

trashblitz CAMPUSES

BELIZE 2024 SPRING REPORT





LANDSCAPE

The nation of Belize, renowned for its staggering biodiversity and iconic barrier reef, faces a surmounting challenge: plastic pollution. Our per capita dependence on single-use plastics far eclipses many nations including the United States.^{1,2} Although Belize does not have large-scale plastic production within the nation, we are consumers of over 235 million single-use plastic bags and over 57 million polystyrene and plastic food and beverage containers every year.³ These items are strongly correlated with a seminal 2015 study showing plastic litter trends across four communities in Belize and a 2020 thesis in the southern cays.^{4,5} And in 2023 a study in the Belize River basin study shows plastic as the dominant material in mismanaged waste.⁶ In 2024 plastic pollution continues to threaten the health of our nature and wildlife, it contaminates our water, soil, air, and it impacts the quality of life for local Belizeans.⁷⁻¹⁰

In 2018 Belize passed a national ban on single use plastics.¹¹ The policy is an important step forward for a nation whose ocean is central to its culture and economy. Yet, the policy needs clearer implementation and enforcement mechanisms. Plastic in local marine ecosystems is still observed at an all time high. Many local organizations like Rotaract, Oceana, National Scouts Association of Belize, UB Environmental Club and more continue to combat this issue with regular cleanups. The addition of waste audits can provide valuable data to decision makers and train the next generation of Belizean leaders in data collection and analysis and elevate their collective voice.



PROJECT

Sea of Life is a community centered conservation organization whose mission is to empower and strengthen communities to protect the ocean. We focus on locally relevant solutions for issues that threaten the health of our waterways and communities across Belize. Our inaugural program, Plastic Solutions Academy, incorporates three pillars: the academy provides comprehensive education and technical training on plastics, the accelerator offers assistance to fellows of the academy to turn their ideas into real world solutions, and TrashBlitz audits document important details about plastic usage and pollution across Belize.

In 2024, Sea of Life joined together with numerous partners in the Belize and Corozal districts. Together with faculty, students, and nonprofit organizations, we collected waste data and then packaged and removed all waste to the designated waste locations. This report is the resulting findings for the Spring 2024.

Through TrashBlitz approximately 150 stakeholders, including secondary and tertiary students, faculty, and nonprofit partners, were engaged in the collection and documentation of waste impacting their campuses. This project was created to increase community awareness of the issue of plastic pollution, foster stewardship through litter prevention, refillable and reusable choices, and cleanups, to prevent plastic pollution from impacting our local waterways and communities.



COMMUNITY SCIENCE

TRASHBLITZ BELIZE

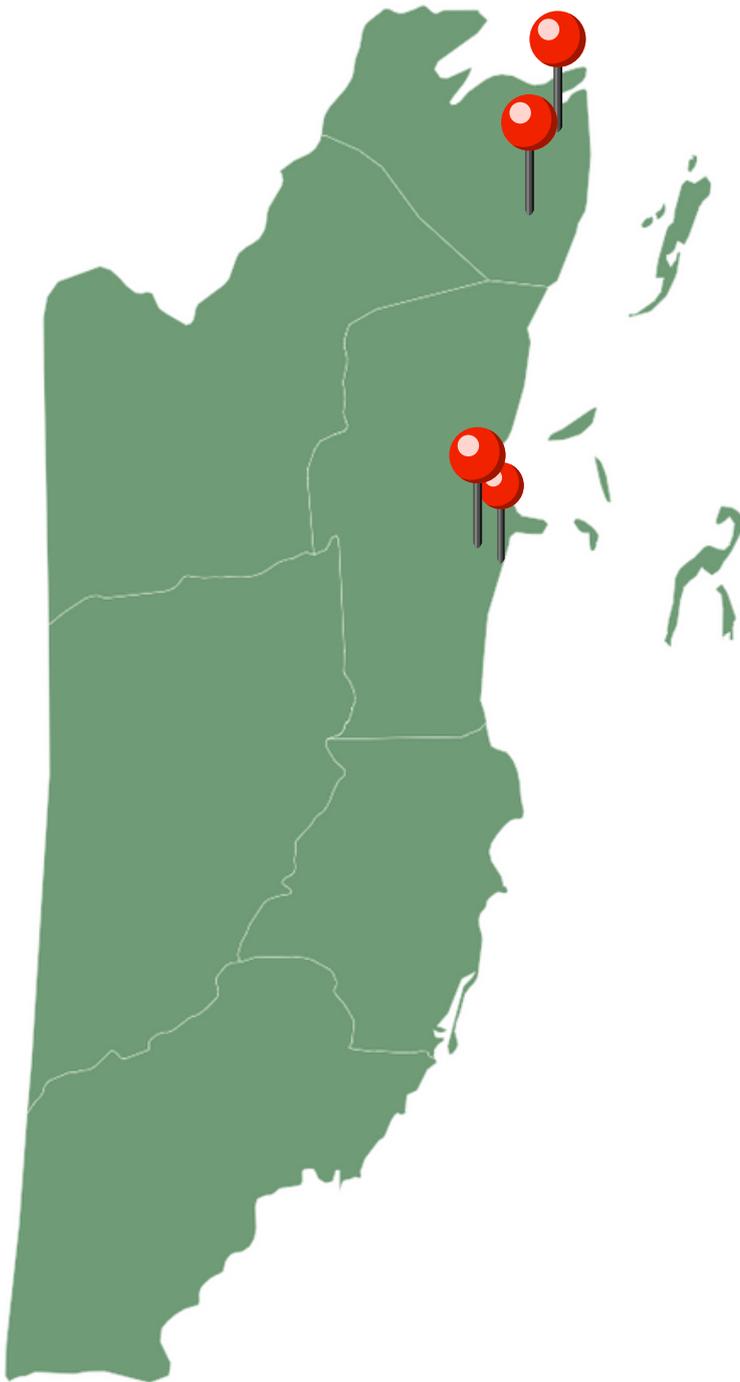
Big change starts at the community level, and TrashBlitz is a proven tool to increase environmental stewardship, build coalitions, and drive change. Sea of Life has partnered with the 5 Gyres Institute to develop Belize specific data queries in the TrashBlitz app. Due to the nuanced way certain items are described and the specifics of local brands to each country this is an important feature of the app. Sea of Life designed the TrashBlitz waste audit initiative for campuses in an effort to help school switch from single-use plastics to refillable and reusable products.



As a field officer working in education and outreach in SACD, it is very important to get this new experience and try these evolving apps that can help us in the management of plastic pollution in the protected area: Corozal Bay Wildlife Sanctuary. – Abisai Verde, Education and Outreach Officer Sarteneja Alliance for Conservation and Development



AUDIT SITES



The Belize TrashBlitz campaign kicked off in January 2024. Four schools conducted a waste audit on their campus compounds.

Corozal District

≈ 20 students participated in the Corozal Community College audit

≈ 60 students participated in the Centro Escolar Mexico Junior College audit

Belize District

≈ 12 students participated in the Wesley Junior College audit

≈ 10 students from Nazarene High School participated in their audit.

METHODOLOGY

Process: Students and organizations across Belize organized waste audits between January - March of 2024. Participants took part and submitted data on a voluntary basis through paper cards, and through the online TrashBlitz app. Volunteers were separated into teams of approximately 3-6 people. Teams were then assigned one of three distinct waste streams; classroom waste, cafeteria waste, and leakage aka litter. In the case of Nazarene High School students only had access to the classroom waste. These TrashBlitz audits are a sample from single day waste patterns.

Once waste was collected, the small teams would empty their sacks onto a large tarp for sorting and counting. In some cases students used the app and some used paper data cards. Two teams were also assigned to shadow the same data set to ground truth accuracy of data collection.

Each campus's capacity was defined by the number of people participating in the audit and the length of time spent on the activity. Each waste audit was conducted in under 150 minutes which included collection, sorting and documenting of waste data.

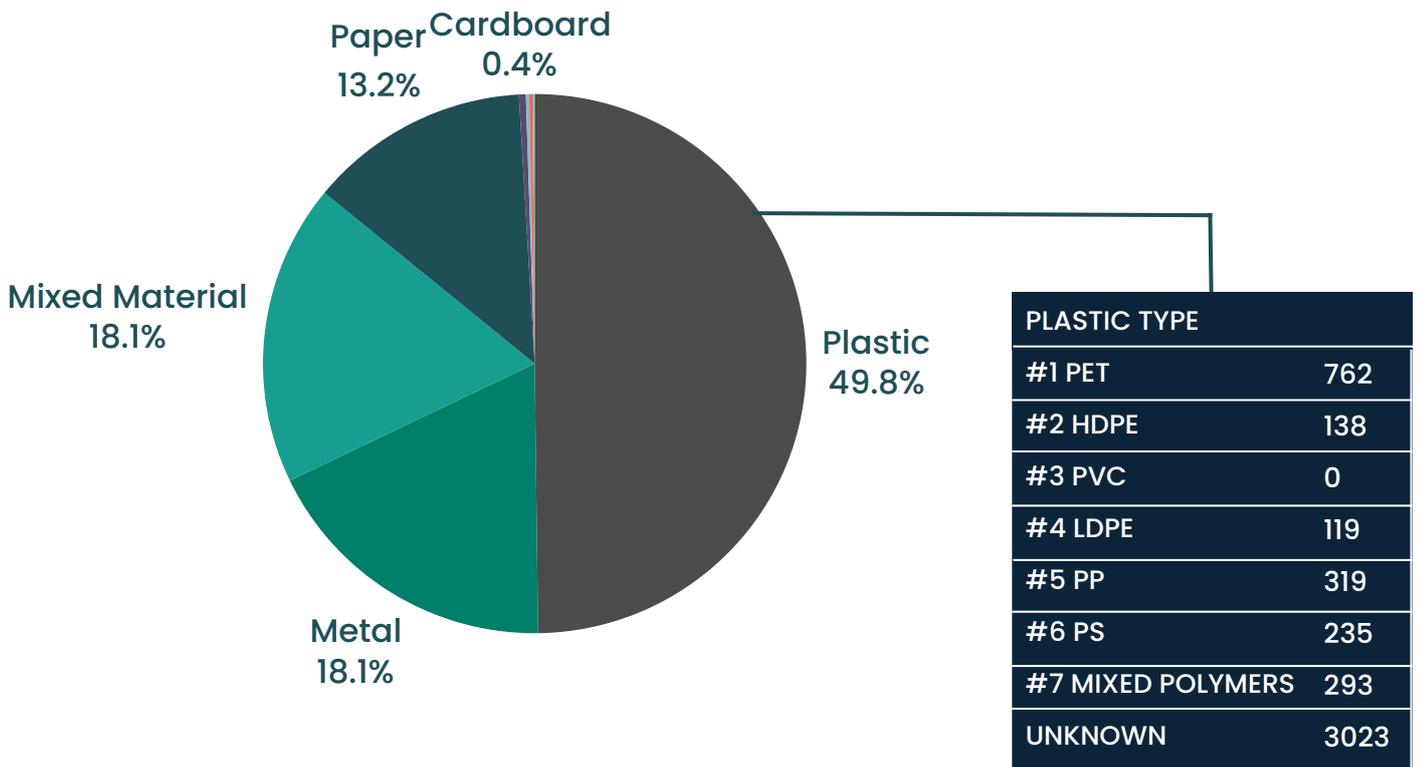
Limitations: *This report relies on self-reported data submitted by partners and volunteers. The data presented is only a sample of plastic waste found across schools campuses in Belize and cannot claim to be fully representative of all plastic pollution patterns in Belize. It is possible that some brands not captured in this report may produce even more plastic pollution than those listed in this report.*

RESULTS

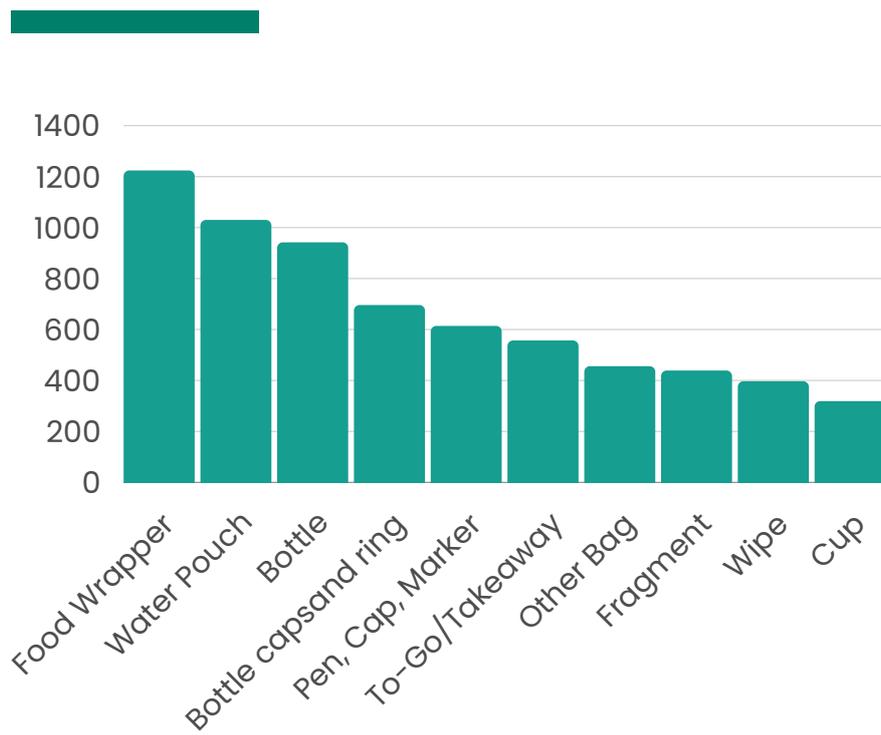
8114 pieces of trash were tagged in the TrashBlitz app.

- More than 75% of trash recorded was plastic or a pairing of plastic with metal.
- Food wrappers, water and drink pouches and bottles make up close to half of the documented waste audit-wide.
- Crystal Drinking Water and Coca-Cola were the top brands identified on campuses campaign-wide.

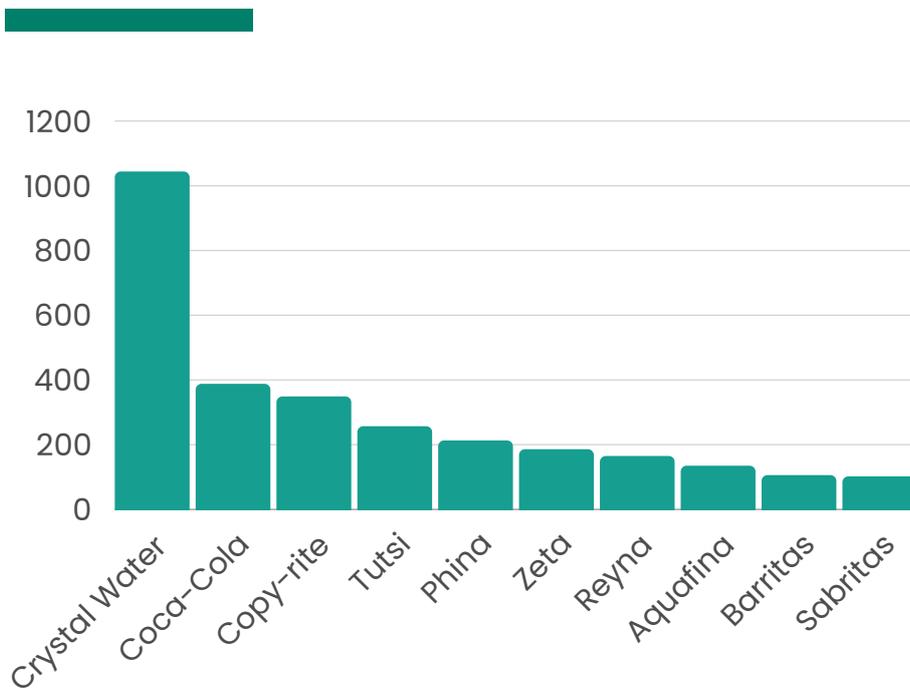
★ Nazarene High School banned the sale of Coca-Cola products on campus and their school recorded only 4 of Coca-Cola products in the waste stream. The average number of Coca-Cola products in the other three campuses was 128. A significant decrease in Coca-Cola was achieved through their ban.



RESULTS: BY ITEM



RESULTS: BY BRAND



DISCUSSION

While the pie chart may show 49.8% plastic, we must also acknowledge the 18.1% of items that were a mix of metal and plastic foil, as well as rubber and synthetic fabrics which are made from plastics as well. When you take this into consideration over 75% of the waste observed was made of plastic. Water brands varied considerably between Belize and Corozal. Zeta was more common in the North while Crystal Water was the dominant water provider in Belize City

Another theme emerged in the Spring waste audits. It was observed and discussed during each campus event how so many of the single use plastic packaging items were for junk food and high sugar content drinks. This presents another important issue where plastic pollution intersects with unhealthy diets. TrashBlitz waste audits may serve a purpose for other government entities working in public health.

“

The use of single-use plastics plagues our country on a whole. As a teacher and part of the school environment, we have started our methods to decrease single use plastics on our compound. We have banned the sale of some Bowen & Bowen products (Coke, Fanta, and bottled juices).

We have also installed 2 refilling stations; thanks to Oceana who donated two water dispensers. This helps to reduce the sale of pouch water and bottled water. -Naomi Sylvania, Teacher at Nazarene High School

”

RECOMMENDATIONS

In order to make significant and sustainable reductions of single-use plastics on campuses, it's important to use a multipronged approach. In addition to changes made by schools, the Government should consider economic incentives to campuses who can document significant and consistent elimination of single use plastic waste..

REFILLABLE WATER STATIONS ON CAMPUSES

Plastics water pouches and bottles were consistently most predominant items found across all campus compounds. Schools could eliminate one of the biggest waste streams on their campus by introducing clean healthy refillable water systems. Additionally, by switching to refillable water, campus operations can create a water fee and parents can save on monthly water costs for students.

EDUCATION FOR BEHAVIOR CHANGE

Education should highlight the environmental, health, and cost benefits of clean, filtered water. Consistent education that is highly visible, relatable and created with input from the local population can positively reinforce smarter choices. In the case of CCC, their consistent awareness and centralized locations of refill stations have resulted in pouches being less than half of any other campus in this study.

REUSABLE CONTAINER PROGRAM

Single-use plastic containers were one of the top 10 most common items recovered. While the initial cost of purchasing reusable containers may be higher, using containers repeatedly means that schools will ultimately spend less on packaging over time. A container program can help instill a sense of responsibility and awareness about the environmental impact of single-use plastics

BAN SINGLE USE PLASTIC PRODUCTS ON CAMPUS

School snack shops and cafeterias are key places to ban nuisance products. Prepare for banning the sale of these items by auditing the issue on your campus and then resourcing accessible refillable and reusable alternatives. Bans can lead fast reductions of plastics yet should be introduced in phases and paired with consistent education.

SOURCES

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ACKNOWLEDGEMENTS

This report was published by [Sea of Life](#) in April 2024
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Special thank you to the students of Centro Escolar Mexico Junior College, Wesley Junior College, Corozal Community College, Nazarene High School, Oceana Belize, Ryan Rivera, Kleon Coleman, Sarteneja Alliance for Conservation and Development, Abisai Verde, Jaimilee Cruz, Ivandi Perez, Basel Convention Regional Centre for Training and Technology Transfer for the Caribbean, GEF ISLANDS, Inter American Development Bank, McPike-Zima Foundation, The Story of Stuff Project, Food and Agriculture Organization of the United States, United Nations Environment Programme, Belize Department of Environment, Zana Wade, JICA in Belize, Accenture, 5 Gyres Institute, Alison Waliszewski, Break Free From Plastics, Belize Department of Environment, Erika Silva, Divan Catzim, Naomi Sylvania, Tyrone Harris, Principal Matias Casanova, Edgemont Martin, all Plastic Tide Turners across Belize, and the Sea of Life Board of Directors.

To learn more about Sea of Life visit SeaOfLife.org
To learn more about TrashBlitz visit 5Gyres.org/TrashBlitz
To partner in Belize contact Sasha@SeaOfLife.org

APPENDIX

BRANDS: A list of the top 52 brands tagged in the TrashBlitz. For a complete set of the 171 brands identified contact our team.

No brand visible	3965
Crystal Water	1044
Coca-Cola	388
Copy-rite	349
Tutsi	257
Phina	213
Zeta Ice	186
Reyma	167
Aquafina	135
Barritas	106
Sabritas	102
Takis	63
Welch's	56

Ruffles	55
Doritos	54
Big H	50
Nimbus	44
Members Mark	43
American Cola	42
Ritz	40
Cheetos	36
Gatorade	36
Fanta	27
Lucas	27
Sprite	27
Hello	27

APPENDIX

BRANDS CONTINUED

Gwaltney	26
Caribbean Pride	26
Top- Tops	24
Max Air	23
Emperador	22
Ushers Makers Mark	22
Lala	19
Foam	19
Cheetos	17
Oreo	15
Botanera	13
Cool Mint	12
V8	12

Arizona	11
Capri-Sun	9
Rise Fruits	9
Ziplock	9
Vero	9
Tootsie Roll	8
Mentos	8
Gamesa Marias	8
Winterfresh	8
Bon Bon Bon	8
Basic	7
Holiday	6
Fruvita	6

APPENDIX

ITEMS: A list of the top items tagged in the TrashBlitz research platform.

Food Wrapper	1247
Pouch	1022
Bottle	942
Bottle caps and rings	696
Stationary, Pens, Pen Caps	614
Food Containers (To-Go/Takeaway)	557
Other Bags	456
Fragment	439
Wipes	400
Cups	319
Paper Towels	315
Beverage Can	262
Forks, Knives, Spoons	210

Unknown item	161
Lids	120
Straws	93
Bottles	64
Napkins	49
Boxes	31
Plastic Film	21
Reams Of Paper	19
Textiles (shoes, gloves, blankets)	17
Juice Box/ Pouch	13
Toothpicks, Floss	12
Nitrile Gloves	10
Cigarette Box	8

APPENDIX

ITEMS CONTINUED

Can	4
Balloons	3
Medical Container	2
Clothing Item (Jacket, Shirt, Pants)	2
Cup	2
Cleaning Spray Bottle	1
Face Masks	1
Car Window Tint Film	1
Container (Non-Food)	1

APPENDIX

MATERIAL: A full list of the materials tagged in TrashBlitz is provided below.

Plastic - Number unknown	3023
Paper	1259
Mixed Material	1250
Plastic #1 Polyethylene Terephthalate	762
Metal - Aluminum	553
Plastic #5 Polypropylene	319
Plastic #7 (mixed polymers or bio-plastic)	293
Plastic #6 Polystyrene/Styrofoam	235
Plastic #2 High-Density Polyethylene	138
Plastic #4 Low-Density Polyethylene	119
Cardboard	110
Fabric - synthetic	19
Wood	18

APPENDIX

MATERIAL CONTINUED

Latex	10
Rubber	3
Metal - Unknown/Other	2
Glass	1

Access the full data file by contacting our team. Thank you.

