PROMAR

Federal Ministry
for the Environment, Climate Action,
Nature Conservation and Nuclear Safety

BASELINE WASTE CHARACTERIZATION STUDY

LONG BAY BEACH, BEEF ISLAND, BRITISH VIRGIN ISLANDS

OCTOBER 2025

ON BEHALF OF GREEN VI

adelphi RESEARCH

UN environment programme

CARIBBEAN ENVIRONMENT PROGRAMME

greenVI

GOVERNMENT OF THE VIRGIN ISLANDS
Ministry of Environment, Natural Resources and Climate Change

Imprint

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The project team expresses its gratitude to all the participants for their very valuable and highly appreciated contribution.

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Project Contribution to SDGs:

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1. Overview of Activities

The Prevention of Marine Litter in the Caribbean Sea (PROMAR) is a regional project aimed at addressing and reducing plastic pollution. The British Virgin Islands (BVI) is one of five Caribbean countries taking part in Phase II of the project, with a focus on reducing waste streams and promoting circular economy solutions.

Green VI, a local environmental non-profit in the BVI is leading the project alongside the Ministry for Environment, Natural Resources and Climate Change (MENRCC). Historic data from beach clean ups shows that The Caribbean has an average of 2,014 items of litter per square kilometre: 3.5 times higher than the global average[1]. Single-use plastics, plastic bottles and abandoned or discarded fishing gear make up most of this litter.

This report presents findings from beach-sampling and waste categorization activities at Long Bay Beach, Beef Island, which is a popular tourist beach, and a key site for the risk of litter entering the marine environment.

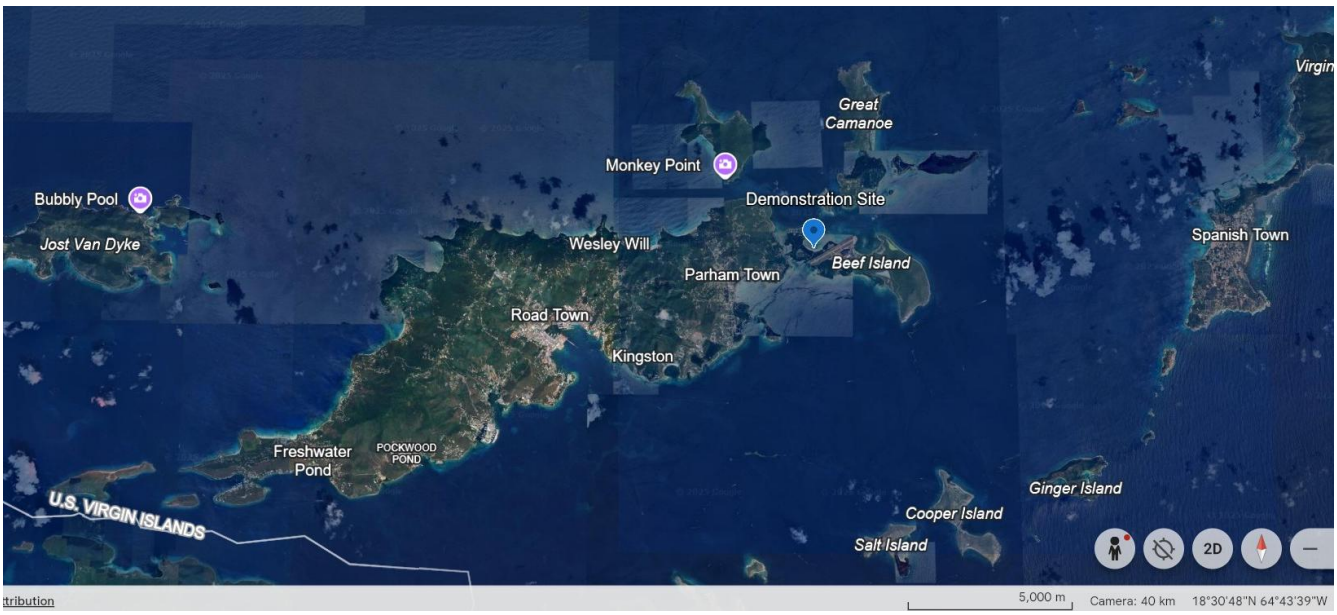

Figure 1: Google earth image of demonstration site for sampling activity at Beef Island, British Virgin Islands 18°26'44"N 64°32'47"W

The beach sampling activity as part of PROMAR's work package one, commenced at the end of March 2025 at two sampling transects on Long Bay Beach, Beef Island. This was complemented by bin waste characterization activities at the same location, and a tailored MFA survey initiative later in 2025 will further support this. The data collected establishes a baseline for the types of items being littered on the beach, with the aim to inform decisions under work package two - implementation of circular economy solutions, and work package three - Implement Extended Producer Responsibility (EPR) Case.

[1] VI Policy Brief

Green VI worked closely with MENRCC and adelphi to choose the location for beach sampling. MENRCC have chosen Long Bay Beach, Beef Island as a focal point for a new beach management plan, with the intention of installing new beach furniture and waste receptacles. With interventions for marine litter already planned and funded by the Ministry, it was agreed the beach sampling should take place at Long Bay Beach, Beef Island to establish a baseline and then monitor for any changes as interventions are implemented. To support this baseline data, a waste characterization study of the existing bins was also conducted.

Green VI staff conducted the baseline survey and met with local beach vendors in March and April 2025. In the longer term MENRCC staff will be trained to conduct the sampling to maintain a database, and outreach initiatives will aim to encourage beach vendor participation in these activities too.

Table 1: Beach Sampling Key Stakeholders

Name	**Organization**
Angela Burnett-Penn	Ministry for Environment, Natural Resources and Climate Change
Dwayne Nibbs	Ministry for Environment, Natural Resources and Climate Change
Charlotte McDevitt - Executive Director	Green VI
Dylan Penn - Operations Director	Green VI
Charlie Peschardt - Head of Operations Support	Green VI
Olivia Rees - PROMAR Project Manager	Green VI
Mavis Abednego - Outreach Manager	Green VI
Kymberley Martin - Outreach Officer	Green VI
Sandra Rabsatt - Outreach officer	Green VI
Paulina Daniel - Outreach Officer	Green VI

1.1. Sampling Activities

The objective of the beach sampling activity is to assess the types, composition and quantity of waste entering the environment. This data provides evidence to inform solutions for preventing marine litter, helping to achieve the overarching goals of PROMAR.

Long Bay Beach, Beef Island was chosen as the location for beach sampling because it is a tourist destination beach, particularly for day trippers from visiting cruise ships whilst also being regularly visited by residents. The source of marine litter is largely traceable to the beach users as there are no waterways emptying into the sea and limited populated areas up current. This allows for straightforward litter collection and sampling and tracking of effectiveness of any interventions.

Despite the heavy beach usage, there is limited waste management infrastructure on site and significant volumes of waste accumulate there. The beach has two distinct areas of use, one where cruise tourists go that is near the various beach vendors, which is regularly cleaned on weekdays by beach wardens employed by MENRCC. The second area is more frequently used by locals and there is currently no waste management infrastructure or regular cleaning in place. To compare these sites and gather a more holistic view of litter accumulating on Long Bay Beach, Beef Island, one representative transect within each of these two areas of the beach was chosen for sampling.

Sampling was conducted between 6:30am and 8:00am on Monday mornings. This timeframe allowed for the sample to be taken after 48 hours of no beach cleaning activities. The area was unaffected by tides/rainfall, and good weather conditions allowed for all samples to be collected within the designated timeframe.

The initial sampling was conducted by Green VI, building capacity within the team on the sampling and characterization methodology. The goal was to train and handover the sampling activity to the beach wardens employed by MENRCC to ensure monitoring continues long term. Maintaining a robust database of coastal and marine litter is integral to the success of the PROMAR project and key to establishing informed and evidence-based solutions to marine plastic pollution.

Litter analysis was carried out at the Tortola Eco Park, which currently houses a recycling sorting facility for plastics and used beverage cans (UBCs), and is run by Green VI as a demonstration site for sustainable living in the BVI.

A waste categorization study of the existing bins was conducted in July 2025, to provide further data to the baseline survey.

1.2. Beach Vendor Interviews

On 3 April 2025, Green VI and MENRCC staff arranged a meet and greet at Long Bay Beach, Beef Island to introduce the PROMAR project to the beach vendors and conduct informal

interviews to understand the current waste management practices and challenges. Seven vendors presently operate at the site; two sell only souvenirs (clothing, accessories and knick-knacks), one rents water sports equipment such as snorkelling gear and kayaks, and the rest offer food and beverage options, as well as providing beach chairs and umbrellas.

Mr. Nibbs at MENRCC introduced Green VI staff to each of the vendor operators, and in turn Green VI presented the PROMAR project and specifically the sampling activity that would be taking place during the month of April.

The owner of Island Boy Beach Shack expressed he had tried to separate recycling in the past, but without strong messaging it led to contaminated bins which became too much effort. Often the large bin he manages is overflowing with waste due to not enough waste receptacles being available at the beach.

The vendor furthest from the public bins offers to collect tourist rubbish herself due to the bins being too far away, but no separation of recycling is done.

Maintaining a clean and litter free environment is of high importance to all the vendors, and they too regularly clean the beach in front of their shops. All vendors expressed the need for more waste infrastructure, and all were on board with recycling, however emphasized the need for clear messaging on the bins to reduce contamination.

This feedback will help shape potential interventions at Long Bay Beach, Beef Island as a demonstration site.

1.3. Material Flow Analysis

A Material Flow Analysis (MFA) was conducted in October 2025 with local tourist and hospitality businesses, and schools, rather than BVI households. Green VI and adelphi Research determined this would better target key stakeholders such as the beach vendors, given the context of the demonstration site at Long Bay Beef Island and avoid the risk of survey fatigue among BVI households.

In total, 13 local schools and 26 businesses took part in the MFA surveys, which were an adapted version of validated MFA instruments used in previous PROMAR studies. The final survey comprised three thematic modules:

1. Procurement: Amount and types of plastic packaging used by schools or businesses
2. Waste Separation and Collection: Are materials separated and how are they then collected and disposed of?
3. Improvements to waste management systems: open feedback on core issues impacting effective waste management at school or business and in the local area.

Survey results among schools identified 69% are separating recyclable materials and this is collected by either a private waste collector or the Department of Waste Management. Eight schools offer water via air-to-water generators or refillable water fountains, but single-use

plastic bottles are still provided in the remaining five schools. Only three schools have canteens where other plastic packaging is procured and adds to the waste stream of the school.

All these schools had participated in a SMART Schools project from 2022 to 2024 which provided infrastructure for clean drinking water and recycling initiatives.

Survey results among businesses identified 60% sell single-use plastic water bottles and go through up to 12 cases per week. Plastic bags and cooking oil bottles are also bought by businesses in high volumes. Of the 26 businesses surveyed, 13 make an effort to separate recyclable materials but only 8 make sure these are then placed in recycling bins or collected for recycling. Barriers to recycling were identified, such as a lack of recycling bins available, infrequent collections, and a lack of knowledge on how to separate recyclables and where they go.

All seven of the vendors at the demonstration site were surveyed and all agreed that the lack of waste management infrastructure was the key barrier to no recycling at the beach. Some vendors had made an effort to separate materials but with no recycling depot nearby this all ended up in landfill.

The waste categorization study of the bins at Long Bay Beach, Beef Island supports these survey results by providing insights into the types of materials being used by the vendors and highlights the need for recycling bins to be made available given the volume of recyclable material found in the bins.

2. Methodology

Long Bay Beach, Beef Island is a popular beach to the east of Tortola. Users of the beach can be separated into two distinct groups: residents and tourists (most often from visiting cruise ships). There is a dedicated area on the beach where bars, restaurants and equipment hire vendors are set up, and this is where cruise ship tourists go. This area is in the middle of the beach, where the main access road leads. Either side of this area, the beach has little furniture and no vendors, and it is in these spaces that residents spend more time. At the eastern end of the beach, closest to the airport runway, a few picnic cabanas are installed, and this is a popular spot for family picnics, barbecues and parties.

The current waste infrastructure consists of 3 small public bins on the beach, and a larger skip bin further back in the car park. The bins are all centrally located near the beach vendors, and currently no waste infrastructure exists in the picnic zone.

A categorization study of waste from the small public bins was conducted to understand the volume and types of materials entering the bins, supporting the baseline survey.

Figure 2: One of three small public bins by carpark

Figure 3: Another small public bin by beach bar Moose on the Beach

Figure 4: Large skip bin located to the back of the beach and carpark area. All waste ends up in here and then eventually landfill.

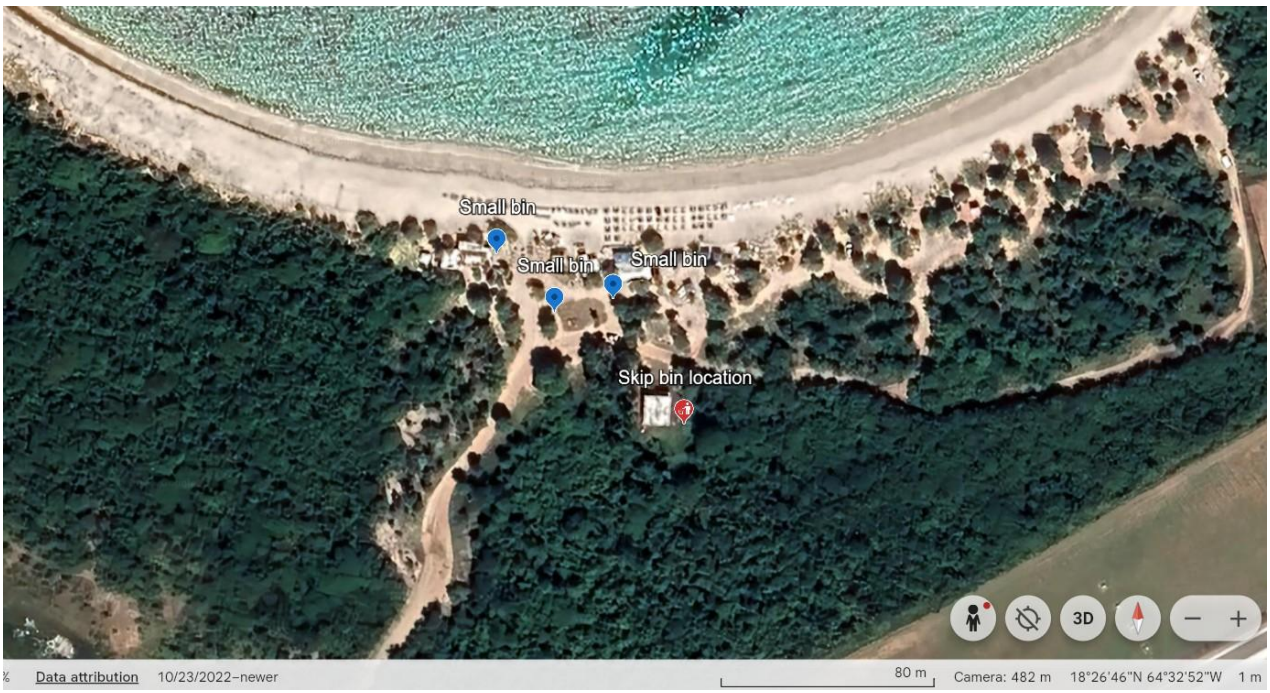

Figure 5: Google Earth image showcasing where the bins are located in relation to the beach

2.1 Beach Sampling

The beach sampling activity, as part of PROMAR's work package one, was initially conducted on the 31st of March 2025, and then weekly throughout April at two sampling transects on Long Bay Beach, Beef Island.

Because of the distinction in beach use, both geographically and demographically, two sample areas were chosen for comparative analysis. The sampling methodology used was adapted from the *Methodological Guide for Conducting Solid Waste Sampling on Beaches* (adelphi, 2025) and modified, with support from the adelphi team, to best suit the local context. Sample site one is 10 metres by 18 metres transect within the 'Vendor area' and extends from the tree line to the water's edge. This is highlighted in image two as the red quadrant. Sample site two is 10 metres by 34 metres transect within the 'Picnic area' and extends from the back of the eastern-most cabana to the water's edge. This is highlighted in image two as the purple quadrant. The picnic area is larger because the vegetation line and picnic space extend further back from the water line than in the vendor area.

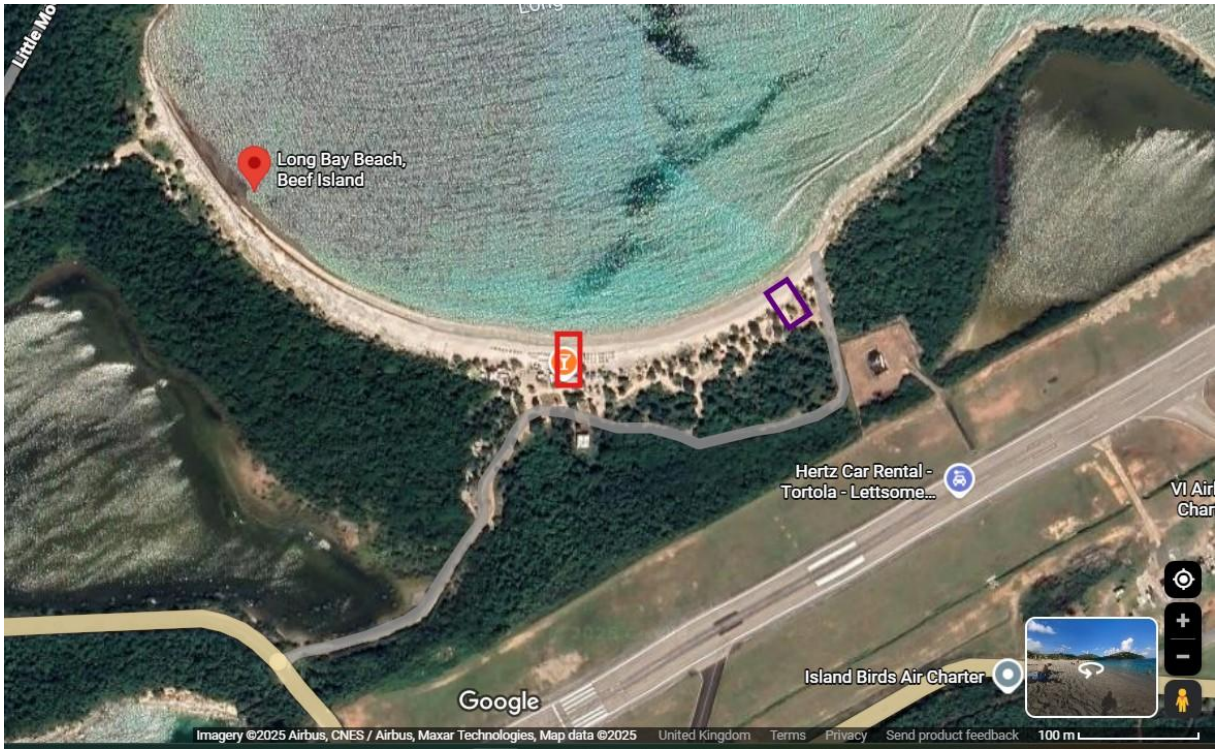

Figure 6: Google earth image of Long Bay Beach, Beef Island. The red quadrant depicts the sampling transect within the vendor area (coordinates: 18.445757N, -64.546167W) and the purple quadrant depicts the sampling transect within the picnic area (coordinates: 18.446313N, -64.544292W).

Due to regular cleaning of the beach in the vendor area by the beach wardens, supplemented by the beach vendors, litter density is relatively low at the site. To capture a more comprehensive picture of the litter issue, weekly samples were collected from both areas, allowing data on the reaccumulating rate of litter to be captured. As no regular cleaning takes place in the picnic area, weekly samples allowed for a better comparison between the sites as after the first sample

the picnic area could be deemed ‘clean’ and be more representative of the vendor area. The results show a summarized analysis of the litter collected across the five samples.

Green VI team members conducting the sampling collected surface litter from the beach into clear garbage bags. Sampling stopped once all surface litter was removed. These bags were then brought back to the Tortola Eco Park for analysis. All participants who collected litter were also involved in the analysis. One participant was responsible for recording the data on a paper sheet, which would later be entered into the excel spreadsheet by the PROMAR project manager.

Litter was sorted by material type (plastic, glass, paper, metal, rubber, fabric) and by item type (e.g. bottle caps, cigarette butts, straws, whole glass bottles). Each group was then counted and weighed. It was noted that some waste items such as bottles, foams or fabrics, retained water and sand which influenced their weight. One instance included a plastic bottle full of liquid, but the contents were unknown and therefore remained closed for health and safety considerations.

Figure 7: View of ‘Picnic Area’ from car park, with blue cabana marking the sample transect area. Presence of black rubbish bags in foreground are common due to no waste receptacles in the area.

Figure 8: Cigarette Butts and metal bottle caps are common items found

Figure 9: Plastic cup discarded within Vendor Area

Figure 10: Litter stashed in a tree within sampling transect

2.2 Waste characterization

To support the initial beach sampling activity and form a robust baseline database, a categorization study of the waste deposited within existing bins was conducted.

Three large cruise ships visited the BVI between the 22nd and the 24th of July. Taxi companies offer tours for cruise ship passengers, so this period was optimal for assessing bin waste during high visitation to Long Bay Beach, Beef Island.

Beach wardens employed by MENRCC cleared the existing small bins each day during this period and set aside the bags of waste for Green VI to collect. The waste was then transported back to the Tortola Eco Park for analysis. Waste categorization followed the same methodology as the beach sampling, with final counts and weights entered a separate google sheet.

The categorization study should be considered a sample of the total waste accumulated in this period as more bags were observed in the skip bin during this time.

Figure 11: Waste set aside by MENRCC for Green VI collection and analysis.

3. Waste Characterization Results

The results presented in this section include a combined summary of the five beach samples at each transect area, and the waste characterization study. Results from the MFA will be added to an updated version of this report once completed.

The beach sampling data provides clear insights into the types and quantities of litter. Plastics are the most common litter type across both sample areas; however, the litter profiles were different in the two transects. Litter amounts were consistent across each sample, showing a regular rate of litter being left on the beach.

The waste categorizations support these insights by highlighting the items being sold at the beach and types of materials being discarded. This shows what potential litter there might be, but also how much of the waste currently at the site can be diverted or prevented.

3.1 Site A - Vendor Area

Across five samples, a total of 253 waste items, weighing 3290 grams were collected from within the vendor area. Table 2 shows the quantity and weight of litter items collected across five sampling events.

Table 2: Characterization data from Vendor Area

Material	Article	Amount		%	Weight (g)	
Plastics associated with fishing	Nylon strings	1	3	1.2%	0.1	0.91
	Thick ropes	2			0.81	
Plastics associated with consumer products	Drink bottles	2	112	44.3%	42	187.39
	Plastic bottle caps	8			7	
	Plastic containers (includes the lid)	1			2	
	Food container "delivered" (smooth styrofoam)	1			3	
	Spoons and disposable cutlery (plastic)	2			6	
	Disposable plates (plastic)	1			25	
	Disposable cups (plastic)	3			35	
	Plastic wrappers and packaging	10			24.58	
	Straws	44			30.26	

	Cigarette butts	39			12.45	
	Lollipop stick	1			0.1	
Plastics associated with daily use	Containers for pharmaceuticals, medicine and ointments (plastic)	1	13	5.1%	11	35.19
	Plastic bags	3			20.3	
	Hair press	2			0.53	
	Decorations and String	5			2.28	
	Advertising/receipts	2			1.08	
particulate plastic	Unidentified plastic fragments (loose)	12	24	9.5%	12.92	19.62
	Unidentified plastic fragments (hard)	11			6.64	
	Fragments of smooth Styrofoam	1			0.06	
Rubber	Balloons (whole or fragment)	1	1	0.4%	3	3
Fabric	Cloth shards (undefined)		3	1.2%		17.2
	Clothes	1			17	
	Thread	2			0.2	
Paper and paperboard	Disposable plates (cardboard)		55	21.7%		55.33
	Paper wrappers	24			16.33	
	Advertising	2			3	
	Napkins	29			36	
Wood	Undefined wood fragments	1	5	2.0%	2130	2135
	Cutlery (wood)	4			5	
Metal	Metal shards (Undefined)		23	9.1%		66.51
	Aluminum cans (drinks)	1			15	
	Aluminum foil	1			7	
	Tin tabs	2			0.37	
	Metal bottle cap	19			44.14	
Glass	Glass fragments (undefined)		6	2.4%		762
	Glass bottles in fragments	2			12	

	whole glass bottles	4			750	
Sanitary and medical implements	Swabs (applicators)		8	3.2%		8.55
	Condom	1			0.35	
	Medical dressings (bandages, gauze, etc.)	1			0.2	
	Bathroom tissue	6			8	
TOTAL		253		100%	3290.7	

Data from the five sampling activities were analysed and the pie chart below represents the average litter distribution by material type. Plastics dominate the litter types found within the vendor area, representing over 50% of the total litter collected. On average, within the vendor transect area, 50 items could be found, weighing approximately 658 grams.

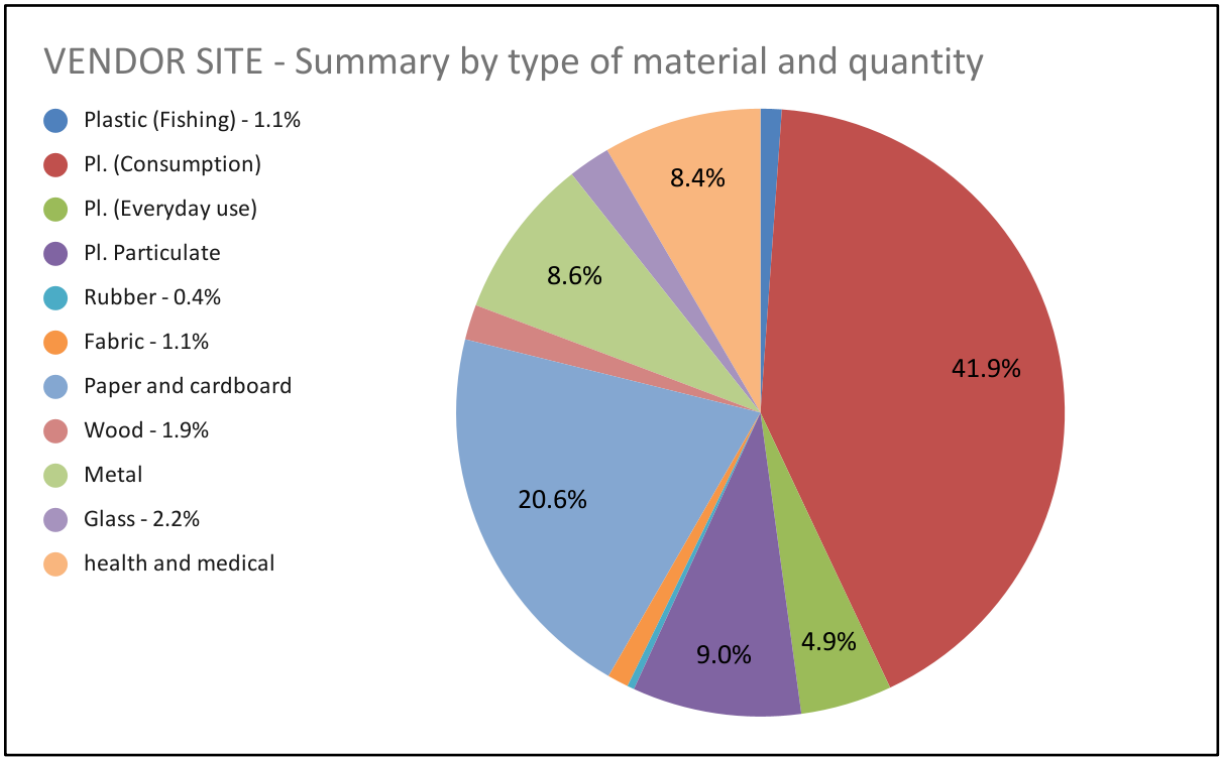

Figure 12: Pie Chart summary of litter items from within the Vendor Area.

3.2 Site B - Picnic Area

Within the picnic area, 958 waste items, weighing 3550 grams were collected across five samples. Table 3 shows the results of the characterization, where 48% of the litter was plastic, mostly single-use plastics associated with consumer products.

Table 3: Shows the results from all five sampling activities combined.

Material	Article	Amount		%	Weight (g)	
Plastics associated with fishing	Thick ropes	1	1	0.1%	2	2
Plastics associated with consumer products	Drink bottles	13	337	35.2%	245	610.04
	Bottle rings	9			1.08	
	Plastic bottle caps	73			87.62	
	Food container "at home" (plastic)	4			9	
	Spoons and disposable cutlery (plastic)	8			23	
	Disposable plates (plastic)	1			21	
	Disposable cups (plastic)	8			39.24	
	Plastic wrappers and packaging	38			108.77	
	Straws	15			6.16	
	Cigarette butts	116			40.79	
	Tetrapack packaging - Tetrabrick					
	Security seals	48			27.68	
	Lollipop stick	3			0.37	
	Breadtag	1			0.33	
Plastics associated with daily use	Plastic bags	13	55	5.7%	7.84	106.54
	Toothbrushes	1			0.1	
	Hair press	1			3.3	
	Toys	13			78.97	
	Decorations and string	23			8.33	
	Tape	4			8	
particulate plastic	Unidentified plastic fragments (loose)	36	64	6.7%	34.52	165.24

	Unidentified plastic fragments (hard)	26			79.7	
	Fragments of smooth styrofoam	1			0.02	
	Unidentified plastic card	1			51	
Rubber	Shoes (includes soles and insoles)	3	109	11.4%	359	509.81
	Balloons	93			148	
	Rubber Band	13			2.81	
Fabric	Clothes	5	5	0.5%	77	77
Paper and paperboard	Paper fragments and documents	15	71	7.4%	6	253.28
	Paper wrappers	1			3	
	Cardboard boxes	1			7	
	Cardboard fragments	3			92	
	Advertising	3			2	
	Napkins	36			130	
	Receipts and invoices	8			2	
	Paper towel roll	2			10	
	Paper straw	2			1.28	
Wood	Cutlery (wood)	1	1	0.1%	30	30
Metal	Metal shards (Undefined)	2	293	30.6%	88	856.69
	Aluminum cans (drinks)	3			23	
	Aluminum foil	27			27.52	
	Tin tabs	5			2.25	
	Spoons and cutlery (metal)	1			25	
	Batteries	3			62	
	Metal bottle cap	251			621.06	

	Key	1			7.86	
Glass	Glass fragments (undefined)	5	12	1.3%	10.63	904.63
	Glass bottles in fragments	3			31	
	Whole glass bottles	4			863	
Sanitary and medical implements	Condom and condom packaging	4	10	1.0%	18.35	35.65
	Pill blister pack	1			0.1	
	Medical dressings (bandages, gauze, etc.)	2			2.1	
	Sanitary towels	2			15	
	Gloves	1			0.1	
TOTAL		**958**		**100%**	**3550.88**	

The most common item found was bottle caps with 215 metal caps from beer or soda bottles and a further 73 plastic caps from plastic drink bottles. A large number of cigarette butts were collected as well as whole or fragmented balloons. Families use the cabana within the transect area for parties and often balloons and string decorations are tied to it and then left behind. This would eventually become beach litter and so was collected and analysed as part of the sample.

The pie chart below shows the average quantity by material type across the five samplings. Plastics form just under 50% of the items found. The 2nd most common material type found was metal, specifically metal bottle caps. On average, 192 litter items were collected each time, weighing 705 grams.

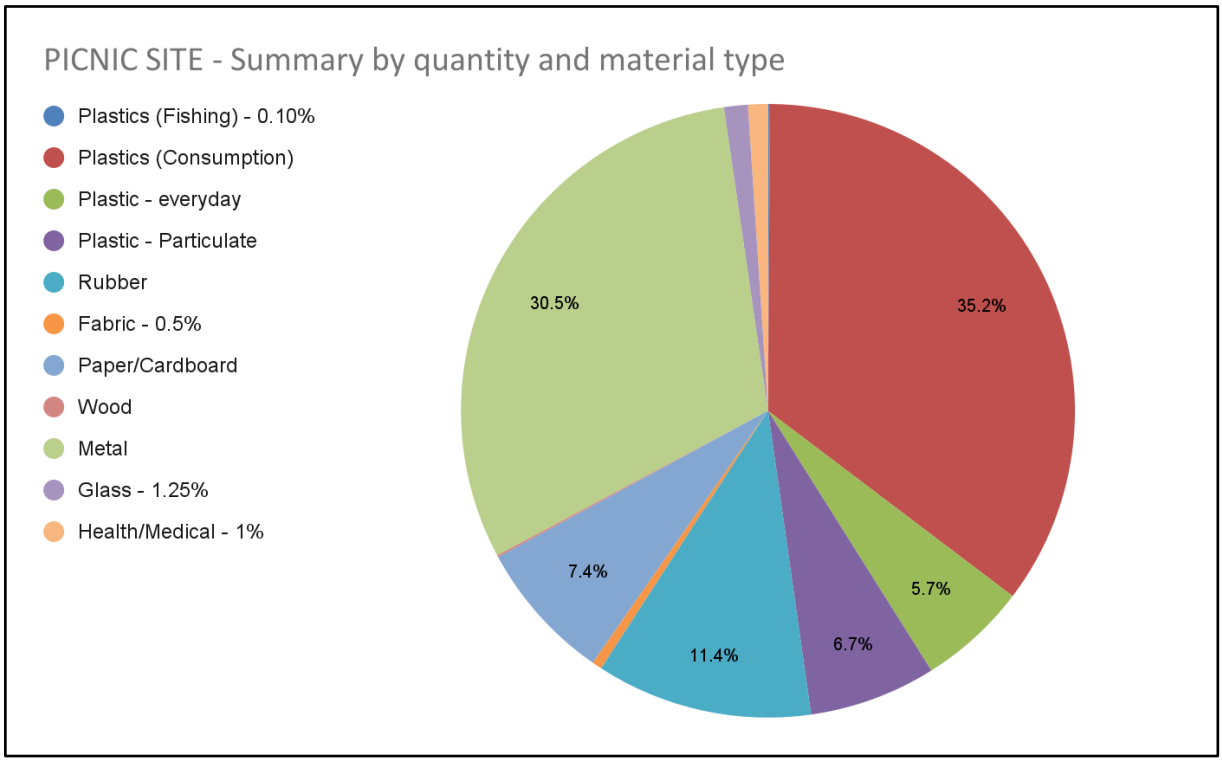

Figure 13: Pie Chart summary of litter items from within the Picnic Area.

Figure 14: Balloons within Picnic area

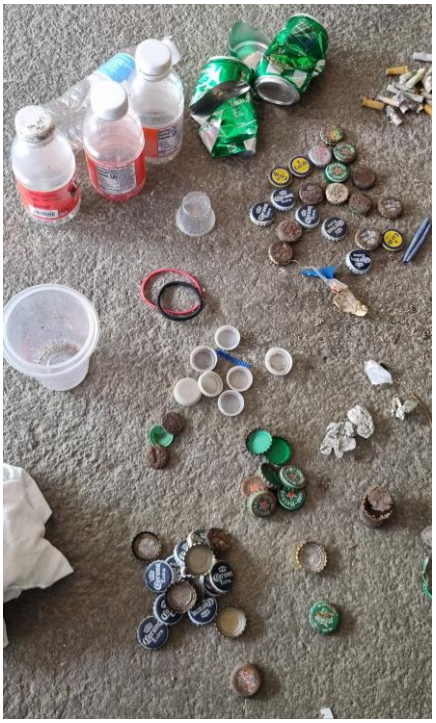

Figure 15: Litter items sorted by type and brand

Figure 16: Litter items sorted into categories

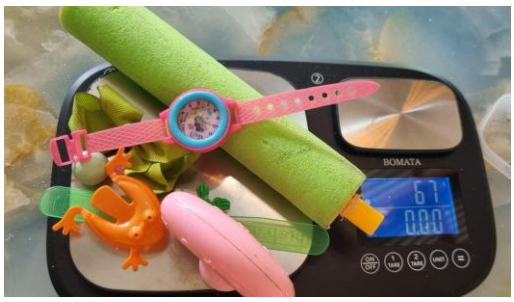

Figure 17: Assorted toys

3.3 Key Findings

Clean Coast Index

The Clean Coast Index (CCI) was used to determine the cleanliness of the demonstration site. The index is a tool for evaluating the cleanliness of a beach, measuring the total number of litter items collected across a given area. Depending on the results, a beach area can then be categorised into grades ranging from 'very clean' to 'very dirty' (Alkalay et al, 2007). A CCI was calculated for both sample areas, providing the range of cleanliness and highlighting whether the areas differed in CCI ranking.

Table 3 describes the calculations for each sample site:

Table 4: Assessment of cleanliness levels at demonstration site using CCI

	Vendor Area	**Picnic Area**
Measured CCI	$5.6 = \frac{(253/5)}{180} \times 20$	$11.3 = \frac{(958/5)}{340} \times 20$
Standard CCI Classification	5 - 10 = Moderate	10-20 = Dirty

The CCI helps to highlight the differences between the two sample areas, where the vendor area is graded as moderate and the picnic area as dirty. The regular cleaning of the vendor area by the vendors and beach wardens is a likely cause for this lower CCI; however, it is not enough to ensure a clean beach. Even with regular cleaning, the area still has a moderate number of plastic debris so further interventions are needed to lower the score and protect the beach in the long term.

Top Waste Items and Brands

Tables 5 and 6 identify the top ten litter items collected within each sample area. This combines data from all five sampling activities, and plastic items dominate the top ten for both sample areas. Single-use plastics associated with consumer products are the most common material found at the beach, making up 42% of the litter in the vendor area and 35% of the litter in the picnic area.

Over 50% of the litter found within the vendor area were plastic, and 48% of the litter within the picnic was plastic.

Table 5: Top ten items collected within vendor area

No.	Item	Quantity	% of waste collected
1	Straws	44	17.39%
2	Cigarette butts	39	15.42%
3	Napkins	29	11.46%
4	Paper wrappers	24	9.49%
5	Metal bottle cap	19	7.51%
6	Unidentified plastic fragments (loose)	12	4.74%
7	Unidentified plastic fragments (hard)	11	4.35%
8	Plastic wrappers and packaging	10	3.95%
9	Plastic bottle caps	8	3.16%
10	Bathroom tissue	6	2.37%

Straws were the most common item found within the vendor area. Items connected to the food and beverages being sold at the beach feature highly in the top ten, such as napkins and paper straw wrappers.

Table 6: Top ten litter items found in the Picnic area

Top 10 items collected - Picnic Area			
No.	**Item**	**Quantity**	
1	Metal bottle cap	251	26.23%
2	Cigarette butts	116	12.12%
3	Balloons	93	9.72%
4	Plastic bottle caps	73	7.63%
5	Security seals (tetra-pack containers)	48	5.02%
6	Plastic wrappers and packaging	38	3.97%
7	Unidentified plastic fragments (loose)	36	3.76%
8	Napkins	36	3.76%
9	Aluminum foil	27	2.82%
10	Unidentified plastic fragments (hard)	26	2.72%

The picnic site has almost 4 times the amount of litter as the vendor site and a slightly different make up of litter, with the top item being metal bottle caps. Plastics still dominate the litter overall, but beer bottle caps and cigarette butts are more abundant within the picnic zone.

The data collected reflects the beach usage across the two areas. More bottle caps and packaging were found in the picnic area where beachgoers bring these items with them to consume at the beach. In the vendor area, bottle caps and other packaging tend to be disposed of behind the bar before being taken to the beach by consumers. Litter items with visible brand names were therefore more commonly found within the picnic area.

Brand information helps to identify what the litter items are, as well as where they came from, and will help to inform targeted campaigns for litter reduction. The top brand recorded across all litter items and transacted areas was Corona.

Table 7: highlights the top brands found at each of the sampling transects

Vendor Transect Area				
No.	Brand	Item	Quantity	Percentage
1	Corona	Metal bottle cap	3	15.00%
2	Carib	Metal bottle cap	3	15.00%
3	Heineken	Metal bottle cap	2	10.00%
4	Corona	Whole glass bottles	2	10.00%
5	Coors Light	Metal bottle cap	2	10.00%
6	Magnum	Whole glass bottles	1	5.00%
7	Salitos	Metal bottle cap	1	5.00%
8	Oh! So good	Drink bottles	1	5.00%
9	Presidente	Metal bottle cap	1	5.00%
10	Eos	Containers for pharmaceuticals, medicine and ointments (plastic)	1	5.00%
Picnic Transect Area				
No.	Brand		Quantity	Percentage
1	Corona	Metal bottle cap	87	45.31%
2	Marlboro	Cigarette butts	20	10.42%
3	Heineken	Metal bottle cap	18	9.38%
4	Carib	Metal bottle cap	13	6.77%
5	Coors Light	Metal bottle cap	12	6.25%
6	Carmel	Cigarette butts	6	3.13%

7	Corona	Whole glass bottles	4	2.08%
8	B&H	Cigarette butts	4	2.08%
9	Welch's	Drink bottles	3	1.56%
10	Dasani	Drink bottles	2	1.04%

Figure 18: Corona bottle caps

3.4 Bin Waste categorization

A total of seven extra-large trash bags were collected across the three days of bin monitoring, and of those bags, 114 gallons of recyclable materials, and 165 gallons general waste was counted and weighed[2].

Table 8 shows the results of this categorization study.

Table 8: Waste categorization data

Material	Article	Quantity		%	Weight (g)	
Plastics associated with consumer products	Bottles (water/soda/sports drink) PET	288	537	72.2%	2140	2740.2
	Food Container (Styrofoam)	41			250	
	Plastic utensils	26			79	
	PP Cups/Tubs	120			85	

[2] No. of gallons estimated by volume capacity of bin bags used in sorting process. It is therefore an approximation of the waste volume.

	Disposable plates (Styrofoam)	7			38	
	Tetrapacks	2			98	
	Plastic straw	47			26.2	
	Styrofoam cups	6			24	
Plastics associated with daily use	Bottles (2,6,7)	1	3	0.4%	70	77
	Styrofoam tray	2			7	
Plastic Other	Unidentified plastic fragments (film)	15	15	2.0%	220	220
Paper and paperboard	Disposable plates/ cups (cardboard)		20	2.7%		1561.4
	Cardboard boxes (non-compostable)	19			1560	
	Straw	1			1.4	
Wood	Cutlery (wood)		0	0.0%		0
Metal	Aluminium bottles	12	113	15.2%	460	3115
	Aluminum cans (drinks)	85			1050	
	Steel cans	11			1450	
	Chemical and paint containers (metal)	1			129	
	Aluminium foil wrap	4			26	
Glass & Ceramics	Glass bottles (whole or fragmented)	43	43	5.8%	8700	8700
Organics	Compostable		13	1.7%		250
	Compostable plates	10			200	
	Compostable cups	3			50	

Others	Mixed material contaminated waste		0	0.0%		35700
Total		744		100%	52363.6	

Most of the waste were plastics and associated with consumer products, with the top items being plastic water bottles and plastic cups. The next top category was metals, entirely made up of aluminium drink cans. A large portion of the waste collected was unable to be categorised due to high contamination levels. Food waste mixed in with the rest of the materials and other sanitary items meant the waste was deemed too unsanitary to sort through.

A total of 35.7kg of mixed contaminated waste was recorded, making up 68% of the total weight of the bin waste. Among this contaminated waste were plastics and aluminium, highlighting the potential for even more recyclable materials were a recycling system in place. High levels of contamination are an issue for recycling in the BVI, so ensuring clear messaging when it comes to using the bins will be essential to ensure the efforts aren't in vain. A campaign for clean recycling is planned to raise awareness among local residents who already recycle. Long term, the installation of a water fountain to clean recyclables at the source may be useful.

4. Conclusion

The baseline survey and waste categorization study at Long Bay Beach, Beef Island, provide a clear picture of the types, sources, volumes, and brands of litter accumulating in two distinct areas of the beach. Plastics dominate both sample sites, with single-use items, bottle caps, and food and beverage packaging being the most common litter types. Noting that the waste sampled across the two different areas reflects the different nature of usage in each area, the picnic zone showed significantly higher volumes of waste, particularly metal bottle caps and cigarette butts, indicating the need for targeted interventions tailored to different user groups.

Up to four times as much litter was found in the picnic area where there are no waste receptacles, and at least 40% of the waste recovered from the bins in the vendor area was recyclable material. Even more recyclable material could be diverted if contamination issues and proper separation of materials are addressed. These findings highlight the urgent need to strengthen waste management infrastructure at Long Bay Beach, Beef Island particularly in areas with high local usage, while also supporting greening of the supply chain for vendors, and behavior change initiatives among both residents and tourists.

Moving forward, this baseline will serve as a critical benchmark to measure the effectiveness of interventions under PROMAR's work packages, including the introduction of circular economy solutions and EPR policies. Continued monitoring, capacity-building, and collaborative action will be essential to achieving lasting reductions in marine litter in the British Virgin Islands and contributing to a healthier Caribbean Sea.

5. Recommendations

Improve Waste Management Infrastructure

- Install additional waste and recycling receptacles along the full stretch of Long Bay Beach.
- Ensure bins are appropriately labelled (e.g., plastics, metals, general waste) and maintained regularly to reduce contamination.
- Deploy signage to encourage responsible waste disposal and beach use.

Targeted Behaviour Change Campaigns

- Launch awareness initiatives for both tourists and residents, focussed on reducing demand for single-use plastics, responsible disposal, and cigarette butt management.
- Develop vendor-specific outreach programs focussed on reducing usage of single-use plastics, packaging waste, encouraging reusable and environmentally friendly alternatives, and promoting proper disposal practices.
- A recycling campaign that focuses on reducing contamination and how to recycle properly as contamination has been raised as a concern by the vendors and observed on the recycling line at the Tortola Eco Park.

Vendor and Community Engagement

- Collaborate with beach vendors to implement take-back schemes for beverage containers and food packaging.
- Encourage local groups and schools to participate in regular monitoring and clean-ups, reinforcing shared responsibility for the beach.

Monitoring and Data Integration

- Continue long-term monitoring through MENRCC-trained staff, ensuring consistent data collection to track progress over time.
- Integrate beach sampling, waste categorization, and MFA results into a central database to inform decision-making and policy development.

Upstream Interventions

- Encourage eco-swaps for products and packaging in the private sector
- Encourage and support circular businesses for upcycling plastics and inspiring local entrepreneurs
- Advocate for legislative changes such as Single-use Plastics Ban and Deposit Return schemes to further eliminate plastic wastes and support the recycling and upcycling of plastic materials.

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