



Ocean Plastic Processing Innovation for the Pacific Northwest

Ocean Legacy Foundation
Waste Management Association of BC

February 23, 2023



Who we are

Canadian non-profit organization and social enterprise

- Develops and implements worldwide plastic pollution emergency response programs to end plastic pollution
- 4 pillar approach combines Education, Policy, Infrastructure and Cleanup (EPIC)
- Targeting ecologically sensitive, remote, complex to semi-urban terrain in
 - Rocky & sandy shorelines
 - Floodplain & flood emergencies
 - Mangrove & tropical environments
 - Temperate forests
 - Desert ecosystems



EPIC
Plastic Pollution
Emergency
Response



Education & Research



Policy & Advocacy



Infrastructure Development



Cleanup & Restoration



Education & Policy



- EPIC Academy – in partnership with TELUS®
 - Free e-learning platform
 - 15-hour curriculum in 10 parts
- Topics:
 - Ocean and land-based plastic pollution
 - Circular economy
 - Environmental impact of plastic pollution
- Knowledge → Action
 - How to advocate specific plastic pollution policies in your community
 - How to speak with media and government
 - How to start individual and community based behavioural changes
 - How to begin your own recycling programs
- The Academy catalyses the last decade of our learnings to inspire action across the world to solve the plastic pollution crisis.
 - Suitable for ages 14+
 - Includes 10 online lessons with engaging video content and teacher guides
 - Available in French, English and Spanish with more languages coming
 - Growing into a multi-million user base over the coming year





Ocean Plastic Educational Curriculum

 edu.oceanlegacy.ca



INFRASTRUCTURE DEVELOPMENT I

Plastic Pollution Emergency Response Facility

- Largest industrially-scaled hub for the Pacific Northwest
 - Processes materials collected from ocean, shoreline and marine industrial cleanup
 - Shares resources and build cross-sectoral relationships
 - Merges principles of the blue and circular economy to provide:
 - 400+ seasonal skilled employment positions
 - Lower carbon footprint
 - Recirculation of valuable resources back into a closed looped system
- In-house processing
 - Polyethylene (PE)
 - Polypropylene (PP)
 - Nylon (PA) – **Coming 2023**





INFRASTRUCTURE DEVELOPMENT II

- Diverted over 680,000 kg of plastic waste from landfill since July 2020
- First and only facility in North America dedicated to managing plastics from shoreline, ocean and industrial cleanup
 - Up to 11 different streams of items accepted
- Small-scale facility in Panama now operational
- Working to make new products
 - Outdoor recreation
 - Automotive
 - Boat building
 - Crab and oyster instrumentation
 - Office furniture
 - Urban infrastructure





Depot Program and Material Collection

Preventing plastic pollution by collecting materials in the Pacific Northwest

- 4 BC depots operating in partnership with the Department of Fisheries & Oceans Canada
 - **qathet (Powell River)**
Let's Talk Trash and the qathet Regional District
 - **Ucluelet**
Surfrider Pacific Rim and the Alberni Clayoquot Regional District
 - **Cumberland**
Vancouver Island Tourism Board and the Comox Valley Regional District
 - **Port McNeil**
Fox Disposal and the Regional District of Mount Waddington
 - **Port Edward – Opening 2023**
 - **Sechelt – Opening 2023**
 - **Maritime expansion – Opening 2023-2024**
- 2 in USA
 - Washington State, Alaska – 2023





Depot Program and Material Collection



- Materials consolidated and separated:
 - Ropes and netting (PP, HDPE, PA)
 - Expanded Polystyrene (EPS)
 - Billets and large items (PP, HDPE, PET, LDPE, EPS)
 - Hard Plastic, Floats, Traps and Baskets (HDPE, PP, LDPE)
 - Buoys (PP, HDPE, PA, PVC, ABS, PP)
 - Tires (rubber)
- Depots receive materials from
 - Non-profits and individuals:
 - Ocean cleanup and shoreline operations
 - Industry and Commercial
 - Legacy equipment from fishing and aquaculture industries
 - Clearing out storage yards of photodegrading material
 - Waste from cleanup operations
- Preventative waste measures





Sorting Guide and Accepted Materials



SORTING GUIDE

WELCOME TO THE OCEAN PLASTIC DEPOT

This depot is one of the first of its kind in Canada created to collect and recycle select ocean plastics and marine debris materials from cleanup efforts as well as legacy equipment from the marine sector.

Thank you to all the volunteer cleaning efforts that are an integral part in solving this plastic pollution crisis.

WE DO NOT ACCEPT

- X Coloured Styrofoam
- X Dirty Styrofoam
- X PVC /ABS Tubing
- X Lighters, Tennis Balls
- X Containers or Bottles with liquid
- X Metal, Glass or Fiberglass
- X Candy/Snack Wrappers



<p>DO NOT LEAVE LOOSE ITEMS! All items must be placed in a provided storage bag unless it is too big to fit into bag.</p>	<p>No standing water please, empty all water from all items if possible before placing them in a storage bag.</p>	<p>Do not leave your item in the wrong category or on the ground. Help us keep things organized!</p>
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If you do not see your item included in a category then we unfortunately are not yet able to recycle your item or your regional district has a local recycling option in place.

<h3>WE DO ACCEPT</h3>	
<p>*OYSTER BASKETS & CRAB POTS</p>	<p>*OYSTER BASKETS & CRAB POTS</p>
<p>*HARD PLASTIC BUOYS</p>	<p>*HARD PLASTIC FRAGMENTS</p>
<p>*BEVERAGE BOTTLES</p>	<p>*NETTING</p>
<p>*ROPE</p>	<p>*BARRELS</p>
<p>*TIRES WITH STYROFOAM</p>	<p>*STYROFOAM</p> <p> White Styrofoam</p> <p> No coloured foam</p>

WHY IS THIS IMPORTANT?

400 MILLION TONS OF PLASTIC
... IS PRODUCED EVERY YEAR AROUND THE WORLD

SINGLE USE PLASTICS ACCOUNT FOR
... A LARGE PERCENTAGE OF MISMANAGED PLASTIC.

8-12 MILLION TONS ENTERS THE OCEAN
... EVERY YEAR KILLING MARINE WILDLIFE, COMPROMISING FISHERY AND OCEAN SAFETY AS WELL AS COASTAL TOURISM CONTRIBUTING TO GLOBAL CLIMATE CHANGE.

ONLY 9% IS RECYCLED
... MUCH OF IT SHOWS UP IN LANDFILLS OR WATERWAYS

MICROPLASTICS
... THROUGHOUT OUR ENTIRE ECOSYSTEM. THE PARTICLES ARE IN OUR FOOD, WATER AND AIR AND ARE A PART OF OUR WEATHER SYSTEM. PREVENTING PLASTIC FROM ENTERING THE OCEAN HELPS PREVENT IT'S EVENTUAL BREAKDOWN INTO MICROPLASTICS.

DEPOT BENEFITS

- * Diverting landfill waste
- * Reducing oceanic plastic pollution
- * Reducing our carbon footprint by making recycled sources of plastic available
- * Stimulating the Canadian plastic circular economy
- * Creating safer and cleaner marine environments for all to enjoy

Please carefully read the category and picture signs that are provided next to each storage bag located either in or beside the depot containers.



Building An Industry Stewardship Program

- Marine equipment is not designed with circularity in mind
 - Working with manufacturers to redesign for circularity
- Consultation process with industry and businesses to:
 - Collectively capture, transport and process material
 - Build management framework
 - Financial modelling and framework





Track & Trace

- Developing inventory management system
 - Utilizing proprietary tracking software built on blockchain technology
 - Bags have QR codes and RFID technology to allow them to be scanned easily as they move along the chain of custody from point of collection to end product
 - Seeking certification through Zero Plastic Oceans for three grades of plastic using source types developed by OceanWorks:



- Resin types for pellets

- PE
- PP
- Nylon (PA)





Cleanup & Restoration

- 700+ km of shoreline cleaned to date
- +1 million kg debris removed during cleanup
- Operations in Mexico, Panama, Canada & USA
- Working to restore ecologically sensitive lands and waters
- Provides critical employment, training and skill building for indigenous and non-indigenous communities



Our Results Are EPIC

- Prioritize building relationships and meaningful employment
 - Collaboration with 12 different First Nations nationally and internationally
 - Co-created over 400+ seasonal positions
- Regularly collaborate with approximately 100+ non-profit community organizations, government, industry, businesses and citizen scientists
- Engaged with hundreds of thousands of people in direct-action cleanup, education, and recycling initiatives.



It Takes a Global Community...

Government of Canada / Gouvernement du Canada

Canada

Fisheries and Oceans Canada / Pêches et Océans Canada

BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

cleanBC
our nature. our power. our future.

BC Parks

MiAMBIENTE

Cabo Corrientes

TLA'AMIN NATION

K'ómoks First Nation



LOWER NICOLA INDIAN BAND



Mowachaht / Muchalaht First Nation

KLAHOOSE FIRST NATION

SURFRIDER FOUNDATION CANADA



Ka'yu:k't'h'/Che:k'tles7et'h' First Nations

Comox Valley REGIONAL DISTRICT

qathet REGIONAL DISTRICT

COAST WASTE MANAGEMENT ASSOCIATION

Alberni-Clayoquot Regional District

REGIONAL DISTRICT OF MOUNT Waddington VANCOUVER ISLAND NORTH

LEM

COMPAÑENTO TORTUGUERO MATO ECOMATO AC

COASTAL RESTORATION SOCIETY

GLOBAL GHOST GEAR INITIATIVE

Let's Talk Trash.ca
WHAT IS WASTE?

CAMOSUN COLLEGE

VANCOUVER ISLAND UNIVERSITY

NICHOLAS SONNTAG marine education centre

BCIT BRITISH COLUMBIA INSTITUTE OF TECHNOLOGY

SFU SIMON FRASER UNIVERSITY



Fishing for Plastic

NET YOUR PROBLEM

Resynergi evolutionary energy recovery systems



ORIGAMI™ PADDLER
Easy. Awesome. Freedom

SAILING CLUB PANAMA

Pacific Coffee Roasters

Rugged Coast RESEARCH SOCIETY

VANCOUVER ISLAND HOTSHOT TRUCKING & SERVICES

GPML Global Partnership on Marine Litter

TELUS the future is friendly

SHEEO Venture Semi-Finalist

Hornby Island Diving

PROJECT ZERO in partnership with Vancity

FOX'S DISPOSAL

CERMAQ

BC SHELLFISH GROWERS ASSOCIATION

GRAYDON TIDEMAN BOATS

LUSH FRESH HANDMADE COSMETICS

plascon plastics

JOHN FLUEVOG SHOES

OCEANWORKS GUARANTEED

Creative Salmon ORGANIC

WPL

HARBOUR CHANDLER



**OCEAN
LEGACY
FOUNDATION**

Josh McLean

Development Coordinator

E: josh@oceanlegacy.ca

O: +1 (604) 214-3591

C: +1 (778) 952-7947

www.oceanlegacy.ca



@TheOceanLegacy



The Ocean Legacy Foundation