



Upstream[®] Battle

River Irvine Intervention
2024 - 2025



Keep Scotland
Beautiful

Your charity inspiring action for our environment

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We support the United Nations Sustainable Development Goals.



Introduction

Through our Upstream Battle® campaign, Keep Scotland Beautiful has been working with communities, businesses and individuals to tackle riverine litter at source before it ends up in our seas.

The Irvine Clean Up Crew - a volunteer community group focused on tackling litter - evidenced issues with litter by the River Irvine by collecting data as part of the campaign in 2023/2024.

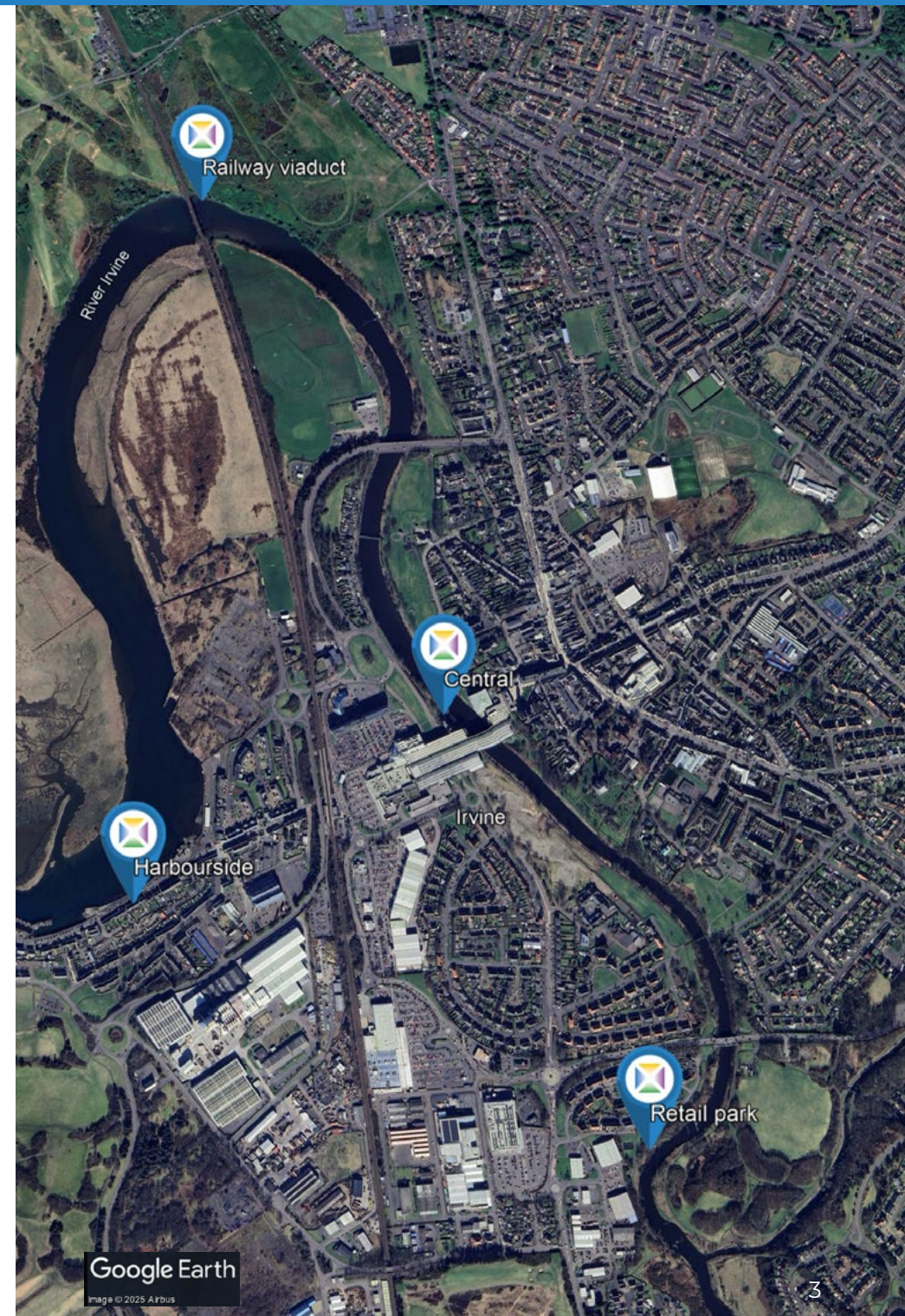
With the support of the Irvine Clean Up Crew and North Ayrshire Council we developed a proposal to identify and attempt to tackle litter along the River Irvine. Thanks to funding from the Marine Fund Scotland, and support from North Ayrshire Council and Irvine Clean Up Crew, we were able to build better data sets, develop campaign interventions and inspire action to reduce litter and prevent it entering the River Irvine and the sea.

We'd like to thank the continued commitment of the volunteers of the Irvine Clean Up Crew for their inspiring action to tackle the litter issues in and around the River Irvine.

Overview

The intervention incorporated baseline assessment and identification of target sites, collection and analysis of 45 litter surveys and trialling a range of engagement and communications tools.

The litter surveys completed by the Irvine Clean Up Crew as the catalyst for this intervention were completed at a location near the railway viaduct over the River Irvine which consistently had extreme levels of litter (up to 1,885 items recorded in 50m). As well as investigating this 'hot spot' site further, we also surveyed the amount and type of litter at three other riverside locations across Irvine to attempt to identify other litter hot spots or indicators for the source of the litter at the viaduct.



River Irvine Intervention overview

We installed promotional materials across key public locations, including a billboard, three bus shelters, and the Irvine train station, highlighting local action and community involvement.

An engagement day was held at Rivergate Shopping Centre, where interactive displays, games, volunteer meet-and-greets, and educational exhibits encouraged the public to learn about the impact of litter on local waterways and inspired them to take action.

4

litter picking events with
local community, plus
additional regular litter picks
by the Irvine Clean Up Crew

20

bin plates installed by
North Ayrshire Council

45

litter surveys carried out
and analysed over 4 sites

110,000+

people reached through radio
and digital advertising, with
over 1.1 million impacts

Bin your litter
keep the River Irvine clean

80% of marine litter
comes from land

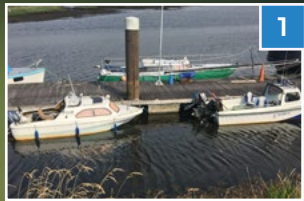


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Timeline of activity



1

June 2024
Baseline assessments - Irvine Data Day
(24 surveys at 4 sites)



2

June 2024
Website news story: Baseline data
along the River Irvine



3

September 2024
Stakeholder engagement: Litter pick
(Railway viaduct) and surveys, Keep
Scotland Beautiful and Irvine Clean Up
Crew (5 surveys at 3 sites)



4

December 2024
Radio and digital advertising on Clyde1- Ayrshire
(30 sec ad, played over 2 week period)
Radio: Impacts: 527,000; Delivered 92 times
Digital: Reach: 5,013; Impressions: 62,530; Listen
Through Rate: 99.1%



8

January 2025
Website news story: Irvine
community collects 15 bags
of litter



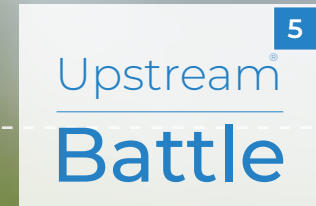
7

January 2025
Stakeholder engagement: Litter pick
(Railway viaduct) and surveys, Keep
Scotland Beautiful and Irvine Clean Up Crew
(7 surveys at 4 sites)



6

November 2024
Stakeholder engagement: Litter pick
(Railway viaduct) and surveys, Keep
Scotland Beautiful, Irvine Clean Up Crew
and Kelvin TOP-SET (4 surveys at 2 sites)



5

November 2024
Website news story: Irvine
joins the Upstream Battle®



9

February 2025
Community engagement: Stall at
the Rivergate Shopping Centre
with Irvine Clean Up Crew



10

February 2025
Billboards and bus shelter signage



11

March 2025
Radio and digital advertising on Clyde1- Ayrshire
Radio: Impacts: 591,342; Reach: 100,839
Digital: Reach: 4,321; Impressions: 50,095; Listen
Through Rate: 98.77%



12

March 2025
Irvine Clean Up Crew
#SpringCleanScotland litter picks
(survey at railway viaduct)

Litter survey findings

Keep Scotland Beautiful held a team baseline data day in June 2024, completing 26 Upstream Battle® litter surveys across the harbourside, central and retail park sites. This baseline was then supplemented with additional surveys over the year. Every survey completed at the railway viaduct site was undertaken by or in conjunction with the Irvine Clean Up Crew, accompanied by a litter pick of both the survey site and the wider area.

The harbourside location was split into two sites, with surveys undertaken along both the harbourside prom and along the adjacent waterline of the same 100m survey transect. This provided a very interesting comparison of the types of litter found at the same location but either on the prom/footpath or on the waterline just below the prom.

45

litter surveys

9,862

litter items

802

litter items per 100m in the
two sites in or flooded by
the River Irvine

81

litter items per 100m on
riverside paths

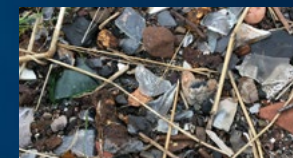
Notable findings

- Six of the top 10 litter items related to food and drink on-the-go.
- 80% of surveys recorded plastic bottles, with a total of 1,813 plastic bottle recorded across the 45 surveys.
- 89% of surveys recorded plastic snack packets.
- 69% of surveys recorded drinks cans, plastic bottles, plastic snack packets and drinks cans in the top 10 for all sites.
- Litter counts were significantly higher in the two sites flooded by the Irvine River, compared with the surveys on riverside paths.
- Fragments of plastic, glass and polystyrene were all in the overall top five litter items. These were primarily recorded at the railway viaduct site.

Top 10 littered items



1. Plastic bottles



2. Glass (and ceramic) fragments



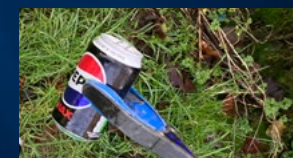
3. Plastic snack packets



4. Polystyrene pieces



5. Plastic pieces



6. Drinks cans



7. Cigarettes



8. Plastic bottle caps



9. Glass bottles & containers



10. Plastic food containers

What was involved?

Railway viaduct

8 litter surveys



6,643 litter items counted

1,476 litter items per 100m



1. Glass (and ceramic) fragments



2. Plastic bottles



3. Polystyrene pieces



4. Plastic snack packets



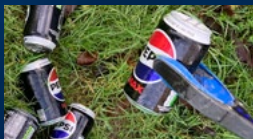
5. Plastic pieces



6. Plastic bottle caps



7. Glass bottles and containers



8. Drinks cans



9. Cotton buds



10. Plastic food containers

Site litter snapshots

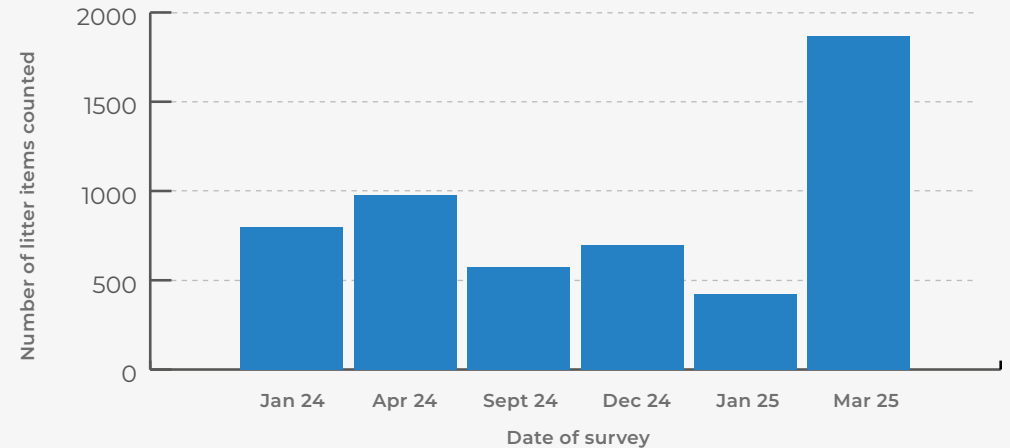
Railway viaduct

This site runs along the northern edge of the River Irvine, just upstream from the railway viaduct, and while it is protected by a low sea wall, the site is inundated on very high tides and during storm surges. Any deposited litter remains onsite when the water level recedes. This site had the most significant litter issues despite being completely litter picked every survey.

Eight surveys were completed at this site over five visits between January 2024 and March 2025. The litter counts were so significant that on some occasions the surveys had to be broken up into surveys over shorter distances.



Litter count (from 50m railway viaduct surveys)



Notable findings:

The site was dominated by litter that has been transported to the site by the River Irvine, with half of the top 10 litter items being food-on-the-go packaging.

- **747** plastic bottles recorded in a 100m survey January 2024 and **510** bottles recorded in a 50m survey in March 2025.
- **1,517** glass and ceramic fragments were counted at the viaduct over the surveys (equivalent to **337** pieces per 100m x 5m stretch). The very high number of (primarily old) glass and ceramic fragments consistently recorded at the site suggests there may have been a historic landfill site for a ceramic producer in this location. More pieces may be exposed as the bank erodes.
- Cotton buds suggests sewage related debris is reaching this location. Given that plastic stemmed cotton buds were banned in 2019, it is alarming that such high numbers are still present.
- **1,885** litter items were recorded in a single 50m survey, including **510** plastic bottles and **330** plastic snack packets as well as many fragments of different materials (**221** glass fragments, **194** plastic pieces and **208** polystyrene pieces). It should be noted that the site had been fully cleaned in both December 2024 and January 2025 but Storm Eowyn occurred in the intervening period, which may have led to the extreme levels of litter deposited on the site.



Follow up recommendation

Despite litter picks being undertaken at the time, extreme counts of litter were recorded at each survey. Investigation of the wider hydrological patterns influencing water flow in the lower Irvine River would be beneficial to attempt to identify the source of the litter. Potential future interventions such as the installation of a cross-river litter barrier could help to determine how much of the litter is moving downstream within the River Irvine, or whether litter is reaching the site through tidal flows from the Garnock River or from the lower Firth of Clyde.



What was involved?

Harbourside prom

7 litter surveys



506 litter items counted

72 litter items per 100m



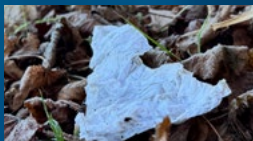
1. Cigarettes



2. Wooden forks and lolly sticks



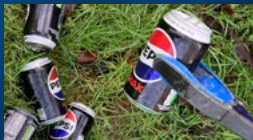
3. Plastic cutlery



4. Paper fragments



5. Plastic bottles



6. Drinks cans



7. Plastic snack packets



8. Paper cups



9. Glass fragments



10. Cartons

Harbourside

At the harbourside site, two parallel surveys were undertaken for each 100m stretch. This allowed for a comparison of the number and types of litter along the riverside prom/footpath with the adjacent waterline area which was within the tidal reaches of the River Irvine. Over the same stretch along the river, 506 items were recorded on the prom, with a significantly higher 899 items on the waterline.



The prom was dominated by food on-the-go litter and cigarettes, with the range of litter types being similar to that of the central Irvine site. The waterline litter surveys suggested some litter may have been blown from the prom into the water, such as plastic snack packets and paper cups, but much of the litter is likely to have been carried by the river, such as construction materials and plastic bottles (which frequently showed evidence of being in the water for some time).

What was involved?

Harbourside waterline

7 litter surveys



899 litter items counted

128 litter items per 100m



1. Plastic bottles



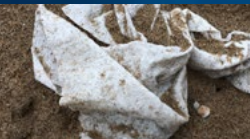
2. Paper food containers



3. Drinks cans



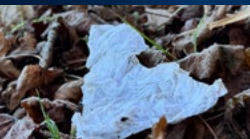
4. Plastic snack packets



5. Wet wipes



6. Paper cups



7. Paper fragments



8. Plastic food containers



9. Construction material

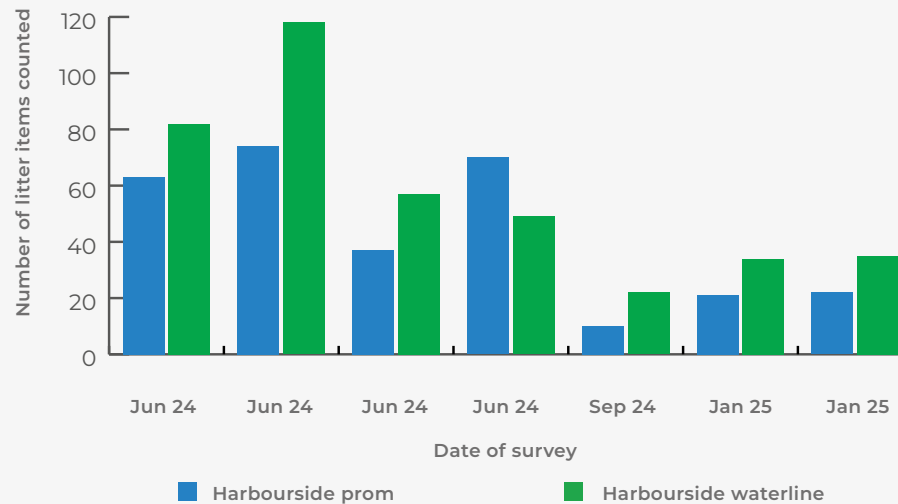


10. Glass bottles and containers

Notable findings:

- More litter was recorded on the waterline compared with the adjacent prom on six of the seven surveys.
- The top litter items on the prom were cigarettes and wooden and plastic cutlery items. This is similar to the Irvine results from our [My Beach, Your Beach report from 2022](#) and reflects the use of the harbourside area, with many people walking between central Irvine and the beach.
- Plastic bottles that may have been carried back and forth in the river with the tidal movement were the most common item recorded at the waterline.

Harbourside litter counts (comparing counts of adjacent prom and waterline litter) over 100m



What was involved?

Retail Park

7 litter surveys



1,327 litter items counted

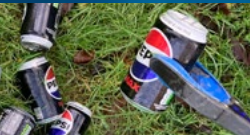
88 litter items per 100m



1. Plastic snack packets



2. Plastic bags



3. Drinks cans



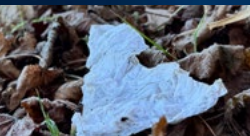
4. Plastic gloves



5. Plastic pieces



6. Plastic food containers



7. Paper fragments



8. Plastic bottles



9. Paper receipts



10. Other paper

Retail Park

The litter surveys undertaken at this site followed a riverside path behind a retail park upstream from the centre of Irvine. The location and the types of litter recorded suggest that the site may be used as a break spot for the staff working in the adjacent retail park. Litter surveys were completed at this site on five different dates, the final survey being nearly two weeks after a litter pick in the area by the Irvine Clean Up Crew.

Notable findings:

- The litter counts at this site were dominated by food-on-the-go related litter as well as single-use/disposable gloves and paper receipts.
- The key finding at this site was the significant impact of a large litter pick undertaken by the Irvine Clean Up Crew at the start of February 2025. Only 23 items of litter were recorded in a survey undertaken two weeks after the litter pick, compared with 100 items in previous surveys. This highlights that a cleaner area may be more likely to remain clean, leading to a lower chance of litter items being blown into the river.

Litter count per 100m survey at the retail park



Photographs from the retail park in June 2024 and then in February 2025 two weeks after the litter pick at the site.

June 2024



February 2025



What was involved?

Central riverside paths

16 litter surveys



1,327 litter items counted

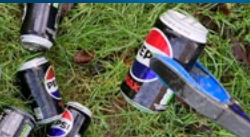
88 litter items per 100m



1. Plastic snack packets



2. Plastic pieces



3. Drinks cans



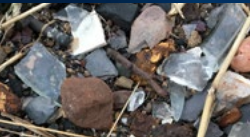
4. Plastic bottles



5. Plastic bags



6. Cigarettes



7. Glass fragments



8. Foil wrappers



9. Plastic food containers



10. Plastic bottle caps

Central

The central riverside paths were surveyed in June 2024. The paths were seen as being representative of local littering in central Irvine. Across the 14 riverside path surveys at this site, the average litter count was 53 items per 100m.

Notable findings:

- Apart from cigarettes, the top 10 most common littered items in central Irvine are all linked to consumption of food and drink on-the-go.
- The Irvine Clean Up Crew completed two litter surveys at a significantly littered central area, off the main path, where the average litter count was 293 pieces per 100m. These surveys were heavily dominated by drink cans, plastic snack packets and plastic bottles - all likely to have been littered on site.
- Surveys along the path in the Low Green area were characterised by littered items that had been cut into pieces through recent mowing of the park area.



Communications

The Upstream Battle® Irvine Intervention was an opportunity to trial a range of communications tools to raise awareness of both the importance of litter being put in the bin and protecting the River Irvine.

Imagery on billboards and bus shelters was based on local photography, highlighting the local efforts of the Irvine Clean Up Crew. Radio advertising was run on Clyde 1 Ayrshire in November 2024 and March 2025, with digital advertising reaching a geographically targeted Irvine audience.



Engagement with the community and stakeholders was important to help highlight the litter issues in Irvine. The Irvine Clean Up Crew is a very active and enthusiastic local group coordinating litter picks with the community, businesses and schools across the Irvine area. They organised community litter picks at the train viaduct site to coincide with our litter surveys, as well as completing additional surveys themselves. They also encouraged contact with local businesses such as Kelvin TOP-SET who engaged with the intervention.

Keep Scotland Beautiful joined the Irvine Clean Up Crew for a day of community engagement at Irvine's Rivergate Shopping Centre; talking to shoppers about litter issues, providing Irvine focused, [litter related activity sheets](#) to young people and encouraging more community action on litter issues.

Out of home advertising

- ✓ **Billboard** (2 weeks)
- ✓ **3 bus shelters** (2 weeks+)
- ✓ **3 train station posters** (2 weeks+)
Combined reach: 56,090
Combined impacts: 271,470

Radio Clyde 1 Ayrshire and digital audio advertising

- ✓ **Nov 2024: 30 second radio ad** (2 weeks)
Impacts: 527,000
Delivered 92 times
Digital audio:
Reach: 5,013
Impressions: 62,530
Listen Through Rate: 99.1%
- ✓ **Feb 2025: 30 second radio ad** (2 weeks)
Impacts: 591,342
Reach: 100,839
Delivered 94 times
Digital audio:
Reach: 4,321
Impressions: 50,095
Listen Through Rate: 98.77%

Additional promotion

- ✓ **Banner in front of Irvine train station**
- ✓ **20 bin plates**
Installed by North Ayrshire Council on bins near the riverside viaduct

Conclusions

There is a significant litter issue in and around the River Irvine.

There is litter on the riverside pathways around Irvine, which has the potential to end up in the river. However, the amount of litter on paths, while problematic in some areas, could continue to be reduced with ongoing education campaigns and direct interventions such as regular litter picks.

The amount of litter moving through the tidal reaches of the river is significant and is of considerable concern for the local environment, as well as the local community. There is no clear source of the litter and no indication of any reduction in the amount of litter carried by the river over time. The levels of litter recorded at the railway viaduct site after significant storm events is extreme and the evidence shows that, despite large amounts of litter being removed through the incredible litter picking efforts of the volunteers of the Irvine Clean Up Crew, the litter count is still high: the final survey recorded the highest number of litter items (over 1,800 items in 50m). The anticipated introduction of the UK wide Deposit Return Scheme in October 2027 will be welcomed and should reduce the litter, particularly plastic bottles, reaching the River Irvine and ultimately the marine environment.

There are a number of interesting features of the lower reaches of the River Irvine. The River Garnock flows into the River Irvine close to its mouth, adjacent to the Bogside flats, which is recognised as an area of special scientific interest. The River Irvine then feeds into the southern reaches of the Firth of Clyde. As such, it appears that the floating litter from both the Firth of Clyde and the River Garnock can flow into the Irvine with tidal movement, especially when combined with storm surges. This tidal source is in addition to the litter flowing down the River Irvine from its catchment which includes industrial and rural areas and the town of Kilmarnock. This would be worthy of further investigation.

Next steps:

Keep Scotland Beautiful will continue to encourage and support the work of the Irvine Clean Up Crew to highlight the issues of source to sea litter.

It is important that further investigation is undertaken into the riverine flows of the lower River Irvine to attempt to determine the source(s) of the litter being deposited in the vicinity of the railway viaduct.

Given the likely diverse geographic spread of the source of litter at this site, wide ranging communications featuring the Upstream Battle® messages will be required to attempt to reduce littering throughout the wider catchment area.

To understand the amount of litter flowing down the River Irvine, research is needed into potential barriers or mechanisms that may trap litter and could assist in identifying the source of some of the litter impacting the Irvine area.





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.



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