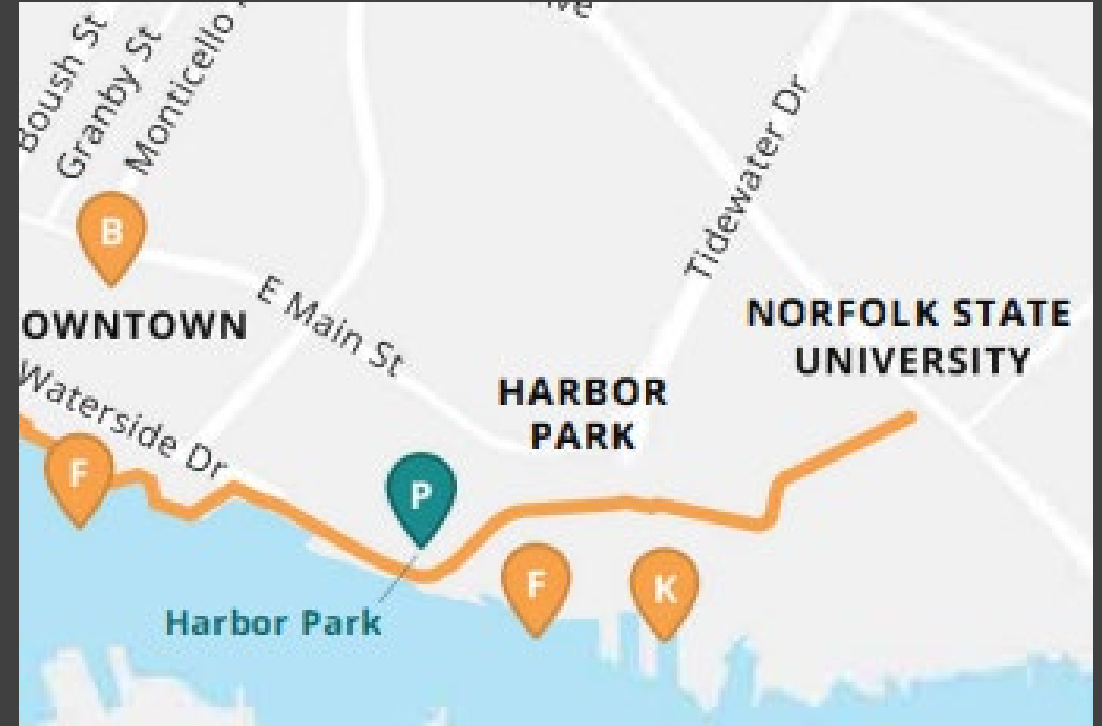
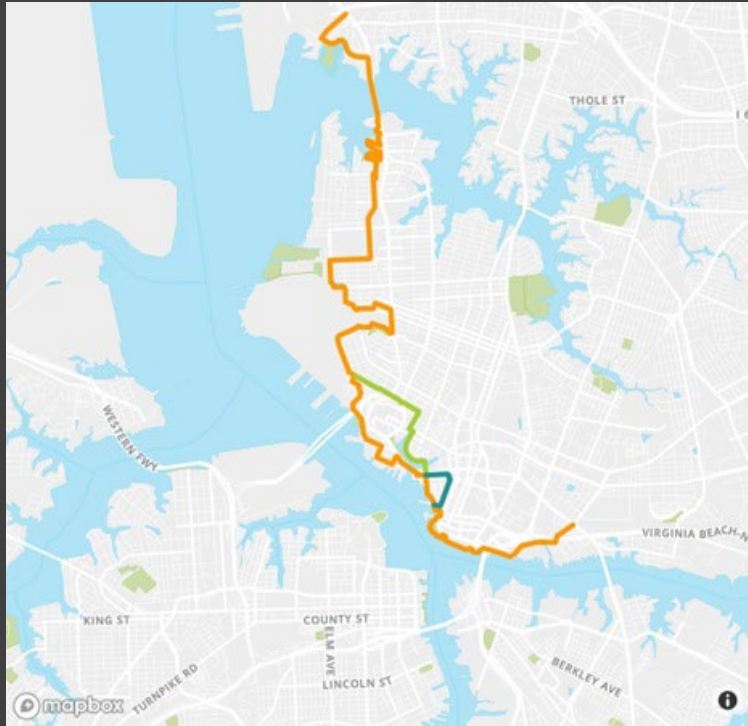




KEEPING THE ELIZABETH RIVER TRAIL BEAUTIFUL

Andrew Wilson
MPH 776



THE ELIZABETH RIVER TRAIL

Trail Cleanup



Organized by the [Elizabeth River Trail Foundation](#) in coordination with the City of Norfolk Department of Works



The Trail is 10.5 miles in total stretching from Norfolk State University to the Hermitage Museum and Gardens



I volunteered with the ERT Foundation to clean up the section of the trail around Harbor Park



50 plus people showed up and we were split up into pairs or small groups



We collected and recorded trash picked up to be used as data for Trash Free Seas



[Trash Free Seas](#) is a program run by Ocean Conservancy to prevent trash from entering our waterways

TRASH COLLECTED **Citizen scientist:** Pick up all trash and record all items you find below. No matter how small the items, the data you collect are important for Trash Free Seas.

EXAMPLE: Plastic Bags: ||||| = 8

Please DO NOT use words or check marks. Only **numbers** are useful data.

MOST LIKELY TO FIND ITEMS:

Cigarette Butts: <u> </u>	= 4	Beverage Bottles (Plastic): <u> </u>	= 9
Food Wrappers (candy, chips, etc.): <u> </u>	= 19	Beverage Bottles (Glass): <u> </u>	= 2
Take Out/Away Containers (Plastic): <u> </u>	= 1	Beverage Cans: <u> </u>	= 7
Take Out/Away Containers (Foam): <u> </u>	= 4	Grocery Bags (Plastic): <u> </u>	= 12
Bottle Caps (Plastic): <u> </u>	= 1	Other Plastic Bags: <u> </u>	= 15
Bottle Caps (Metal): <u> </u>	= 1	Paper Bags: <u> </u>	= 9
Lids (Plastic): <u> </u>	= 8	Cups & Plates (Paper): <u> </u>	= 2
Straws/Stirrers: <u> </u>	= 17	Cups & Plates (Plastic): <u> </u>	= 1
Forks, Knives, Spoons: <u> </u>	= 5	Cups & Plates (Foam): <u> </u>	= 1

FISHING GEAR:

Fishing Buoys, Pots & Traps:	=
Fishing Net & Pieces:	=
Fishing Line (1 yard/meter = 1 piece):	=
Rope (1 yard/meter = 1 piece): <u> </u>	= 1

OTHER TRASH:

Appliances (refrigerators, washers, etc.):	=
Balloons:	=
Cigar Tips:	=
Cigarette Lighters:	=
Construction Materials: <u> </u>	= 2
Fireworks:	=
Tires:	=

TINY TRASH LESS THAN 2.5CM:

Foam Pieces: <u> </u>	= 2
Glass Pieces: <u> </u>	= 1
Plastic Pieces: <u> </u>	= 21

PACKAGING MATERIALS:

6-Pack Holders:	=
Other Plastic/Foam Packaging: <u> </u>	= 13
Other Plastic Bottles (oil, bleach, etc.): <u> </u>	= 1
Strapping Bands:	=
Tobacco Packaging/Wrap:	=

PERSONAL HYGIENE:

Condoms:	=
Diapers:	=
Syringes:	=
Tampons/Tampon Applicators:	=

DEAD/INJURED ANIMAL

STATUS	ENTANGLED	TYPE OF ENTANGLEMENT ITEM
Dead or Injured	Yes or No	

2.5cm (actual size)

My Group Data

- I was in a pair with a fellow local citizen who is a Navy Corpsman
- This was the form we all used to record the data
- Recording the data was eye-opening
- Most of the trash collected was plastic
- We filled two bags

TRASH COLLECTED

Citizen scientist: Record the total number of items picked up by volunteers at the Cleanup site. The data you record are important for creating solutions for Trash Free Seas.

Please DO NOT use words or check marks.
Only **numbers** are useful data.

TOTAL #	EXAMPLE
28	Plastic Bags

TOTAL #	MOST LIKELY TO FIND ITEMS
1119	Cigarette Butts
269	Food Wrappers (sandy, chips, etc.)
90	Take Out/Away Containers (Plastic)
42	Take Out/Away Containers (Foam)
354	Bottle Caps (Plastic)
27	Bottle Caps (Metal)
73	Lids (Plastic)
135	Straws/Stirrers
44	Forks, Knives, Spoons
242	Beverage Bottles (Plastic)
30	Beverage Bottles (Glass)
70	Beverage Cans
71	Grocery Bags (Plastic)
111	Other Plastic Bags
32	Paper Bags
48	Cups & Plates (Paper)
68	Cups & Plates (Plastic)
59	Cups & Plates (Foam)

TOTAL #	FISHING GEAR:
2	Fishing Buoys, Pots & Traps
10	Fishing Net & Ploose
29	Fishing Line (1 yard/meter = 1 piece)
20	Rope (1 yard/meter = 1 piece)

TOTAL #	OTHER TRASH:
2	Appliances (refrigerators, washers, etc.)
24	Balloons
128	Cigar Tips
10	Cigarette Lighters
75	Construction Materials
0	Fireworks
1	Tires

TOTAL #	PACKAGING MATERIALS:
2	6-Pack Holders
152	Other Plastic/Foam Packaging
8	Other Plastic Bottles (oil, bleach, etc.)
26	Strapping Bands
53	Tobacco Packaging/Wrap

TOTAL #	PERSONAL HYGIENE:
2	Condoms
1	Diapers
0	Syringes
4	Tampons/Tampon Applicators
6	Gloves & masks (PPE) (not on tracking sheet)
0	E-cigarettes (not on tracking sheet)

TOTAL #	TINY TRASH LESS THAN 2.5CM:
218	Foam Pieces
246	Glass Pieces
680	Plastic Pieces

ITEMS OF LOCAL CONCERN:	TOTAL #
1.	
2.	
3.	

DEAD/INJURED ANIMAL	STATUS	ENTANGLED	TYPE OF ENTANGLEMENT ITEM
2 Beach	Dead or Injured	Yes or No	
	Dead or Injured	Yes or No	
	Dead or Injured	Yes or No	

Thank you for your valuable contributions to the Cleanup!

COORDINATOR



DEAR CLEANUP COORDINATOR:

Thank you for your hard work, dedication and valuable time spent for this important cause! We appreciate your commitment and passion for trash free seas.

Before you complete this form, compile all data from the Volunteer Ocean Trash Data Form. For each item of trash, add the total number of pieces and enter this number in the "Total" box on the back of this data form. Numbers are the only valid form of data, so please DO NOT use words or check marks in the boxes next to ocean trash items.

55
5
6
5.5
5.5
6.5
10
8.5
7.5
5.5
9.5
10
5
11
13
10
8.5
20

NAME: Morgan Willett EMAIL: MORGAN.WILLETT@elizabethrivertrail.org

CLEANUP SITE DESCRIPTION

Type of Environment (choose one):
☐ Saltwater (Ocean/Bay/Estuary)
☐ Freshwater (River/Stream/Lake)
☐ Inland (No Water Body Present)

Mode of Data Collection (choose one):
☒ Land (beach, shoreline or inland)
☐ Underwater
☐ Watercraft (powerboat, sailboat, kayak or canoe)

CLEANUP SITE LOCATION

Cleanup Site Name (beach, park, etc.): Harbor Park
 State or Province: VA Zone or County: Norfolk
 Country: USA Nearest Crossroad/Landmark: Harbor Park Stadium

CLEANUP SUMMARY

Month: 10 Day: 22 Year: 2022 Total Number of Volunteers at this site: Adults: 35 Children: 9
 Total Weight of Trash Collected: 160 lbs. or 72 kg. Total Number of Trash Bags Filled: 30
 Estimated Distance Cleaned: 1/4 1/2 3/4 1 2 3 4 5 (circle one) Other:
 Distance Measured In: Miles or Kilometers (circle one)

MOST UNUSUAL ITEMS COLLECTED:

1. 2. 3.

Please return this form along with all Data Forms to your State/Country Coordinator.
 State/Country Coordinators: Please submit Summary Data into the online Data Collection and Reporting Tool at www.coastalcleanupdata.org.

International Coastal Cleanup

If you are unable to contact your State or Country Coordinator, please mail or email this form to:
 Ocean Conservancy
 Attn: International Coastal Cleanup
 1300 19th Street, NW, 8th Floor
 Washington, DC 20038
cleanup@oceanconservancy.org
www.oceanconservancy.org/cleanup

SECTION DATA FROM COORDINATOR

Highlights from ERT Section Cleanup

Covered an area of ~ 1 mile

Collected 30 bags of trash weighing a total of 160 lbs.

Top 5 types of items collected:

- Cigarette Butts
- Plastic Pieces less than 2.5 cm
- Plastic Bottle Caps
- Food Wrappers
- Glass Pieces less than 2.5 cm

Plastic Waste Threatens the Health of the Chesapeake Bay

- Plastic waste in the US has increased tenfold from 1970 to 2018 while only 8.7% (3.09 mil tons) gets recycled in the US (US Government Accountability Office, 2021)
- A 2020 study found that plastic waste pollution in the Chesapeake Bay was found downstream from most major cities (Bikker, Lawson, Wilson, & Rochman, 2020)
- Beach surveys in the Commonwealth of Virginia have shown that most plastic debris is derived from food and beverage uses, with smoking-related products also making a sizeable contribution (Hale, Seeley, & Cuker, 2020)
- A 2014 study found that microplastic levels in the Chesapeake Bay peaked following rain events and increased surface runoff, supporting the hypothesis that land-based sources were major contributors. (Yonkos, Friedel, Perez-Reyes, Ghosal, & Arthur, 2014)
- Plastic waste within the context of the One Health Model
 - Microplastics can poison, entangle, and buildup in animals
 - This can be transferred through the food chain
 - Research to date suggests that the potential human health effects of exposure to plastics include respiratory irritation, dyspnea, decreased lung capacity, coughing, obesity, increased phlegm production, cardiovascular disease, asthma, and cancer (Morrison, et al., 2022)

Reflection on the Experience

- Cleaning up a section of the Elizabeth River Trail was surprisingly easy
- Working with your fellow citizens is a good way to get to know your neighbors and make an impact on environmental health
- This experience is perfect for replicating more frequently and is a great entry-level event for everyday people to get involved
- Student orgs from ODU like the Student National Environmental Health Association and the PHSA could coordinate with the Elizabeth Trail Foundation and the City of Norfolk to expand upon the work being done to “Keep Norfolk Beautiful”.
- Experience helps fight off climate catastrophe existential dread, you can make a difference, however small, and you are not powerless.

Reflection on Personal Skills



It helped me to get out of my comfort zone and meet new people



The organizers were very helpful and willing to network to provide data and assistance with reports



It helped me rebuild my social skills which have regressed since being isolated due to the pandemic



It was a positive experience in building my communication skills, would recommend it for introverted people



The experience was low-pressure and good exercise walking around



It was empowering to be a part of the community while serving the community



Service Learning plus Classroom Learning

- Service learning is an excellent way to put what you learn in the classroom into action
- Knowledge without action does not help anyone
- It also helps you develop the skills to build working relationships in your community
- Service learning informs how you want to build future interventions
- This experience was a great way to bring people together, get them excited about making a difference, and ensure people get educated and involved
- It made the public active partners in public and global health
- Service learning allows future and current public health workers to do public health with the community, instead of doing public health to the community
 - It is a collaborative effort, you cannot lead the public to do anything unless they trust you

References

- Bikker, J., Lawson, J., Wilson, S., & Rochman, C. M. (2020, July). Microplastics and other anthropogenic particles in the surface waters of the chesapeake bay. *Marine Pollution Bulletin*, 156. doi:10.1016/j.marpolbul.2020.111257
- Hale, R. C., Seeley, M. E., & Cuker, B. E. (2020). Plastic pollution and the chesapeake bay: The food system and beyond. In B. E. Cuker, *Diet for a sustainable ecosystem* (pp. 325-348). Retrieved from https://link.springer.com/chapter/10.1007/978-3-030-45481-4_17
- Morrison, M., Trevisan, R., Ranasinghe, P., Merrill, G. B., Santos, J., Hong, A., . . . Somarelli, J. A. (2022, November 2). A growing crisis for one health: Impacts of plastic pollution across layers of biological function. *Frontiers in Marine Science*. Retrieved from <https://doi.org/10.3389/fmars.2022.980705>
- US Government Accountability Office. (2021). *Advanced Plastic Recycling*. US Government Accountability Office. Retrieved from <https://www.gao.gov/assets/gao-21-105317.pdf>
- Yonkos, L. T., Friedel, E. A., Perez-Reyes, A. C., Ghosal, S., & Arthur, C. D. (2014). Microplastics in four estuarine rivers in the chesapeake bay, u.s.a. *Environmental Science and Technology*, 14195-14202. Retrieved from <https://doi.org/10.1021/es5036317>