

Supplementary Information

Data Quality Remains Consistent Between Volunteer Scientific Background, Training and Experience Levels, While Single-Use Pollution Detectability Varies in Trash Free Trails Citizen Science Surveys

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Table 1 Seeded SUP type and quantity on the 250m transect for activity 1

SUP Type	Quantity
Plastic bottle top	7
Plastic water bottles	6
Tissues	6
Confectionary/sweet wrappers	8
Glass alcoholic bottles	3
Aluminium soft drinks cans	5

Aluminium energy drink can	3
Hot drinks cup	3
Cigarettes	6
Fruit peel	3
Tear off	5
Empty dog poo bags	3
Items outside the transect	5

Table 2 Seeded SUP type and quantity on the 100m transect for activity 2

SUP Type	Quantity
Cigarettes	3
RYO cigarettes	3
Broken pottery	3
Brightly coloured can	3
Dull can	3
Cigarette filter tip wrapper	3
Brown banana peels	3
New banana peels	3
Tear offs	3
Red bottle top	3
Green bottle top	3
Blue bottle top	3
White bottle top	3
Can opener off can lid	3
Cable tie	3
Plaster	3
Straw sachet	3
Plastic bottle	3

Table 3 SUP type for activity 3, answers defined by Trash Free Trails CEO - Dom Ferris

SUP Type Category		Correct Trash Free Trail Survey
1-	Plaster	Miscellaneous
2-	Hairband	Clothes and footwear
3-	Plastic tablet packet	Drug related
4-	Plastic straw sachet	Plastic straws
5-	Energy gel sachet	Plastic energy gel sachet
6-	Energy gel end	Plastic energy gel ends
7-	Broken pottery	Miscellaneous
8-	Ring pull	Miscellaneous
9-	Garden glove	Clothes and footwear
10-	Wooden disposable spoon	Other fast / takeaway food containers, bags, wrapping
11-	Event paper wrist band	Outdoor event (e.g. festival)
12-	Bag handle strap	Miscellaneous
13-	Metal broken semi-circle	Miscellaneous
14-	Pink bit of plastic	Too small/dirty to ID
15-	Rubber band	Miscellaneous
16-	Battery	Miscellaneous
17-	Part of a wet wipe bag	Face / baby wipes
18-	Fabric label	Clothes and footwear
19-	Black tape	Other industrial / commercial
20-	Nicotine salts box	Vaping e-cig related

21-	Plastic cup	Drinks cups e.g. McDonalds
22-	High protein vanilla drink bottle	Plastic soft drinks bottle
23-	Baby dummy	Miscellaneous
24-	Striped tape	Other forestry
25-	Rubber balloon	Normal balloons
26-	Tennis ball	Pet stuff - toys
27-	Empty cigarette filter packet	Smoking related
28-	Trainer	Clothes and footwear
29-	Sports top	Clothes and footwear
30-	Hiking stick end	Roam
31-	Leggings	Clothes and footwear


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Ready To Get Started?

Use these handy Toolkit videos to train yourself up as a Citizen Scientist! With each video being no more than **3 minutes**, you can watch them in bitesize chunks or come back to them easily at any point. Click on each section for more information and helpful resources available to **download for free**.





#1 - Introduction
How did this Toolkit come about?



#2 - What is Citizen Science?
Great question - let's start there!



#3 - Doing a Trash Count
Clickers at the ready - it's counting time!

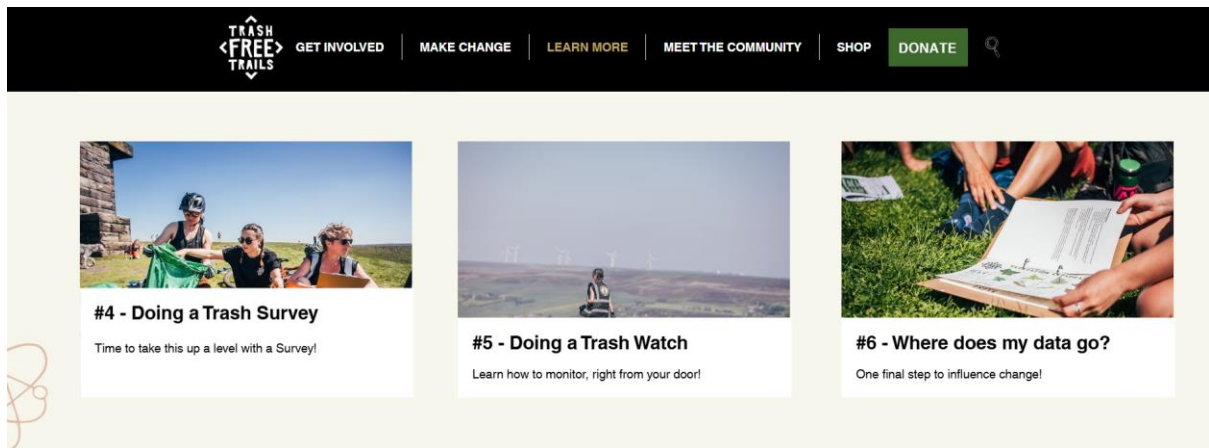


Fig. 1 Citizen science training toolkit videos, informing volunteers how to conduct a single-use pollution survey available at: <https://www.trashfreetrails.org/research/citizensciencetoolkit>



STATE OF OUR TRAILS REPORT - TRASH SURVEY SHEET

Trail Name and location postcode: Distance:

Your Name and Email: Date:

Below is a list of items you may find on your trails. All you need to do is to record a tally next to each of the items you find. Once you've finished the trail clean, add up your tally for each item to include totals for each item type. Finally, add up your totals for each category and then add the categories to get the overall total.

EXAMPLE CATEGORY	
Trash Type A	12
Trash Type B	4

PET STUFF	
Full dog poo bags	
Empty dog poo bags	
Toys (e.g., tennis ball)	
Other pet related	
DRINKS CONTAINERS	
Soft Drinks	
Plastic water bottle	
Plastic soft drink bottle	
Aluminium soft drink cans	
Glass soft drink bottles	
Plastic bottle top	
Energy Drinks	
Plastic energy drink bottle	
Aluminium energy drink can	
Plastic energy gel sachet	
Plastic energy gel ends	
Alcoholic Drinks	
Aluminium alcoholic drink can	
Glass alcoholic bottle	
Glass bottle top	
Takeaway drinks	
Hot drinks cups	
Hot drinks tops and stirrers	
Drinks cups (e.g., McDonalds)	
Drinks tops (e.g., McDonalds)	
Cartons	
Plastic straws	
Paper straws	

OTHER NOT LISTED ITEMS

SNACKS / FOOD / SHOPPING / BBQ	
Plastic carrier bags	
Plastic bin bags	
Confectionery / sweet wrappers	
Wrapper 'corners' / tear offs	
Other confectionery (e.g. ice-cream, lolly sticks, plastic pots)	
Crisps (or other snack packs, e.g. nuts) packets & pots	
Used chewing gum	
Plastic fast / takeaway food utensils	
Other fast / takeaway food containers, bags, wrapping	
Disposable BBQs and cooking utensils	
BBQ food containers, packaging etc.	
Food on the go (e.g. sandwich wrappers and sub/slawers)	
Homemade lunch (e.g. cling film, foil, sandwich bags)	
Fruit peel & cores	
SMOKING / VAPING / DRUGS	
Cigarette butts	
Smoking related (e.g. packs, filters, lighters)	
Disposable vapes	
Vaping e-cig related	
Drug Related	
FARMING / FORESTRY / IND / COMMERCIAL	
Salt / mineral lick buckets	
Silage wrap	
Other farming	
Tree guards	
Other forestry	
Cable ties	
Industrial plastic wrap	
Other industrial / commercial	

WEIRDEST / FUNNIEST / OLDEST

HYGIENE / BABY / COVID RELATED	
Toilet tissue	
Face / baby wipes	
Nappies	
Single Use Period Products	
Rubber / nitrile gloves	
Single Use COVID masks	
OUTDOOR RECREATION	
Camping	
Outdoor event (e.g. festival)	
Halloween, Fireworks	
Seasonal (e.g. Xmas, Easter)	
Normal balloons	
Helium balloons	
OUTDOOR ACTIVITY RELATED	
Outdoor sports event / race	
Ride (offroad biking)	
Run	
Roam (e.g. hiking, swimming, droming)	
TEXTILES	
Clothes & footwear	
HOUSEHOLD / DOMESTIC	
Plastic milk bottles	
Glass milk bottles	
Plastic food containers	
Cardboard food containers	
Cleaning product containers	
MISCELLANEOUS	
TOO SMALL / DIRTY TO ID	
TOTAL	

REMEMBER TO SUBMIT YOUR DATA AT WWW.TRASHFREETRAILS.ORG

Share your trail clean and tag us on instagram @trashfreetrails

#StateofOurTrailsReport #CitizenScience #TrashFreeTrails

Fig. 2 2025 Trash Free Trails Survey sheet used for fieldwork transects (side 1 of 2)

Table 4 Significant Tukey post-hoc comparisons for SUP categorisation difficulty per SUP item

Comparison	Estimate	SE	z-ratio	p-value
Bag handle - Fabric label	-4.177	0.957	-4.37	0.005
Bag handle - Garden glove	-3.335	0.818	-4.08	0.016
Bag handle - Hairband	-3.335	0.818	-4.08	0.016
Bag handle - Leggings	-4.178	0.957	-4.37	0.005
Bag handle - Plastic cup	-4.177	0.957	-4.37	0.005
Bag handle - Rubber balloon	-3.335	0.818	-4.08	0.016
Bag handle - Sports top	-3.334	0.817	-4.08	0.016
Bag handle - Trainer	-3.334	0.817	-4.08	0.016
Black tape - Fabric label	-4.176	0.957	-4.36	0.005
Black tape - Garden glove	-3.334	0.817	-4.08	0.016
Black tape - Hairband	-3.334	0.817	-4.08	0.016
Black tape - Leggings	-4.177	0.957	-4.36	0.005
Black tape - Plastic cup	-4.177	0.957	-4.36	0.005
Black tape - Rubber balloon	-3.334	0.817	-4.08	0.016
Black tape - Sports top	-3.333	0.817	-4.08	0.016
Black tape - Trainer	-3.333	0.817	-4.08	0.016
Broken pottery - Fabric label	-3.601	0.913	-3.94	0.027
Broken pottery - Leggings	-3.602	0.914	-3.94	0.027
Broken pottery - Plastic cup	-3.601	0.914	-3.94	0.027

Fabric label - Metal broken semi-circle	3.603	0.914	3.94	0.026
Fabric label - Part of wet wipe bag	3.601	0.914	3.94	0.027
Fabric label - Plastic straw sachet	3.601	0.913	3.94	0.027
Fabric label - Striped tape	3.868	0.931	4.16	0.012
Fabric label - Wooden disposable spoon	3.871	0.931	4.16	0.012
Garden glove - Striped tape	3.026	0.787	3.85	0.038
Garden glove - Wooden disposable spoon	3.029	0.787	3.85	0.037
Hairband - Striped tape	3.026	0.787	3.85	0.038
Hairband - Wooden disposable spoon	3.029	0.787	3.85	0.037
Leggings - Metal broken semi-circle	3.604	0.914	3.94	0.026
Leggings - Part of wet wipe bag	3.602	0.914	3.94	0.027
Leggings - Plastic straw sachet	3.602	0.914	3.94	0.027
Leggings - Striped tape	3.869	0.931	4.16	0.012
Leggings - Wooden disposable spoon	3.872	0.931	4.16	0.012
Metal broken semi-circle - Plastic cup	-3.603	0.914	-3.94	0.026
Part of wet wipe bag - Plastic cup	-3.601	0.914	-3.94	0.027
Plastic cup - Plastic straw sachet	3.601	0.914	3.94	0.027
Plastic cup - Striped tape	3.869	0.931	4.16	0.012
Plastic cup - Wooden disposable spoon	3.871	0.931	4.16	0.012
Rubber balloon - Striped tape	3.026	0.787	3.85	0.038
Rubber balloon - Wooden disposable spoon	3.029	0.787	3.85	0.037
Sports top - Striped tape	3.025	0.787	3.85	0.038
Sports top - Wooden disposable spoon	3.028	0.787	3.85	0.037
Striped tape - Trainer	-3.025	0.787	-3.85	0.038
Trainer - Wooden disposable spoon	3.028	0.787	3.85	0.037
