Nova Scotia Coastal Conservation & Marine Debris Recycling Initiative

Year 2 Results (2025-2026)

April 2026

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Executive Summary

Abandoned, lost, and discarded fishing gear (ALDFG), commonly referred to as ghost gear, is widespread in both oceanic and coastal environments. ALDFG poses significant threats to marine ecosystems and negatively affects local industries. Recent studies estimate that ALDFG accounts for up to 70% of microplastics in the ocean by weight, and over time, this material can break down into microplastics, further exacerbating marine pollution. Common causes of ALDFG include entanglement with other fishing gear, severe weather conditions, and accidental cutting of lines by passing marine traffic.

Ghost gear is among the most harmful forms of marine debris, as it endangers marine life and habitats and can also present serious navigation hazards for marine vessels. In Atlantic Canada, effective management of ALDFG and other marine debris remains challenging due to limited data on gear loss rates and impacts, as well as regulatory and funding barriers to retrieval efforts.

For the past six years, Coastal Action has worked to address these challenges through marine debris mitigation initiatives. In 2025, with funding from Fisheries and Oceans Canada's Ocean Management Program, Coastal Action focused on removing marine debris and ghost gear from remote coastal areas, including offshore islands, and continued to explore solutions for recycling discarded fishing rope and netting.

The primary objective of this project was to collect ALDFG and other marine debris from particularly sensitive environments along Nova Scotia's south shore while aiming to foster collaboration among various stakeholders from the fishing industry, as well as governmental bodies, non-profit organizations, local communities, indigenous groups, and academia. Other objectives included prevention, reduction, and improved recycling efforts for marine debris.

This report provides an overview of the project retrieval methods and results. The key findings are summarized below:

- 11 locations were scoped along the south shore of Nova Scotia to assess islands that needed urgent attention, with a total of 11 islands scoped.
- 22 coastal island clean-ups were completed, along with 1 additional mainland shoreline clean-up completed.
- Captains from 8 vessels supported island clean-ups.
- A total of 12,829 kgs of ALDFG and marine debris were retrieved from the shoreline.
- Of the total shoreline debris retrieved 52.7% (6762 kg) were lobster traps or pieces/partial traps, and 11% (approximately 90, 976 ft) was rope (determined by weight).
- Whole traps ranged in age, with a median age of 24.5 years. The oldest tagged piece of gear found was 42 years old.
- 63% (approximately 8060 kg) of all retrieved gear and marine debris was diverted from landfills.
- 42,500 kg of rope and netting were collected from wharf side collection bins.
- 25 collection bins across 18 collection sites were managed with the assistance of 15 harbour authorities.

- Rope Depot stats. 25,000 kg of rope processed into shred and 100 bales ready to ship to end users. 5 Shred samples were provided to potential retailers and research facilities, and 10kg of rope was distributed to community partners for crafting.

Materials and Methods

Remote Shorelines

To identify priority areas for ALDFG retrieval, multiple approaches were employed throughout the project. Targeted discussions were held with experienced retrieval captains to identify locations with a history of successful recovery efforts and areas where gear loss occurs frequently. In addition, consultations with other environmental organizations were prioritized to support local coordination and maximize retrieval efficiency.

To identify sensitive habitats, consultations were conducted with personnel from the Nova Scotia Department of Natural Resources and Renewables (NS DNRR) and with bird habitat experts. Environment and Climate Change Canada's (ECCC), species at risk and critical habitat maps were also reviewed to clarify site-specific considerations, including seasonal restrictions and permitting requirements. This information was compiled to inform the selection of areas for further exploration.

Areas identified for further exploration were subsequently scoped by Coastal Action staff through shoreline assessments conducted from a skiff of a lobster fishing vessel. During these assessments, data on debris incidence and severity were recorded (Appendix A), and island cleanup sites were then selected (Figure 1).

A total of 23 shoreline cleanups (22 coastal islands and 1 mainland), were conducted across southwestern Nova Scotia, encompassing 10 distinct locations, including Pubnico, Shelburne, Port La Tour, Lockeport, Riverport, and Sambro. Retrieval efforts were carried out by Coastal Action staff in collaboration with lobster fishers, community volunteers, and partner organizations, including the Nova Scotia Nature Trust and Scotian Shores. Cleanup participants surveyed the shorelines on foot and collected marine debris encountered along the way. In some cases, all-terrain vehicles were used to support retrieval efforts in challenging terrain. All recovered debris was transported to a centralized collection point, where Coastal Action staff sorted and catalogued each item. Cataloguing was conducted using the Coastal Action ghost gear retrieval data form for shoreline recoveries (Appendix B). For each category of gear or debris collected, data were recorded on gear type, weight (kg), length (ft), tag information, biofouling observations, and gear condition. Gear weight was measured in kilograms using crane or digital scales. Rope length was estimated in feet using the following calculation:

$$ft = \frac{(Total\ kg)}{0.021}$$

Data collected through shoreline retrievals informed recycling priorities and the development of educational materials for community engagement and volunteer initiatives. All debris recovered from shorelines was recycled and/or disposed of appropriately following cleanup activities, with

support from partner organizations including Sustane Technologies, Mersey Seafood, the Fishing Gear Coalition of Atlantic Canada (FGCAC), and local waste management facilities.

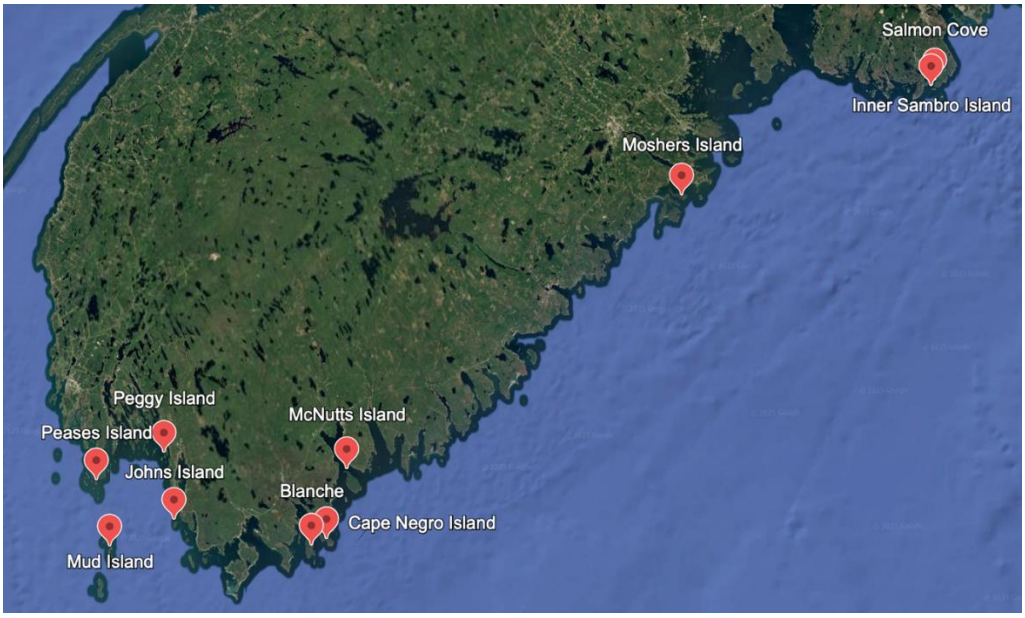

Figure 1. Map of the Nova Scotia remote shoreline clean-up locations completed in 2025.

Rope Collection

Wharf-side collection bin locations were previously selected based on several key factors. Previous iterations of this project established partnerships with local Harbour Authorities, providing a framework for reinstating bins or continuous collections at previously established sites. Additional ports were selected based on Harbour Authority willingness to participate in the program and the density of fishing fleets operating in those areas (Figure 2).

Figure 3. Map of the Nova Scotia rope recycling bin and depot locations.

25 collection bins were routinely monitored across collection sites by different Harbour Authorities and additional support was provided by local fishing captains, community organizations, and Coastal Action staff to ensure bins were adequately maintained. Once bins reached capacity, Coastal Action staff and project partners emptied and sorted the collected material into recyclable rope and net, incorrectly disposed items that remained reusable or recyclable, and landfill waste (Figure 4). Recyclable rope and net were placed into supersacs for collection and transport to the Liverpool rope depot, where materials were diverted to appropriate recycling partners. All rope bin communications and collection metrics were tracked throughout the season, contributing to a broader understanding of material volumes and seasonal accumulation patterns.

Figure 4. Left; Sorting material post-cleanup in 2025. Right; Rope Collection bins at Clarks Harbour.

Results

Remote Shorelines

A total of 12,829 kgs of ALDFG and marine debris was retrieved from remote shorelines. Shorelines had a wide variety of debris, but by weight, fishing gear made up the majority of what was retrieved. Traps and trap pieces were the most common, followed by rope and buoys. Plastic was the most common non-fishing item, followed by rubber and textiles. (Table 1)

Table 1. Shoreline retrieval breakdown summary.

Fishing Gear											
	All figures are in KG										
	Blanche	Cape Negro Island	Cape Sambro & Salmon Cove	Inner Sambro Island	Johns Island	McNutts Island	Moshers Island	Mud Island	Peases Island	Peggy Island	Grand Total
Aquaculture Pipe	-	4.4	-	-	-	76.9	-	-	-	2.3	**83.6**
Bait Bags	7.7	9.3	0.1	3.8	18.2	6.15	-	62.7	3.2	0.1	**111.25**
Buoy	24.8	181.7	45.81	6.51	534.6	28.85	4.7	86.3	69.4	18.8	**1001.47**
Other Fishing Gear	7.9292	51.10	45.89	19.54	92.09	0.02	1.82	6.06	0.06	99.43	**323.93**
Rope	98.4	549.5	44.75	36.6	605	361.7	42.9	131.9	73.5	201.1	**2145.35**
Trap & Trap Pieces	-	1732.9	56.7	33.2	1118.1	2652.95	37.2	1040.1	21.1	72.8	**6765.05**
Grand Total	**138.83**	**2528.90**	**193.25**	**99.65**	**2367.99**	**3126.57**	**86.62**	**1327.06**	**167.26**	**394.53**	**10430.65**

Marine Debris											
	All figures are in KG										
	Blanche	Cape Negro Island	Cape Sambro & Salmon Cove	Inner Sambro Island	Johns Island	McNutts Island	Moshers Island	Mud Island	Peases Island	Peggy Island	Grand Total
Fiberglass	3.3	6.5	-	3.5	-	2.4	-	-	-	-	**15.7**
Foam	1	4.6	64.2	-	-	12.3	3.6	0.7	5.7	0.1	**92.2**
Metal	22.7	32.5	2.2	-	18.2	87.75	0.2	2.9	11.6	4.3	**182.35**
Other	72.5	106.7	89.2	36.5	29.8	87.68	2.6	41.2	4.8	205.51	**676.49**
Plastic	64.9	114.26	55.31	35.79	173.22	124.30	9.00	36.30	38.67	17.90	**669.65**
Rubber	149.2	14.42	0.51	3.31	58.21	241.65	20.00	38.01	12.51	11.50	**549.32**
Textiles	28.9	22.8	7.3	17.9	11.8	55.45	8.3	5.6	4.5	51	**213.55**
Grand Total	**342.5**	**301.78**	**218.72**	**97.00**	**291.23**	**611.53**	**43.70**	**124.71**	**77.78**	**290.31**	2399.26

Gear											
	All figures are individual count										
	Blanche	Cape Negro Island	Cape Sambro & Salmon Cove	Inner Sambro Island	Johns Island	McNutts Island	Moshers Island	Mud Island	Peases Island	Peggy Island	Grand Total
Buoy	12	54	53	10	113	18	5	15	28	19	**327**
Partial Trap	-	17	5	1	3	9	2	-	-	-	**37**
Trap	-	87	2	-	74	124	3	45	1	5	**341**
Grand Total	**12**	**158**	**60**	**11**	**190**	**151**	**10**	**60**	**29**	**24**	**705**

Season Totals											
2026	All figures are in KG										
	Blanche	Cape Negro Island	Cape Sambro & Salmon Cove	Inner Sambro Island	Johns Island	McNutts Island	Moshers Island	Mud Island	Peases Island	Peggy Island	Grand Total
Fishing Gear	138.83	2528.90	193.25	99.65	2367.99	3126.57	86.62	1327.06	167.26	394.53	**10430.65**
Marine Debris	342.50	301.78	218.72	97.00	291.23	611.53	43.70	124.71	77.78	290.31	**2399.26**
Grand Total	**481.33**	**2830.67**	**413.37**	**196.65**	**2659.22**	**3738.10**	**130.32**	**1451.77**	**245.04**	**684.84**	**12829.21**

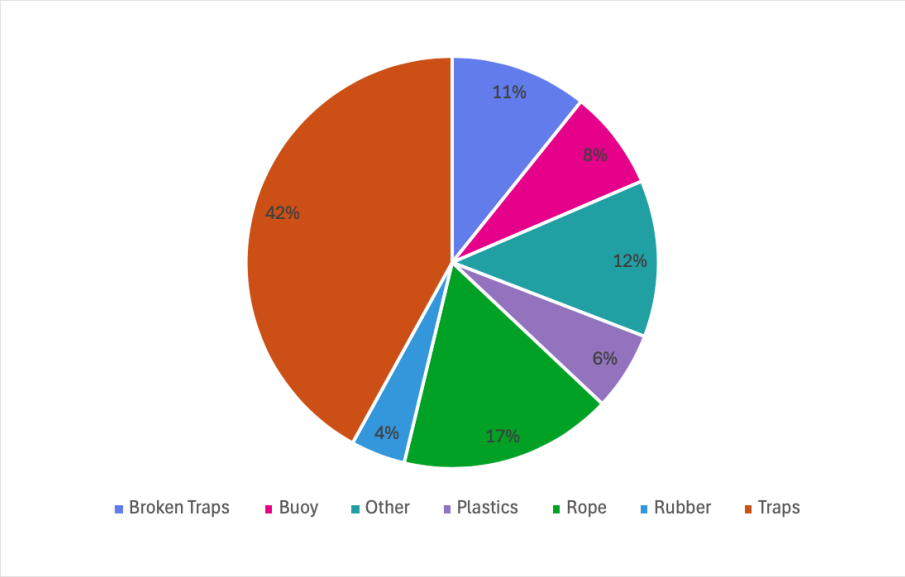

Figure 5. Breakdown by weight of retrieved items from shorelines.

A total of 90, 976 ft of fishing gear was removed from coastal environments (Table 2). Regular PP/PPE Rope made up 91% of this, lead line made up 8%, and monofilament/longline made up the other 1% by length (Figure 6).

Table 2. Lengths of shoreline fishing gear items.

Gear Type	Length (ft)
Lead line	7,162.25
Monofilament	1,261.90
Rope (PP/PPE)	82,552.68
Total	**90,976.83**

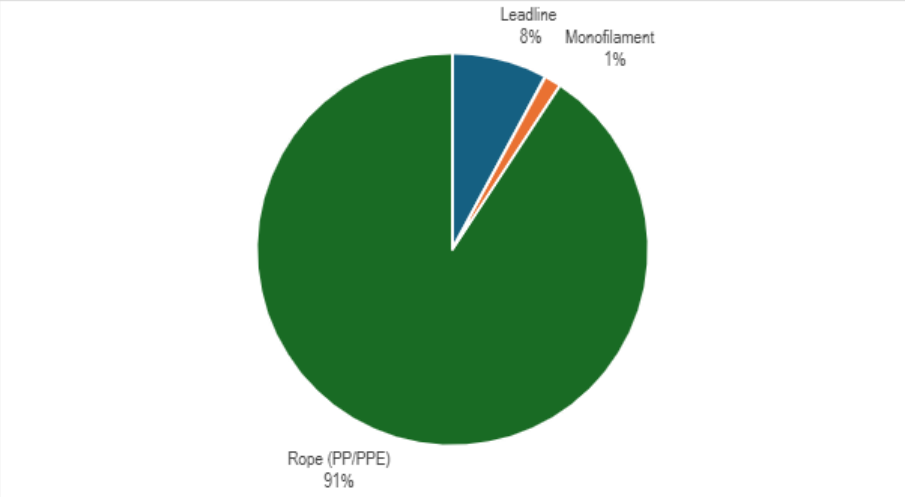

Figure 6.Percentage of length of fishing gear collected based on type from shoreline cleanups.

Every effort was made to recycle as much of the collected material as possible, resulting in 60% of the weight being diverted from landfills. Polypropylene and polyethylene rope and netting were transported to either our Mersey Seafood-sponsored collection depot to be recycled through our partnership with Ocean Legacy Foundation or taken to Sustane Technologies to be made into fuel. Plastics of all kinds, including some clean Styrofoam, were also recycled through Sustane and other items like scrap metal and tires were recycled through municipal and provincial programs. A small fraction of gear and material was reused by staff, landowners, community members, captains and crew, volunteers, or other cleanup groups (Figure 7).

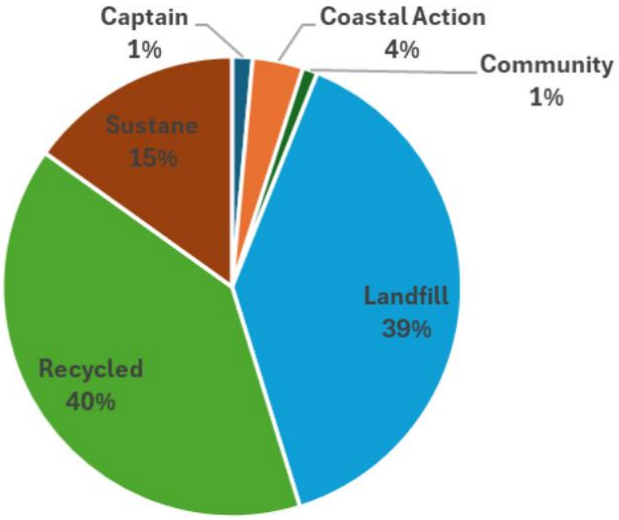

Figure 7.Percentage of end-of-life destination for materials by weight.

Rope Collection

A total of 42,500 kgs of rope and netting was collected from 18 active collection sites in collaboration with 15 different Harbour Authorities. From the wharf collection bins, over 122 supersacs of material were collected, along with an additional 9 roll-off bin loads from the Pubnico location (Table 3).

Table 3. Weights in kg of all materials collected in wharf bins in 2025 based on location

Location	Weight (kg)
Clarks Harbour	4,000
Digby	2,200
East Pubnico	24,500
Eastern Passage	800
Lunenburg	200
Port La Tour	4,200
Sambro	1,000
Shag Harbour	1,400
Shelbourne	3,400
Upper Port La Tour - Seal Point	1,000
Grand Total	**42,500**

Overall bin contamination remained low, supported by ongoing education, efforts to encourage compliance throughout the project, and regular check-ins and feedback with harbour authorities. Common items found in the bin that were not part of the program were lobster tags, anchor links, lead line, and general garbage. In some cases, Harbour Authorities added additional bins to collection sites to accommodate higher demand for material disposal. In those instances, due to a lack of signage on these new bins, they may have accumulated higher levels of unwanted waste.

Multiple collaborators played a key role throughout the second year of this project by assisting with bin monitoring, material sorting, and transportation to the collection depot. Interest from other fishing communities continues to grow. We are currently focused on finding a way to maintain the current sites we have while we expand recycling capacity, as there is always an increased interest in collection bins.

As we moved into a new pilot recycling phase this year, we have also gained the capacity and need to start processing more backlogged material that has been brought to our collection depot in previous years. We have been able to shred about 25,000kg of rope into over 100 bales of material that is ready to be shipped to manufacturers and made available to create new products out of recycled fishing rope. One of our key objectives moving forward is to find manufacturers on the East Coast so that we can reduce our carbon footprint and avoid shipping shredded material to our partner, Ocean Legacy, on the West Coast.

Conclusions and Notable Trends

Remote Shorelines

Retrieval captains and the wider shoreline cleanup community shared their expertise regarding areas prone to ghost gear accumulation, as well as providing valuable insight on locations of debris buildup throughout the project. This collective knowledge was essential for the success of our retrieval efforts.

Some of our most notable cleanups include multi-day efforts at John's Island, Cape Negro, McNutt's Island, and Blanche Peninsula. John's Island has been highlighted as an area in need of significant attention, as the number of debris found there was quite high (Appendix C). This year alone, we tackled the island on four different occasions and are planning on returning for 3 more clean-ups during the 2026-2027 season. Similarly, Cape Negro (newly named Eel Island), which is also a larger island, had four different clean-up days in 2025 with another 2 planned for the 2026- 2027 season.

Both McNutt's Island and Blanche Peninsula were done in partnership with Scotian Shores and Nova Scotia Nature Trust. These were very successful collaborative cleanups and led to over

4,219.43 kg of debris collected and diverted away from shorelines. This was in big part due to the wonderful volunteer community that Scotian Shore has developed.

In terms of debris types, one common category that we continued to see this year is textiles. This includes clothing, shoes, rags, and rugs, among others. Unfortunately, because these items are usually very dirty and destroyed, and made of mixed materials, they cannot currently be recycled. As of yet, we still have not found a recycling partner for this material.

Overall, unsurprisingly, the main contributor of the debris found was fishing gear, in the form of traps, rope, and other gear. In terms of amount and weight, these categories remain the highest. We also have a significant amount of plastic, including consumables, rigid plastics, and films, most of which were able to be recycled through our partners at Sustane Technology.

Moving forward, we would like to start revisiting some of the same sites previously cleaned to help model debris accumulation rates.

Rope Collection

We saw a great deal of enthusiasm from fishers and community members regarding the rope recycling program again this year. The project also continued to have strong support from Harbour Authorities, Mersey Seafoods and Cookes Aquaculture. Including interest from additional locations looking for their own bins. Bins continued to reach capacity more frequently around the start and end of the fishing season, as fishers swapped out or retired their gear. Pubnico and Clarks Harbour are the two main locations with the highest amount of rope collected; however, expected as where the majority of the fleet resides in SW Nova Scotia.

As this project continues and grows, we are looking for ways in which the industry can support this initiative more long-term to ensure end-of-life fishing rope and gear is diverted away from landfills and recycling options are identified.

Acknowledgements

A huge thank you to the captains and crews of every vessel involved in retrieval efforts, as well as for their ongoing support and for helping spread awareness of this work. We also extend our sincere appreciation to the many volunteers whose continued dedication makes each clean-up possible.

We are grateful to Scotian Shores and the Nova Scotia Nature Trust for their site suggestions, access, coordination, and the invaluable personal support provided by their committed staff and enthusiastic volunteers. Our thanks also go to all Coastal Action volunteers for their flexibility and dedication, and to the artisans who participated in crafting events and helped repurpose collected materials.

We deeply appreciate the landowners who generously granted access to clean-up sites. Special thanks to the volunteers and staff at Mersey Seafoods for their ongoing support of the rope depot and their assistance in transporting recycled materials across the province.

Finally, we thank the harbour authorities who supported this initiative by promoting the program, monitoring rope bins, and educating harbour users on responsible gear disposal and recycling.

Appendix A: Coastal Action Ghost Gear Shoreline Scoping Data Sheet

Coastal Action Ghost Gear Shoreline Data Sheet

Date:	
Island Name/Area Name:	
GPS Coordinates:	
Debris Type:	
Boat Access:	
Notable Species:	
Estimated Days Needed to Clean:	
Notes:	

Appendix B: Coastal Action Ghost Gear Shoreline Retrieval Data Sheet

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Coastal Action Ghost Gear Shoreline Data Sheet

Collector Name: _____ **License #:** _____ Shoreline: _____ **Date:** _____

Hail Out Time: _____ Hail In Time: _____ Beaufort Scale: _____

Start Coordinates: _____ **End Coordinates:** _____

Region of License Issuance: ◯ Maritimes ◯ Newfoundland & Labrador ◯ Gulf

Gear Information											
Type of gear	Length of rope (ft)	Gear weight (kg)	Buoyancy (Y/N)	Reusable (Y/N)	Escape panel (Y/N/NA)	Functional? (Y/N/NA)	Tag Number	Tag colour & year	Biofoul (#)	Gear degradation	Notes

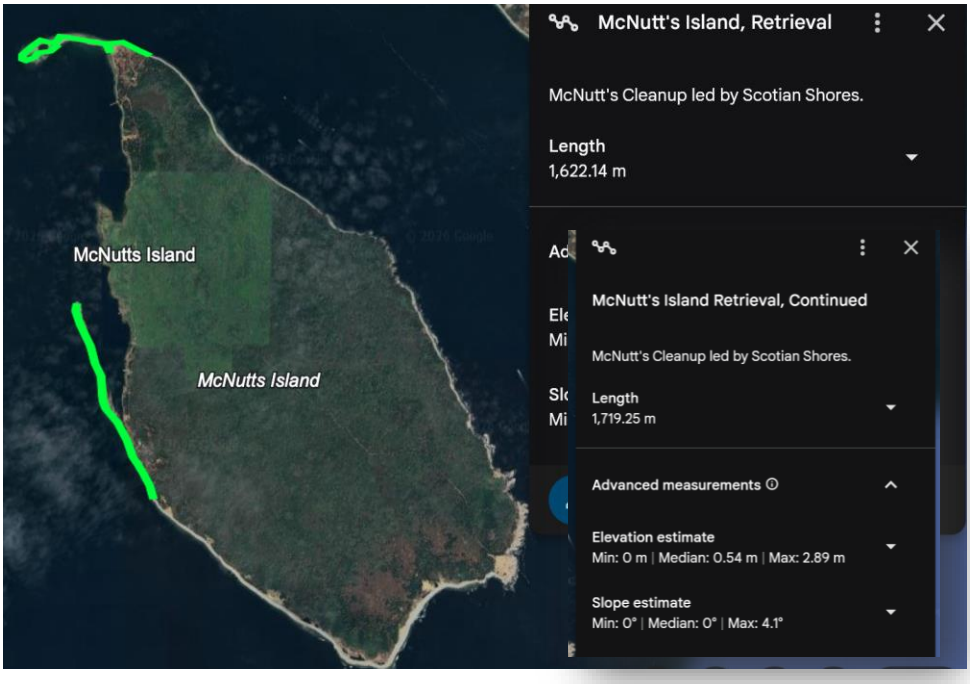
Page _____ of _____

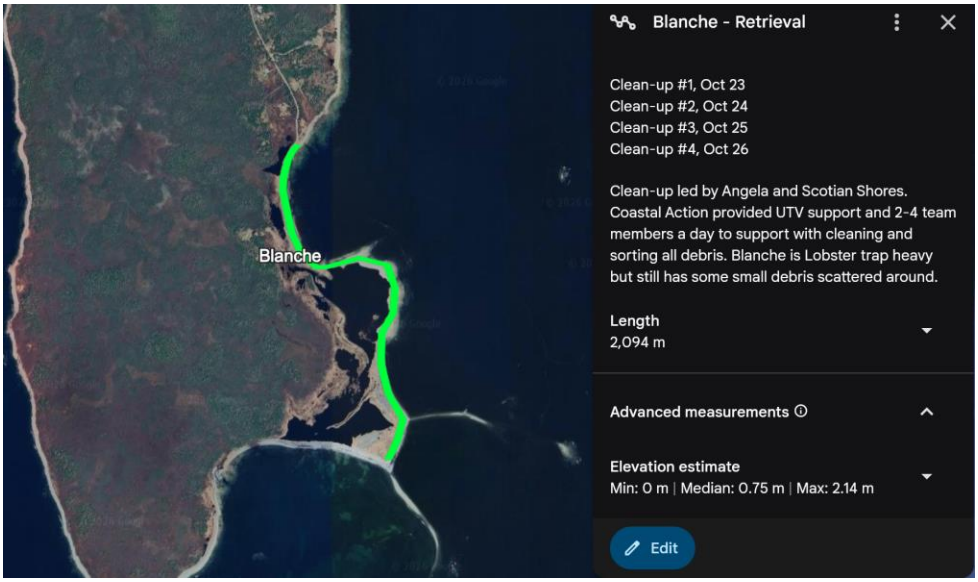
Gear Storage Location: _____

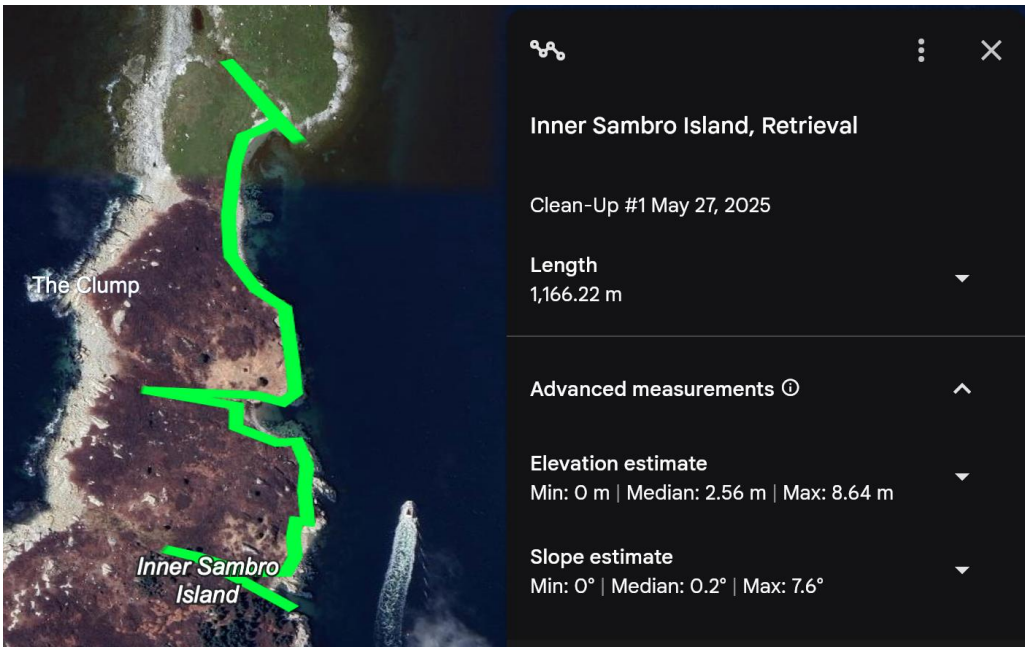
Appendix C: Completed Areas of Remote Island Shorelines that were Cleaned

The black text boxes in each photo show the dates and total distances cleaned, per island on the corresponding dates.

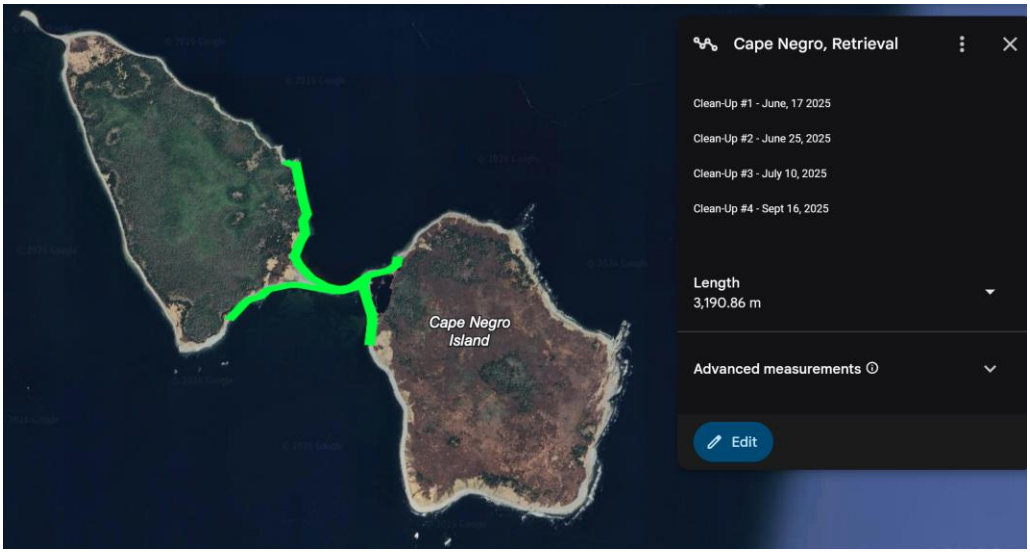
- Green Lines on all the maps are the completed portions of each island.
- Yellow Lines on all the maps are the areas that were scoped

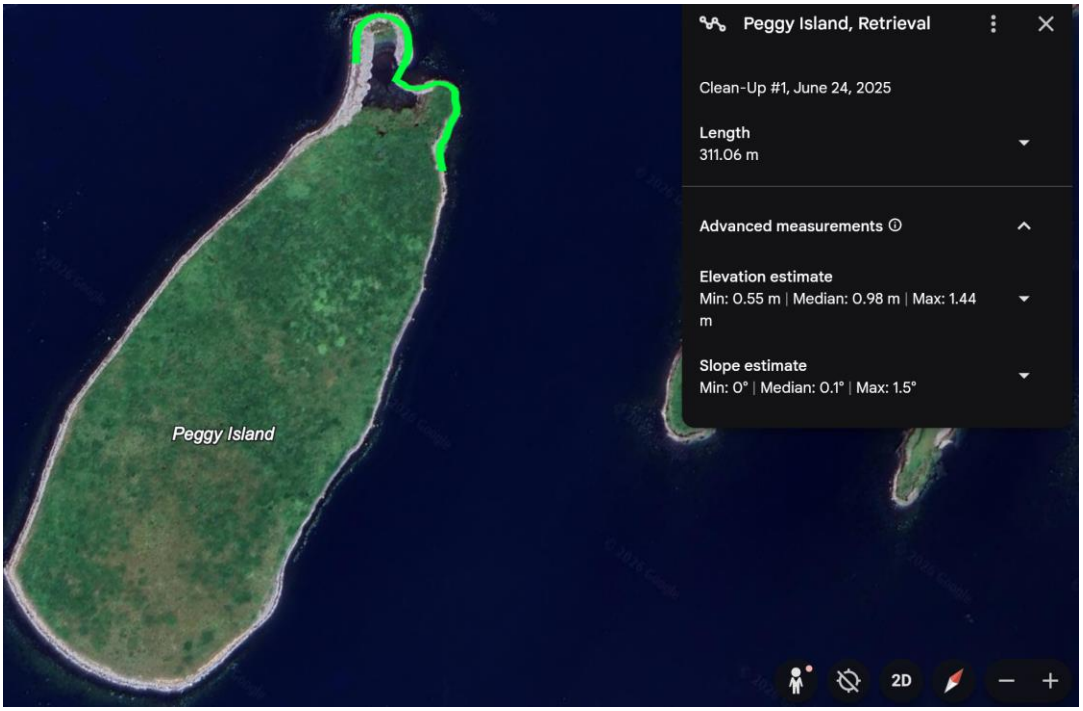


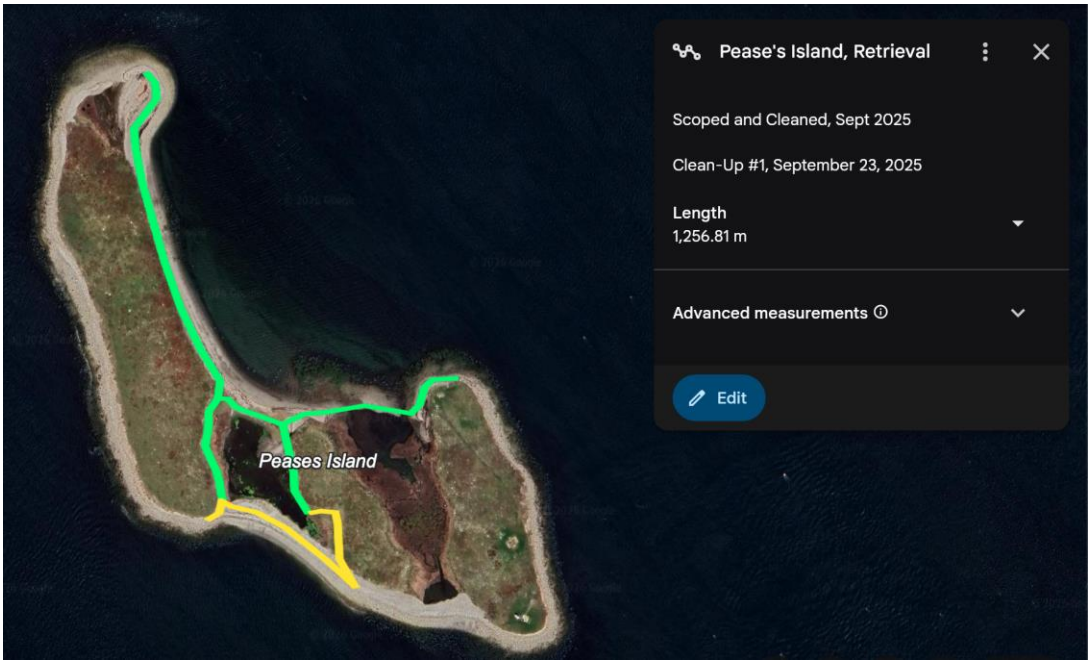


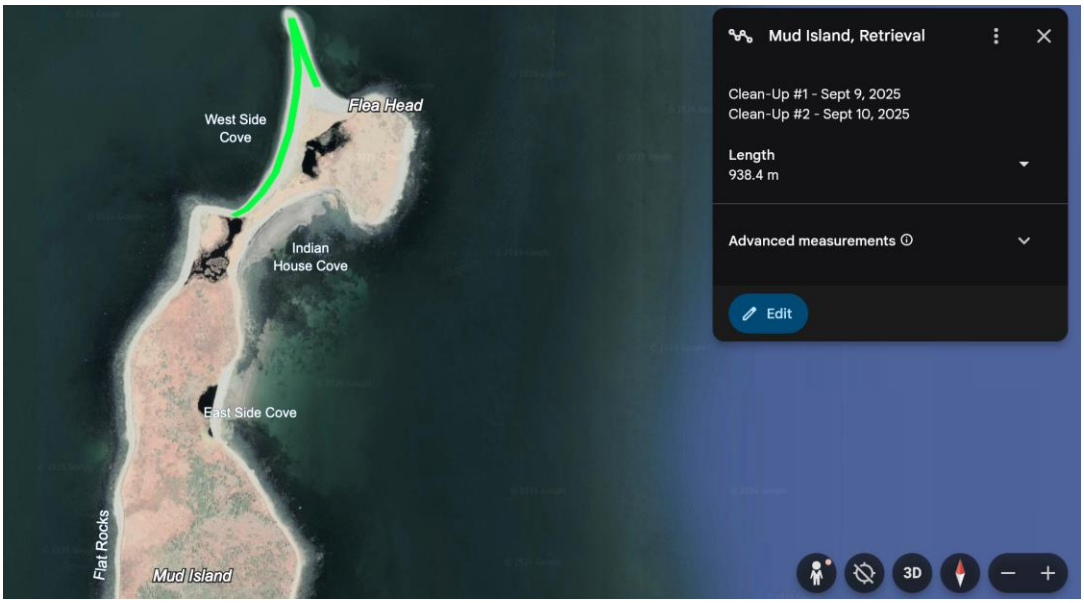

The Clump
Inner Sambro Island
Inner Sambro Island, Retrieval
Clean-Up #1 May 27, 2025
Length
1,166.22 m
Advanced measurements
Elevation estimate
Min: 0 m | Median: 2.56 m | Max: 8.64 m
Slope estimate
Min: 0° | Median: 0.2° | Max: 7.6°

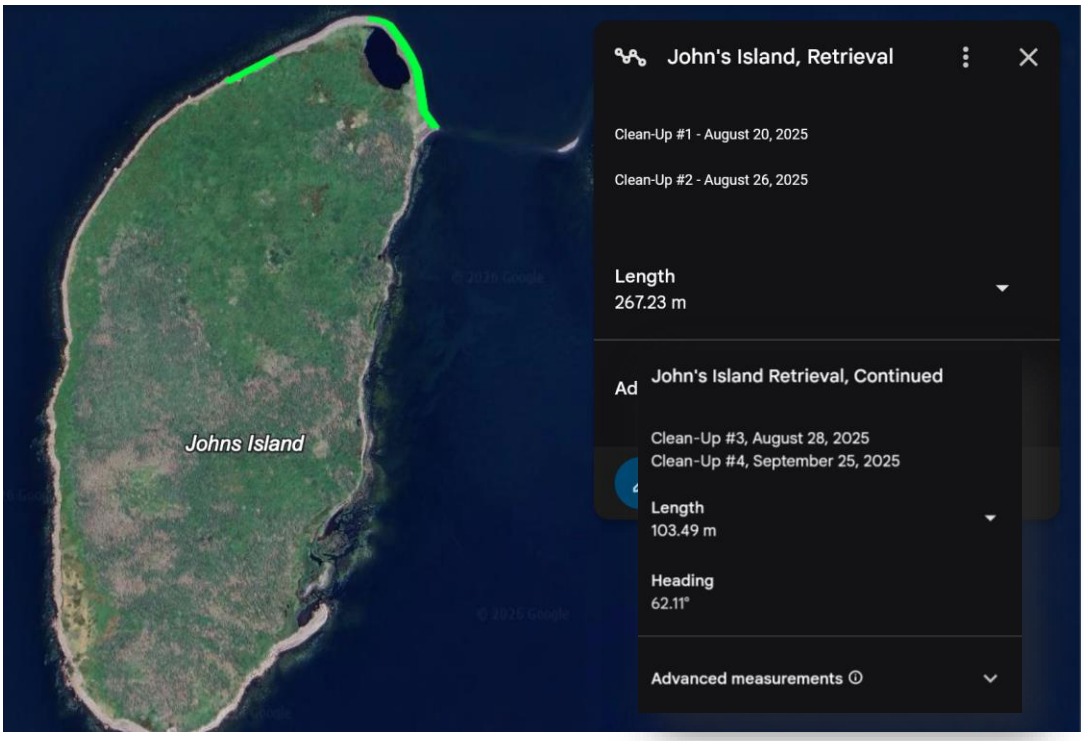
Salmon Cove
Salmon Cove, Retrieval
Clean-Up #1 June 4, 2025
Length
307.1 m
Length
271.46 m
Advanced measurements
Elevation estimate
Min: 0.05 m | Median: 2.27 m | Max: 3.7 m
Slope estimate
Min: 0° | Median: 0.3° | Max: 7.9°


Cape Negro Island
Cape Negro, Retrieval
Clean-Up #1 - June, 17 2025
Clean-Up #2 - June 25, 2025
Clean-Up #3 - July 10, 2025
Clean-Up #4 - Sept 16, 2025
Length
3,190.86 m
Advanced measurements
Edit


Peggy Island, Retrieval
Clean-Up #1, June 24, 2025
Length
311.06 m
Advanced measurements
Elevation estimate
Min: 0.55 m | Median: 0.98 m | Max: 1.44 m
Slope estimate
Min: 0° | Median: 0.1° | Max: 1.5°
Peggy Island
2D


Pease's Island, Retrieval
Scoped and Cleaned, Sept 2025
Clean-Up #1, September 23, 2025
Length
1,256.81 m
Advanced measurements
Edit
Peases Island


Mud Island, Retrieval
Clean-Up #1 - Sept 9, 2025
Clean-Up #2 - Sept 10, 2025
Length
938.4 m
Advanced measurements
Edit
West Side Cove
Flea Head
Indian House Cove
East Side Cove
Flat Rocks
Mud Island
3D


John's Island, Retrieval
Clean-Up #1 - August 20, 2025
Clean-Up #2 - August 26, 2025
Length
267.23 m
Ad
John's Island Retrieval, Continued
Clean-Up #3, August 28, 2025
Clean-Up #4, September 25, 2025
Length
103.49 m
Heading
62.11°
Advanced measurements
Johns Island