

# SeaChange Marine Conservation Society



## 2018-2019 Annual Report

[www.seachangesociety.com](http://www.seachangesociety.com)

# WHO WE ARE

SeaChange Marine Conservation Society, established in 1998, is a charitable non-profit environmental organization. We educate children and the public about marine and watershed environments and conserve and restore marine habitats in British Columbia in partnership with coastal communities.

## OUR GOALS

- *To educate the public regarding the effects human populations are having on marine ecosystems.*
- *To conduct education workshops for schools and the public on marine conservation issues.*
- *To organize expeditions for on-site interpretation of ecosystems for the public.*
- *To cooperate with other environmental groups to promote systemic change in the ways we make use of marine resources.*
- *To participate with other like-minded organizations to create marine sanctuaries, collect data and organize workshops and conferences on the importance of rehabilitating and sustaining marine biodiversity.*
- *To reverse the continual degradation of marine ecosystems through restoration, rehabilitation and/or conservation activities.*



## Notes from the Executive Director's Seat

In 1998 SeaChange became a not-for-profit society with a small Board of Directors with a vision to make a difference in peoples' attitudes and behavior towards the sea. We began with a small eelgrass transplant in Tod Inlet (SNIDŪEL, pronounced *sngēet kwith* or the *Place of Blue Grouse*). While we SeaChange divers planted 1800 eelgrass shoots, I would ascend to the surface of the Inlet's water overhearing the laughter of the volunteers on shore while they were preparing the shoots for transplanting. It occurred to me then that the restoration of the oceans begins with these connections on the shore.

We celebrated our 20<sup>th</sup> Anniversary at the Empourium Café in Brentwood Bay in 2018. We have planted thousands of eelgrass shoots within the Salish Sea with hundreds of community members, removed tons of debris from seabeds, created outdoor environmental education programs for hundreds of youth and adults, and partnered with many groups and individuals to work together to recover the health of our sea. Throughout these years, one theme plays over and over, best described by Marge Piercy:

“...Connections are made slowly, sometimes they grow underground. You cannot tell always by looking what is happening. More than half the tree is spread out in the soil under your feet ...Weave real connections, create real nodes, build real houses. ...Keep tangling and interweaving and taking more in, a thicket and bramble wilderness to the outside but to us interconnected with rabbit runs and burrows and lairs...”<sup>1</sup>



All the work described in the following report is done in relationship with a cast of thousands. Thank you.

A handwritten signature in blue ink that reads 'Billi Dwyer'.

SeaChange Executive Director

<sup>1</sup> Marge Piercy, “The Seven of Pentacles”



SeaChange accomplishes much because of the dedication of the  
SeaChange Board of Directors 2018-9

Rosaline Canessa, Doug Biffard, Nancy Higginson, Ken Josephson, Garry Fletcher and Pauline Finn.

And staff: Alison Prentice, Administrative Assistant, Sarah Versteegen, Operations Manager, Nikki Wright, Executive Director, Leanna Boyer, Communications Coordinator; Earl Claxton Jr. Tsawout Elder, Tiffany Joseph and Sarah Jim, First Nations Ethnobotanists; Richard Elliott, Educator and Canoe Captain, Lorne Underwood, First Nations Liaison; SeaChange volunteers; Coast Salish, Cowichan, Tsleil-Waututh, shíshálh and Squamish First Nations; Jamie Smith, Justin Bland and Jeff Skinner, SCUBA Divers and eelgrass restorers; Regional Coordinators Dianne Sanford, Anu Rao, Ann Eriksson and Fiona Beatty.



All donors and funders  
BC Parks  
Lenny Ross

Educators within School Districts #61 & #63 and the WSÁNEĆ School Board  
Seagrass Conservation Working Group and the Coastal Regional Fund Regional Coordinators  
Department of Fisheries and Oceans Canada  
Pacific Salmon Foundation  
Capital Regional District Parks staff  
Local Businesses  
Coastal Photography Studio  
University of Victoria Geography Department  
Cynthia Durance, R.P. Bio Precision Identification

...and all the environmental conservation groups with whom we have had the privilege of working:

Conservancy Hornby Island, CORI Ocean Watch, Cowichan Community Land Trust, Friends of Tod Creek Watershed, Friends of Semiahmoo Bay, Gabriola Eelgrass Mappers, Galiano Conservation Association, Habitat Acquisition Trust, , Mayne island Conservancy Society, Moonstone Enterprises, Pender Island Conservancy Association, Peninsula Streams Society, Saanich Inlet Protection Society, Seaquaria in Schools, Squamish River Watershed Society, Thetis Island Nature Conservancy, and World Fisheries Trust.



Photo: Doug Biffard

Christmas Pt. Saanich Inlet, November 2019



# Achievements over the last fiscal year

July 1, 2018 – June 30, 2019

## Education

Over 2,000 students of varied ages participated in SeaChange environmental programs over the past year.



EcoRowing continued programs in SNIDŪEL spring months of school students waters of the estuary, dock, recorded their

and restored the surrounding lands of the inlet by removing invasive plants or mulching and watering. The learned all the while about the First Nations use of native plants for medicines, foods and tools from a First Nations member. The program was conceived by Lenny Ross and other educators from School District #61 in 2004 near the Esquimalt Lagoon. For the past seven years, schools have participated in EcoRowing in SNIDŪEL because of its calming waters and deep significance to the W̱SÁNEĆ (Saanich) communities.

with a total of 26 all day during the fall of 2018 and 2019. Middle and elementary rowed or paddled on the calm tested water quality off the data on a monitoring graph,

Other environmental programs included the Chinese Youth Leadership Program. SeaChange led over 200 Chinese University students through the natural and cultural history of SNIDŪEL. This program is a partnership with the University of Victoria. Creatures of Habitat students, led by Peninsula Streams



Society and SeaChange, helped to remove invasive plants for an all-day adventure involving the entire school of 6<sup>th</sup> graders from Bayside Middle School. Other groups include Parkland Secondary School, homeschoolers, the Tamagawa students at Vancouver Island University, and the Redfish School for Change.

SeaChange SCUBA divers helped out with collecting sea creatures for CRD Marine Day at Witty's Lagoon in July 2018, quite possibly for the 15<sup>th</sup> year – we have lost count!





## Teaching House

The Teaching House in SNIDZEL capsized during the snow storm in the winter of 2019. With the support of Butchart Gardens, it was up righted and prepared for repairs during the fall. It will be ready in 2020 to welcome students of all ages to learn First Nations and western scientific approaches to learning.



## Conservation

SeaChange participated in or initiated over 20 community gatherings and presentations this past year in communities surrounding the Salish Sea

2019 summer staff during an Oceans Day Event, June, 2019

SeaChange eelgrass and community and University course of the interest in our busy with latest climate



presented talks on nearshore ecology to events, conferences classes over the year. Burgeoning ocean is keeping us researching the knowledge about changes and



nearshore systems. Presentations and explorations of the nearshores included Hornby, Thetis and Gambier Islands, as well as Sidney, West Vancouver, Port Moody, Sooke, Metchosin and Baynes Sound. The Pacific Salmon Foundation (PSF) funds make this broad outreach possible.

# Help Protect Eelgrass

### Why?

Eelgrass meadows are essential habitat for many species including spawning fish, juvenile salmon and crabs. They are also feeding grounds for birds and mammals.



For more information: [seachangesociety.com](http://seachangesociety.com)



### How?

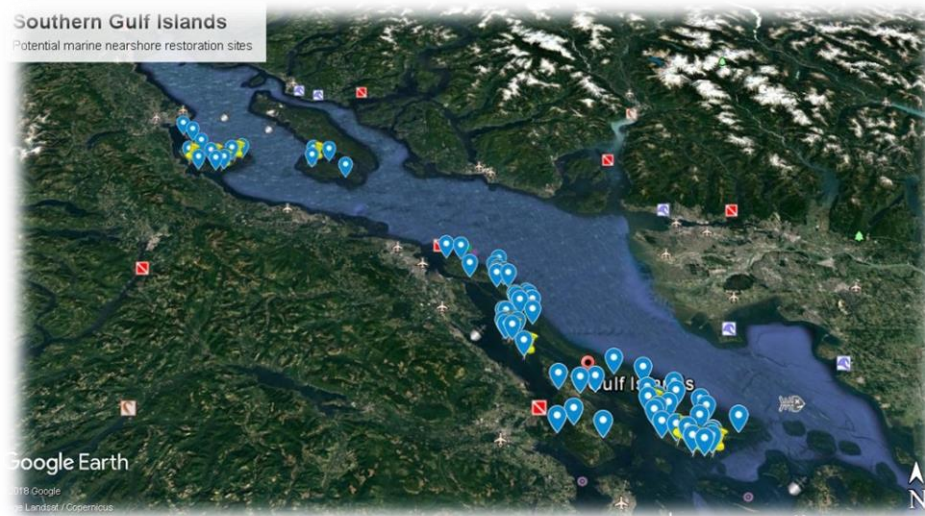
Anchor or moor deeper than 7m (23ft) chart depth.



Design and installation of eelgrass signs is also funded, in part, by PSF. By the summer of 2020 these reminders not to stay clear of eelgrass habitats will be posted near marinas and government docks.

Several Community and Technical meetings took place as part of the Salish Sea Nearshore Habitat Recovery Project, a five year initiative to restore nearshore habitats in four regions of the Salish Sea. These gatherings helped to refine site selections selected by community members for eelgrass and marine riparian

restoration and marine debris removals. The regions include the southern and northern Gulf Islands, Howe Sound, and Sechelt and Burrard Inlets. March of 2019 concluded the second year of this project.



A map of potential restoration sites within the Southern Gulf Islands as identified by community members

## Restoration

SeaChange continued the Salish Sea Nearshore Habitat Recovery Project by restoring eelgrass and riparian areas within the Salish Sea. We continued our engagement with Cowichan Tribes and the Pacheedaht First Nations in two eelgrass restoration projects.

A total of 3,365m<sup>2</sup> of eelgrass was transplanted, over 5,230 kg of underwater debris was removed and a steep failing slope on Thetis Island that serves as shade and food source for salmon and forage fish was restored with willow plantings, a method known as bioengineering. A total of 359 community volunteers gave their time during meetings and restoration events. Thousands of dollars in labour and services were given as in-kind contributions in the form of accommodations, supplies, equipment and time for Community and Technical Working Group meetings. Some of those contributions include: debris bins, tote bags, waivers for tipping fees, excavators, local government staff time for debris removals, airplane discounts and boat moorage space. Forty-five new partnerships were formed, including those with industries, local and First Nations governments and agencies.



A failing slope next to a cemetery on Thetis Island was restored by over 40 volunteers with the expertise of Dave Polster, Professional Bioengineer.





Over 20 days in November of 2018, the SeaChange dive crew removed over 5.23 metric tonnes of marine debris from the SW portion of Porpoise Bay in Sechelt Inlet. Materials removed from the marine substrate ranged from bottles, cables, tires, furniture, generators, outboard motors and over 500 kilograms of fishing gear.

Fish netting comprised a large component of the debris, and was the most problematic to remove. Netting had to be raised from the sea floor and cut into manageable pieces for the crane aboard our barge, 'Collective Effort'.

The District of Sechelt provided equipment for unloading the barge, the staging areas for debris collection, and trucking of the material to the local landfill. Collection bags were donated by Howe Sound/Atl'ka7tsem Pulp and Paper. Landfill tipping fees were covered by the Good Samaritan fund at the Sunshine Coast Regional District. This was an excellent example of collaborative effort and would not have been feasible without the assistance of the local governments (District of Sechelt and Sunshine Coast Regional District) and shíshálh Nation.



Abandoned fishing net being removed from Porpoise Bay



Removal of creosote logs in the Indian Arm estuary is planned with many in-kind contributions from Vancouver Port Authority, Vancouver Piledrivers, Seaspan and Metro Vancouver for the spring and summer months of 2020. Once these logs are removed, eelgrass habitat recovery will be determined.



Monitoring of eelgrass transplant plots installed in 2017-8 was completed every six months after the transplant installation in Medicine Beach, Pender Island, and Clam Bay.

Overall, the test plots are surviving. The Medicine Beach site had signs of damage from the high windstorms of December and February. Small woody debris has moved into the site. Surviving eelgrass shoots, however, looked healthy. Such evidence of the damage caused by high wind velocities (up to 56km/hr. in December 2018 from the south, southwest and southeast) may indicate the need to re-evaluate eelgrass restoration sites previously considered “protected”.

Clam Bay had evidence of eelgrass wasting disease (*Labyrinthula zosterae*) when monitored during the summer of 2018, but little evidence of permanent damage was observed when monitored again in February of 2019. This mold disease is often present in eelgrass beds. When infected, eelgrass blades develop black and brown splotches ('lesions') that can spread and kill the blade. Recent evidence is showing increased salinity levels and rising sea surface temperatures may be setting conditions for a higher prevalence of the disease, affecting eelgrass productivity. Donor and transplant sites will continue to be monitored for the presence of this marine slime mold.



Clam Bay summer 2018 monitoring showing evidence of eelgrass wasting disease.

### Howe Sound/Atl'ka7tsem



Halkett Bay transplant shoots

Halkett Bay is situated within a BC Provincial Park. The transplant was done under permit. Since the first transplant in 2016, the average shoot density has remained steady (7-7.5 shoots/m<sup>2</sup>) compared to shoot densities in the donor bed (7.5-9.4/m<sup>2</sup>). The bed is healthy and protected from boat traffic and anchoring by permanently placed log sticks. The native bed was more sparse (lower density) in 2019 than in 2018, most likely due to the winter conditions.

Brigade Bay on the eastern shore of Gambier Island contains a small test plot (15m<sup>2</sup>) located ~60 m from a rip rap breakwater and close to a small patch of native eelgrass. Monitoring results showed ~70% of the shoots is surviving. Monitoring later in the year will show a more accurate picture of the bed during its productive period.





The westward section of the transplant in Port Graves on the southern end of Gambier is struggling and is denser on the east end. Eelgrass signage may improve conditions if boat anchoring is a challenge for the plants to spread in this area.



HOBOT unit in a transplant site

## Native Plant Restoration in SNIDZEŁ



Photo by Wyn Crocker

After 12 years of restoring the native plant communities and soils in SNIDZEŁ with community volunteers and members of the WSÁNEĆ communities, SeaChange will end its active commitment. We will continue to support First Nations stewardship of the lands within this beautiful site. We will share equipment and other resources with the First Nations crew who ended their work with SeaChange at the end of March 2019. Hopefully we can serve as a bridge for improved communications with BC Parks and the general public as this transition unfolds.

## Celebratory Events



SeaChange held its second Board Retreat on Salt Spring Island in February 2019. Over two days we reviewed our work over the last 20 years and explored where we need to go in these challenging times of climate chaos. Board minutes are available upon request.



In March, 2019 Maria Catanzaro started working for SeaChange. She brings a bounty of skills and experience to fulfill the role of Project Manager for future eelgrass and nearshore restoration projects. We welcome Maria to our staff!

## Future Plans

### Education



The Teaching House in SNIDŪEL will be prepared to serve as an educational classroom on the water to orient youth and others to SNIDŪEL's unique history and wealth. The structure will house an integrated First Nations and Western marine science and indigenous language approach to learning.



SeaChange will continue to develop robust, relevant and interactive environmental programming for all ages.

### Conservation



SeaChange will continue to work with Cowichan Tribes to increase the health of the Cowichan estuary through monitoring, expanding the transplanted eelgrass habitat and serving on the Technical Committee for the Cowichan/Koksilah Estuary Restoration Project. We will continue to work with the Pacheedaht Nation to increase eelgrass productivity in the San Juan Watershed.



SeaChange will continue to work with BC's coastal communities to increase the health and resiliency of nearshore marine habitats and continue to build upon the network of coastal communities established over the years.



## Restoration



SeaChange will work with the University of B.C. to support the creation of a predictive model to improve restoration site selections.



We will continue to restore and monitor eelgrass habitats within the Salish Sea and find ways to research solutions to the presence of eelgrass wasting disease (*Labyrinthula zostera*) to investigate resilient strains of native eelgrass to adapt to rising sea surface temperatures.



SeaChange will increase shellfish recruitment on the shores of SNIDŪEŁ by depositing shell hash in the intertidal zone of the beach.



SeaChange will increase its capacity for marine conservation, education and restoration by continuing to employ part-time contract staff for administrative and field work.

## **Funding/In-Kind Sources for SeaChange Marine Conservation Society 2018-2019**

Environment Canada	SNIDŪEŁ Resiliency Project
Greater Victoria School District	EcoRowing in SNIDŪEŁ
First West Foundation	EcoRowing in SNIDŪEŁ
Ministry of Environment	Permits to work in SNIDŪEŁ; In-Kind support for conservation
Department of Fisheries & Oceans	Salish Sea Nearshore Habitat Recovery Project (SSNHRP)
Pacific Salmon Foundation	Leveraged funding for SSNHRP
Province of British Columbia	Permits to transplant eelgrass in specific BC Parks
Service Canada	Summer staffing for the stewardship of SNIDŪEŁ and EcoRowing
Vancity Community Credit Union	SNIDŪEŁ Resiliency Project
Victoria Foundation	SNIDŪEŁ Teaching House and Welcoming Figure

### Other Support

Donations through Canada Helps	Core expenses
CRD Parks	Marine Day at Witty's Lagoon
Horne Coupar Barristers & Solicitors	1% for the Planet - core expenses
Individual donors	Core expenses

Roy Group	1% for the Planet – SNIDØEŁ programs
Private donor	Leveraged funding for summer staff and programming
Squamish River Watershed Society	Support for eelgrass restoration/monitoring
University of Victoria Geography Department	In-kind labour & equipment Coastal Community Mapping & GIS support, programming for the Chinese Youth Leadership Program
User Fees	EcoRowing in SNIDØEŁ, Ethnobotanical tours, beach programs
SCUBA Diving contracts	Eelgrass compensation, survey and restoration projects

### Supportive Local Businesses

Brentwood Bay Village Emporium	Soap Exchange
Roy Group	Glass Foundry (Salt Spring Island)
Butchart Gardens	Horne Coupar Barristers and Solicitors
Mitchell Farms	Pixelart Computers
Zanzibar Restaurant	Polster Environmental Services Ltd.
Sherwood Marine	

“If you look at the science that describes what is happening on earth today and aren't pessimistic, you don't have the correct data. If you meet people in this unnamed movement and aren't optimistic, you haven't got a heart...”

“What I see everywhere in the world are ordinary people willing to confront despair, power, and incalculable odds in order to restore some semblance of grace, justice, and beauty to this world.”

— Paul Hawken, *Blessed Unrest: How the Largest Movement in the World Came Into Being and Why No One Saw It Coming*

Photos: All photos, except where noted, taken by SeaChange staff