

The background of the entire page is a photograph of the ocean under a blue sky with white clouds. Several large, crumpled pieces of clear plastic waste are floating on the water's surface, appearing like icebergs. Below the waterline, the plastic waste is visible as dark, tangled shapes. A semi-transparent white rectangular box is centered over the image, containing the title text.

Upstream[®] Battle

National Citizen Science Report
May 2024



**Keep Scotland
Beautiful**

Your charity inspiring action for our environment

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We support the United Nations Sustainable Development Goals.



Introduction

80% of marine litter comes from land. If we are serious about effectively addressing this issue, we must actively prevent and reduce litter along our rivers and waterways, by changing behaviour and stopping marine litter at source.

Keep Scotland Beautiful is at the forefront of tackling riverine litter in Scotland - since 2018, our award-winning Upstream Battle Campaign has been raising awareness, gathering data and inspiring action to tackle riverine litter at source before it ends up in our seas. The campaign was launched across the Clyde Valley in 2018 and Tayside in 2021.

In 2023/24 we received funding from the Marine Fund Scotland to transform Upstream Battle into a national campaign focused on riverine litter. A key element of this work was creating the first national Citizen Science Report.

To do this, we rolled out our Citizen Science Programme to collect data on rivers and waterways across Scotland, which allows us to better understand the key litter issues facing communities and in turn identify key items and behaviours that we need to target.

This report provides the first snapshot of data gathered nationally and regionally. The main effort to collect data took place across three months (December 2023 to February 2024). During this time 185 surveys were completed along 26 rivers and waterways across Scotland and the analysis in this document is based on these 185 surveys.

We'd like to thank all the organisations, businesses, community groups and individuals who have supported us with collecting the data and have contributed to this important report.

An underwater photograph showing various pieces of plastic litter floating in clear blue water. Visible items include a green leaf, a clear plastic bottle, a white plastic bag, and other unidentifiable plastic fragments. The scene is brightly lit, with light rays filtering through the water.

185
surveys

26
waterways

20
local authorities

20,383
Items counted

This national report builds on work which was undertaken across the Clyde Valley from 2018-2021 and Tayside in 2021

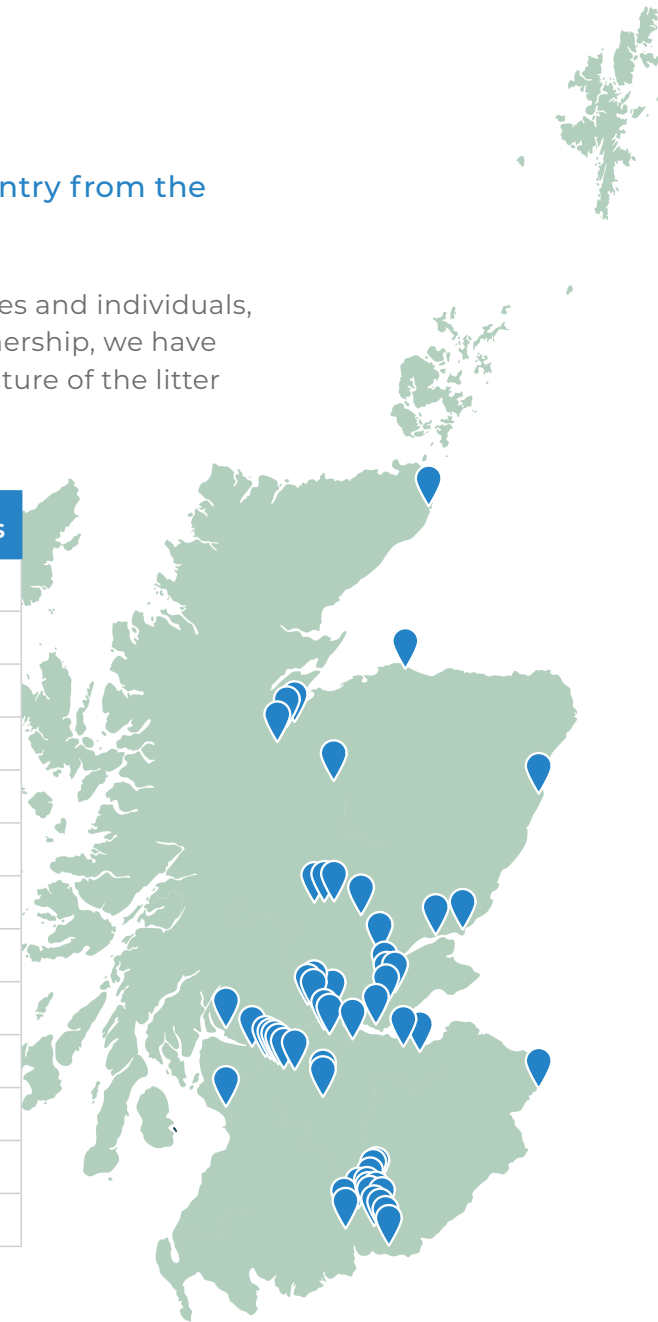
National snapshot

We started to build Upstream Battle® nationally by working with communities across the country from the Wick River in the Highlands to the River Nith in Dumfries and Galloway.

Only by working with a wide range of participants including community groups, youth groups, businesses and individuals, across Scotland, have we been able to collect the 185 surveys analysed in this report. By working in partnership, we have been able to use local knowledge to understand where local litter hot spots are, and to build a better picture of the litter entering our rivers and waterways.

Area	Waterway	Surveys
The Highlands	River Lossie	1
	Wick River	10
	River Ness	14
	Caledonian canal	12
	River Spey	1
Tayside	River Tay	17
	Dighty Burn	1
Forth and central	River Forth	19
	Allan Water	8
	Forth & Clyde Canal	4
	Water of Leith	8
	Lyne Burn	3
	River Esk	8

Area	Waterway	Surveys
Clyde Valley	Drumfork Burn	2
	River Clyde	32
	Gills Burn	6
Dumfries and Galloway	River Annan	21
	River Nith	8
Other*	River Don	1
	Butterwell Burn	1
	River Leven (Fife)	1
	River Ore	1
	Pow Burn	2
	Lochty Burn	1
	River Irvine	2
	River Tweed	1



* The litter survey data from the waterways in the 'other' reporting category has been included as part of the National Snapshot and overall top 10. However, due to low survey numbers, a regional snapshot for these waterways has not been included in this report.

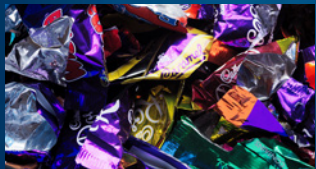
Top 10 littered items



1. Plastic bottles



2. Plastic pieces



3. Plastic snack packets



4. Drinks cans



5. Polystyrene pieces



6. Cigarettes



7. Glass fragments



8. Dog poo



9. Plastic bags



10. Plastic bottle caps

Key findings

Overall, there was a high level of consistency across Scotland in terms of what items were found along our rivers and waterways with some minor regional variations.

- Plastic bottles and drinks cans are high in both the top ten nationally and regionally.

- Plastic snack packets (from crisps and confectionery) are number three nationally and consistently in the top five regionally.

- Plastic pieces are in the top five nationally and in every top five regionally.

- Cigarette litter is number six nationally and makes the top ten in almost every region.

- Dog poo is at number eight nationally and makes the top ten in almost every region.

- Plastic bags is number nine and is found in the top ten everywhere except the Clyde Valley.

What was involved?



26
rivers and tributaries



20
local authorities

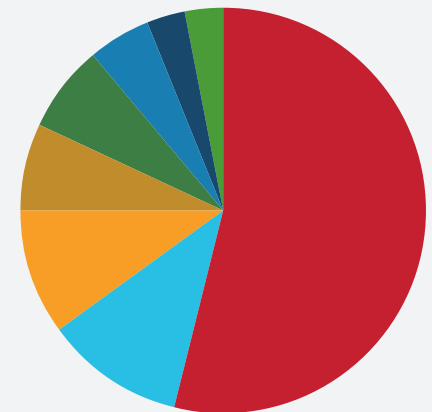


185
Upstream Battle® surveys



20,383
Items counted in total

Material types found



■ 54% Plastic ■ 11% Metal

■ 10% Other ■ 7% Glass

■ 7% Cigarettes ■ 5% Paper

■ 3% Dog poo ■ 3% Sanitary

Key findings

These findings show that almost all of the litter items recorded nationally and regionally along our rivers and waterways are a result of human behaviour, whether it is through our unsustainable consumption of single-use convenience products, for example the array of items associated with food and drink on the go, or from our careless use of these locations for leisure and recreation (cigarette litter and dog poo).

Legislative, regulatory and policy change, for example the eventual introduction of a Deposit Return System (DRS) across the UK and forthcoming reform of packaging Extended Producer Responsibility (EPR) regulations, are to be welcomed but, in truth, cannot come quickly enough to help address the damage being done to our rivers and waterways, and ultimately the marine environment.

Some of these changes have been delayed already and while we wait for them to be agreed and implemented, the reality is that these littered items – from plastic bottles to drinks cans and sweet wrappers and crisp bags – will continue to accumulate along our rivers and waterways, damaging nature and wildlife.

In addition, some of the most common items found nationally and regionally are not currently in scope for either DRS or EPR, for example cigarette litter, and there is a need to urgently develop solutions to address these items.

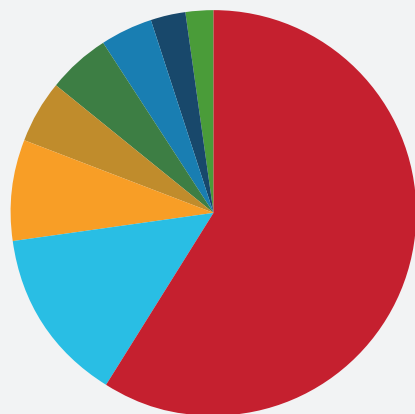
That is why we believe Upstream Battle, with the data gathered through Citizen Science across the country and positive action to change behaviour, is of vital importance in tackling riverine litter nationally and regionally.



What was involved?

-  **5** rivers and tributaries
-  **2** local authorities
-  **38** Upstream Battle surveys
-  **2,830** Items counted in total

Material types found



- **59% Plastic**
- **14% Glass**
- **8% Metal**
- **5% Dog poo**
- **5% Other**
- **4% Paper**
- **3% Cigarettes**
- **2% Sanitary**

The Highlands

The following regional summary was compiled using data collected from surveys completed across the Highlands region from December 2023 – February 2024 by community groups, businesses and members of the public. These focused on the Wick River that flows into the North Sea, and the River Ness and the Caledonian Canal that both flow into the Moray Firth. Surveys were also taken from the River Lossie and the River Spey.

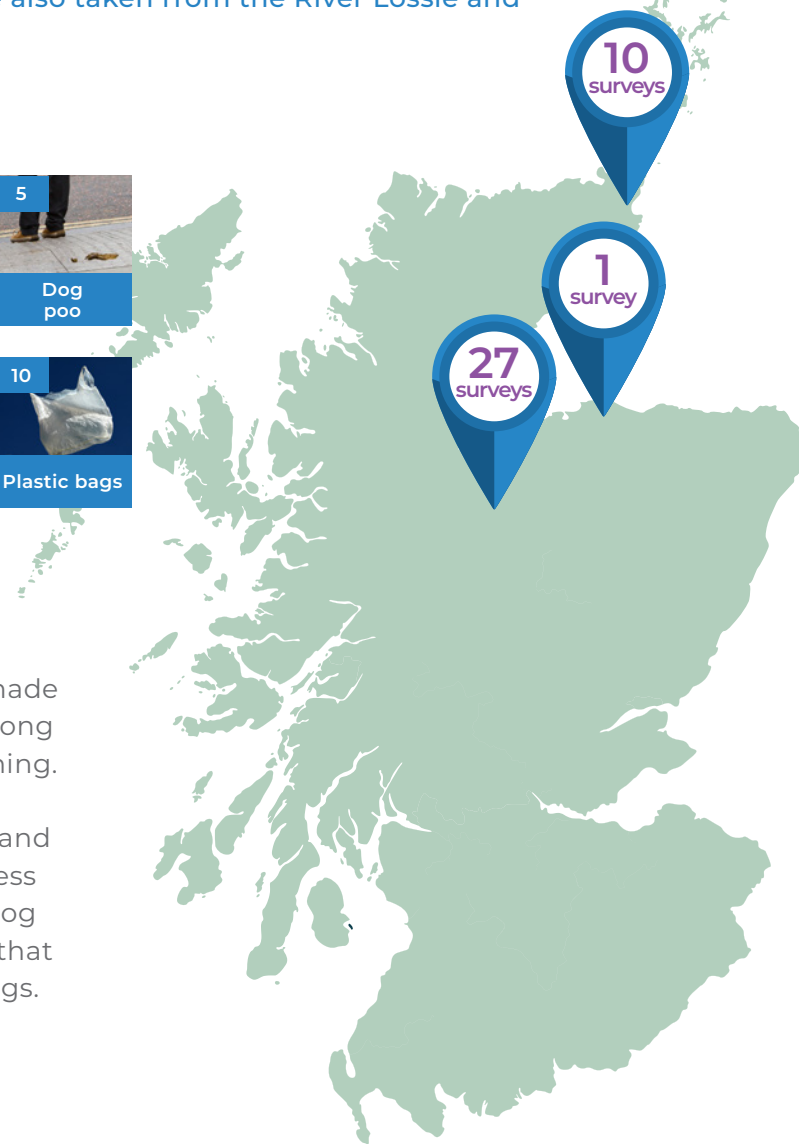
Top 10 littered items:



Notable Findings:

The Wick River was one of the key focuses in the Highlands, which may indicate why fishing line made it into the top 10 littered items as the town has a long association with commercial and recreational fishing.

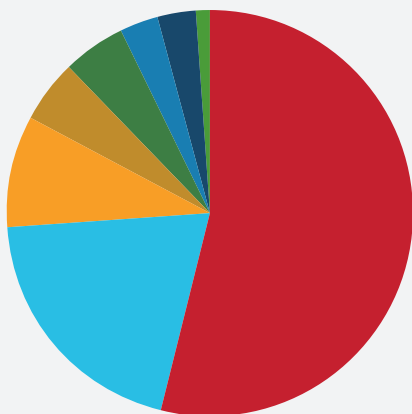
There was a high proportion of dog poo (bagged and unbagged) found which could link to the River Ness Islands and Caledonian Canal being popular for dog walking. The area could benefit from messaging that encourages dog owners to clean up after their dogs.



What was involved?

-  **2** rivers and tributaries
-  **2** local authorities
-  **18** Upstream Battle surveys
-  **1,180** Items counted in total

Material types found



- **54% Plastic**
- **20% Metal**
- **9% Other**
- **5% Dog poo**
- **5% Glass**
- **3% Cigarettes**
- **3% Paper**
- **1% Sanitary**

Tayside

The following regional summary was compiled using the data collected from litter surveys completed across Perth and Kinross and Dundee from December 2023 – February 2024 by community groups, businesses and members of the public. The surveyed areas include the Tay at Kenmore, Aberfeldy, and Perth, as well as a survey on the Dighty Burn. The majority of the surveys (12) were completed around Aberfeldy.

Top 10 littered items:



Notable Findings:





The unusual occurrence of Clothing being in the top 10, related to a significant clothing count from a survey on Dighty Burn.

12 of the Tayside surveys were completed by an Anchor Group, Beyond Adventure. The group have indicated that many items come from drivers along the A827 which runs close to the river. There would be benefit in running a roadside litter campaign using our messaging "Give Your Litter a Lift, Take It Home" in this location.

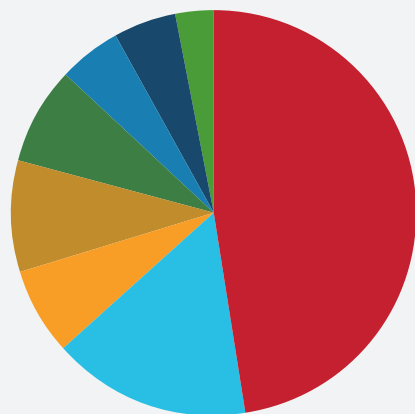
In Perth, cigarettes were the number one littered item which could be due to it being more urban with a higher footfall of traffic and potentially more nightlife venues.



What was involved?

-  **6** rivers and tributaries
-  **6** local authorities
-  **50** Upstream Battle surveys
-  **4,717** Items counted in total

Material types found



- **48% Plastic**
- **16% Metal**
- **7% Other**
- **9% Dog poo**
- **5% Glass**
- **5% Cigarettes**
- **8% Paper**
- **3% Sanitary**

Forth and Central

The following regional summary was compiled using data collected from surveys completed across Stirling, Alloa, Falkirk, Edinburgh, southern Fife and East Lothian from December 2023 – February 2024 by community groups, businesses and members of the public. The River Forth, which flows into the Firth of Forth passes through Stirling and Alloa. Surveys were also undertaken adjacent to the Allan Water in Bridge of Allan, the Forth and Clyde Canal in Falkirk and the Lyne Burn in Fife, which flow into the Forth, and the Water of Leith in Edinburgh and River Esk in Musselburgh, which both flow into the Firth of Forth.

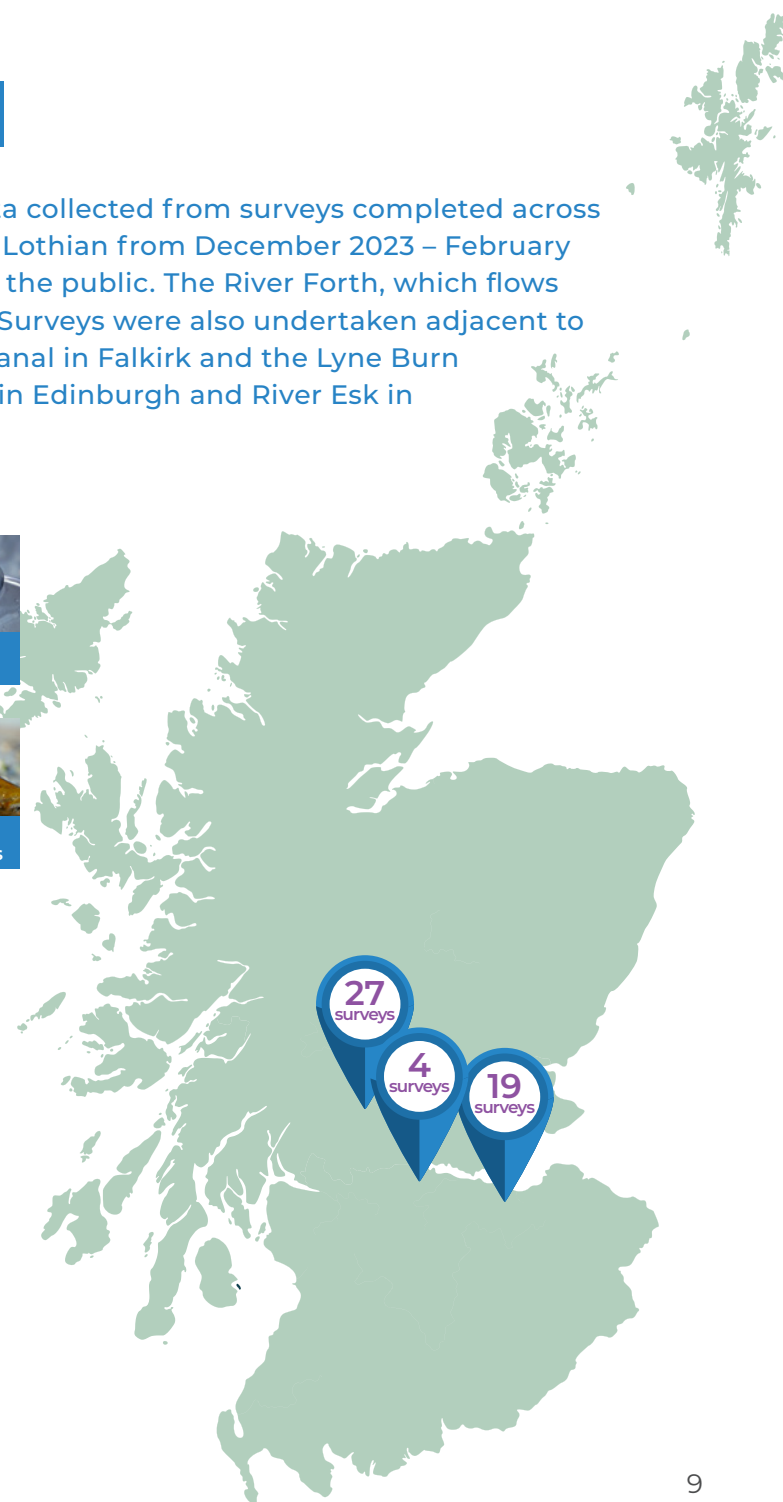
Top 10 littered items:



Notable Findings:

29 single-use vapes were found across the surveyed central Scotland waterways with 15 found along the River Forth in Stirling at one event. Vapes were added to the survey sheet following the campaign we've been working on with Laura Young, ASH Scotland and the Marine Conservation Society - #BanDisposableVapes. Collecting the data on vapes will help us monitor any impact of a ban or other measures.

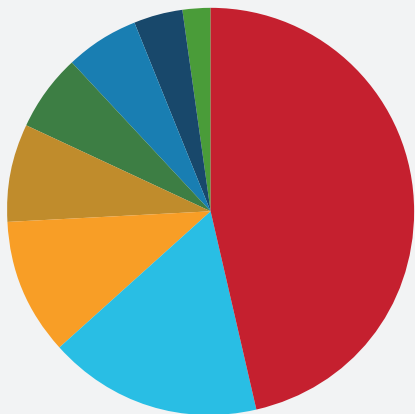
Dog poo, both bagged and unbagged, is number four. Many of the pathways along the Forth are popular with dog walkers. The area could benefit from messaging that encourages dog owners to clean up after their dogs.



What was involved?

-  **3** rivers and tributaries
-  **4** local authorities
-  **40** Upstream Battle surveys
-  **5,530** Items counted in total

Material types found



- **46% Plastic**
- **17% Cigarettes**
- **11% Metal**
- **8% Paper**
- **6% Other**
- **6% Glass**
- **4% Sanitary**
- **2% Dog poo**

Clyde Valley

The following regional summary was compiled using data collected from surveys completed along the length of the River Clyde, including surveys from the Drumfork Burn, Helensburgh and upstream to Gills Burn near Crossford between December 2023 – February 2024 by community groups and members of the public. There was a concentrated effort on the River Clyde in Glasgow as part of a KSB team data day.

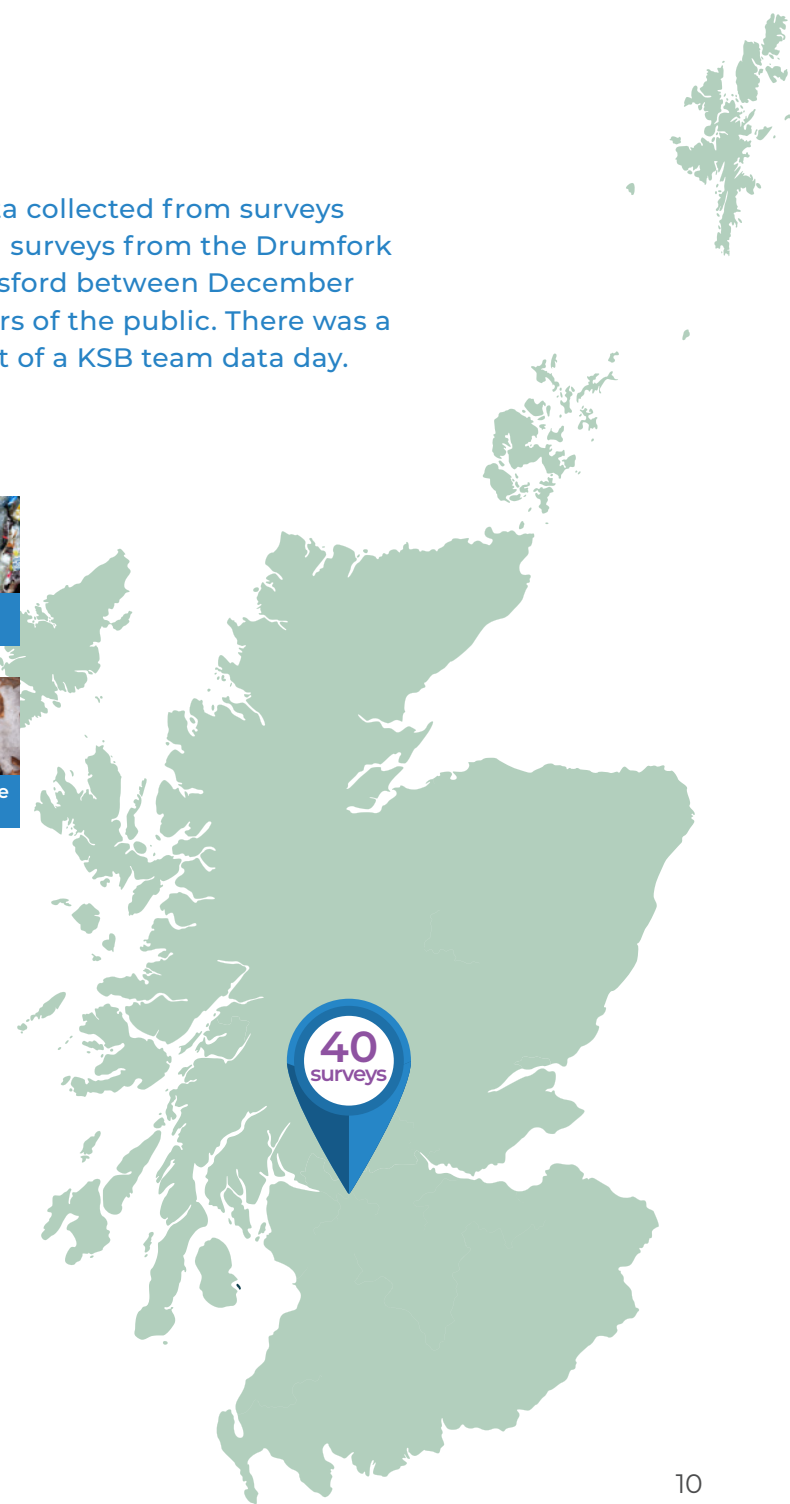
Top 10 littered items:



Notable Findings:

Cigarettes are number one across the Clyde, this was particularly prominent in built-up and high footfall areas as well as near key locations including The Hydro, SEC and the Riverside Museum.

A survey near the Erskine Ferry found 90 cotton buds. These could have come in from the tide or there could have been a release from a nearby combined sewer overflow. In 2019 the Scottish Government banned the sale of plastic-stemmed cotton bud sticks, however there are clearly some areas where these are being found.



River Clyde intervention

As part of our work this year, we wanted to collect data to inform an Intervention in a local area targeting key problem items found. On 1 December 2023, the Keep Scotland Beautiful Campaign's Team collected 23 surveys along the River Clyde. Seven surveys were conducted in the Cuninglar Loop section on the north side of the river, which was then targeted for intervention due to the top three items found in this area being 'food and drink on-the-go' associated litter (drinks cans, plastic snack packets and plastic bottles). The Intervention included designing materials connecting locals and visitors to this area of the Clyde with the marine environment and installing them along the walkway as banners, a billboard and bin wraps.



We used the key campaign stat: 80% of marine litter comes from land and the message 'Enjoy it on the way... Bin it on the go'.

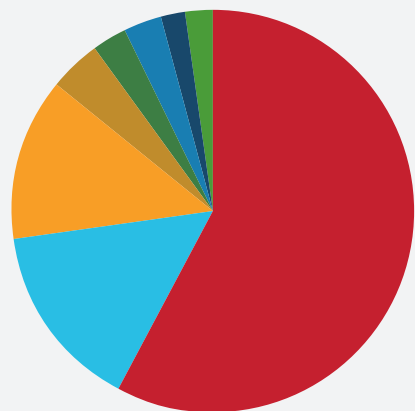
The intervention site was a two-mile section along the River Clyde which incorporates a National Cycle Route that passes through industrial, green, and residential spaces. The intervention targeted the variety of walkway users including people who live in the area using this for leisure, commuters, and workers on lunch breaks.











What was involved?

-  **2** rivers and tributaries
-  **1** local authorities
-  **29** Upstream Battle surveys
-  **1,374** Items counted in total

Material types found



-  **58% Plastic**
-  **15% Cigarettes**
-  **13% Metal**
-  **4% Paper**
-  **3% Other**
-  **3% Glass**
-  **2% Sanitary**
-  **2% Dog poo**

Dumfries and Galloway

The following regional summary is compiled using data collected from surveys completed across Dumfries and Galloway from December 2023 – February 2024 by community groups and members of the public. The surveys were focused on the River Annan and five of its tributaries and the River Nith, both rivers flow into the Solway Firth.

Top 10 littered items:



Notable Findings:

There were two notable finds in Dumfries and Galloway: Plastic sheeting and Polystyrene pieces. More research should be done to understand the sources of these items.

Supporting organisations



Velocity Café & Bicycle Workshop



Visit Inverness / Loch Ness



Scottish Seabird centre



The Scottish Coastal Clean Up



Nith life



Dumfries and Galloway Council's Environmental Team



New Gorbals Housing Association



AtkinsRéalis



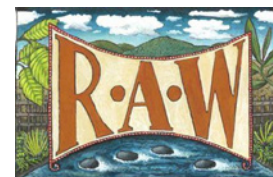
Scottish Canals



Beyond adventure



Irvine clean up crew



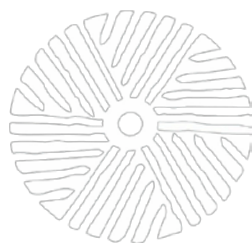
RAW - Restoring Annan's Waters



Annan Harbour Action Group



SEPA



Water of Leith conservation trust



Grow Uddingston



Scouts Scotland



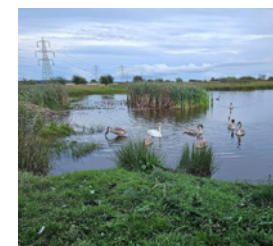
The Duke of Edinburgh's Award



Aberdeen University Marine Society



Target Fund Managers



Alloa park residents association



Portmoak school



Safer Communities Youth Action Project



Peoples project Dumfries and Galloway



Solway Firth Partnership



Wick path's group

Next steps

Keep Scotland Beautiful is 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.

This is the first national riverine data set gathered through our Citizen Science Programme. Gathering data of this type from across Scotland can help identify issues and challenges, encourage engagement, promote prevention and behaviour change, and focus resources.

This phase of Upstream Battle successfully engaged 26 new groups from community groups to businesses and youth organisations from communities across the country to help us understand local issues. This report provides a valuable insight into the varying issues facing communities along rivers and waterways across Scotland.

We need to continue to work with a broad range of partners, funders, and supporters nationally and regionally to build collaboration and deliver action. Most importantly we need to work with local communities to ensure we address local issues and challenges.

Upstream Battle provides a robust platform for effective and efficient action to tackle litter at source along rivers and waterways nationally and locally.





We support the Sustainable Development Goals.

Keep Scotland Beautiful is your charity for Scotland's environment. We work with you to help combat climate change, reduce litter and waste, restore nature and biodiversity and improve places. We aim to inspire changes in behaviour to improve our environment, the quality of people's lives, their wellbeing and the places that they care for.



**Keep Scotland
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