qathet
REGIONAL DISTRICT

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"Genetically Engineered Free Crop Area"

March 17, 2020

Director Edwin Grieve
Chair, AVICC Special Committee on Solid Waste
Local Government House
525 Government Street
Victoria, BC V8V 0A8
Sent Via Email: edwingrieve@shaw.ca

Dear Director Edwin Grieve,

Re: Request to Share qRD's *Shoreline Cleanup 2019 Year End Report* and *What We Heard on Marine Debris in B.C* to the AVICC's Special Committee on Solid Waste Management

The Regional Board recently passed the recommendation that the qathet Regional District's (qRD) *Shoreline Cleanup 2019 Year End Report* as well as the Parliamentary Secretary for the Environment, Sheila Malcolmson's provincial report entitled *What We Heard on Marine Debris in B.C.* be forwarded to the AVICC's Special Committee on Solid Waste Management.

Secretary Malcomson's report did not include the qRD in the summer 2019 consultation process on the marine debris issue. Therefore, we are forwarding the *Shoreline Cleanup 2019 Year End Report* directly to Secretary Malcolmson and the Honourable George Heyman, Minister of Environment.

We want to ensure that all AVICC members are aware of the ministry's report and its 'potential solutions' for the problems of marine debris. We would also like to share the qRD's report, including its data, experiences, and specific concerns with AVICC members to encourage other coastal local governments to watch for and act on any further opportunities to raise awareness on this issue. Therefore, please find attached both reports for dissemination.

Please contact myself or Let's Talk Trash to further discuss the contents of the *Shoreline Cleanup 2019 Year End Report*. Thank you for your efforts to highlight this important issue and encourage improved policies, best practices, oversight, funding, and enforcement.

Sincerely,

Patrick Brabazon, Chair
qathet Regional District
Att.

qathet REGIONAL DISTRICT

Report Date: February 4, 2020

Author: Ingalisa Burns

Meeting Date: February 13, 2020

REQUEST FOR DECISION REPORT

TO: Committee of the Whole

FROM: Manager of Asset Management and Strategic Initiatives

IN COLLABORATION WITH: Let's Talk Trash

SUBJECT: Shoreline Cleanup 2019 Year End Report

ACTION/RECOMMENDATION

THAT the Committee recommend the Board receive the *Shoreline Cleanup 2019 Year End Report*; and

THAT the Committee recommend the Board forward the *Shoreline Cleanup 2019 Year End Report* to Minister of Environment and Climate Change Strategy George Heyman and to Parliamentary Secretary for Environment Sheila Malcolmson to add the voice of qathet Regional District to those in support of the 'potential solutions' to the problem of marine debris identified in Parliamentary Secretary Malcolmson's February 2020 report entitled *What We Heard on Marine Debris in B.C.* and to advocate for the swift development of an action plan to implement the identified 'potential solutions' as well as the improved oversight and enforcement capacity of the aquaculture industry by senior government approving jurisdictions; and

THAT the Committee recommend the Board forward the *Shoreline Cleanup 2019 Year End Report* as well as the Provincial report entitled *What We Heard on Marine Debris in B.C.* to the Association of Vancouver Island Coastal Communities (AVICC) Special Committee on Solid Waste Management to ensure that our neighbouring coastal local governments are aware of the work being done at the Provincial level related to the problem of marine debris; to share the qathet Regional District's data, experiences and concerns; and to encourage other coastal local governments to watch for, and act on any further opportunities to raise awareness on this issue.

PURPOSE/SUMMARY

To report back on the 2019 shoreline cleanup efforts in the region; current federal and provincial policies, regulations, and over-site in regard to the use of marine plastic and Styrofoam in aquatic environments; federal and provincial funding opportunities to support the shoreline cleanup initiatives; and the enforcement capabilities of the Department of Fisheries and Oceans (DFO) with regard to aquaculture licensees not operating in an environmentally sustainable manner.

BACKGROUND

Since 2017, qathet Regional District (qRD) has facilitated a Coastal Cleanup Initiative that allocated funding for shoreline cleanup efforts in Electoral Areas A, B, C, D and E. Major shoreline cleanup events have taken place over the past three years since the allocation of funding. In 2019, cleanups occurred on Lasqueti, Texada, Savary, Hernando, Jedediah, and Harwood Islands, and along mainland Okeover and Malaspina Inlets. The Hernando Island cleanup was its first, engaging 40 volunteers and cleaning most of its shoreline. For the 3rd year in a row, Let's Talk Trash (LTT), coordinated a partnership with the Ocean Legacy Foundation (OLF), a Canadian-based non-profit plastic emergency response program, to recycle and reuse the majority of qRD's collected marine debris.

This Coastal Cleanup Initiative has brought awareness to the environmental issue of marine debris along qRD shorelines and support to the work of volunteers.

Marine debris is a pervasive environmental problem. Shorelines in qRD's catchment area have drift collection beaches where marine debris gathers as prevailing south easterly winds push pollution ashore. qRD has an estimated 720 km of shoreline, including all islands, inlets, and the mainland coastal strip. In 2019, volunteers cleaned approximately 70km of the region's coastline (~10 per cent), focusing on locations that are the more easily accessible 'hot spots'. Volunteers often return to the same stretches of shoreline annually as debris re-accumulates during the year.

These volunteer efforts collect significant amounts of waste that is harmful to the environment and human health. Residents of qRD have been enthusiastic to volunteer their time in removing marine debris off beaches, the coastline, and out of the marine environment. Many have expressed concern about the origin of accumulated waste materials.

STRATEGIC PRIORITY

Climate Change

Recent studies from the University of Hawaii have discovered that several greenhouse gases are emitted as common plastics degrade in the environment. The published study reports that when common plastic is exposed to sunlight, methane and ethylene gases are emitted. Polyethylene is the most produced and discarded synthetic polymer globally and has been found to be the most prolific emitter of both gases. Removing plastic pollutants from the environment, therefore, has a positive impact in decreasing the region's carbon footprint. In partnering with OLF, approximately 90 per cent of collected marine debris is able to be recycled instead of landfilled, which supports the qRD's Solid Waste Management Plan's (SWMP) commitment to working towards Zero Waste.

Environmental Sustainability

Working to remove plastic pollutants from the shoreline removes them being able to re-enter the oceans and removes their presence as being a food source for both sea birds and marine animals, ranging from bivalves all the way up the food chain to fish and whales.
It is estimated that each year, globally, over 100,000 marine mammals and over 1 million sea birds die due to plastic ingestion.

TYPE OF DECISION

Directive Decision.

It has been widely recognized that there is a plastic pollution epidemic facing our waterways and oceans in particular. Addressing this issue with leadership from both local and senior governments has become necessary. Policies, imposing higher taxes on fossil fuels used to

make single-use plastics, enacting minimum recycled-content laws, which require manufacturers to make new stuff from old, and requiring deposits on packaging to ensure more of it is recovered for reuse, is where communities are looking for government leadership to step in to help address this environmental crisis.

HEALTH & SAFETY IMPACT/RELATIONSHIP
From a human health and safety perspective, qRD has engaged LTT to communicate with shoreline cleanup event coordinators. LTT provides support and resources, such as the Great Canadian Shoreline Cleanup Guide and Ocean Legacy Guide to help prepare coordinators to have the most successful outcomes at their events. This early communication and resources provide examples on how to manage and organize volunteers and highlights examples of potential safety concerns that may arise in a beach/shoreline cleanup event and solutions on how to address and mitigate these issues.

RISK MANAGEMENT IMPACT/RELATIONSHIP
qRD has consulted with our solicitors, who created a waiver statement that is a part of the shoreline cleanup event application form (Appendix A) and removes any risk from qRD. Each event coordinator takes on the risk and responsibility for their event. The Great Canadian Shoreline Cleanup can provide event coordinators with waivers for event volunteers to remove any risk from themselves. If an event is taking place in a BC Marine Park, BC Parks can provide the event coordinator with volunteer insurance/coverage.

LEGISLATIVE, REGULATORY, BYLAW OR POLICY IMPACT/RELATIONSHIP
Currently, governments at all levels appear to be working to address the plastic pollution problem that continues to be on the rise each year. The problem has moved out of the individual action realm and residents are looking to government to take a leadership role in helping to stem this pollution crisis.

DISCUSSION/ANALYSIS
With the longest coastline on the planet, Canada faces a sizable share of global shoreline cleanup. The sheer volume of plastic entering the marine environment exacerbates these efforts. Each year 640,000 tons of abandoned, lost, or discarded fishing gear (ghost gear) enters the ocean where it can persist for up to 600 years.

In Canada alone, 90 per cent of plastic waste consumed overall is not recycled. In total, Canadians throw away 3 million tons of plastic annually. Massive quantities of it leak into the environment, specifically into waterways that then flow into the ocean. According to recent estimates, over 8 million tons of plastic enter the oceans every year and it could outweigh fish in the ocean by 2050.

The ocean is without borders and thus marine debris washing up in coastal communities can originate from anywhere. Due to the geography of qRD in being sheltered from the west coast, most of marine debris found locally is domestic in origin (BC or Canadian) and comes from the marine industry, and residential dock floats. Approximately 90 per cent (volume) of collected marine debris is comprised of Styrofoam floats, flotation tires filled with Styrofoam, hard plastic flotation barrels, oyster trays, black buoys, PVC piping, and marine rope – all of which originate mainly from marine-related industry. This volume is notably higher than global averages, with the European Union (EU) estimating only 27 per cent of its marine debris sourced from marine industry and estimates for the Great Pacific Garbage Patch at 46 per cent. With Canadian coastal communities taking on most of the financial burden for cleaning up waste originating from marine industry, there is much discussion

about looking to industry to share these costs. Provincial and federal partnerships are being sought for both funding and enforcement capabilities as these jurisdictions primarily issue the permitting and/or licensing for industrial/commercial activities that are enforced by the DFO.

Volume of Marine Debris from Marine Industry:

European Union	**Great Pacific Garbage Patch**	**qathet Regional District**
27 per cent	46 per cent	90 per cent

Another 5 per cent is plastic debris including items such as plastic water bottles, other beverage containers, plastic oil containers, cigarette butts, tennis balls, shoes and flip-flops, straws, plastic tampon applicators, and small unidentifiable pieces of hard plastic. A final 5 per cent is scrap metal and wood waste, often attached to industrial flotation devices.

This year the 6 shoreline cleanup events in qRD collected a total of 407 cubic metres of marine debris. For perspective, this amount of debris would fill 12 logging trucks. 346 cubic meters of this (mainly Styrofoam floats and ghost gear) was delivered to OLF for recycling and repurposing.

2019 Shoreline Cleanup Efforts:

Marine Debris Collected	**Marine Debris Recycled through OLF**	**Total qRD Shoreline**	**qRD shoreline cleaned**
407 cubic meters	85 per cent	720 km	10 per cent

<u>Policies, Regulations, Over-site & Funding re: Marine Debris</u>

Many residents are interested in volunteering their time to collect marine debris regardless of its source but are not willing to pay for the disposal fees. Having a dedicated Coastline Cleanup fund established in the Solid Waste Management budget is a significant contribution to addressing this ongoing environmental problem while tapping into the resource of citizens willing to volunteer their time and talents through cleanups. That said, having coastal community tax payers continuing to fund shoreline cleanups across Canada is an unfair burden and further support is called for at the provincial and federal levels. This is particularly the case when one considers that the authorities permitting the activities causing the majority of waste rest at these levels of governance.

Laying the groundwork for this type of support is Canada's Ocean Plastics Charter established at a Group of Seven's (G7) - international intergovernmental economic organization – meeting in 2018. It outlines concrete actions to eradicate plastic pollution and recognizes the need to address the devastating impacts of marine litter on the health and sustainability of our oceans, seas, coastal communities, and ecosystems. The Charter has been endorsed by over 21 governments, and 64 businesses and organizations. Members have committed to preventing plastic leakage into marine environments from all sources along with enabling their collection, reuse, recycling and recovery. They also agree to work with local governments, particularly remote communities with small islands, to reduce marine litter and plastic waste. Canada has committed $100 million towards developing countries to prevent plastic waste from entering oceans. The qRD is not eligible for these funds.

In November 2018, the Canadian Council of Ministers of the Environment (CCME) introduced the Canada-Wide Strategy on Zero Plastic Waste. Its goal is to keep all plastics in

the economy and out of the environment. Phase 2 of its action plan began January 1, 2020 and focuses in part on preventing plastic pollution in oceans, better monitoring of plastic pollution in the environment, and cleanup efforts. While municipal governments are eligible for funds of between $25,000 and $250,000, shoreline cleanups and targeting of fishing gear or the removal of boats, and education campaigns are not eligible. Efforts that are eligible for funding include: using innovative solutions to capture and remove plastic pollution from the environment, targeting plastic leakage points and commonly littered items, and capacity building through data monitoring and collection regarding plastic pollution and its removal.

On December 22, 2018, Bill M-151, forwarded by Vancouver Island Member of Parliament (MP) Gord Johns, passed unanimously in the House of Commons. The Bill lays out a national strategy to deal with ocean plastics advocating specifically for introducing regulations and permanent funding. Suggested regulations are aimed at reducing plastic debris from storm water outfalls, industrial use of micro-plastics, and single use plastics. Permanent annual funding is recommended for the cleanup of derelict fishing gear, community led cleanups, and education campaigns. Investigation to date by LTT finds it is unclear what specific funding has resulted yet from this unanimously passed Bill.

The Government of Canada recently announced the development of an $8.3 million Sustainable Fisheries Solutions and Retrieval Support Contribution Program (SFSRSCP) administered by the DFO. It assists fish harvesters, environmental groups, Indigenous communities, the aquaculture industry and coastal communities to retrieve harmful ghost gear from the ocean and dispose of it responsibly. Marine farmers and qRD are eligible to apply for funding, and most projects are awarded between $5,000 and $400,000. The Active Malaspina Mariculture Association (AMMA) has been made aware of their eligibility and should funds be acquired, they could be used for retrieval of abandoned, lost, or otherwise discarded fishing gear as well as the acquisition of innovative gear technologies. Expressions of Interest (optional step) are requested by February 20, 2020 and final applications (required step) must be remitted by April 1, 2020. Funds are to be used by December 31, 2022.

The Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP) has funding available to marine farmers to encourage moving towards more environmentally sound technologies, like replacing Styrofoam floats with hard plastic encased Styrofoam, or flimsy cultivation gear with more durable gear that will not degrade as rapidly into plastic debris. This is a voluntary program and some farms are not taking advantage of the funding opportunity. The BC Shellfish Growers Association (BCSGA) is applying to FACTAP to replace all the old Styrofoam in their member farms on their behalf.

Abandoned or wrecked small boats also pose a threat in marine environments and often end up as shoreline debris which is particularly cumbersome to remove. Canada’s Ocean Protection Plan (2016) includes the Abandoned Boats Program (ABP) which aims to provide grants and funding to assist in the removal of abandoned or wrecked small boats posing a hazard in Canadian waters. The Dead Boats Society (DBS) is the provincial arm of this Transportation Canada program, and they have removed nearly 100 boats to date. The DBS funding has been used up, but it is continuing to log the location of abandoned or wrecked boats. At the time of authoring this report, DBS is in the application process for continued federal funding. Projects must also receive 25 per cent of any clean up funding from the Province.

Marine Debris Cleanup Funding:

Funding	**Total Funds Dedicated**	**qRD Eligible**	**Funding Allocation**	**Application Deadline & Contact**
Ocean Plastics Charter	$100 million	No	-For developing countries to prevent plastic waste from entering oceans	
Zero Plastic Waste Strategy	$25,000 - $250,000/ project	Yes	-Using innovative solutions to capture and remove plastic pollution from the environment -Targeting plastic leakage points and commonly littered items -Capacity building through data monitoring and collection regarding plastic pollution and its removal	March 2, 2020 Ec.sgesc-gcems-sgesc-gcems.ec@canada.ca
Sustainable Fisheries Solutions and Retrieval Support Contribution Program (SFSRSCP)	$5,000 - $400,000/project	Yes	-Retrieval of abandoned, lost, or otherwise discarded fishing gear as well as the acquisition of innovative gear technologies	Feb 20, 2020 (optional Expression of Interest) April 1, 2020 (application) DFO.GGFundFonddesef.MPO@dfo-mpo.gc.ca
Fisheries and Aquaculture Clean Technology Adoption Program (FACTAP)	75 per cent of project	No	-Replacing equipment with more environmentally sound and innovative technologies	Four year funding ends March 31, 2021 DFO.PAC.FACTAP-PATPPA.PAC.MpO@dfo-mpo.gc.ca
Dead Boats Society (Ocean Protection Plan's Abandoned Boat Program)	Program is currently applying for continued federal funding	Yes, but currently on hold.	-Removal of abandoned or wrecked small boats	reportdeadboat@gmail.com John Roe 250-383-2086
Turn It In Week DFO	Project based (no funds for 2020 allocated)	No	-Marine debris collected by marine industry	

The DFO has in the past, also directly funded clean-up of marine debris in the qRD. In 2017, the DFO hosted a Turn-It-In-Week in Okeover Inlet (qRD) and Hummingbird Inlet and collected a total of 275 cubic metres of debris, mainly from industry at a cost of over $20,000. There was no event in 2019, and funding for transportation of collected materials continues to be a challenge. Also, the bins for collection were left open and unmonitored during the week of collection, inviting the possibility of both marine industry and residential items to be added. No Turn-It-In Week is known to be scheduled for 2020.

Enforcement

As most qRD marine debris is from marine industry, and cleanup efforts are cumbersome, enforcement would have the potential to stop marine debris leaks at their source. DFO enforcement in regard to the environmental requirements stated in DFO's Conditions of License would assist with waste leaking into marine environments from local industry. DFO is responsible for issuing aquaculture licenses and under its 'Conditions of License' it states that, "aquaculture sites are operated in an environmentally sustainable manner that minimizes the risk to wild fish stocks and the marine resource".

In terms of policies to prevent aquaculture leases from discharging pollutants into the environment, the *Fisheries Act* (Sec 36.3 and 36.4) has strict penalties for the proof of discharge of substances harmful to fish, as well as the depositing of hazardous substances. Microplastics though have not yet been proven to 'acutely' kill fish and are therefore not yet strictly regulated. It is a violation of DFO aquaculture Conditions of License to allow the introduction of refuse (including Styrofoam and plastic) into the marine environment. DFO can issue a violation notice warning and issue a deadline for cleanup and fixing the issue.

DFO does aquaculture site inspections, but as it has 480 sites and only one compliance officer working on debris issues for the area of coastal BC from Sooke to Prince Rupert, enforcement is more than challenging. DFO has prioritized Okeover Inlet and has issued violation notices over the past few years. Inspections have recently been done alongside Natural Resource Enforcement, BC's Forest, Lands, and Natural Resource Operations and Rural Development (FLNRORD), and the local First Nations. Underwater cameras were deployed to check up on sites issued to be cleaned. Some sites had complied and cleaned up while others had not. DFO were not empowered to ticket those who did not comply.

As DFO currently has no ticketing ability for aquaculture violations, it cannot issue fines for litter. Also, DFO's aquaculture dedicated Fishery Officers are currently tasked to a longer term bi-valve traceability and human health project which has no debris enforcement component. As such, there will be no officers looking at debris issues in 2020.

DFO shares regulatory responsibility with the BC Government as FLNRORD issues the tenures on which shellfish farms operate. These facilities are required to be clean, safe, and sanitary. Any calls to the DFO report line sharing specific information about fisheries or aquaculture violations are followed up, but again there is very little in the way of enforcement capabilities. Advocacy for DFO officers to have strong enforcement capacities (ie: ticketing ability) could create motivation by the marine industry towards compliance and even accessing available provincial and federal funding for more marine friendly equipment.

Maritime Provinces have regulations in place that BC does not, such as a restriction on the types of floats that can be used. Exposed floats are not permitted, thus eliminating massive amount of Styrofoam debris from washing up on their shores from local sources. In addition, there remains a difference in BC within aquaculture industries regarding bonds. Fin fish

leases are required to place bonds which would address costs associated with abandoning sites, whereas the shellfish industry does not. In qRD, there are cases of abandoned shellfish leases where gear has polluted the waterways without financial recourse. The challenge associated with requiring bonds can result in smaller operations being unable to operate due to increased costs.

Advocacy

In the Illegal Dumping Strategy 2020-2022, one of the listed action items reads "Advocate to upper tiers of government wisely and strategically when the opportunity presents itself. Collaborate with partner Regional Districts and Municipalities through the Association of Vancouver Island and Coastal Communities (AVICC) and British Columbia Product Stewardship Council (BCPSC) to advocate for increased regulation, oversite and enforcement of materials allowed in the environment."

It is key that funding continue at the regional district level to allow for continued cleanup efforts, but it is also critical that local governments advocate for additional provincial and federal funding, improved over-site and enforcement of the marine industry by senior levels of government, and potential prevention and reduction strategies to target the issue of marine debris at its source. It is recommended that qRD forward the following advocacy suggestions to the AVICC Special Committee on Solid Waste Management to work with the participating local governments who may be experiencing similar challenges, to elevate these concerns to upper levels of government. Many voices are stronger than one.

4 Recommended Advocacy Suggestions:

1. Introduce restrictions on the use of Styrofoam flotation devices by the marine industry (eg. Styrofoam must be encased if used in the aquaculture industry and is explicitly written in to the Conditions of License).
2. Expand Extended Producer Responsibility programs to include marine fishing gear, and require them to be tagged for identification.
3. Permanent funding for coastal communities for the cleanup of marine debris.
4. Improved over-site of industry by senior government approving jurisdictions.

The first two actions would prevent a reduction in marine debris at its source and greatly assist in pollution prevention while requiring industry to manage the products it produces. The third action acknowledges the burden that coastal communities carry for the cleanup of material generated outside their jurisdiction and the fourth action would put the accountability on the industrial / commercial approving jurisdiction.

FINANCIAL IMPACT

Electoral Areas A, B, C, D and E, have coastal cleanup funding in the Solid Waste Management budget.

Electoral Area	Allocated Budget	Actual Funds Spent in 2019
A, B, C, D, E	$8,000.00	$7,301.19
Let's Talk Trash Admin	$2,870.00	$ 5,269.00

Targeted areas in each Electoral Area & Tla'amin Territory

Area A – Savary and Hernando Islands, and mainland Okeover and Malaspina Inlets
Area D – South end of Texada Island and coastline from Gilles Bay to Mouat Bay
Area E – Lasqueti beaches, and Jedediah Island
Tla'amin Territory – Ahgykson (Harwood Island)

qRD Shoreline Cleanup budget funding is used for boat fuel and transportation costs along with any associated disposal or recycling fees. Printing of posters used to help advertise cleanup events are also covered through this funding. Funding is on a first come first serve basis and to a maximum of $1,200 per cleanup event.

The 2019 Shoreline Cleanup budget allocated $2,870 to the LTT budget to administer this initiative. These funds were not sufficient to cover all the required administrative duties. LTT redirected $2,399 from other areas of its general budget to accommodate the overages and spent 128 hours undertaking administrative tasks associated with this project. Tasks included being onsite to facilitate with sorting and logistics for portions of the Okeover, Harwood, and Hernando cleanups, communicating and scheduling pick-ups with OLF, sorting of material at the qRD Maintenance Facility (MF), assisting with loading of materials, on-site receiving of materials from cleanups at the MF, communicating with all 6 event organizers, vetting cleanup event applications and receipts, support for the events to be Zero Waste, meeting with event coordinators to ensure sorting requirements were clearly understood, assisting in advertising efforts and being a consistent go-to resource for the community and event organizers.

PUBLIC AND/OR STAKEHOLDER ENGAGEMENT REQUIRED OR PERFORMED

Over 200 residents and 80 School District 47 (SD47) students participated in the 2019 qRD shoreline cleanup initiative, removing an estimated 407 cubic meters of debris. These clean-ups were also made possible through partnerships with OLF, SD47, Coast Mountain Academy, Tla'amin Nation, Canadian Coast Guard (CCG), First Credit Union (FCU), AMMA, Lund Hotel, Townsite Brewing, qRD's LTT, qRD Maintenance Staff, Augusta Recyclers, Sunshine Disposal & Recycling, City Transfer, and Lund Water Taxi. Partnerships with local cleanup groups are expected to continue and expand in 2020.

- A short film was produced about the Ahgykson (Harwood Island) cleanup and can be viewed at integralearning.org/marine-debris-project
- Lasqueti Island's clean-up was featured in a CBC news article:cbc.ca/news/canada/british-columbia/lasqueti-islanders-collect-record-2-tonnes-ofbeach-waste-during-annual-styrofoam-day-1.522464
- See photos from 2019 clean-up events (Appendix B).

CONCLUSION

Marine debris pollution is one of the most universal problems plaguing the world's oceans as it has serious negative impacts on plant life, wildlife, sea life and human health. Action is required not only to save waterways but to help preserve them for future generations. By providing on-going, consistent funding for cleanup efforts, qRD is making a significant and much needed contribution to the community in assisting to relieve the overwhelming marine debris problem being experienced along qRD shorelines. These volunteer-driven events additionally educate all who participate in combating this societal problem. The participation is encouraging and can lead to behavioral changes. Participants become catalysts for change sparking conversations with others as a result.

While local efforts are essential, it is also critical that local governments work together to advocate for greater provincial and federal funding, improved over-site and enforcement of the marine industry by senior levels of government, and potential prevention and reduction strategies to target the issue of marine debris at its source.

Mike Wall
Asset Management & Strategic Initiatives

Concurrence: Al Radke
Chief Administrative Officer

APPENDIX A

QATHET REGIONAL DISTRICT COASTLINE CLEANUP INITIATIVE
APPLICATION FOR FUNDING

Name of Applicant: _____

Date of Event: _____

Target Area for Cleanup: _____

Collection Plan (recycling sorting, transportation of material, etc.):

Funding Details:

- *Will receipts be kept for reimbursement?*
- *Requesting qRD to contact Augusta for coverage of material?*
- *Please include all estimated costs*

PLEASE READ: The qathet Region District does not organize, administer, monitor or assume any responsibility for any beach cleanup events. Persons who participate in a beach cleanup do so at their risk and should be aware of shoreline dangers and hazards, including slippery surfaces, unpredictable waves, storm surges, currents and cold water.

By submitting this application and in consideration for the opportunity to be considered for cleanup funding, the applicant agrees to waive and release all claims that the applicant has or may have in the future against the qathet Regional District, its officers, employees, elected officials, agents and contractors from any and all liability for any loss, damage, expense or injury, including death, that the applicant or next of kin may suffer as a result of the applicant's participation in the event described in this application.

I HAVE READ AND UNDERSTAND THE ABOVE INFORMATION: ☐ Agree _____

Signature

LET'S KEEP OUR BEACHES SAFE & BEAUTIFUL.

APPENDIX B

Harwood Island
2019 Shoreline Cleanup

Harwood Island
2019 Shoreline Cleanup


Harwood Island
2019 Shoreline Cleanup


Hernando Island
2019 Shoreline Cleanup


Hernando Island
2019 Shoreline Cleanup


Lasqueti Island
2019 Shoreline Cleanup


Lasqueti Island
2019 Shoreline Cleanup
(polystyrene nurdles)

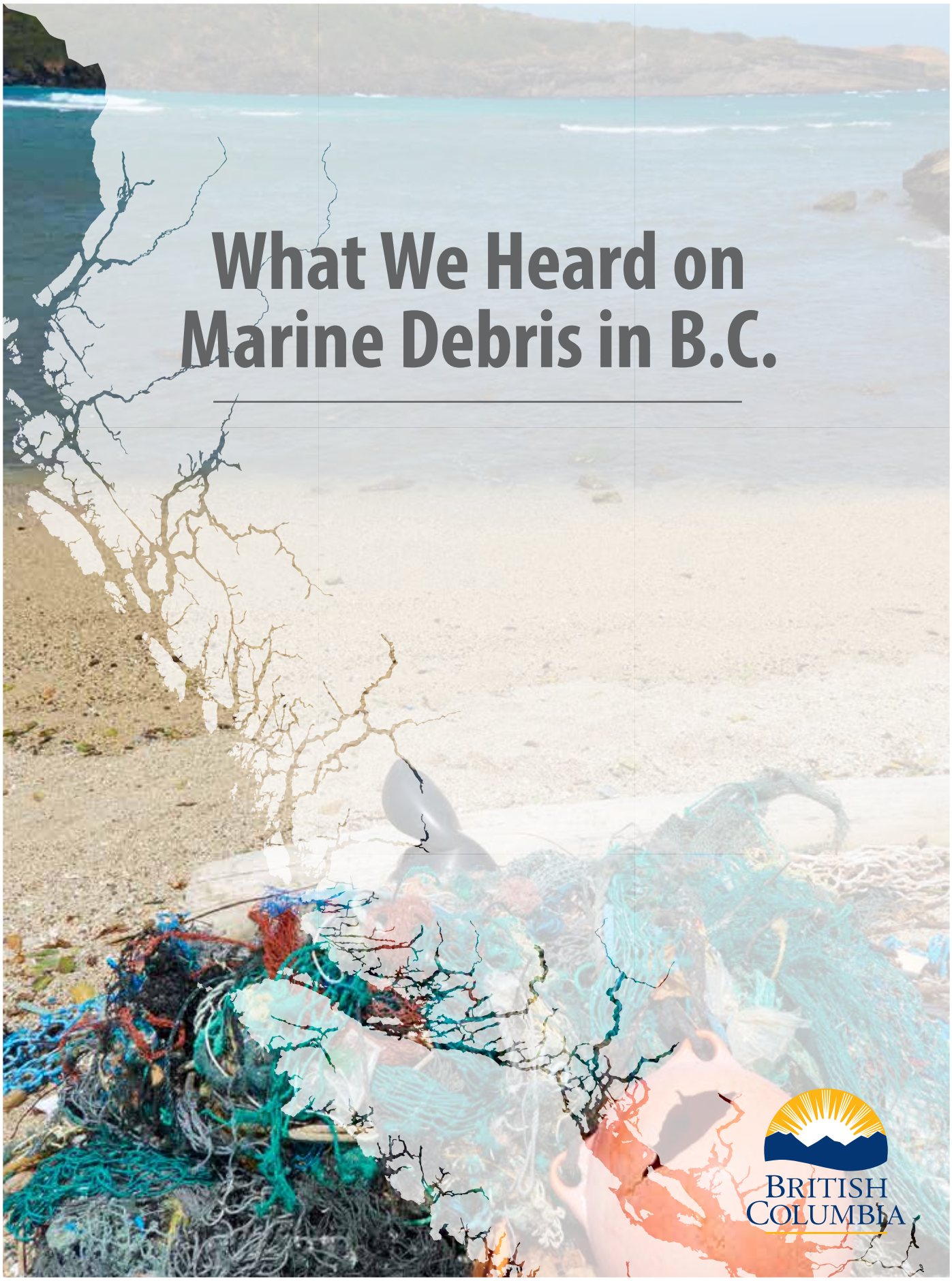

Lasqueti Island
2019 Shoreline Cleanup

Okeover Inlet AMMA
2019 Shoreline Cleanup


Okeover Inlet AMMA
2019 Shoreline Cleanup


Okeover Inlet AMMA
2019 Shoreline Cleanup

What We Heard on Marine Debris in B.C.



BRITISH COLUMBIA

Introduction

Abandoned boats and discarded plastics pollute our oceans and put coastal communities at risk. That's why, in April 2019, Premier Horgan asked Sheila Malcolmson, MLA for Nanaimo, Special Advisor for Marine Debris Protection and Parliamentary Secretary for Environment to find solutions to the issues of abandoned vessels, marine debris, and marine-sourced plastics. Parliamentary Secretary Malcolmson will present her findings and recommendations to George Heyman, Minister of Environment and Climate Change Strategy, in order to help him develop an action plan. See Appendix 1 for full Terms of Reference.

In order to fully understand the gaps, barriers and opportunities, Parliamentary Secretary Malcolmson met with interested parties affected by marine debris during the summer and early fall of 2019[1]. These groups included coastal governments, Indigenous Nations, industry, and environmental organizations. By listening to people who have been tackling these issues for years, she learned about the obstacles these groups face in relation to abandoned vessels, marine debris, and marine-sourced plastics. She also gathered ideas for addressing these obstacles and learned about the many innovative solutions and programs developed by local groups. This report is a summary of what she heard.

Additional details on the process for the meetings can be found in Appendix 2. A list of the organizations that met with Parliamentary Secretary Malcolmson is included in Appendix 3. Appendix 4 includes a summary of the problems, challenges/obstacles, potential solutions and success stories raised by different parties during meetings, which are described in more detail in the remainder of this report.

1 Note: Interested parties are also referred to as groups, organizations or participants throughout this report.

Summary of the source and nature of the problem

Guided conversations as well as comments from the public provided a broad picture of the problem of abandoned vessels and marine debris.

ABANDONED VESSELS

The abandonment of vessels causes both environmental and economic impacts. Environmental concerns include water contamination caused by fuels, oils and greases, anti-fouling paints and toxic materials found on boats.

Many participants spoke to the prevalence of abandoned vessels, describing how the low value of older boats combined with the high cost of proper disposal, and/or lack of disposal options, may result in older boats being sold for a low price or ultimately abandoned when they become too costly to maintain. Other factors contributing to vessel abandonment discussed include fishing license buybacks, high moorage costs, and lack of ownership accountability. Shellfish growers noted the financial impact to the quality and quantity of their product from oil leaking from abandoned vessels and associated clean up costs.

MOORING BUOYS

Several groups noted that the lack of regulation and enforcement of private mooring buoys (putting up a buoy for personal use) is contributing to the problem of abandoned vessels and associated marine debris (e.g. dock material, ropes, other debris). Private mooring buoys are creating more locations where older vessels can be moored and then abandoned when repair, maintenance, or disposal is too costly for the vessel owner. Vessels attached to mooring buoys may also act as unsafe accommodations during the housing crisis or be rented out as airbnbs. The increased density of private mooring buoys is said to be causing problems such as untreated sewage release as well as limiting access to safe anchorages in many small harbours. Participants also noted the environmental impact of mooring buoys on the seabed.

GHOST FISHING GEAR

Ghost fishing gear is gear that has been lost or abandoned in the marine environment; this includes nets, oyster traps, and long lines from the commercial fishery and aquaculture industry and debris from recreational activities such as crab and prawn traps and floats. The gear continues to capture fish and other animals, causing the death of marine life, destroying marine habitat, and causing a hazard to navigation by getting entangled in boat motors. Some types of plastic ghost gear may persist in the marine environment for hundreds of years before eventually breaking down into microplastics that can enter the food chain.

Ghost gear comprises a much larger percentage of remote beach clean-up debris over that in urban settings. Some participants estimated that fishing gear accounted for almost half of the marine debris collected by weight while others found only about a tenth of the debris was fishing gear.

AQUACULTURE DEBRIS

Several meeting participants highlighted aquaculture as a source of marine debris. Rope, anti-predator netting, buoy balls, plastic net bags, oyster trays, lead line (used to hold netting place) and PVC pipes (used in inter-tidal geoduck aquaculture) were identified as sources of marine debris, and particularly marine-sourced plastics. It has been noted that although new aquaculture tenures require holders to keep their gear in safe, clean and sanitary conditions, this is not always occurring. Further, once the gear has been washed off a licensee's site, it is difficult to trace back to the tenure holder. Many of the materials break down with saltwater and sun exposure, contributing to the problem of microplastics. Some forms of aquaculture debris, such as anti-predator netting, become ghost fishing gear. Aquaculture debris collected in beach cleanups can be complicated to recycle, as it's often contaminated by barnacles and seaweed. Some industry members welcome tighter regulation and enforcement of marine debris in their industry, to level the playing field between those operators who have voluntarily controlled plastic pollution and those who are giving the industry a bad reputation.

POLYSTYRENE FOAM

Many participants mentioned that polystyrene foam (known under the trademark name Styrofoam™) makes up a large proportion of marine debris. Polystyrene foam has been used as flotation for docks, floats, aquaculture facilities, and other marine infrastructure but breaks up easily in the marine environment into small pieces that can be ingested by wildlife and contribute to microplastics pollution. Combined with tiny pieces of plastic, polystyrene foam is the most common form of garbage found during the Great Canadian Shoreline clean-ups. Industry is moving towards alternatives to unprotected polystyrene docks; however, legacy issues of exposed Styrofoam™ remain even as new ones are being installed. The aquaculture industry alone has over 400 floats made from exposed Styrofoam™ that would need to be replaced and recycled in the coming years.

OTHER ISSUES RAISED THAT ARE OUTSIDE THE SCOPE OF THE REVIEW

Several participants highlighted single use plastics, including plastic bottles, straws, and plastic bags as a major source of marine plastics; however, single-use plastics are mostly from land-based sources and fall outside of the mandate of this work. In July, the Province released the *Plastics Action Plan – Policy Consultation Paper* and has been engaging on developing new policy options for single-use plastic items. Additional details on that process can be found at: *https://cleanbc.gov.bc.ca/plastics/*.

Microplastics are another major issue raised in the review. They result from the breakdown of marine debris such as single use plastics, ghost gear, and polystyrene foam. Microplastics may also absorb contaminants and introduce them into the food chain. Sewage was also identified as a source of microplastics, but being land-based, sewage is outside of the scope of the project.

What caused the problem

LACK OF OPTIONS FOR DISPOSAL AND RECYCLING

One of the main challenges to addressing both abandoned vessels and marine debris cited by many participants was the lack of options for disposal or recycling of vessels and marine debris, particularly polystyrene foam. Participants explained that vessel owners who wished to properly dispose of their boats had difficulty finding affordable local options. Those engaged in beach clean-ups described the challenge of transporting, sorting, and disposing of marine debris. Participants mentioned:

- *There are no recycling facilities available for fibreglass; as a result, vessel hulls are broken up and most materials are landfilled with less than 15% of the materials being recycled.*
- *Although a limited federal vessel removal program has removed some boats, it is not available for problem structures such as dock wreckage or abandoned boats on land. New disposal options have not been created.*
- *Many landfills will not accept polystyrene foam or fibreglass boats that are not broken down.*
- *Lack of capacity for foam recycling can seriously disrupt recycling efforts for shoreline clean up organizations.*
- *Netting used in aquaculture is very difficult to recycle; the nylon portions have some salvage value, but they need to be cleaned to be accepted for recycling.*
- *There are not enough facilities for garbage disposal or recycling of materials from private vessels when they reach the shore.*
- *Most large commercial metal vessels are not being dismantled and recycled in B.C. due to lack of boat breaking options and the cost of labour. These vessels are instead exported.*
- *There is a lack of sorting centres for marine debris; one marine debris sorting centre run by Ocean Legacy Foundation handles most marine debris in the Province.*
- *There is no formal retrieval program for fishing gear. Fisheries and Oceans Canada announced funding to find and retrieve ghost gear from the ocean and dispose of it properly; however, additional details of the funding are not yet available.*

ECONOMIC BARRIERS TO DISPOSAL AND RECYCLING

From a business perspective, participants described many obstacles to establishing recycling facilities for old vessels and marine debris, including:

- *Low economic value in the materials found in smaller boats (unlike the steel found in commercial vessels);*
- *Low quality of degraded ocean plastics, and inconsistent supply;*
- *High labour costs in B.C.;*
- *The potential for hazards such as asbestos or lead, and the special tasks involved in decommissioning vessels, e.g. removing hidden potential contaminants such as piping sludge and tank sludge;*
- *Few technical options for the recycling of fibreglass;*
- *Difficulty securing insurance for salvage/removal operations;*
- *Lack of capacity in current shipyards to take on ship breaking in addition to ship building and repair; and,*
- *Disposal and recycling work would need more government support, as it is not currently financially viable on its own.*

LACK OF FUNDING, INFRASTRUCTURE, AND WORKFORCE

Most of the examples of shoreline clean-up programs described by meeting participants were undertaken by non-profit organizations supported by volunteer labour. Groups highlighted the following challenges:

- *There is a lack of paid workers, or funds, to undertake marine debris clean-up.*
- *The amount of money available from Transport Canada for the removal of abandoned vessels is small relative to the scope of the problem.*
- *The supporting infrastructure is lacking; for example, even when marine debris has been collected through shoreline clean-ups, transporting the debris and finding recycling and disposal options can be overwhelmingly complex and costly.*
- *Addressing ghost fishing gear and sunken vessels is very technical, specialized, and potentially dangerous work, particularly in areas with rough weather.*

CRITIQUES OF REGULATIONS AND ENFORCEMENT

Several issues consistently came up during meetings: there is a confusing patchwork of regulatory authority; inadequate collaboration across levels of government; inadequate enforcement of both provincial and federal regulations; and several gaps that are contributing to the problems of abandoned vessels and marine debris. For example, groups mentioned:

- *If an abandoned vessel is moved to land, it is no longer eligible for Transport Canada funding for its disposal.*
- *Boats cannot be removed until they are abandoned, rather than before the abandonment occurs (but the risk is evident). Once a boat is abandoned, it can be very difficult to identify and locate the owner.*
- *Enforcement of vessel licensing requirements is incomplete. The Royal Canadian Mounted Police (RCMP), Fisheries and Oceans Canada and the Canadian Coast Guard have only a handful of employees patrolling the coast.*
- *Pleasure craft vessel licensing participation is low compared to commercial vessel registration, with many owners choosing not to license their pleasure craft in order to avoid sales tax.*
- *Removing a fishing net from the ocean is technically considered 'fishing', which has been a barrier for volunteers removing ghost gear, particularly in areas where fishing is not allowed.*
- *Enforcement authorities do not have the ability to look up boat ownership in real-time, making it challenging to enforce boat licensing requirements and find owners.*
- *There are too many rules and agencies involved in removing abandoned vessels; for example, a vessel sank in Stevenson Harbour while the paperwork was being completed to remove it.*

Participants noted that often if the problem is dealt with in one location (e.g. through an RCMP patrol), the problem may shift to another location due to gaps in regulation and challenges in coordination across regulatory authorities. It was also pointed out that marine debris coming from outside Canada cannot be easily addressed.

Summary of potential solutions

Multiple overlapping jurisdictions and mandates of federal, provincial, and local government combined with a lack of oversight and comprehensive approaches have created a complicated and complex patchwork that is hard to navigate. Participants identified the need for greater coordination between jurisdictions in order to address the problems of abandoned vessels and marine debris.

PLANNING AND INTER-JURISDICTIONAL COOPERATION

Many groups identified the need for greater cooperation among all levels of government and agencies responsible for addressing abandoned vessels and marine debris, including federal agencies, provincial agencies, Indigenous Nations organizations, municipalities and regional districts. A few groups recommended that a first step should be the development of a coast-wide strategy, or strategy for the Salish Sea. According to the participants, such a strategy could include marine zone plans, analogous to land use plans, and be enacted through supporting legislation.

Several participants felt that the best way to address challenges with coordination across regulatory authorities would be to make changes to those authorities such as:

- *The Province taking control of the seabed where Port Authority does not exist;*
- *Making it possible to get a purchase order to remove a boat when it's at risk, as is the practice in Washington State;*
- *Developing strong best practices for new and renewed foreshore structure leases using the latest information on the impacts of sea level rise and storm surges; and,*
- *Developing a regional-wide 'license of occupation' to prevent boats from moving from a jurisdiction where there is a municipal license of occupation to one that does not.*

INCREASE DISPOSAL AND RECYCLING CAPACITY

Many participants recommended that the province provide options for recycling or disposing of vessels and marine debris, at multiple locations coast-wide. They suggested that the province could do this by supporting the development of ship-breaking and recycling businesses in coastal communities. Other examples include: better plastic and battery recycling and garbage disposal options at small craft harbours; more options for disposal for gear found on beaches; and more options for fishers who have retrieved lost gear offshore to dispose/recycle it. Several groups emphasized the need to make proper disposal/recycling easier, and that the closer these options are found to ports, the more likely they are to be used.

In order to address some of the more difficult-to-recycle materials, participants recommended that the Province investigates new technologies and new end uses for these materials, providing examples from around the world. For example, participants recommended that the Province:

- *Invest in emerging technologies in fibreglass recovery and recycling;*
- *Investigates the use of recycled fibreglass in concrete;*
- *Examine gasification and/or pyrolysis to break down waste and generate electricity; and,*
- *Support the use of nylon in recycled products.*

ENABLE GOVERNMENT-FUNDED PROGRAMS

Many groups suggested that the province should fund and/or directly undertake removal of abandoned vessels and marine debris. Suggestions included:

- *Granting programs for regional districts for vessel removal;*
- *Funding or conducting shoreline and debris clean-ups, with more of a focus on remote locations;*
- *Funding or conducting sunken vessel and debris clean-up, including removal of ghost fishing gear; and,*
- *Investing money in Indigenous capacity as part of a long-term planning approach.*

Participants identified economic or policy tools to fund clean-up or prevent the problem at its source. These include requiring securities to cover the cost of clean-up when aquaculture tenures are issued, a tax or deposit on aquaculture equipment, a fine on abandoned vessels, using vessel registration and/or moorage fees, and a surtax on marine fuel sold in Canada.

Washington State's successful abandoned vessel prevention and response program has been operating for almost 15 years. It includes a vessel turn-in program to help prevent boats from being abandoned and potentially harming the environment and water quality, and threatening public safety. As there is a lot of interest in the program, the State prioritizes the vessels that are a biggest threat to the environment. The program is primarily funded through vessel registration fees. Although fees were increased in recent years, the boating community has tolerated these user fees because revenues are used to support abandoned vessel removal and prevention.

PILOT A VESSEL TURN-IN PROGRAM

Among the specific ideas for government-funded programs, many groups supported the idea of a vessel turn-in program (i.e. modelled on the successful B.C. vehicle 'cash-for-clunker' program) that would give boat owners an affordable way to deal with the boat at the end of its life rather than abandoning it. Local governments volunteered to be the pilot location for the program. The vessel turn-in program in Washington State was referenced as a good example to consider.

IMPROVE VESSEL LICENSING

Improving the effectiveness of vessel licensing was a common theme during discussions. Many groups asked that pleasure craft licensing be more stringent and should be associated with a fee to support vessel disposal. For example, groups recommended:

- *That an annual licensing fee could be used to fund disposal of old boats.*
- *That boaters could be required to register annually. The program in Washington state was cited as a good example of how this could work.*
- *Licensing requirements could be expanded to smaller vessels that are currently excluded.*
- *Licensing could be modelled after All Terrain Vehicles under the Off-Road Vehicle Act.*
- *Changes of ownership should be better tracked; the obligation should be on the seller to report.*
- *Enforcement of licensing requirements to prevent abandonment should be increased.*
- *Enforcing agencies should have access to the pleasure craft license database.*

Participants emphasized that licensing programs should be fair to all vessel owners, and could include incentives (for example, a fee reduction for insurance, or funding for more boat launches/ shoreline cleanups). Participants emphasized that they would like a level playing field for all vessels instead of the current system which includes some lifetime licenses and some that require renewal every 10 years. They also emphasized that pleasure craft funds should be used to address abandoned and wrecked pleasure crafts and not to subsidize the clean-up of commercial vessels.

IMPROVE PRIVATE MOORING

Despite the fact that moorage is a federal responsibility, several groups asked that the Province establish regulation and enforcement for private mooring buoys in order to reduce the abandonment of boats. A few different approaches were recommended, including:

- *A short-term moratorium on private mooring buoys, with over the longer term, the creation of a licensing scheme, and infrastructure requirements, including sewage pump-outs;*
- *Charging a fee with a time-limit for anchorage;*
- *Enforcement of foreshore leases associated with all anchorages and mooring;*
- *Expanding of the enforcement of the land act to apply to private mooring buoys, which would be allowed only if installed and used by owner;*
- *Applying an allocation and approval process for commercial mooring buoys; and,*
- *Enforcing and improving foreshore regulation to keep anchorage areas free for refuge (e.g. Boaters with motor troubles, safety from weather).*

PREVENT MARINE DEBRIS AT THE SOURCE

In order to get to the root of the problem of marine plastics and debris, several groups recommended phasing out the use of single use plastics, increasing recycled content of materials, and banning the use of certain materials, such as Styrofoam™, in the marine environment.

With respect to fishing and aquaculture gear, participants recommended:

- *Creating new requirements for the use of gear that is more durable, contains more recycled content, or is more recyclable;*
- *Creating a tagging system for aquaculture gear as a condition of licensing; fishing gear labelling programs; annual net collection programs; mandatory reporting of lost fishing gear; and a deposit on nets; and,*
- *Ensuring that any prevention measures be coupled with clean-up programs to remove sunken gear due to the legacy issue from earlier gear loss.*

One participant noted that it can be hard to make enough income on fishing alone, and that adding a collection program such as a barge-based annual collection system for nets could provide an economic development opportunity.

INCREASE EDUCATION AND OUTREACH CAMPAIGNS

Participants highlighted the need for awareness campaigns that would tackle the problems of abandoned vessels and marine debris. They suggested the use of photo, video, text, and social media campaigns, and working with private enterprises on joint campaigns. Several groups pointed to successful existing campaigns, and emphasized the importance of educating boaters, business, and youth. When the disposal options are clear, education can be very effective; participants pointed to Boating B.C.'s education campaign which has reached 13 million people in the Province.

Success stories

Many success stories were shared by members of the public. Highlights include:

- *Shoreline clean-up programs. Many of these are led by environmental non-profit organizations (ENGOs) staffed largely by volunteers (e.g. Great Canadian Shoreline Clean-ups; Living Oceans Society; Surfrider; Association of Denman Island Marine Stewards; B.C. Parks' partnership with Living Oceans Society in Cape Scott Provincial Park; B.C. Marine Trails; and, Clayoquot CleanUp).*
- *Licensing and abandoned vessel recycling programs from other jurisdictions, particularly in the United States. Although the States have more jurisdiction over vessels and the marine environment that the Provinces do, there are still learnings that can be shared.*
- *Innovative projects using materials from waste plastic or old fibreglass vessels in new or inventive applications, for example in composite lumber or concrete or gasifying waste to create alternative fuel.*
- *Adoption of best practices to reduce marine debris in the absence of regulation: for example, by installing catch-basins with oil-water separators on-shore; using plastic-encapsulated foam for dock construction; adopting a new aquaculture system for oysters to make gear last longer and prevents gear loss; increasing the re-use of materials in aquaculture operations; the Vancouver Aquarium's program to reduce plastics in its operations. Green certification programs can support these initiatives.*
- *Ghost gear retrieval programs, such as the Northwest Straits Foundation which has removed 5,800 fishing nets to date and Emerald Sea Protection Society's work with the Global Ghost Gear Initiative.*
- *Projects researching or tracking waste and pollution, e.g. Oceanwise's pollution tracker; Great Canadian Shoreline Clean-ups Dirty Dozen List; Oceanwise's joint research with Metro Vancouver and apparel companies on the source and fate of microplastics.*
- *Federal, provincial and local governments and port authority initiatives, such as the Transport Canada Abandoned Boats Program; B.C. Parks mooring buoys/arrangements with local communities to create anchorage zones; Nanaimo Port Authority's sunken vessel retrieval; the Capital Regional District's partnership with the Dead Boats Disposal Society, partially funded through the federal Abandoned Boats Program, to remove abandoned boats.*
- *Education campaigns including documentaries, social media, and texting campaigns, and emphasizing outreach to schools (e.g. Kids for a Plastics Free Canada and Boating B.C.).*

Thank you!

Coastal community visits, conversations, and communications received last summer provide a rich depth of information and a breadth of ideas for addressing abandoned vessels and marine debris. Many coastal organizations have been taking the initiative to tackle clean-up and to implement measures to reduce debris at its source. Overall, many success stories were identified and there was a high degree of convergence across organizations in how to further address the problem of abandoned vessels, marine debris, and marine-sourced plastics. Problems were characterized; challenges and obstacles were described; and potential solutions were recommended.

Meeting participants identified numerous ways in which the Province could act within its jurisdiction, and collaborate with other jurisdictions, to solve the problem of abandoned vessels, marine debris, and marine plastics. Five consistent themes emerged: provide dedicated funding, enhance prevention and reduction, increase recycling and disposal, tighten regulations and enforcement and foster education and outreach.

Parliamentary Secretary for Environment Sheila Malcolmson sincerely appreciates the time and effort devoted by many organizations and individuals to engage on abandoned vessels, marine debris, and marine plastics. The input provided will be integrated into recommendations that will be submitted to the Honourable George Heyman, Minister of Environment and Climate Change Strategy.

Appendix 1: Terms of Reference

The terms of reference for Parliamentary Secretary Malcolmson's work were to:

- *Make recommendations for a provincial action plan, in co-ordination with the federal government, to eliminate the environmental threats caused by abandoned vessels including but not limited to:*
  - *Building on existing work and partnerships, collaborate with the federal government on potential development of a boat-licensing program to aid enforcement of regulations for the management of abandoned boats;*
  - *The feasibility of an environmental stewardship program to manage the end-of-life recycling of boats and marine infrastructure, as well as fibreglass and other elements of abandoned boats;*
  - *The feasibility of a "cash for clunkers" program for abandoned vessels or those at the end of their useful life; and*
  - *What lessons can be learned from the Washington state program for this problem.*
- *Make recommendations for provincial action to curb the disposal of plastics in the marine environment.*

Appendix 2: Process for Meetings

In addition to the direct engagement meetings held by the Parliamentary Secretary, staff level meetings were conducted by Ministry of Environment and Climate Change Strategy (ENV) staff and interested parties. Email submissions were also invited via ENV's website (*gov.bc.ca/MarineDebrisProtection*) from the beginning of July 2019 through September 6, 2019. The meetings were targeted within coastal British Columbia and the assignment timeline was very short so full province-wide consultation could not be undertaken. Consultation on specific actions may be required during the implementation phase.

Groups participating in meetings were asked a series of questions which included:

- *On the subject of abandoned vessels, what involvement would you like to see from the Province (e.g. vessel licensing, boat dismantling infrastructure, vessel turn-in program or funding)?*
- *When looking at boat (and marine debris) recycling, what could the Province do to advance this and find new solutions?*
- *On average, how much of your operational time is spent on abandoned vessels (and marine debris)?*
- *When thinking more broadly on marine debris, what kind of awareness campaigns do you think would be the most successful? or: When thinking more broadly on marine debris, what other materials should be targeted in the prevention/reuse side?*
- *What success stories do you wish to share?*
- *What barriers do you see to finding solutions?*
- *What is the single most important thing that you think the B.C. Government can do to improve the situation to create lasting solutions?*

Approximately 40 organizations met directly (in person or by phone) with the Parliamentary Secretary and/or ENV staff. Many of these organizations provided additional information such as summaries of their recommendations, reports, presentations, and suggestions of other parties to engage to inform the Parliamentary Secretary's work. In addition, roughly 20 submissions to the Marine Debris Advisor e-mail address are reflected in the relevant sections of this report.

Appendix 3: Organizations involved in direct meetings

ORGANIZATION	WEBSITE
Association for Denman Island Marine Stewards	www.adims.ca
BC Ferries	https://www.bcferries.com/
BC Marine Parks Forever Society	https://www.bcmpfs.ca/
BC Shellfish Growers Association	http://bcsga.ca/contact/
Boating BC Association	https://www.boatingbc.ca/cpages/home2
Canadian Parks and Wilderness Society	https://cpaws.org/
Capital Regional District	https://www.crd.bc.ca/
Council of BC Yacht Clubs	https://www.cbcyachtclubs.ca/
Dead Boat Disposal Society	https://www.facebook.com/DBDSBC/
Fisheries and Oceans Canada	
District of Sechelt	https://www.sechelt.ca/
District of Tofino	http://www.tofino.ca/home
District of Ucluelet	https://ucluelet.ca/
Emerald Sea Protection Society	https://www.emeraldseasociety.ca
First Nations Fisheries Council	https://www.fnfisheriescouncil.ca/
Global Ghost Gear Initiative	www.ghostgear.org
Indigenous Zero Waste Technical Advisory Group	
Islands Trust	http://www.islandstrust.bc.ca/trust-council/advocacy/marine-environment/abandoned-and-derelict-vessels-advocacy/
Kids For a Plastic Free Canada	https://www.facebook.com/plasticfreekids/
Marine Recycling Corporation	www.marinerecycling.ca
Nanaimo Port Authority	https://portauthority.npa.ca/en
National Marine Manufacturers Association	https://www.nmma.ca/
Nuu-chah-nulth Tribal Council	https://nuuchahnulth.org/services/education
Oak Bay Marine Group	https://obmg.com/contact-us/
Ocean Legacy Foundation	https://oceanlegacy.ca/
Ocean Watch Task Force	http://oceanwatch.ca/howesound/

Appendix 3: Organizations involved in direct meetings (*continued*)

ORGANIZATION	WEBSITE
Pender Harbour and Area Residents Association	https://www.phara.ca/
Plastic Oceans Canada	https://plasticoceans.ca/
Ralmax/Salish Sea Industrial Services Ltd.	www.ralmax.com
RCMP West Coast Marine Services	
Sea Grant Washington	https://wsg.washington.edu/
Seaspan	https://www.seaspan.com/
Shift Environmental	https://shiftenvironmental.com/
shíshálh Nation (Sechelt)	https://shishalh.com/
Sunshine Coast Regional District	https://www.scrd.ca/
Surfrider Pacific Rim Chapter	https://pacificrim.surfrider.org/
Transport Canada	
Tsehum Harbour Task Force	
Tsleil-Waututh Nation	https://twnation.ca/
Ucluelet Aquarium	https://uclueletaquarium.org/
Union of BC Municipalities	https://www.ubcm.ca/
Vancouver Aquarium/Oceanwise	https://www.shorelinecleanup.ca/
Vancouver Island Marine Debris Working Group	https://www.bcmarinetrails.org/77-bcmtna-news/2658-vancouver-island-marine-debris-working-group
Vard Marine Inc.	https://vardmarine.com/
Washington State Department of Natural Resources	https://www.dnr.wa.gov/derelict-vessels
West Coast Environmental Law	https://www.wcel.org/

Appendix 4: Summary of issues raised by different parties

The below table provides an at-a-glance summary of the problems, challenges, and potential solutions raised by different parties during direct engagement meetings.

	GOVERNMENT	INDUSTRY	ENGOS*	CITIZEN GROUPS	BOATER GROUPS
PROBLEM					
Abandoned vessels	X	X		X	X
Mooring buoys	X			X	X
Ghost fishing gear	X		X		
Aquaculture debris		X	X	X	X
Polystyrene foam	X	X	X	X	X
PROBLEM – OUT OF SCOPE					
Single use plastics			X	X	
Sewage/Microplastics in sewage	X	X		X	
CHALLENGES					
Lack of options/economic challenges for disposal/recycling	X	X	X	X	X
Lack of funding, infrastructure, and workforce	X	X	X	X	
Critiques of regulations and enforcement			X	X	
SOLUTIONS					
Planning and inter-jurisdictional cooperation	X		X	X	X
Provide disposal and recycling options	X	X	X	X	X
Province-funded programs	X	X	X	X	X
Vessel turn-in program	X	X			X
Vessel licensing	X			X	X
Private mooring	X			X	X
Addressing marine debris at the source			X		X
Education and outreach campaigns		X	X	X	X

**(Environmental Non-Governmental Organizations)*


BRITISH
COLUMBIA