LIVING OCEANS
Rising Tide
Fall 2017

Salmon Farms: Progress, at Last!

Living Oceans has worked to get salmon farms out of the water for nearly 20 years. We've never been closer to that goal than we are right now!

A constellation of factors has lined up in our favour. The Strategic Salmon Health Initiative is making rapid strides toward proving what diseases are being transmitted from farms to outmigrating juvenile salmon. Soaring costs for salmon farmers, for feed and treatment chemicals, combined with chemical resistance developing in sea lice, has forced the global industry to look to alternatives to open netpen culture. First Nations in B.C.'s Broughton Archipelago have occupied salmon farms, demanding their removal from traditional territorial waters. At the same time, they've taken shocking video of the conditions inside the netpens, proving once and for all that farmed fish are predating on juvenile wild fish, especially herring; and that disease is far more common than we've been led to believe.

Add to all of these factors two governments with a commitment to repairing their relationships with First Nations and to making science-based decisions and we have the best scenario for change that we have ever seen.

Two of B.C.'s NDP cabinet ministers (Claire Trevena, Scott Fraser) helped author the 2009 Special Committee report on aquaculture that recommended government incentives and legislation to require farms to transition to closed containment. The Premier has taken the first step toward clarifying the muddle of conflicting scientific advice, by ordering a review of the Animal Health laboratory, where diagnostic technique and public communications from the Provincial veterinarian have been the subject of controversy for over a decade.

Federal Fisheries Minister Dominic LeBlanc is not only listening, but has taken active charge of the file.

The technology for land-based closed containment aquaculture has been used by all the major salmon farming companies for years to grow fish through part of their life cycle. Increasing problems with sea lice and disease have led them to leave the fish in recirculating aquaculture systems (RAS) for longer periods. But it was right here in B.C., at Kuterra, that the technology was pioneered for the purpose of growing the fish to market size. Conceived as a pilot project, the Kuterra farm is now producing top-quality market-sized salmon that attract the highest sustainability rating. This has translated to a substantial premium in the marketplace as well, with the product selling for an average 59% more than netpen salmon over the past 3 years.

Global trends are fueling intense research and development efforts in RAS. Norway is of course leading the charge: it is there that the major farming corporations are headquartered and there that the control of sea lice and disease is taking its largest toll on their bottom line. The government has stepped in with incentives, including R & D licences that are free for up to 15 years and convertible to commercial licences at a fraction of the cost of conventional licenses. They're investing directly in research as well. Both the European Union and the United Nations Food and Agriculture Organization are operating 'blue growth' programs, designed to encourage the implementation of sustainable forms of aquaculture.

Living Oceans has been working with Wild Salmon Forever and a group of experts to prepare a detailed brief on the opportunity for B.C. to capitalize on its aquaculture industry assets by becoming a leader in land-based closed containment.

Salmon Science and the Vocal Veterinarian

Dr. Kristi Miller Saunders and colleagues at the Strategic Salmon Health Initiative (SSHI) published last December, indicating that they had made a positive diagnosis of Heart and Skeletal Muscle Inflammation (HSMI) on fish sampled from a B.C. salmon farm. The SSHI proved that there is a statistical correlation of the disease with the piscine reovirus (PRV); and shortly thereafter, Wessel et al proved that the virus, PRV, causes the disease, HSMI. These are important developments because 80 per cent of B.C. farmed Atlantic salmon carry the virus and the disease it causes can be lethal to Pacific salmon. The federal government continues to permit the introduction of diseased smolts to the marine environment. It is not known how long this virus has been present in B.C. waters; but it is clear that it is a Norwegian strain that was discovered here.

Dr. Gary Marty, in his role as provincial veterinarian, has been in charge of diagnostics for the fish health program at B.C.'s Animal Health laboratory since about 2004. For years, he observed cases of heart lesions that are diagnostic of HSMI but did not make that diagnosis. When faced with the findings of the SSHI, Marty advised that he believed he required the salmon farm's veterinarian to report "clinical signs of disease" before he could make that diagnosis. The thing is, he seems to be the only scientist in the world who requires such corroboration. And he required the corroborating evidence to be self-reported by the very industry that he is helping to regulate.

It's not the first time that diagnostic technique at the provincial lab has come under scrutiny. During the Cohen Commission, it was the diagnosis of Infectious Salmon Anemia (ISA) that was questioned and it appeared the provincial lab was again using a technique different from international standards. ISA is also lethal to wild Pacific salmon and perhaps more to the point, its detection leads to closure of borders to trade. For an industry that exports 85% of its product, such a diagnosis would be disastrous.

Dr. Marty has frequently appeared as an expert witness on behalf of the salmon farming industry and has been quick to publish his conclusion, post-Cohen, that salmon farms pose no more than a minimal risk to wild salmon. That conclusion was publicly criticized by eight eminent scholars for "several errors of interpretation and a selective use of the literature that we believe lead to a biased conclusion that farmed salmon pose minimal disease risks to wild salmon in BC."

One of the errors noted in the critique was this assertion by Marty: "Less than 1% of BC farmed Atlantic salmon die of diseases that might be infectious to wild Pacific salmon. Among the other 99% of farmed salmon, 90% survive and 9% die of other causes." If you happen to be the pathologist in charge of diagnosing the cause of death, you might feel fairly confident about making this statement, if it were confined to "less than 1% of the fish I examined". But total mortality on salmon farms is an order of magnitude higher than Marty indicated; and the cause of death is not established for most of those fish.

We were accordingly extremely pleased to hear that the provincial government is conducting a review of Dr. Marty's lab. It is critical to know that the most up-to-date techniques are being used to diagnose salmon diseases and that the results of examinations are being fully and fairly communicated to regulators and the public. We congratulate Minister Popham and Premier Horgan on taking the initiative to ensure that the science on which they base their regulatory decisions is free of industry bias.

Karen Wristen, Executive Director of Living Oceans and Stan Proboszcz, Science Director at Watershed Watch Salmon Society, met with Agriculture Minister Lana Popham to discuss land-based closed containment for B.C. aquaculture.

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Living Oceans is working to ensure the long-term health of the ocean and coastal communities of Canada. We believe that people are part of the environment and that we can build sustainable communities by protecting coastal ecosystems today.

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They Can Run, But They Can't Hide

Living Oceans will be exploring new applications of DNA technology to detect escaped farmed salmon in B.C. rivers. Environmental DNA (eDNA) analysis of water samples from suspect rivers will prove which ones are harbouring Atlantic salmon.

We know where to look. We've known for years that escaped Atlantics tend to favour rivers with a high diversity of native Pacific salmon. The recent escape of some 300,000 Atlantics from a Cooke Aquaculture farm in Washington State reconfirmed this: there have been reports of Atlantics coming in from many of the salmon rivers of Vancouver Island.

Back in 2014, we told you about a new study published by Drs. Alina and Jason Fisher and John Volpe, analysing the results of 3 years of systematic snorkel surveying of 41 B.C. rivers. Accounting for imperfect detection of escapees, occupancy dynamics models predicted over half of those rivers to have Atlantics present. Moreover, 97 per cent of the rivers with high native salmon diversity harboured Atlantics.

The fact that escaped farm stock favour the same rivers as our native salmon lends credibility to the anecdotal evidence from fishermen who say they've caught Atlantics with bellies full of salmon eggs. The Atlantics may prey on the eggs or juvenile Pacific salmon and, if they are present in sufficient numbers to spawn, they may also compete for spawning grounds.

Dr. Volpe found Atlantics reproducing successfully in 3 of the rivers he studied when he did the field work for this study, back in the late 1990's. Since then, the Department of Fisheries and Oceans has devoted next to no effort to finding out just how invasive Atlantic salmon are. The Atlantic Salmon Watch programme, that accepts reports from fishermen, was closed down for years. DFO reports that in 2011 and 2012, it conducted "extensive field work" in 12 streams without seeing a single Atlantic salmon. But if you actually read the report, you'll find that the field work engaged staff who had never before performed a snorkel survey or identified an Atlantic salmon and put them in the rivers at the same time as the native salmon were returning by the thousands.

DFO will excuse its lame effort by pointing to the extraordinary reduction in the number of escaped Atlantic salmon reported by industry since 2010—the numbers have plummeted from annual highs of as much as hundreds of thousands, to single digits. What's remarkable about that is how it was achieved with no apparent change in technology, right at the time when DFO took over management of B.C. aquaculture from the Province. A close look at the reporting requirements provides a different perspective: while the Province required farms to report all escaped fish and audited those reports against stocking and harvest counts, DFO requires a farm to report when there is "evidence of an escape". Suddenly, instead of 'escapes', we have 'trickle losses' and 'poor performers' who apparently escape without leaving an evidence trail and so, do not need to be reported.

Our new study will help establish the extent of migration of the Cooke Aquaculture escapees, providing new insight into the behaviour of fish during a mass escape. A second round of eDNA testing in the spring will identify rivers in which Atlantics successfully spawned. For those rivers with positive signals in both winter and spring, we'll mount our own "extensive field work" and see what we can find.

You can help support this work with your donation or as a volunteer. Donate online at www.livingoceans.org/donate or call us at 250-973-6580 to volunteer.

Marine Protected Areas: The Key Word is "Protected"

Living Oceans is thrilled that the federal government has renewed its commitment to meet targets for marine protected areas, but cautious about the progress that's being made.

The Scott Islands marine National Wildlife Area is one that we are especially keen to see done properly—this is our back yard and a critical area for seabirds, fish and marine mammals. It has progressed along the administrative path toward establishment, but the science and the protections required to make it an effective MPA are lagging far behind.

The area is riddled with oil and gas licences that must be cancelled. There is no management plan proposing mitigation measures for the shipping and fishing that take place within its boundaries. And we can't even be sure that the boundaries are adequate to protect all of the seabird species that it is meant to protect.

Living Oceans recently joined with marine conservation colleagues to set out its position on the MPA to Fisheries and Oceans Canada. Our letter states in part that,

"The area should not be counted towards Canada's Marine Conservation Targets until the federal government has finalized their approach on minimum standards for marine protected areas, in accordance with international standards, and these standards are met within the Scott Islands mNWA."

The government currently plans to gazette the regulations and designation of the MPA in December.

What's Behind The Label?

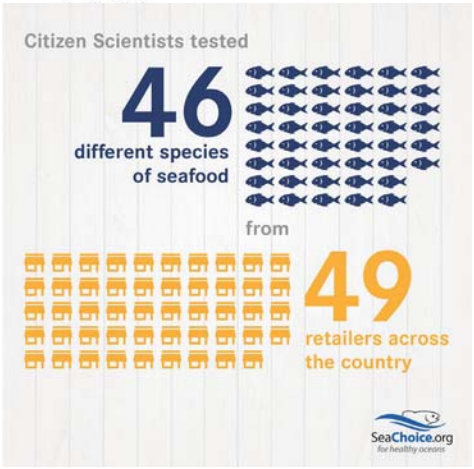
Eco-labels are now commonplace at our local supermarket seafood counters and on restaurant menus. While the rise in demand for sustainable seafood is indeed positive progress, are these eco-certifications' processes credible and leading to genuine improvements in our Canadian fisheries and fish farms? This is the question Living Oceans and our fellow SeaChoice member groups dived into with the recently released report, What's Behind the Label? Assessing the Impact of MSC and ASC Seafood Certifications in Canada.

Two of the most prominent eco-certifications are the global Marine Stewardship Council (MSC) and Aquaculture Stewardship Council (ASC). Eighty per-cent of Canadian fishery landings by value are MSC-certified. Approximately a quarter of B.C. active Atlantic salmon farms are ASC-certified, and the industry has committed to certifying 100 per cent of farms by 2020.

All Canadian MSC certified fisheries have received conditional certifications, with an average of six conditions per certification. Conditions are imposed where fishery improvements are required and are supposed to be met within the five-year certification period. Despite these conditions, our analysis found little change to fishery practices on the water, to directly improve their impacts on habitat, non-target species and ecosystem function. We found significant timeline extensions and flexible interpretations of the application of Standard requirements.

Meanwhile, the younger programme, ASC, was found to be at risk of lowering its sustainability bar to accommodate current industry practices. We found the Standard's claim of '100% compliance in order to be certified' to be misleading. In practice, salmon farms in British Columbia regularly have non-conformities (akin to MSC's 'conditions') raised and rely on variances to the Standard criteria to be certified. This has resulted in B.C. farms with sea lice levels more than 60 times the Standard threshold being certified.

We also found that auditors were routinely excluding up to a year of the production cycle from their audits, with the result that chemical use scores and other data can be mis-stated, allowing farms to be certified where they actually fail to meet the Standard.



The ASC's suspension and revocation rules for farms that violate the Standard after they are certified were also found to be inadequate. For example, a certified farm that experienced 7 sea lion deaths (5 above the Standard threshold), a breach that would have disqualified the farm from initial certification, has twice successfully harvested and entered the market with the ASC certification.

If current trends in eco-certification continue, the concerns identified in What's Behind the Label will undermine efforts to improve the sustainability of Canadian fisheries and farms. They could also threaten the credibility of the MSC and ASC eco-labels.

Read our report at: http://www.seachoice.org/whats-behind-the-label

Best Practices or Excluding the Worst?

Salmon Farms to Dramatically Increase Chemical Use under new Proposal by ASC Eco-label.

Credible eco-certifications have robust environmental standards. If they are too lenient, companies can be certified for simply doing business as usual, while gaining a green sheen and premium market prices to boot. Meanwhile, unsuspecting consumers rely on the eco-label and are none the wiser.

Living Oceans worked with SeaChoice partners to produce a report on the leading eco-labels, Aquaculture Stewardship (ASC) and Marine Stewardship (MSC). In our What's Behind the Label report, we show that the ASC is at risk of lowering its sustainability bar to accommodate industry. A prime example is the recent proposal by the ASC to dramatically increase the number of sea lice chemical treatments allowed under their Salmon Standard. On behalf of SeaChoice, Living Oceans reviewed and analyzed the proposal. We found serious flaws and concerns.

First, the proposal would allow for an increase of up to 450% in pesticides, known as parasiticides, from the Standard's current requirement (depending on the region). The threshold for B.C. salmon farms, 4 treatments per cycle, is 233% higher than industry typical best practice (claimed to be 1.2 treatments). Right now, farms can only treat 2-3 times per cycle to maintain certification; this proposal would allow farms applying as many as 11 chemical treatments to be certified.

The proposal introduces a 'conditional' certification approach. Globally, some salmon farming regions would have more lenient requirements than others, with an aspirational 'global target' defined as 4 sea lice treatments per cycle. Based on a realistic worst-case scenario, it would take a Chilean farm up to 15 years to reach the 'global target' and throughout that period, it could use the ASC logo on its product.

Even if these conditional certifications were successful in reducing treatments per cycle eventually, the overall increase in parasiticide use coupled with expansion of the industry is likely to outpace the small gains made by certified farms over the next decade and beyond.

Additionally troubling is the removal of measures to protect lobsters from negative impacts of sea lice chemicals, despite the many scientific studies that show some parasiticides are highly toxic to lobsters.

The ASC's shift from certifying best practices to an 'excluding the worst' approach suggests the scheme is willing to lower the expected level of performance in order to increase the number of certified salmon farms. Certainly, the pressure from the industry is there to do so – more than half of the global salmon farming industry has pledged ASC certification by 2020 (including the entire B.C. industry). Living Oceans will continue to push for the ASC to lift their sustainability bar, not lower it.

The table below illustrates the ASC's proposed increase in parasiticide use by region:

Region/Country	Current treatment frequency allowed under the Salmon Standard	Proposed 'entry gate' treatment frequency allowance	Increase
Atlantic Canada	2-3%	8	166% - 300%
Pacific Canada		4	33% - 100%
Chile		11	266% - 450%
Faroe Islands		8	166% - 300%
Ireland		7	133% - 250%
Norway		6	100% - 200%
Scotland		9	200% - 350%

Clear the Coast 2017: A Challenging But Successful Year!

Living Oceans wound up another season of Clear the Coast in early November, sorting the last of this summer's cached marine debris for reuse, recycling or disposal. It was a rewarding week at the Seven Mile Landfill with stalwart volunteers who braved the inclement weather.

We faced more challenges than just the weather, though. Project Manager Rob O'Dea and Executive Director Karen Wristen accompanied contract trucker Dan Carter of Port Hardy to the cache site only to find that some fine citizens had pillaged the cache. Dumping out our bags to use to take the material they wanted, these characters left the roadside strewn with plastics they didn't want.

Cleaning that mess up required so much time that it was already dark and pouring rain when the trailer broke down on the return trip, still out on the logging roads, outside of cell range. Our sincere gratitude to Dan for bearing up under all of that strain!

After that, it was hardly even surprising when the recycler emailed to say that transport to the recycling centre was also cancelled. (It's all good; he re-booked.)

Our thanks to volunteers Jasper, Joe, Bill, Jodi, and Bruce for remaining cheerful through such dismal mid-November weather! Also to everyone at Seven Mile Landfill, for the space, advice and help.

In the end, we trucked only about 6 tonnes of material into the landfill, although we calculate that closer to 8 tonnes was collected by Living Oceans and the BC Marine Trails Network Association (pre-pillaging). The debris came from about 22 km of foreshore interspersed along a 100 km stretch of coast, from Grant Bay right around to Nissen Bight on the North Coast Trail.

The majority of the debris we found was post-industrial: buoys, floats, fishing nets, ship hawsers, pieces of boats, equipment including totes and pallets from fishing and aquaculture. Post-consumer plastics such as water and pop bottles made up about 1/3 of the debris collected.

The big challenge with Clear the Coast this year was the limited funding. During the previous three years marine debris removal in B.C. was substantially funded by a generous grant from the Government of Japan, which provided $1 million to Canada to deal with flotsam generated by the Tohoku tsunami in 2011. That funding was exhausted by the end of 2016, but neither the federal nor provincial government has stepped in to replace it. We are working on them.

We looked at other countries in the G-20 to see where Canada places among its peers for policy and action on marine debris. The European Union, USA, China, Russia, Japan, Turkey, Indonesia, Brazil and Australia all have plans in place, but Canada, with the longest coastline in the world, has no strategy or funding.

You can help: please write or call your local BC Provincial and Federal elected representatives and ask that they co-operate to establish a National Marine Debris Response Policy and Funding Program. Or click here, to send a letter directly to Fisheries Minister LeBlanc.

This year, the bulk of our funding for Clear the Coast came from Sitka Foundation and the Public Conservation Assistance Fund; B.C. Parks and the Johnson Ohana Foundation provided small grants as well. Gifts from our wonderful supporters allowed us to cobble together enough for a frugal approach to the project. We are very grateful for all of this support.

The frugal approach worked due to the amazing response of the Vancouver Island community:

- North Coast Trail Shuttle and Cape Scott Water Taxi assisted to set up marine debris collection stations at a number of beaches along the North Coast Trail. They also put out the word to their hiking clients, who responded by filling all of the debris stations to capacity.
- 43K Wilderness Solutions provided support for our teams setting up collection stations and helped with heli-lifts.
- Jessie Moore, our B.C. Parks area supervisor and her staff helped by transporting debris from our cache at Raft Cove.
- West Coast Helicopters reduced their bill to fit our budget.
- Victoria-based outdoor apparel company Lifestyle over Luxury volunteered to clean beaches, assist with heli-lifts, and donated a portion of sales of their products.
- BCMNTA cleaned four beaches north of Brooks Peninsula and provided volunteers to assist with heli-lifts.
- Seven Mile Landfill provided a large sorting area and waived any fees for storage, recycling or tipping.
- Dozens of volunteers gave anywhere from two days to two weeks of their time
- North Coast Trail Backpackers' Hostel cut their rates to the bare minimum for our sorting crew and were helpful beyond words when our plans went askew!

Support also came from the mainland: EcoFair encouraged their customers to support us with a dedication of 10% of each sale; Nature's Path kept our energies up with a massive donation of granola bars; and IKEA gave us dozens of their enormous shopping bags that made it so much easier to collect and carry debris to the caches.

Thank you all so much! We could never have done this without you.

Kinder Morgan Goes Rogue

Living Oceans' legal challenge to the decision to approve Trans Mountain was heard in the Federal Court of Appeal at the beginning of October, in the longest hearing of the Court's history. Our case (with co-applicants Raincoast Conservation Foundation, argued by Ecojustice) was heard together with challenges from numerous First Nations, the cities of Vancouver and Burnaby and an intervention from the Province of B.C. Even before the case was heard, Kinder Morgan began construction illegally, in advance of final route approval by the NEB.

Our argument focused on the harm the project poses for Southern Resident Killer Whales, among the many marine hazards that regulators failed to assess or mitigate. But Kinder Morgan still had more surprises in store for the whales: they were busy working to reduce the habitat of the endangered animals' main food source, the Chinook salmon.

We learned of the illegal activity through the diligence of Pipe Up, who picked up on a blog post from Kinder Morgan. The company had placed "salmon spawning deterrent mats" in rivers that it had decided to cross with trenches, rather than drilling underneath.

"When I heard that one of the rivers was in Valemount, my heart sank," said Karen Wristen. "The annual return of Chinook salmon to Valemount's Swift Creek is a popular tourist attraction; and the fish are red-listed by the Department of Fisheries and Oceans." Calls to Valemount confirmed that the returns this year were very low.

The spawning deterrent consists of laying down snow fencing over the gravel spawning beds in areas with high potential for salmon spawning, to prevent the fish from digging redds. It's only been done once or twice before and there is no science to say what impact it will have on endangered populations of salmon. The only thing certain about the use of the mats is that it stops salmon from spawning in ideal habitat.

We wrote in protest to the NEB which, although it had ordered the company to stop placing spawning deterrents, had not ordered the removal of the illegal ones, nor imposed any kind of penalty. We pointed out that, according to B.C. Oil and Gas Commission rules, they would never have been permitted to trench the rivers with red-listed fish habitat in any event: they'd have been ordered to drill under them.

Kinder Morgan replied by saying that it could not remove the mats without damaging the redds of salmon elsewhere in the river; and by the way, it would like to put some more of them down in other rivers so as to prevent any more fish from getting in their way. The protection of fish might delay their planned in-service date and jeopardize the whole project, they said.

Yes, let's run that again: "Okay, we broke the law, but if you don't let us continue to break the law, we might take our marbles and go home."

A media storm broke as virtually every environmental organization with an interest in wild salmon, whales and the ocean joined the protest.

Kinder Morgan subsequently withdrew its request to continue to mess with spawning habitat in advance of final route approval.

The NEB announced on October 12 that the whole issue was therefore moot and reminded the company to play nicely. No penalty was imposed.

Kukstsemc Warriors announced on October 31 that they had removed the mats from Swift Creek themselves. The other mats will be taken up by Kinder Morgan according to the schedule it proposed for itself.

Southern Resident Killer Whales now number 76 animals. They are precariously poised between extinction and recovery; and they are starving for want of Chinook salmon.

The decision of the Federal Court of Appeal is reserved and will probably take at least as long as the eight months spent deliberating on the Enbridge Northern Gateway case. We hope to see a decision by next summer.

Buoy-tiful Christmas Ornaments

Living Oceans' school project is underway again this year. An army of little elves is busy transforming fishing floats into colourful Christmas ornaments, as they learn about plastics in the marine environment.

Our goal is to create awareness of the impacts that the plastics we use can have on ecosystems and their inhabitants. We bring a wealth of learning about sustainability to classroom talks and can demonstrate some of the impacts with visuals like the fishing floats that bear the toothmarks of the creatures that mistook them for food!

Plastic debris is often ingested by fish, seabirds and marine mammals, leading to disastrous consequences: birds and whales have been found starved to death with stomachs filled with plastic waste. Ultimately, anything a fish ingests will end up being ingested by something else -or by us!

Help keep plastic out of the oceans by refusing to use single use cups, straws and plastic bags; and by recycling plastics of all kinds.

We will be selling these ornaments at Christmas fairs and shops around the city. Contact Claude at **ctremblay@livingoceans.org** if you'd like to buy one ($20 at the point of sale).

More Plastic Than Fish?


Plastic bags recovered from a whale's stomach contents

The United Nations Environmental Program estimates that each year, more than 8 million tonnes of plastic ends up in the oceans. Now, if you are having a hard time getting your head around that figure, it is more than three times the combined weight of person in Canada. This plastic wreaks havoc on marine wildlife, fisheries and tourism, and costs at least $8 billion in damage to marine ecosystems. Up to 80 per cent of all litter in our oceans is made of plastic and by 2050 oceans will carry more plastic than fish. The debris that reaches B.C. waters degrades the wilderness experience, entangles and poisons marine mammals, and can pose risks to navigation. Recent studies of fish and shellfish in supermarkets have found plastic in the flesh of the food that we buy.

The problem is global and urgent. It has been taken up by a number of international and multilateral agencies, but the solutions lie in the hands of domestic governments at all levels. Here in B.C., the cities of Vancouver and Victoria are both taking steps toward source reduction, with local bans on items like plastic bags and coffee cups. The provincial government has mapped the extent of the problem with aerial photography, but has allocated no funding to tackle the problem. The federal government's Coastal Restoration Fund specifically excludes marine debris removal. Neither government has a policy to address, or even accurate intelligence about, plastic marine debris.

Living Oceans aims to change all that, by convening governments and agencies throughout Canada to examine the evidence and create a policy that can govern the work to be done. Do we ban certain plastics, extend and improve recycling facilities or step up public education? If the answer is 'all of the above', what's the right mix of products and uses of plastic to try to control? And in any event, what are we going to do to remove the plastic currently stranding on our shores? These are some of the questions we hope to answer.

Thanks for your support!

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By cheque or credit card: please fill out this form. Cheques must be payable to CANADIAN COASTAL RESEARCH SOCIETY. Please note if you would like to make a one time or monthly donation. Monthly donors will receive annual tax receipts.

3. Online: You can donate directly to Living Oceans or to the Canadian Coastal Research Society using your credit card or Paypal on our web site.

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