



Upstream[®] Battle

National Citizen Science Report
July 2025



Keep Scotland
Beautiful

Your charity inspiring action for our environment

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We support the United Nations Sustainable Development Goals.



Introduction

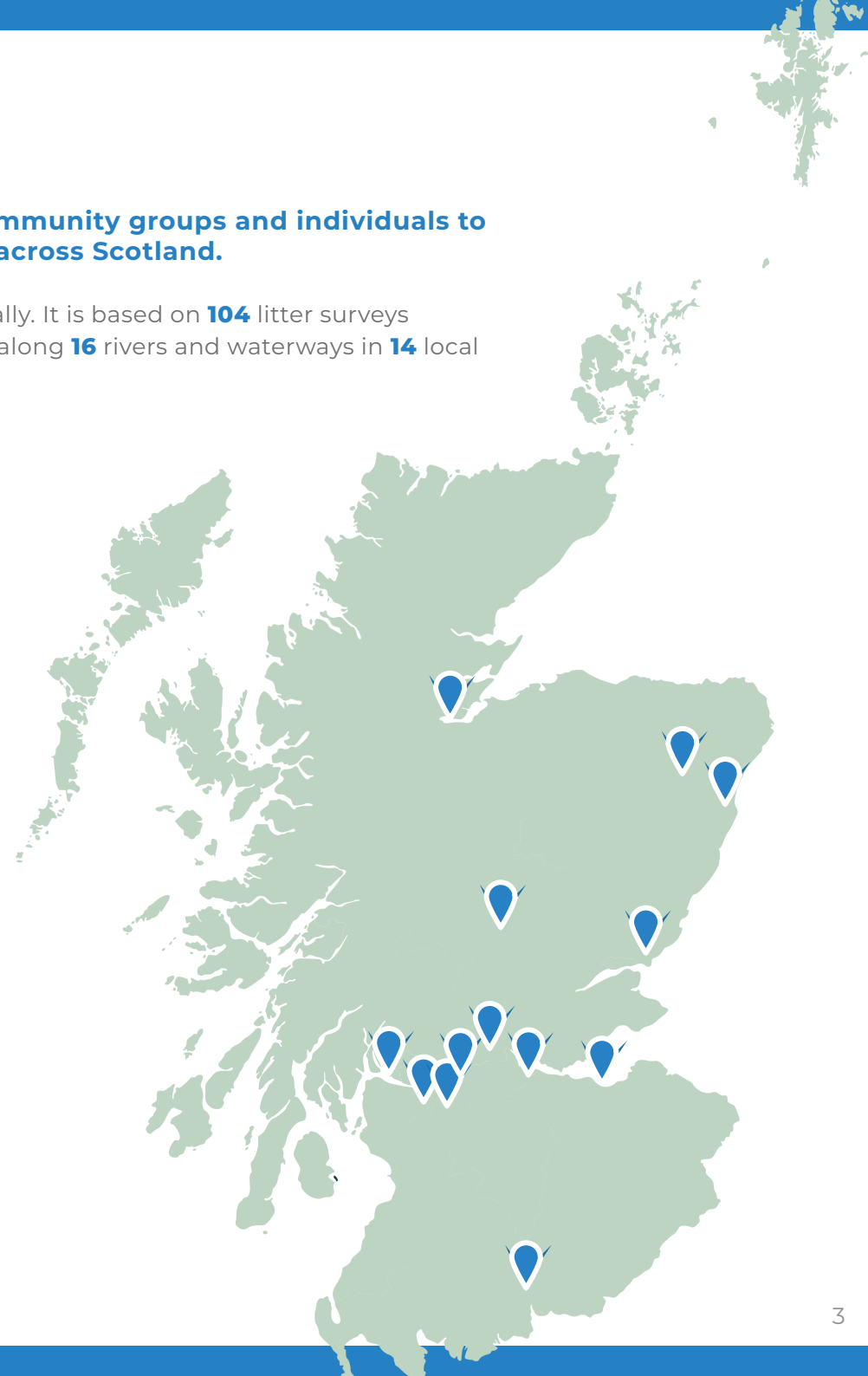
Our Upstream Battle® Citizen Science Programme encourages community groups and individuals to collect data on the litter found adjacent to rivers and waterways across Scotland.

This report provides a snapshot of data gathered both nationally and regionally. It is based on **104** litter surveys completed from December 2024 to February 2025. Surveys were completed along **16** rivers and waterways in **14** local authorities throughout Scotland.



Citizen scientists have been adding to our national database throughout the year. These surveys have been added to our national dataset which thanks to funding from the Marine Funded Scotland, we have been building since 2023.

This report builds on our first Upstream Battle® National Citizen Science Report released in May 2024.



Key findings



104
Upstream Battle® surveys

16
rivers and tributaries

14
local authorities

8,438
items counted

Top 10 littered items

Change in position from 2024

↑ Increase ↓ Decrease ↔ No change



1. Plastic snack packets



2. Plastic pieces



3. Glass fragments



4. Drinks cans



5. Cigarettes



6. Plastic bottles



7. Plastic bags



8. Polystyrene pieces

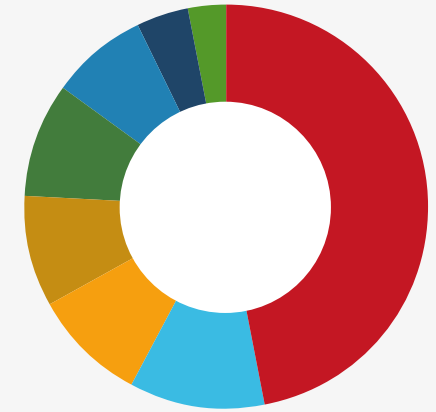


9. Dog poo



10. Paper fragments

Material types



■ 47% Plastic

■ 11% Metal

■ 9% Other

■ 9% Glass

■ 9% Cigarettes and vapes

■ 8% Paper

■ 4% Dog poo

■ 3% Sanitary

Key findings

As we found last year, there was consistency across the top 10 littered items nationally, with only minor regional variations.



Food and drink packaging

- Food and drink packaging was recorded in all but one of the **104** litter surveys. The key food and drink packaging items were plastic snack packets (in **87%** of surveys and **20%** of total item count), drinks cans (in **69%** of surveys) and plastic bottles (in **54%** of surveys).
- Single-use drinks cups (including plastic and 'paper' cups) were recorded in **35%** of surveys.

Other litter

- Fragments, or pieces, of litter (including plastic, polystyrene, paper and glass) are an often underreported, as in some areas they are too numerous to accurately count. Despite this, **1,783** litter pieces were surveyed making up **24%** of all items counted.
- Paper fragments is a 'new' category that has been added to the survey form based on the high number of fragments of paper (such as tickets, receipts and leaflets) that have been recorded in previous years under the 'Other paper' category.
- Cigarettes remain in the top five and were found in **46%** of surveys with the total count of cigarettes making up nearly **7%** of total items counted.
- Fifty vapes were recorded in total and they were recorded in **22%** of the surveys.
- Dog poo is back in the top **10** and was recorded in **61%** of surveys. These counts were recorded as either "bagged" (**54%**) or "unbagged" (**46%**) dog poo.

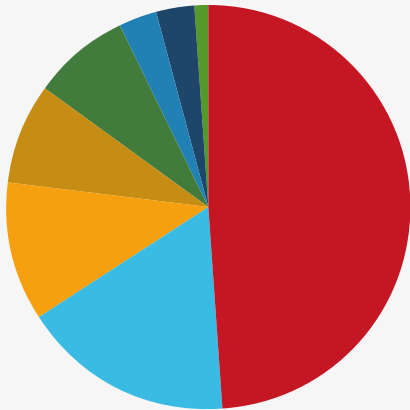
This report provides a snapshot of data gathered both nationally and regionally. The main data collection phase took place across three months from December 2024 to February 2025.



What was involved?

-  **14** surveys
-  **2** rivers and tributaries
-  **2** local authorities
-  **715** litter items counted

Material types found



- **49%** Plastic
- **17%** Paper
- **11%** Metal
- **8%** Cigarettes & vapes
- **8%** Other
- **3%** Sanitary
- **3%** Dog poo
- **1%** Glass

Aberdeen

Continuing the national development of the Upstream Battle® campaign, we expanded into the Aberdeen area collecting data from 14 surveys on the River Dee and River Don in 2024-25. The River Don surveys were completed by staff and students from Kemnay Academy as part of their trial of the Upstream Battle® toolkit.

Top 10 littered items:



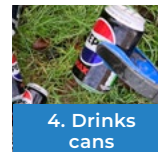
1. Plastic snack packets



2. Plastic bags



3. Paper fragments



4. Drinks cans



5. Plastic bottles



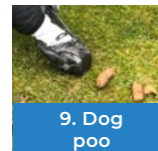
6. Cigarettes



7. Plastic bottle caps



8. Foil wrappers



9. Dog poo



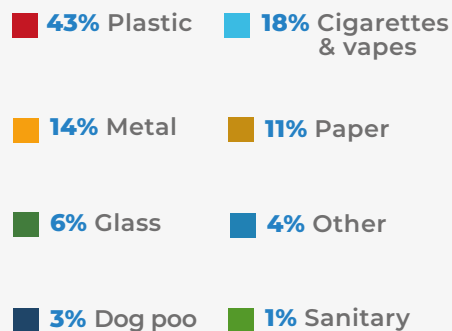
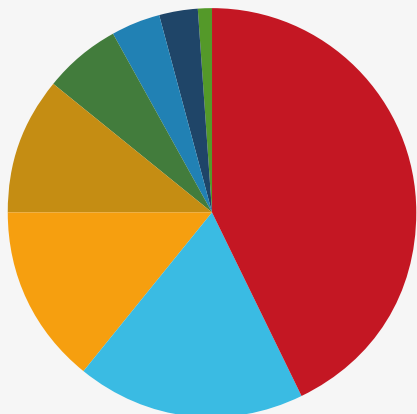
10. Plastic pieces



What was involved?



Material types found



Clyde Valley

The Clyde Valley regional summary was compiled using data collected from 29 litter surveys completed between December 2024 – February 2025 by community groups and members of the public.

Top 10 littered items:



Notable Findings:

- Plastic snack packets were recorded in **93%** of surveys.
- More than **100** plastic snack packets were recorded in a single survey at the Red Burn in Helensburgh.
- Single-use cups were recorded in **34%** of surveys.

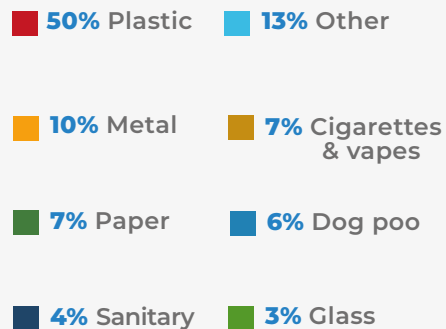
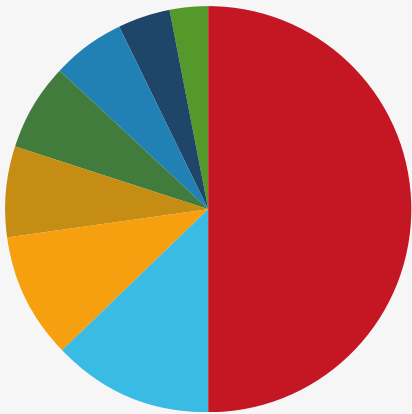
Significant litter surveys were completed on the Clyde in September and November 2024, outside of the three-month focused citizen science reporting period. A group from Clydebank completed two large (250m) surveys along the Clyde in West Dunbartonshire, recording **2,012** litter items in these two surveys. One of the surveys recorded **180** cotton buds.



What was involved?



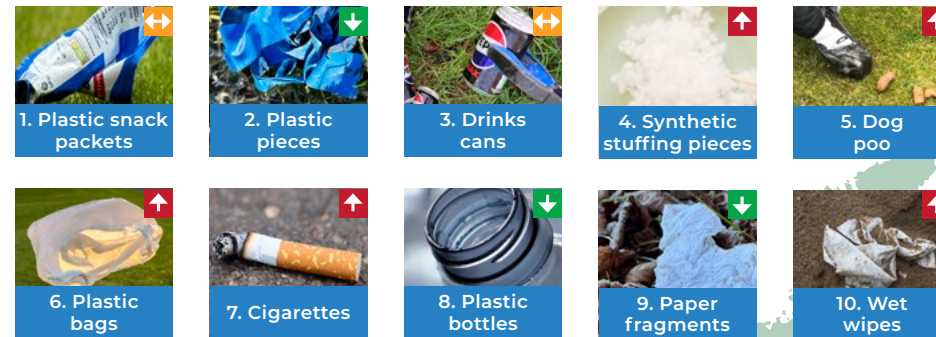
Material types found



Forth and Central

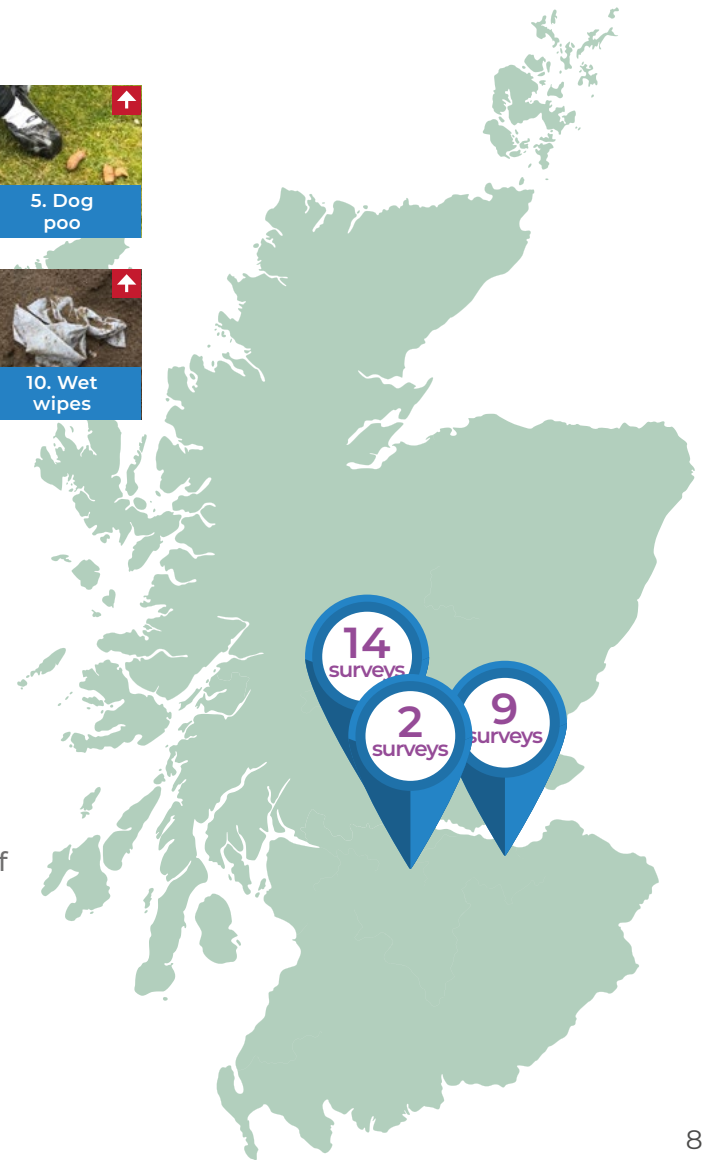
The Forth and Central regional summary was compiled using data collected from litter surveys completed between December 2024 – February 2025 by community groups including the Scottish Seabird Centre and Scottish Coastal Clean Up.

Top 10 littered items:



Notable Findings:

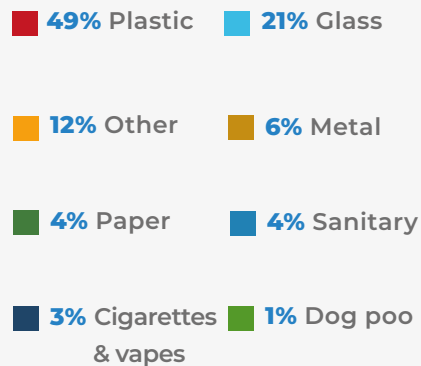
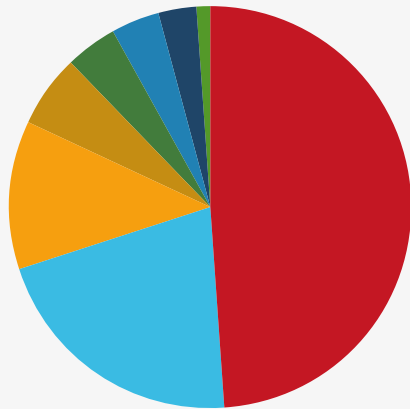
- Surveys on the riverside path in Stirling had a high prevalence of dog poo (recorded in all surveys) and smoking related litter (vapes and cigarettes recorded in **75%** of surveys). Twenty-two dog poos (**21** of them unbagged) were recorded in a single 100m survey in Stirling.
- Wet wipes were recorded in **64%** of surveys, with **29** wet wipes recorded in one survey on the River Esk (half of the total wet wipes recorded across the Forth and central region).



What was involved?



Material types found



Irvine

As part of the national roll out of the Upstream Battle® campaign during 2023/24, the Irvine Clean Up Crew highlighted the significant litter issues on the River Irvine, evidenced by litter surveys.

This led to the development of an [Upstream Battle® intervention on the River Irvine](#) as part of the 2024/25 funding. For the broader intervention, 45 litter surveys were carried out at four locations along the River Irvine and the results are available to read in our River Irvine intervention report. We carried out 13 of the River Irvine litter surveys during the three-month window of this citizen science report.

Top 10 littered items:



Notable Findings:

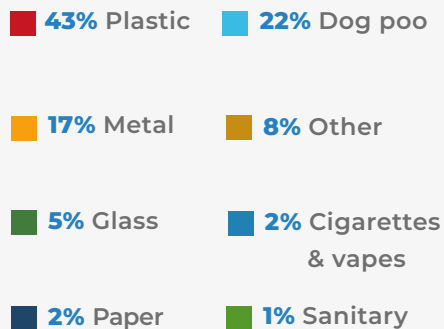
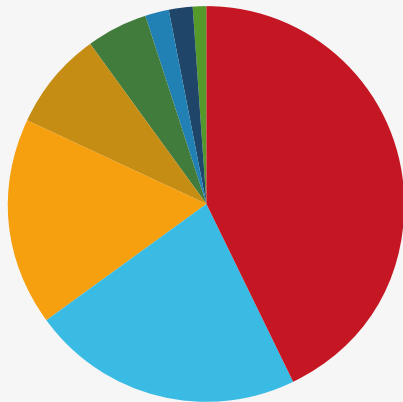
- At a site adjacent to the railway viaduct, **720** litter items were recorded in a single 50m survey, including **48** plastic bottles as well as many fragments of different materials (**230** glass fragments, **118** plastic pieces and **112** polystyrene pieces).
- Litter picks were carried out with the surveys at the railway viaduct site; however, the same very high amounts of litter were recorded at follow up surveys. Investigation of the riverine flows in the area and measures of the litter moving down the river would be beneficial to attempt to identify the source of the litter.



What was involved?



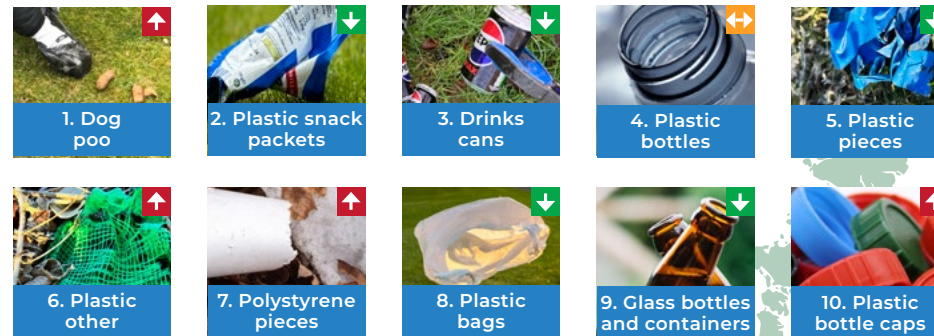
Material types found



Tayside

In 2025, the Tayside regional summary was focused on data collected from 15 litter surveys in and around Aberfeldy in January 2025 by the outdoor adventure business Beyond Adventure. Surveys were completed on the same area along the River Tay in Aberfeldy in both 2024 and 2025.

Top 10 littered items:



Notable Findings:

- The number of pieces of litter per survey in Aberfeldy has more than halved between 2024 and 2025, dropping from **64** to **28** litter items per 100m survey.
- Ninety-five littered bags of dog poo were recorded across the 15 surveys with dog poo recorded in **73%** of surveys.



Focus on: Cuningar loop intervention

Keep Scotland Beautiful staff completed Upstream Battle® data days at the beginning of December 2024 and December 2025 with a series of surveys focused on the Cuningar Loop section of the River Clyde in Glasgow.

Following the December 2024 surveys, an intervention targeting food on-the-go litter was implemented with signage put in place from March 2024. The bin stickers and one of the banners were still in place when the second round of surveys were completed in December 2025. The surveys recorded a drop in the average amount of litter per 100m survey, as well as a drop in the counts of the individual litter types that were common across both top 10s.

	2024	2025
 Number of surveys	7	20
 Total litter items recorded	403	700
 Litter items/100m survey	57.6	35

Top 10 comparison			
Position	2024	2025	Change
1	Drinks cans	Plastic snack packets	↑
2	Plastic snack packets	Drinks cans	↓
3	Plastic bottles	Plastic bags	↑
4	Plastic bags	Plastic pieces	↑
5	Plastic pieces	Plastic bottle caps	↑
6	Glass bottles & containers	Plastic bottles	↓
7	Paper cups	Cigarettes	↑
8	Dog poo	Plastic food containers	↑
9	Miscellaneous other	Foil wrappers	↑
10	Plastic food containers	Paper fragments	↑




Focus on: Forth, Stirling

In January 2024 and January 2025, the Keep Scotland Beautiful team completed a series of litter surveys along the walkway by the River Forth in Stirling. The average number of litter items per survey remained quite similar over the two years.

Notable Findings:

- Twenty-two dog poos (21 of them unbagged) were recorded in a single 100m survey in Stirling.
- Considerable overlap in litter items across the two years with eight out of the top 10 items being present in both 2024 and 2025.
- The other plastic category included empty dog poo bags and plastic packaging.

	2024	2025
 Number of surveys	15	12
 Total litter items recorded	1,295	1,020
 Litter items/100m survey	86	85

Top 10 comparison			
Position	2024	2025	Change
1	Plastic snack packets	Plastic snack packets	↔
2	Plastic pieces	Synthetic stuffing pieces	↑
3	Drinks cans	Dog poo	↑
4	Polystyrene pieces	Cigarettes	↑
5	Dog poo	Plastic bags	↑
6	Plastic bags	Plastic pieces	↓
7	Plastic bottles	Polystyrene pieces	↓
8	Foil wrappers	Other plastic	↑
9	Paper pieces	Paper pieces	↔
10	Cigarette	Drinks can	↓






Focus on: River Nith, Dumfries

In 2024 and 2025, Keep Scotland Beautiful worked with Nith Life to gather surveys along a particularly littered residential area along the River Nith in Dumfries. In 2025, we linked with them again to collect surveys and trial our [Upstream Battle® toolkit](#).

Notable Findings:

- The litter items per survey reduced nearly by half between 2024 and 2025.
- Plastic snack packets remain the most recorded item over two years.
- Cigarette related items included plastic wrapping from cigarette packets and cigarette lighters.

	2024	2025
 Number of surveys	8	6
 Total litter items recorded	931	385
 Litter items/100m survey	116	64

Top 10 comparison			
Position	2024	2025	Change
1	Plastic snack packets	Plastic snack packets	↔
2	Polystyrene pieces	Cigarettes	↑
3	Plastic bags	Drinks cans	↑
4	Plastic pieces	Plastic pieces	↓
5	Drinks cans	Plastic bottles	↑
6	Plastic bottles	Other plastic	↑
7	Cigarette related	Glass fragments	↑
8	Plastic cups	Cigarette related	↓
9	Plastic sheeting	Polystyrene pieces	↓
10	Glass fragments	Paper fragments	↑



Looking forward

Legislative, regulatory and policy change, for example the eventual introduction of a Deposit Return System (DRS) across the UK and the reform of packaging Extended Producer Responsibility (pEPR) regulations, are to be welcomed. Design changes such as the move to plastic bottle caps remaining attached to bottles may have influenced our findings that plastic bottle caps have dropped out of the top 10.

We celebrate the ban on single-use vapes, and look forward to working with the government and retailers to tackle single-use coffee cups. These changes cannot come quickly enough to help address the damage being done to our rivers and waterways, and ultimately the marine environment. Some of the most common items that have again been found nationally and regionally, such as cigarette litter and paper fragments, are not currently in scope for either the Deposit Return Scheme or packaging Extended Producer Responsibility, and there is a need to develop solutions to address these items.

We believe the data gathered through Citizen Science as part of Upstream Battle® is not only essential for understanding the scale and sources of riverine litter in Scotland, but has already contributed to policy change — and holds significant potential to inform future decision-making at both local and national levels.

The logo for Upstream Battle is displayed on a white rectangular background. The word "Upstream" is in a blue, sans-serif font with a registered trademark symbol (®) to its upper right. A thin horizontal line separates "Upstream" from the word "Battle", which is in a larger, bold, blue, sans-serif font. The background of the entire page is a blurred image of a river with buildings in the distance under a blue sky with clouds.

Upstream[®]
Battle

The challenge is immense. The need for action urgent.

Making the connection between litter dropped inland, moving to our waterways, and ending up in the sea is imperative.

Litter does not stay where it is dropped. Until we tackle the behaviours behind our litter culture, we are fighting a losing battle.

We all need to step up. Make the connection. Reduce our consumption. Stop dropping litter.

Conclusion

We would like to sincerely thank the tireless efforts of the individuals and local community groups who are out litter picking in their communities. We rely on the work of community groups to raise awareness and provide evidence of litter hot spots to encourage action and investigation into the sources and impacts of litter at different locations throughout Scotland.

To further encourage and highlight the value of citizen science, Keep Scotland Beautiful is chairing a Citizen Science Coordinators Forum as part of our support of the National Litter and Flytipping Strategy. This forum is fostering collaboration with other charities targeting litter issues in Scotland to actively promote and improve the quality and consistency of citizen science data to further support collection of litter data.

We have seen some very encouraging reductions in the broader numbers of litter items recorded per survey, compared with 2024. However, there are still areas where there are significant and unacceptable amounts of litter recorded. Hot spots on the Irvine, the Esk and the Nith highlight that litter is a national issue.

The recent release of the [Upstream Battle® toolkit](#) to support communities to tackle the litter issues around their local waterways provides some guidance and support. However, for those in areas affected by significant litter accumulations, often impacted by tides, storm surges and riverine currents, more work needs to be done to understand the patterns of water movement to attempt to intercept litter earlier on its source to sea journey.

When consulting with communities, we are frequently reminded of the need for a wide-reaching national anti-litter campaign. People remember the television advertising campaigns of their childhood that highlighted the importance of everyone putting their litter in the bin. As Upstream Battle® continues, we will strive to reach the national audience and continue to work to prevent litter from reaching our parks and waterways and to stop the litter before it even starts a source to sea journey. Campaigns and programmes like Upstream Battle® endeavour to engage with communities and highlight the issues that matter to them. Reporting of citizen science highlights the value of local voices contributing to national issues.

Keep Scotland Beautiful remains committed to tackling litter at source along rivers and waterways as part of our support for the Scottish Government's Marine Litter Strategy for Scotland, and the National Litter and Flytipping Strategy.





We support the Sustainable Development Goals.

Keep Scotland Beautiful is your charity for our environment.
We work with you to help combat climate change,
reduce litter and waste, restore nature and biodiversity
and improve places.



T: 01786 471333 E: info@keepscotlandbeautiful.org

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