route to the west coast Paul Anderson photo



Residents monitor the beach for coal on Texada Island
Photo from Voters Taking Action on Climate Change

To date, 50,000 individual British Columbians, fourteen local governments, six school boards, four medical health officers, dozens of unions, community groups, businesses, health experts and tens of thousands of Americans in communities along the export route from Montana to BC oppose the expansion of thermal coal exports.

The proposal also faces powerful legal challenges. After the port authority issued a permit in August 2014, Voters Taking Action on Climate Change and Communities & Coal teamed up with Ecojustice to challenge the approval in court. The Musqueam First Nation filed a separate challenge. Those cases will be making their way through the courts for months to come.

Even without court battles, FSD must acquire three more permit approvals before it can start building its coal port. In an unprecedented move this spring, the Metro Vancouver regional government took public comments on Fraser Surrey’s application for a wastewater permit. More than 3,000 people submitted comments and Metro Vancouver decision-makers are now studying all that input before making a final decision. The company will also need an air quality permit from the regional government and a water quality permit from the provincial government – it is yet to finalize applications for either of those. Now that its plans for loading coal have changed, FSD will also have to apply for an amendment to its embattled port authority permit.

In summary, we have come a long way in stopping the expansion of US thermal coal exports in BC. There are, however, still more battles to come to make sure that we shut down the Fraser Surrey Docks-Texada Island proposal for good. As we add more groups like the SCCA and engaged residents like you to the ever-growing groundswell of opposition, our power to take back our coast grows.



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Oceans are Choking in the Age of Plastic

by Richard Carton

One of the defining characteristics of modern civilization is its reliance on plastic. From everyday consumer products to sophisticated technology, plastic has revolutionized our lives. It is not only versatile but cheap, durable and water resistant. Since it is a component in about 85% of medical equipment, it may even be argued that plastic enhances our life expectancy.

By replacing materials such as wood and metal, plastic conserves some natural resources. It makes automobiles more fuel efficient. But the ever-increasing use of plastics has been an environmental disaster. It clogs landfills and litters our land. About 8 million tons of plastic are added to the oceans annually, killing a million or more seabirds, marine mammals and turtles.

Fragments of the floats, nets and lines used in aquaculture entangle and kill marine creatures. Packaging materials such as the six-pack rings used for beverages are also to blame. Items like bottle tops, lighters and balloons have been recorded in seabirds and their chicks. A turtle found dead in Hawaii had over a thousand pieces of plastic in its stomach and intestines.



Entangled Stellar Sea Lion

Jayanth Sharma photo

Tiny bits of plastic are created when the debris from the land, cargo ships and oil platforms deteriorates. These microplastics that are 1-5 mm in diameter look like fish eggs and get eaten. Organisms starve due to the blockage of their digestive system or because they feel full and feed less. Microplastics also enable insects, barnacles, small crustaceans and invertebrates called bryozoans to hitchhike to new habitats where they are invasive.

Of growing concern are the microbeads which David Suzuki calls a sign of plastic consumer madness. Used as a scrubbing agent in personal care products such as toothpaste, they are the size of a grain of sand and almost impossible to filter from water without eliminating valuable microorganisms. Researchers have measured 330,000 microbeads in a single tube of facial cream.

Particles of plastic act as a sponge which absorbs many toxic chemicals, including persistent organic pollutants (POPs). They poison creatures such as the plankton that produce the majority of the world's oxygen. These toxins can also cause hormone disruptions that lead to reproductive failure. As they make their way up the food chain they may pose a risk to human health.



Egg-like bits of microplastic

Scott Andre @ Flickr

Most of the ocean plastic eventually gets trapped in one of the world's five systems of currents known as gyres. The largest of these, the North Pacific Gyre, contains the Great Pacific Garbage Patch. This floating blanket of highly concentrated sludge and plastic is estimated to cover an area up to twice the size of Texas.

A 2014 study by the Proceedings of The National Academy of Sciences found that the microplastic levels in sub-tropical gyres were lower than expected. This was attributed to the amount getting eaten. It may also have been due to biofouling that occurs when plant material accumulates on plastic, then sinks. Marine worms that are a key food source for other animals ingest it and die.

Peter Ross, director of Vancouver Aquarium's ocean pollution science program, says BC's coastal waters are awash in plastic. Readings for microplastic particles per cubic metre include Queen Charlotte Sound off NE Vancouver Island (7,630); the Strait of Georgia (3,210); the west shore of Vancouver Island (1,710); the open NE Pacific Ocean (279). Resident killer whales in the Salish Sea are the most polluted marine mammals on Earth but our federal government has made pollution research and monitoring a low priority. It has cut many positions at the Department of Fisheries and Oceans.

Biodegradable plastics that are economically and environmentally sustainable are not yet available. They require very specific disposal conditions in order to decompose without producing greenhouse gases. Stanford University and Mango Materials are jointly trying to develop better biodegradable plastic made from methane waste. Projects such as a floating platform near Easter Island and a water wheel in Baltimore's inner harbour aim to remove large amounts of ocean plastic. Organizations such as **5 Gyres**, **The Ocean Cleanup** and **Algalita** are also tackling the problem.

To lower your plastic footprint follow the 4Rs: reduce, reuse and recycle but also *refuse* items such as drinking straws and bags that restaurants like Subway provide with every sandwich. Avoid disposable water bottles and cut six pack rings apart. Buy clothes made from natural fabrics - polyester releases plastic fibres when washed. Check products for microbeads in the form of polyethylene or polystyrene. Finally, strive to support research and legislation aimed at reducing plastic waste.

Greater Protection Recommended for Wilson Creek Watershed

by Will Koop, Co-ordinator of the BC Tap Water Alliance

In July 2001, the Ministry of Forests' Sunshine Coast Forest District ordered International Forest Products (Interfor) to cease logging its Crown land tenure within the 2,200 hectare Wilson Creek watershed and to conduct a Coastal Watershed Assessment Process (CWAP). Measured by a science-based technique called Equivalent Clearcut Area (ECA), the amount of cumulative logging in the watershed was considered too high, having crossed a known threshold. The Assessment was needed to determine if further logging would compromise critical water quality and high/low water flow objectives for the valuable fish habitat and related concern for a dozen or more water licenses.

Following the May 2001 election which resulted in a BC Liberal Party majority government, the Assessment order was one of the last conducted under the 1995 Forest Practices Code Act. During its first term in office, the Campbell government dismantled BC's environmental legislation. By 2005, it had dramatically de-regulated the forest industry and transferred decision-making powers to the private sector's hired forest professionals.

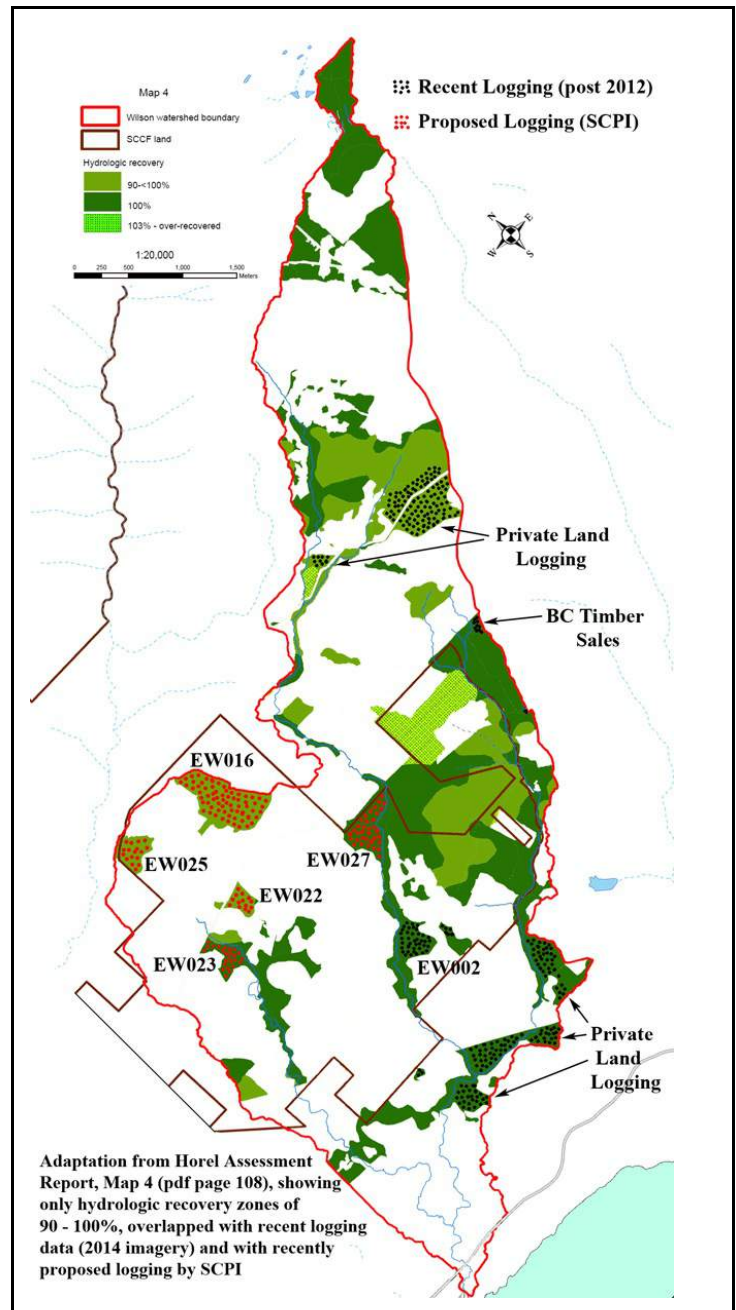
Sechelt Community Projects Inc. (SCPI), conceived within the grey areas of de-regulation, alarmed local residents by acquiring controversial Interfor operating areas, including questionable rights to log in Chapman and Gray Creeks, the community's drinking watersheds. When SCPI's 2009 logging plan for its 899 hectare Wilson Creek watershed unit was released, the SCCA raised the issue of its predecessor's obligation to conduct a CWAP prior to undertaking more logging.

After the SCCA's critique of SCPI's 2010 Watershed Assessment, it was rejected. A second Assessment was completed in August 2012 (Horel report), but before it was completed logging had already started. And, complicating matters further, large swaths of immature forest stands had been clearcut on private lands in the watershed beginning in 2007. These cumulative impacts had not been adequately assessed.

Hydrological recovery is defined in the *Watershed Assessment Procedure Guidebook* (WAPG) as "the process by which regeneration restores the hydrology of an area to pre-logging conditions." The 2012 Watershed Assessment's *Summary of Key Findings* states that "ECAs in the Wilson watershed are high," but fails to state how high. Table 5 (Horel report), however, indicates that Wilson Creek has an ECA rating of about 50%, the hydrological equivalent of a clearcut, with 0% hydrologic recovery, covering half the watershed.

The March 15, 2015 on-line report by the BC Tap Water Alliance (BCTWA), **Withholding Water Flow Science in the Wilson Watershed: An Examination of the Sunshine Coast Community Forest's Wilson Creek Watershed Assessments (2010-2012)**, asks the obvious question: Why didn't the Community Forest's consultant who concluded that, "These ECAs indicate an overall high potential for hydrologic change," recommend the cessation of logging in the Wilson Creek watershed until hydrologic recovery has occurred?

Deciphering the data about logging in the watershed assessments is difficult so the BCTWA report has two maps to simplify the findings. The maps have been updated with the information about Crown and private land logging in the Wilson Creek watershed since the completion of SCPI's assessment in August 2012. One map shows the small amount of total forest area within the watershed that has a hydrologic recovery rate of 70 - 90%. The other map (which is included on this page) depicts the even smaller amount of land that has a 90% recovery rate. The visual evidence is very clear: the Wilson Creek watershed is in a state of extreme hydrologic stress and will need time to recover from past logging.



Wilson Creek Watershed Report (continued)

Furthermore, SCPI's 2012 report states (p. 26) that, "Low flows, rather than peak flows, are more likely to be a concern for fish populations," and (p. 28) "the objective for forest management in Wilson watershed is to not cause a decline in the quality of fish habitat including water quality."

The degree of logging in the Wilson Creek watershed during the past 25 years exceeds the 20% level which is the threshold for *significant watershed sensitivity* (WAPG). In 2006 Mike Fenger and Associates declared (see BCTWA report, Appendix A) that with an ECA range between 50 to 70% "many stream channels will erode, out or down," to accommodate "increased mean annual flood" flows. The "resulting bed load movement will result in the "infilling of downstream pools and alluvial channels" and the siltation will impact "spawning gravels and water quality." "Many channels" will suffer "major losses in fish habitat" and "in water quality during higher flows." "Peak flows will usually be much more rapid and weeks earlier," while "low flows may retreat to sub-surface flow."

Based on Wilson Creek's identification as "high value fish habitat" (David Bates salmonid report, 2012), its excessive Equivalent to Clearcut Area (Horel, 2012) and observed



It's been a busy year for the Green Film Series with 10 films in 18 film events. We were finally able to realize our goal of moving films up the coast by presenting screenings in both Gibsons and Sechelt. One of the highlights was the screening of *Powerful: Energy for Everyone*, a seed event for the solar co-operative now flourishing on the coast. This kind of success reinforces our belief that we can enable and support local community initiatives through film events.

We have supported and encouraged local filmmaker Sarama in the completion of his documentary *This Living Salish Sea*, which we will premiere in a special event this fall. We were able to show a five minute excerpt at our recent screening of *Symphony of the Soil*. You can experience some of his stunning work on his website livingsalishsea.ca.

Two other new films will be shown this fall. *How to Change the World* is Jerry Rothwell's story of GreenPeace, the world's largest activist organization. It began in 1971 when a group of Vancouver journalists, scientists and hippies joined forces to oppose nuclear testing on an Alaskan island that was rich in wildlife. The film explores the struggle between the competing forces of idealism and pragmatism.

Fractured Land is the long-awaited Damien Gillis documentary about First-Nations leader Caleb Benn. Benn is a young Dene lawyer who may become one of this generation's great leaders. He must discover how to reconcile the fractures within himself, his community and the world around him, blending the modern tools of the law with ancient wisdom. His people, who are at the epicenter



View directly below the northwestern edge of cutblock EW002, next to Wilson Creek. A thin buffer of standing forest has exposed a steep escarpment. *Ross Muirhead photo*

changes in the hydrologic system, the BCTWA joins the SCCA in calling for the immediate designation of the Wilson Creek watershed as a Fisheries Sensitive Watershed under the *Forest and Range Practices Act*, subject to fisheries protection.

The full BCTWA report is at <http://www.bctwa.org>

of some of the largest fracking operations on earth, are deeply divided. How does Caleb balance their need for jobs with his sacred duty to defend their territory? He has arrived at a key moment in history, sees the contradictions, and is seeking solutions.



Caleb Benn and the Dene Nation are the focus of the film "Fractured Land", coming to the Sunshine Coast this fall. To view a trailer go to www.fracturedland.com *Zack Embree photo*

We're always looking to partner with the local community in creating film events which serve as networking and organizing opportunities. You can contact us at our www.greenfilms.ca website or find us on Facebook at facebook.com/greenfilmseries.

New BC Water Act Gets Lukewarm Response

by Margot Grant

After six years of consultation, British Columbia finally has a new set of rules to manage its fresh water resources. The BC Water Sustainability Act (Bill 18) of 2014 will take effect in January 2016, replacing the Water Act of 1909. There have been mixed reviews of the new legislation. Some unresolved issues will still need to be worked out in the regulations that are to be developed in the years ahead.

The good news is that for the first time in B.C. history, companies and communities will have to pay for their groundwater. Commercial users will have higher fees than communities. Last year, Nestle drew about 300 million litres of B.C. groundwater for bottling without being charged. Under the new Act, the same amount of water will cost Nestle about \$750 in rental fees.

Three hundred million litres of groundwater would cost \$42,000 in Nova Scotia. A 0.5 litre bottle of Nestle water costs \$1.25 in a grocery store. Environment Minister Mary Polak says, however, that the new fees only cover the costs of administering the new Act. "British Columbians have been very clear they don't want us to sell water," she said. Critics wonder if the rates, both for communities and companies, are sufficient for effective enforcement of the new rules, and if they encourage users to conserve water.

The new Act requires the government to "consider" environmental flows (the ability to sustain aquatic ecosystems as well as human livelihoods) when deciding where water is allocated in times of scarcity. The provincial cabinet can declare streams "sensitive" or "critical", giving them priority. Water flows for fish will have a better chance of protection – depending on decision-makers.

In theory, this is a good thing. However, West Coast Environmental Law (WCEL) points out that in the new Act, the government upholds the principle of "first-in-time, first-in-right." It means that older licenses for water use, some of which are 100 years old, trump environmental flows, the water rights of First Nations and more recent licenses. Environmental flows will only be considered for new licenses, or amendments to licenses.

The provincial government will be able to share or delegate responsibilities to authorities at the regional level who might better understand local priorities, particularly in areas with water conflicts or ecosystem risks.

An important feature in the new Act is "beneficial use" which requires licensees to demonstrate that they are using the water efficiently. Government staff will have powers to decide on measures for water conservation.

A recurring issue during the consultation process was water use for hydraulic fracturing (fracking). The new Act makes it easier for the government to issue repeat short-term water licenses for fracking. This reduces transparency. Less information is required for short-term approval and quick licensing cannot be appealed to the Environmental Appeal Board.

Bill 18 requires the applicant for a water license (or an amendment to such a license) to notify anyone who is directly affected. Objections can only be filed by someone who the government decision-maker has pre-determined may be impacted by the decision.

The Council of Canadians is disappointed that the new Act does not recognize water as a human right that cannot be privately controlled. It fails to account for First Nations' rights and will not enable communities to say "No" to projects that pollute or abuse water in other ways.

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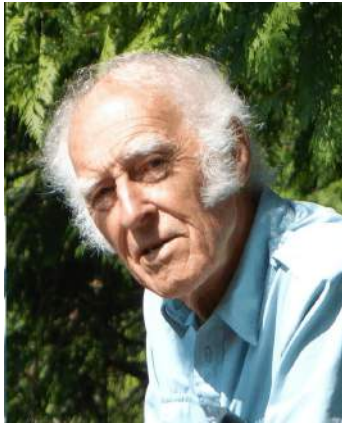
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In Memoriam...

Joop Burgerjon: October 9, 1924 – May 27, 2015



Joop was the heart and soul of the Sargeant Bay Society since its inception in 1977. He was a founding director through the lengthy and often onerous negotiations leading up to the designation of Sargeant Bay as a Class "A" Provincial Park in 1990. His efforts to expand the park led to the incorporation of the Triangle Lake watershed in 2003.

Joop was a true steward of the park: monitoring and photographing nature, counting spawning salmon in Colvin Creek and publishing a twice-yearly newsletter for many years. He, along with Kye Goodwin, developed a comprehensive plan to successfully eradicate the invasive Himalayan Blackberry and Scotch Broom from the park.

Joop wrote or co-wrote nine major reports on the park, all of which are available on the Sargeant Bay Society website sargbay.ca under "Links and Bibliography". He recently received some well-deserved awards: 2014, Sunshine Coast Celebration of Excellence in the category of Environmental Enhancement; 2013, BC Parks Volunteer Legacy Award; 2013, Sargeant Bay Society Award of Recognition.

The people of Halfmoon Bay, the Sargeant Bay Society, and all Sargeant Bay Provincial Park users should be thankful that Joop retired to the Sunshine Coast. Without his commitment and boundless energy we would likely not have the park to enjoy and share with friends and family. Joop will be missed but he should never be forgotten.

Rand Rudland, MD. President, Sargeant Bay Society

Late in 1989, the BC government announced an initiative to increase forest land protection to match the United Nations Bruntland Commission recommendation of 12%. On the Sunshine Coast and throughout BC that process activated many outdoor enthusiasts to work to protect their special local candidate areas.

By 1996, when the Protected Areas Strategy was winding up, many of us who were environmentalists realized that a regional environmental conservation group was urgently needed to protect our local biodiversity.

To set up such an organization that would have the full support from the whole coast, a strong leader who was respected by all was needed to bring it together. Joop Burgerjon was the natural choice. He willingly accepted the challenge, leading us in his quiet and extraordinarily competent way through the establishment of the Sunshine Coast Conservation Association. We couldn't have done it without Joop. He will be sorely missed.

Brad Benson, former SCCA Founding Director and Chair

Daniel Kingsbury: February 18, 1987 - June 1, 2015



From a young age, Daniel received accolades for his artistic prowess, community involvement and social consciousness. He worked as Youth Coordinator for the local outdoor club, owned and operated a video production company and created the Music for Youth Endowment Fund. His early accomplishments included 'Most Inspirational Student' and a number of music-related scholarships and bursaries.

In 2002, at just fifteen years of age, Daniel won the award for Best Film on Mountain Sports at the Banff Mountain Film Festival. *The Essence of Adolescence* was a celebration of the exuberance of youth, portraying both success and failure in snowboarding, BMX biking and skateboarding.

Daniel believed that music is the most powerful vehicle for changing society. He co-founded the band Mindil Beach in 2009. In the words of a friend, Nathan Campbell, Daniel's songs transcend the present day pessimistic discourse and provide an overwhelmingly hopeful, even utopian sentiment toward the future of environmental stewardship. They offer us the optimism he persistently sought, but could never quite acquire. The depth of Daniel's music reflected his ardor, his passion, and his hopes for a green future.

Daniel also co-founded the Jellyfish Project in 2011. Its 'From the Stage' program encourages artists to speak about the environment to their audiences during performances. The Jellyfish Project School Presentation has been performed for free to over 52,000 students. It generates awareness about overfishing, plastic pollution and climate change. The multi-media show teaches youth how to participate in the sustainability movement. They also learn about responsible consumerism, renewable energy, and green career options.

Daniel was a beautiful soul whose talents, kindness and dedication to the environment touched us all. He held the entire world in his heart. Words cannot express how he will be missed. People can contribute to Daniel's legacy by supporting the environmental movement. Volunteer or donate to the Jellyfish Project. Contribute to Daniel's Music for Youth Endowment Fund. Plant a tree, take a picture of yourself planting it and post it on social media using the hashtag #TreesForDaniel. Listen to Daniel's music and share it with others. It was his ultimate gift.

Two Night Stay at Wilderness Lodge Up for Grabs in Annual Raffle

In what has become a popular tradition, the SCCA is once again holding a raffle to help fund its projects. This year's lucky winner will receive a two-night stay at the fabulous West Coast Wilderness Lodge. Second prize is two high quality Helly Hansen jackets provided by Mr. Mender. Third prize is a \$50 gift certificate from Spin Cycles. Thanks to all of these sponsors for their generous donations. The draw will be held on October 23rd.

The SCCA has projects and campaigns throughout the year but it is in the summer that you really see us out in the community. With so many events on the Sunshine Coast, it is our opportunity to meet local people and discuss issues. Protecting the local biodiversity is a huge responsibility and we're always looking for new people to get involved. You'll find us at our outreach booth at the public markets in Gibsons and Sechelt, at Canada Day Celebrations, Roberts Creek Daze, the Davis Bay Sand Castle Competition and more.

Please enjoy the summer and do your part to protect where we live by honoring our environment. If you are in the forest take extra caution to prevent forest fires. At home, think about water conservation for the health of our watershed and our community.

The SCCA Welcomes Its 2015 Conservation Outreach Coordinator



Through the assistance of the Summer Jobs Program of Service Canada, the SCCA has been able to hire a summer student. This year's Conservation Outreach Coordinator is Kelsey Baker, an Environmental Engineering student who will be entering her fourth year at the University of British Columbia in the fall. Hoping to pursue a career in land remediation, she takes a special interest in conservation issues involving land and groundwater contamination. Growing up in Roberts Creek, from an early age Kelsey learned to appreciate the wilderness of the Sunshine Coast. She's an avid outdoor enthusiast who particularly enjoys biking and swimming. Kelsey is very excited to be putting her passion for the environment and technical knowledge to good use this summer helping to protect the region she loves.



Join the Sunshine Coast Conservation Association

The fact you are reading this newsletter suggests that you are interested in conservation. Please consider joining us or renewing your membership with our organization. The annual cost is just \$20 for an individual, \$30 for a family, \$40 for a group, and \$100 for a business. You can pay online or send in a form. It's easy - just go to www.thesc.ca If you would like to make a donation, receipts for income tax purposes are issued for amounts of \$25 or more.

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Ottawa Still Dawdling Over Species at Risk Act

by Monque Keiran

The Species at Risk Act became law in 2003. Designed to protect Canada's plants and animals, the federal Act requires the government to develop recovery strategies and action plans for listed species within a set period. At the time, the federal government declared the southern resident orcas endangered under the law. Twelve years later, the required federal action plan to protect orcas and other endangered species such as leatherback sea turtles remains incomplete.



Southern Resident Orca Photo courtesy of Miles Ritter @ Flickr

The milestones that occurred during those years were predominantly negative. The southern resident population continues its decline. Haro, Georgia and Juan de Fuca straits, where the whales summer, become noisier, busier and more polluted every year. Shipping traffic increases, whale watching intensifies and coastal cities grow.

Federal funding for issues like species at risk has declined. Labs have closed; scientists as well as other staff have been laid off, leaving less people to meet the law's requirements.

In 2013, the Commissioner of the Environment and Sustainable Development reported that the government is years behind in meeting the Act's legal requirements. Almost half of 360 recovery strategies for species at risk were overdue, and of those that had been completed, almost half failed to include critical information that would make species recovery and management possible.

In 2014 the Federal Court declared the failure to provide recovery strategies for species listed under the Act unlawful. But something more insidious is occurring. Under the law, the Committee on the Status of Endangered Wildlife assesses species' population health. It weighs evidence to determine if a species should be added to the protected list, or if a listed species' status should be changed. The committee presents its recommendations to the federal environment minister who has 90 days to approve or reject each recommendation. If approved, the species goes on the protected list, and the clock starts ticking down to the legislated deadlines and requirements. If it is rejected, no action is taken.

However, a loophole exists. If the minister ignores the recommendations and outwaits the 90-day legal deadline,

the recommendations conveniently and quietly cease to exist—foreshadowing the possible fates of the species they have failed to protect. No clock starts ticking, no obligations result, few people take notice, no fuss is made. The current federal environment minister has often chosen this tactic. What does it say about Canada when our government ignores its own laws?

Bald Eagle Nest Registry Program to be Presented

The Bald Eagle is among the most widely known species of wildlife in North America. It occurs in large numbers along the west coast of Canada and is a symbol of the natural world. The success and vitality of the Bald Eagle, one of the top predators in the food chain, is a measure of the health of the natural systems in any local area.

In an effort to understand the habitat needs of Bald Eagles, between 1987 and 1995 biologists with the Ministry of Environment, the Canadian Wildlife Service, and several forest companies worked together to catalogue over 3,000 Bald Eagle nest sites around Vancouver Island, the southern Gulf Islands, and in the lower Fraser Valley. In the late 1990s the Wildlife Tree Stewardship Program (WiTS) was created to maintain an on-line atlas and database of Bald Eagle nest observations on the **Community Mapping Network** (www.cmnbc.ca).

To gauge the public's interest in recording the nesting sites on the lower Sunshine Coast, the SCCA and the Tetrahedron Outdoor Club (TOC) will be co-hosting biologist Ian Moul of the Bald Eagle & Osprey Nest Registry program. His presentation will consider the natural history and conservation issues affecting the species and how the atlas and nest records support government protective legislation for Bald Eagles. The presentation is open to the public and will take place on **September 11, 2015**, at St. John's United Church in Davis Bay beginning at 7:30 PM. Refer to either the SCCA (www.thesc.ca) or TOC (www.tetoutdoor.ca) websites for confirmation of the event. Entry will be by donation.



Bald Eagle on Pasley Island Bob Vohanka Photo

Understanding of Sea Star Wasting Syndrome Continues to Grow

By Jessica Schultz, Co-ordinator, Howe Sound Research and Conservation Group at the Vancouver Aquarium.

It's not a new idea that disease can regulate populations. In 1798 Thomas Malthus wrote that it's the "ravages of war, famine, pestilence and the convulsions of nature" that keep a population in check. Although Malthus was referring to human populations and writing in a time when marine ecology as we know it did not exist, his principles may extend to the marine invertebrate world of today.

During the spring of 2013 people began noticing sick and dying sea stars all along the coast of North America. This situation is caused by Sea Star Wasting Syndrome (SSWS). It is a gruesome display that is drastically reducing many sea star populations; afflicted sea stars twist, eviscerate, lose limbs and die. The sea star wasting event is the largest mass mortality event in the ocean in the past 200 years.

Although there are still many unanswered questions, during the past year some new information has come to light. Could Sea Star Wasting Syndrome be an example of pestilence controlling population numbers? Quite possibly.

The onset of SSWS prompted a series of swift and determined collaborations throughout the scientific community. Pathologists, veterinarians, geneticists, ecologists and other scientists from around the continent have been working to understand the problem. One of the outcomes of these collaborations was a break-through study led by Dr. Ian Hewson of Cornell University that identified a virus associated with the wasting syndrome.

Although the study was a huge step forward in understanding the event, it has left us more questions than answers. For example, Dr. Hewson and his colleagues also found that this virus was present in marine sediments and has probably been around for hundreds of years.

Why has the virus suddenly become so destructive to sea stars? The answer may be related to environmental conditions or other factors. It's possible that the virus is a common inhabitant of another animal and has crossed over to sea stars. Indeed, there are many examples of viruses in the vertebrate world in which a virus only becomes highly pathogenic when introduced to an "unnatural" host.

Another big question mark is the overall influence of SSWS on marine communities. Sea stars are important invertebrate predators so it would be expected that their sudden and drastic decline would have collateral effects. Unfortunately there is no quick answer. It can take many years to observe ecological shifts.

One change we are seeing is a marked increase in the abundance of green sea urchins. Because urchins can be voracious herbivores, they may have a large impact on the abundance of kelp. The sea colander kelp, which is the dominant subtidal species in Howe Sound and an important habitat for many organisms, has declined in abundance over the past year. What this will mean in the long term remains a mystery, and is the focus of our current research. Sea Star

Wasting Syndrome has been a stark and humbling reminder of how much we still have to learn about marine ecosystems, even in our own backyard.

Sea Star Wasting Syndrome is not over. While many areas are seeing evidence of recovery, new sightings of degenerative symptoms are being reported from the central coast of BC. The syndrome appears to be continuing northward. However, our observations in Howe Sound make us optimistic.

The sunflower star, *Pycnopodia helianthoides*, was the hardest-hit species in our area, with adult populations virtually absent by the end of 2013. Now we are encountering healthy juveniles in many areas. Even more encouraging is the occasional healthy adult sunflower star. With increasing regularity we are seeing healthy intact adults that have recovered from the syndrome. Others have evaded it entirely, perhaps by retreating to some refuge. So while Malthus might have been right about the effects of disease, we don't think it will spell the end of our sea stars.



A healthy adult sunflower star near Popham Island appears to have been spared from SSWS. Photo courtesy of Donna Gibbs

Published by the Sunshine Coast Conservation Association

Box 1969, Sechelt, BC V0N 3A0

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