

North Coast Project – Coastal Environmental Protection, Employment, and Economic Recovery

An Initiative of the Small Ship Tour Operators Association
and the Wilderness Tourism Association of British Columbia

Funded by the Government of British Columbia's
Clean Coast, Clean Waters Initiative Fund (CCCW)



Acknowledgements

Contributing and Participating Organizations

Wilderness Tourism Association of BC (WTA)
Small Ship Tour Operators Association of BC (SSTOA)
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Kevin Smith and Maureen Gordon, Maple Leaf Adventures & SSTOA
Eric Boyum, Ocean Adventures Charter Co. Ltd. & SSTOA
Ross Campbell, Mothership Adventures & SSTOA
Randy Burke, Bluewater Adventures & SSTOA
Melissa Heer, Pacific Yellowfin & SSTOA

Supporting and Participating First Nations

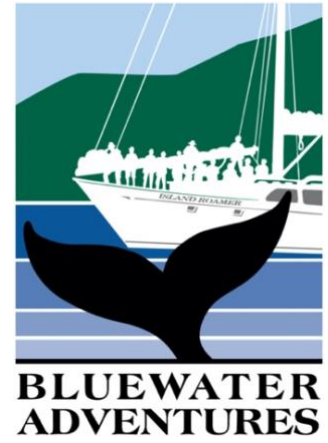
Kitasoo/Xai'xais First Nation
Gitga'at First Nation
Gitxaala First Nation

Funded by

The Government of BC's Clean Coast, Clean Waters Initiative Fund
TELUS Corporation

Delivery Partners

Airspan Helicopters
Central Coast Marine Services
Fox Disposal
Furney Distributors
Heiltsuk Horizon Maritime Services
Ocean Legacy Foundation
Spirit Bear Lodge



2021 Clean Coast Clean Waters Summary Report

Project Background

The Wilderness Tourism Association (WTA) and Small Ship Tour Operators Association (SSTOA) collaborated on a submission to the Clean Coast, Clean Waters Initiative (CCCW) in mid-January 2021. The Wilderness Tourism Association is a registered non-profit tourism sector association focused on advocacy for tourism issues associated with land and marine use and for improved stewardship of terrestrial and marine natural resources. The tourism industry and the province are dependent on supporting the *Super, Natural British Columbia* brand. The SSTOA is a collaboration of small ship ecotourism operators who provide boutique tourism adventures on BC's west coast, operating primarily in the Great Bear Rainforest, Haida Gwaii and Northern Vancouver Island.

Previous Marine Debris Removal Projects

In late summer of 2020, the WTA and SSTOA undertook a shoreline clean-up project in the southern portions of the Great Bear Rainforest, collecting over 127 tons of marine debris over a 40-day period. The SSTOA partnered with three coastal communities to deliver this project: Heiltsuk Nation at Bella Bella, Kitsoo Xai'xais Nation at Klemtu and the Gitga'at Nation at Hartley Bay. Other major partners in this initiative included Heiltsuk Horizon Marine Services (tug and barge), Airspan Helicopters, Fox Disposal, Beattie Tartan Communications, Furney Distributors and Mount Waddington Regional District. The SSTOA companies involved in 2020 included Bluewater Adventures, Mothership Adventures, Maple Leaf Adventures, Ocean Adventures and Outer Shores Expeditions. The WTA provided contract administration and logistical support.

The Province of BC's Ministry of Environment and Climate Change Strategy provided \$3.5 million to support the 2020 project. The WTA and SSTOA acknowledges the ministry's vision for providing the funding for this project while assisting tourism business that were closed due to the COVID-19 pandemic. This was the first large scale shoreline clean-up project in this region of BC resulting in a record amount of plastic debris collected on a shoreline in Canada.

The scale of plastic pollution on British Columbia's coast is unfathomable. This pilot program demonstrated that shoreline clean up on a large scale can be achieved through businesses and communities working together. It also demonstrated the need for a program like this to carry on into the future.

2021 Clean Coast, Clean Waters WTA-SSTOA Project

The 2021 CCCW project proposal consisted of a 40-day project split into two 20-day expeditions. The focus area was on the North Coast region starting at Princess Royal Island and moving north to Banks Island. Nine ships from 5 companies, 3 communities and numerous delivery partners were identified to conduct the clean-up. Once the proposal was accepted, details were refined with the provinces contract administrator, Price Waterhouse Coopers.

Community partners in the 2021 project include: Kitasoo Xai'xais Nation, Gitga'at Nation and Gitxaala Nation. Other major partners include: Airspan Helicopters, Heiltsuk Horizon Marine Services (tug and barge), Fox Disposal, Ocean Legacy Foundation, Spirit Bear Lodge, Furney Distributors, Mount Waddington Regional District and Central Coast Marine Services. The SSTOA companies involved in 2021 include Bluewater Adventures, Mothership Adventures, Maple Leaf Adventures, Ocean Adventures and Outer Shores Expeditions and Pacific Yellowfin (sponsorship arrangements). The WTA provided contract administration and logistical support.

TELUS Corporation provided sponsorship support covering the cost of recycling, and producing a video summary of the 2021 expedition.

The experience gained from the 2020 expedition identified that the project could collect more debris than the budget would accommodate given the cost of recycling, land fill fees and related transport costs for tug and barge. The 2020 expedition experienced a cost overrun from collecting more debris than estimated. The same situation was anticipated in the 2021 project, which was addressed through negotiating a generous sponsorship agreement with TELUS Corporation to cover the costs associated with recycling.

The first expedition departed for Prince Royal Island on May 10, 2021 and concluded in Prince Rupert on May 29, 2021. Focusing on the outer shorelines of Princess Royal and Aristazabal Islands, 9 ships and over 100 crew from the ships and neighbouring communities collected 104 tons of marine debris.

The majority of the debris originates from international and national plastic fishing gear, nets and rope and polystyrene floats. Given the exposure of this portion of the coast to the Pacific currents and winds, the concentration of plastic debris is very high. Some of the materials collected date back to the mid 1960s. The volume of plastic water bottles and other plastic debris originating from countries in Asia is very significant.

The second expedition started May 30, 2021 from Prince Rupert and concluded June 18, 2021, continuing the clean-up picking up where they left off on the north end of Aristazabal, Campania and the Estevan Group of Islands. The SSTOA ran out of time and funding to continue the shoreline clean up on Banks Island. This is a product of the amount of debris they encountered on both expeditions and the poor sea and weather conditions for the second expedition.

The second expedition collected 106 tons of debris when the ships concluded the project on June 18, 2021. In total, the 2021 shoreline clean-up collected 210 tons of debris from 306 km of shoreline.

Financial contributions provided by the Province of BC \$3.5 million, and TELUS Corporation \$85,000 (for recycling costs).

Debris Collection Data Summary for the Two Expeditions

	Expedition 1	Expedition 2	Total	Total %
Length of shoreline cleared (km)	145	161	306	
Hard plastic floats/dragger balls (kg)	17235	10979	28213	13.4%
Plastic barrels (kg)	1127	1477	2604	1.2%
Black plastic oyster baskets (kg)	82	66	148	0.1%
Hard plastic items and fragments (kg)	7032	8067	15098	7.2%
Other packaging (single-use hard plastic) (kg)	201	682	883	0.4%
Foam floats (kg)	3944	1380	5324	2.5%
Non-reusable Foam floats (kg)	n/a	2172	2172	1.0%
Recyclable White Styrofoam (kg)	3460	2742	6201	2.9%
Non-Recyclable White Styrofoam (kg)	n/a	2372	2372	1.1%
Plastic beverage bottles (kg)	1905	1084	2989	1.4%
Net (poly) (kg)	9062	16445	15507	7.4%
Net (nylon) (kg)	67	272	339	0.2%
Rope (poly) (kg)	20071	22543	432613	15.5%
Rope (nylon) (kg)	701	336	1037	0.5%
Nonrecyclable net & rope (poly) (kg)	n/a	20300	20300	19.2%
Tires with Styrofoam (kg)	1024	808	1832	0.9%
Tires without Styrofoam (kg)	2752	2386	5138	2.4%
Unclassified (e.g. metal, appliances) (kg)	1790	1383	3173	1.5%
Unsorted (kg)	5496	3649	9249	4.3%
Garbage/ Landfill (kg)	28151	7177	35328	16.8%
Total debris collected (kg)	104097	106320	210417	

Much of this material comes from international sources.

Landfill and Recycling

The 2020 expedition sent 100% of the debris collected to landfills due to lack of available recycling facilities for marine debris. Plastic marine debris can be particularly difficult to recycle because of material degradation from UV light exposure, salt and sand, as well as being contaminated with organic materials, salt and sand.

This changed in 2021 with Ocean Legacy Foundation being available to recycle some of the materials collected by the SStOA group and other organizations conducting shoreline clean-up projects. Approximately 60% of the materials collected in 2021 were able to be recycled, leaving the remaining 40% sent to landfills.

This phase of the project would not have been possible without the financial support of TELUS Corporation and the determination and diligence provided by the SStOA crews in sorting the materials collected. Fox Disposal in Port Hardy completed a secondary screening and loading for materials for recycling. None of the recycling would have been possible without Ocean Legacy establishing a marine debris recycling program and processing the materials collected so efficiently.

From the 210 tons of marine debris collected, approximately 126,594 tons could be recycled, with 35,328 tons directed to the landfill. Materials that are sent to the landfill include items that are not recyclable or too degraded or contaminated to be recycled.

Recycling Data

	Expedition 1	Expedition 2	Total
Estimated # of bottles (@25/kg)	47613	27100	74713
Estimated # of bottles (@30/kg)	57135	32520	89655
Estimated # of foam floats (@13/8kg)	6068	5464	11532
Total net and rope (kg)	29901	59895	89796

Employment

Employment numbers for this project are as follows:

SStOA Crews: 110

First Nations Crews: 60 (estimate)

Contractors: 18

Total: 188 persons employed

Recommendations

The Clean Coast, Clean Waters Initiative should continue into the future.

The volume of plastic debris washing up on British Columbia's coastline annually is beyond comprehension. The majority of it is out of sight of BC's population base, yet it poses one of the greatest threats to marine ecological systems in Canada, if not North America. If this amount of debris were to wash up on Vancouver's English Bay, it would be deemed a disaster.

The continuous flow of plastic debris washing ashore and cycling back and forth in the intertidal zone is generating micro plastics that enter the marine and terrestrial food chain. To demonstrate this, a test site that was cleaned in the fall of 2020 was revisited and found to have 275 kilograms of debris on it in the spring of 2021. This occurred over 7 months.

British Columbia has over 25,000 kilometres of shoreline with the majority of it inaccessible by road. All of it is exposed to marine debris flows albeit at different rates of deposition. The WTA-SSTOA project collected 210 tons of marine debris in 2021 over 306 kilometres, and 127 tons over 389 kilometres in 2020.

Similar amounts are being collected on remote sections of the west coast of Vancouver Island. This is a significant amount of pollution that is accumulating unabated, annually on the shores of our province. Continued effort is needed to remove it; new initiatives are needed to limit the sources of the debris.

The province needs to initiate a discussion with Canada on continuing support for this program.

As the majority of the debris is coming from offshore, it is unreasonable for British Columbia to bear the clean-up cost of plastic waste from commercial and industrial activities emanating from other jurisdictions. Canada needs to be engaged in this initiative going forward to assist in the cost of clean-up.

Canada and British Columbia need to start a discussion on reducing the source of the problem.

Potential solutions may lie in creating an international fund that provides resources for research and plastic reduction.

1. Derelict Fishing Gear

The majority of debris collected and removed was made of up lost, abandoned or otherwise discarded fishing gear (i.e. ghost gear) from both domestic and international fisheries. Given the abundance of this source of marine debris and the risks it poses to wildlife and ecosystems, we encourage the BC Government to work with their federal counterparts in the Ministry of Fisheries and Oceans Canada, and the Ministry of Environment and Climate Change Canada, to work with industry and international organizations to reduce and mitigate the impacts of ghost fishing gear.

2. Expanded Polystyrene Foam Mitigation

We found blocks, chunks, particles, and middens of expanded polystyrene foam (i.e. Styrofoam™) throughout the Central coast. Extensive literature from around the world has demonstrated that polystyrene foam is ingested by marine wildlife (including commercially and culturally important species such as salmon, lingcod and halibut), and releases toxic chemical leachates into the environment. The major domestic sources of polystyrene foam pollution on the BC coast is the polystyrene foam floatation used for commercial and recreational docks and marinas, and moorings for commercial aquaculture industries. We recommend that the BC and Federal Governments work with these industries and the public to: 1) require that all new projects use alternative forms of floatation; and 2) develop legal and financial frameworks for facilitating the refitting of existing installations with alternative forms of floatation.

3. Funding for Marine Debris Research and Monitoring

To our knowledge, no estimates currently exist for the total amount of marine debris currently on the shorelines of British Columbia, nor do estimates of debris deposition rates. Without this critical information, it is difficult to develop the strategies, capacity, and budgets for shoreline cleanup initiatives. We recommend that the BC and Federal Governments make funding available to: 1) facilitate research initiatives aimed at estimating the current abundance and distribution of marine debris on the BC coast; and 2) establish a coast-wide network of marine debris index sites that could be readily monitored by community organizations, Coastal Guardian Watchman programs, tourism operators, and other citizen scientists to establish how much marine debris is arriving onto the BC coast each year and its sources.

4. Funding for Marine Debris Recycling Facilities and Capacity

This service was unavailable to process debris from the 2020 project, however based on the 2021 project experience would have been capable of handling the volume of material. The 2021 project was able to divert 60% of the material collected for recycling. Continued funding for this service is critical.

5. Prioritize Marine Protected Areas for Removal Initiatives

The incredible size and length of BC's shorelines will require that a prioritization, or triaged, approach to future marine debris removal initiatives. Marine Protected Areas (MPAs) are generally areas that have high ecological, biodiversity, cultural, tourism, and fisheries values, and therefore environmental impacts resulting from marine debris accumulation may be disproportionately large. For this reason, we recommend that the BC and Federal Governments prioritize the clean-up and restoration of MPAs on the BC coast, including BC Parks and Conservancies, Ecological Reserves, Marine National Wildlife Areas, National Park Reserves, National Marine Conservation Areas, and Indigenous Protected and Conserved Areas (IPCAs). Those areas exposed to open pacific flows are the most vulnerable.

6. Project Administration

The system of project administration for the 2021 Clean Coast Clean Waters Initiative is cumbersome and administratively costly. The project oversight, communication and administration need to be simplified.

Conclusions

The WTA-SSTOA 2021 Clean Coast Clean Waters project was completed successfully without any serious incidents and injury. There is no question about the need for continuing programs of this nature, supporting both businesses and communities to work collaboratively to resolve provincial-scale environmental problems. The benefits for the environment speak for themselves. The benefits for reconciliation between business and communities are significant.

Longer term commitments to this program will facilitate volunteer and business organizations to commitment to this work on an annual basis. The province and federal government should consider establishing a fund or foundation to support this initiative on an ongoing basis. The problem and the pollution is not going away.

Planning and assessment need to be integrated into this initiative to focus on areas with high vulnerability. Areas with historically high concentrations of debris need attention to prevent the breakdown of plastics into microplastics. This does not negate the need for clean-up in areas with lower concentrations of debris.

The WTA and SSTOA recommends this program continue and would like to thank the Province of BC for the opportunity to participate in it.