## Marine Litter Report 2022

### KEEP NORTHERN IRELAND BEAUTIFUL



Marine Litter Report 2017











#### Litter on beaches in Northern Ireland 2014



Litter on beaches in Northern Ireland 2016

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Ten years of the Northern Ireland Marine Survey 2012-2022\*

\*There was no report published for 2015.  $\equiv$ 

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### **Foreword: Ten years of the Marine Litter Report**

10 years ago, we set off on a journey with the Department of **Agriculture, Environment and Rural Affairs: to record the** amount of Marine Litter that is plaguing our beaches and waterways in Northern Ireland.

The pages in this report show in some ways that we have come far in advancing the debate around our waste problem, but sadly, they also show we have some distance still to travel in preventing littering.

We need to have an honest conversation about our misuse of plastics. The figures in this report make the case for reimagining how we use our plastics very clear, with 90% of the litter found on our beaches made of plastic. This is the highest since we began surveying in 2012.

These plastics include a mix of larger and more visible items such as gloves, but also many smaller and microplastics too. Microplastics can be incredibly harmful to our marine wildlife. They can wreck natural habitats and pose a real risk to the lives of other animals.

This damage is caused very simply because there are a minority of people in society who feel it is OK to litter. As we visit the coast, most of us will be responsible and clean

up after ourselves, but others will just leave their litter for someone else to deal with. Sadly, for our planet, the victims of this are our wildlife.

For a decade now, this report has gone in-depth in exposing the numerous dimensions of marine litter in Northern Ireland. We take pride in this research as a way to establish a benchmark for all of us to understand the true scale of the problem.

What we want to see is this research being used to achieve results. That is why we have placed a focus on how you can help make a difference. Whilst the marine litter problem has many different dimensions, there are just as many different avenues available for us all to be part of the fightback.

You can also read some of our recommendations for government, businesses and individuals. I have always believed that if we are going to go far, we have to go together. Through legislation, we can have proper targets to work towards, which leads to new approaches from businesses, which then leads to wider behaviour change from the public.

Sometimes change is hard to believe in, until it happens. Over the last decade, this very report has charted the positive and negative trends in our marine litter. This report is critical because it informs our conversation and ensures that policy-makers have clear robust information on which to base legislative and policy decision making. And whilst

in some respects this problem has worsened, I am firmly of the belief that there has never been a more exciting time to be working on the environment.

Why am I so excited? It really is because of the rising awareness of the issue amongst so many dedicated volunteers I meet who want to make a difference. For that I sincerely thank you. I am also excited by the businesses that are keen to know just how they can reduce their negative environmental impacts.

It is my hope that this report can help steer Northern Ireland towards a better future in the next decade. The great research that has been done over the past ten years has made a difference.

Let's keep working together and really reduce the amount of plastic that is used.

#### **Dr. Ian Humphreys**

CHIEF EXECUTIVE, KEEP NORTHERN IRELAND BEAUTIFUL

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### **Executive Summary**

This report summarises the key findings on marine litter observed on twelve reference beaches around Northern Ireland in 2022. Data has been collected since 2012 using the internationally recognised **OSPAR methodology.**<sup>1</sup>

Marine litter continues to be an issue of global concern. The amount of plastic in the oceans has been estimated to be 75-199 million tonnes.<sup>2</sup> Moreover, emissions of plastic waste into aquatic ecosystems are projected to nearly triple by 2040 without meaningful action.<sup>3</sup>

In 2010 the OSPAR protocol was adopted in the North East Atlantic area to assess the impact of marine litter. This report details the amount of litter observed on 12 reference beaches in Northern Ireland during the 2022 calendar year.<sup>4</sup>

The 2022 Marine Litter Report shows some improvement, when compared with last year's figures. The overall number of items of litter recorded decreased, from 36,587 in 2021 to 26,002 this year. The average number of items per 100m is also down, from 762 in 2021, to 542 in 2022. The total recorded number of heavy duty plastic gloves has reduced significantly to 660, from last year's 1,012.

While these improvements are welcome, they must be received with caution. The 2022 average number of items per 100m, 542, while lower than last year, is still higher than those figures reported in 2020 and 2019. (364 and 508 respectively.) In fact, if we look at these figures over the past ten years, the 2022 figure is the third highest on record.

This year also saw a record 90% of litter that was made from plastic, the highest since the Marine Litter Report began. This is reflected in the 2022 Terrible Ten, which reveals that nine of the top ten items are forms of plastic.



Cover from our 2016 report; animals often mistake rubbish for food which can result in injury and even death. This photo shows one of our most charismatic species, the grey seal attempting to eat a plastic bag.

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heavy duty gloves recorded in 2022 on survey beaches

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### Ten Years of the Marine Litter Report

In 2012, we reported an average 4,033 items of litter per km of beach surveyed. Ten years on, and that figure is 5,420. The graphic below illustrates the composition of this average figure.







Items of litter per km of beach surveyed in 2022

	000 A 400 A 6 3	69 <u>7</u> 229	10/	CLASS 200	
K A	ARS AN OVER		4/0	Bottles 20	
	Glas	SPRAID27	2%	METAL 120	
			270	Drinks Cans 90	
			1.%	<b>CLOTH</b> 60	
			0.9%	SANITARY 50	
	<b>~~~~~</b>	48	0.070	Cotton Bud Sticks 15	
Other Plastic Items	Metal 9	Cloth	0.5%	RUBBER 30	
		] <	0.5%	<b>WOOD</b> 30	
	🕾 ነ ለጠ 🖌		0.5%	DOTTEDV/CEDAMIC 70	
	Sanitary Ruk	ber Wood	0.5%	POTTERT/CERAMIC 30	
			0.4%	PAPER 20	
	Raterrazio l ¶		0.2%	MEDICAL 10	
Pottery/Ceramic Paper Medical					

### What is the Marine Litter Survey?

### **Keep Northern Ireland Beautiful** has been recording marine litter in Northern Ireland for the past ten years.

We use a survey method designed by the OSPAR Commission to standardise the monitoring of litter on beaches across countries bordering the North Atlantic.

Currently 12 beaches are being surveyed in Northern Ireland (see page 9).

OSPAR is the mechanism by which 15 governments and the EU cooperate to protect the marine environment of the North-East Atlantic. The 15 Governments are Belgium, Denmark, Finland, France. Germany, Iceland, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom<sup>4</sup>.

OSPAR's strategic marine litter objective, shared by Keep Northern Ireland Beautiful, is to "Prevent inputs of and significantly reduce marine litter, including microplastics, in the marine environment to reach levels that do not cause adverse impacts to the marine and coastal environment with the ultimate aim of eliminating inputs of litter." <sup>5</sup>

You can view the data for all OSPAR sites by visiting https://odims.ospar.org

#### The methodology

The OSPAR Commission designed the marine litter survey guidelines to assist countries with recording and tackling the marine litter problem on both a local and North East Atlantic level.

The information collected from each beach is fed into a central database which shows trends in the types of litter found in the marine environment. Surveyors record all litter found on the beach under different categories to help describe the different groups and items of litter observed.

When selecting beaches to be surveyed the following criteria were used. The beach must:

- Be composed of sand or gravel and exposed to the open sea;
- Be accessible to surveyors all year round;
- Be accessible for ease of marine litter removal;
- Be a minimum length of 100 metres and if possible over;
- 1 kilometre in length;
- Be free of 'buildings' all year round; ideally not be subject to any other litter collection activities

Two sampling units are used to measure a fixed section of the beach between the water's edge and the back of the beach.

These units are:

100 metres: for identifying all marine litter items;

1 kilometre: for identifying objects generally larger than 50 centimetres.

The survey periods are as follows:

- Winter: mid-December to mid-January
- Spring: April
- Summer: mid-June to mid-July
- Autumn: mid-September to mid-October

To ensure that the marine litter being recorded during each of the surveys isn't duplicated, the survey beaches are cleaned within two weeks of the survey.

Once all data has been collected, it is collated into one form and uploaded to the OSPAR database.

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**Clean-ups have** contributed massively by removing well in excess of a million items of litter from the survey beaches

**Dr. Ian Humphreys** CHIEF EXECUTIVE, **KEEP NORTHERN IRELAND BEAUTIFUL** 



### Then and Now: The Plastic Problem 10 Years on

In 2022, plastic accounted for an overwhelming 90% of litter recorded on our beaches. While perhaps not surprising, this is the highest proportion of plastic litter we've recorded to date.

Looking back at the figures from the past ten years, we can identify a broad upward trend in the proportion of plastic litter, from 74% in 2012 to 90% this year.

Plastic litter is a serious cause for concern, not least because it can take centuries to break down. Around the world, more than one million birds and over 100,000 sea mammals and turtles die every year from eating or

getting tangled in plastic waste.<sup>6</sup> There is also growing concern about the widespread prevalence of microplastics (read more about this on page 11)

#### Key

OTHER PLASTIC

Bar chart shows mean items of litter per 100 metres of beach surveyed.

One off events, such as the winter storms of 2014, can skew the data. It can also be influenced by very good weather, or if there has been a recent clean up.

Surveys were not carried out in Northern Ireland during the period Spring-Autumn 2015.

Surveys could not be carried out in Northern Ireland during the period Spring 2020 due to COVID-19 restrictions in line with Public Health guidelines.





An abundance of litter,



### 2022 Terrible Ten

Plastic continues to dominate the most common items found on the survey beaches, whether in the form of single-use plastics, such as food and drinks containers, or as string, rope and cord. This graph details the average number of pieces of each type of litter found within each 100m survey.



The total number of heavy duty gloves we found on our surveyed coastline. 2022 saw a significant reduction in this type of litter when compared with 2021. We would hope for this trend to continue in this downward direction.





2019: Ardglass beach, a beach in close proximity to a fishing harbour showing an array of plastic litter and an abundance of blue heavy duty gloves.

### **Plastic Around our Coast**

These mini graphs depict the seasonal variation in total number of plastic items found around our coast. These include both Single Use Plastic items and also items of fishing gear.





3,556





Left, an emergency beacon from a life raft, found on Kilkeel beach during the winter survey in 2012.

Below, surveying Ardglass beach in 2016.

Bottom, Black Guillemot entangled in a dog poo bag, captured in 2017 by Mary Lappin.



## **Ending Plastic Pollution Permanently: A Global Plastics Treaty**

A comprehensive, legally enshrined international accord promises the best opportunity to resolve one third of our triple planetary crisis.



The nurdles above were collected on the Groomsport beach in Bangor in 2018. All nurdles are between 3 and 5 mm in diameter and often shaped like a lentil. They are clear or white in colour but become yellow over time. Some of them are coloured.

The presence of microplastics in the Arctic<sup>7</sup> and the ongoing journey of the Friendly Floatees to shores across the world since 1992<sup>8</sup> illustrates two important facts about the plastic-pollution crisis: (1) that it is transboundary and (2) that is transgenerational.

In other words, the efforts of individual nations alone to combat the effects of plastic waste cannot hope to succeed, and coordinated international action is required to protect all countries on earth against the ongoing threats posed by plastics. The necessity of this outcome is illustrated by the Pew Charitable Trusts report that existing polymer plans around the world will only stem the flow of plastics into our oceans by 7% by 2040<sup>9</sup>. At present, there are an estimated 171 trillion pieces of plastic destroying our largest waterways<sup>10</sup>.

It is against this backdrop that what has become known as the Global Plastics Treaty is currently under negotiation. The mandate for 'End plastic pollution: Towards an international legally binding instrument' was agreed on 02 March, 2022 at the fifth session of the United Nations Environment Assembly (UNEA 5.2) by Member States, including the UK. Its aim is to establish a planet-wide convention by 2024 that can deliver robust and lasting solutions to the plastic crisis by 2040. Significantly, the resolution has drawn support from major corporations in the private sector, including Coca-Cola, PepsiCo, Unilever and P&G, who all added their signatures to The Business Call for a UN Treaty on Plastic Pollution<sup>11</sup>.

What sets the Global Plastics Treaty apart from other vital plastic-pollution policies (Extended Producer Responsibility, Deposit Return Schemes, national bans and levies) is how it focuses on the full lifecycle of plastics, accommodating into its purview everything from fossil-fuel extraction, product design and transportation, waste collection and management, and, strikingly, the disposal and retrieval of legacy plastics.

As the resolution's official name also conveys, the treaty is designed to secure ironclad legal targets from all signatory governments, distinguishing it from the national voluntary commitments that guide similar multilateral environmental agreements (MEAs), such as the Paris Agreement on climate. A similar strength of the international accord is that it will be led by a scientific body in the Intergovernmental Negotiating Committee (INC), placing it in contrast to the United Nations Framework Convention on Climate Change (UNFCCC) treaty, which is governed by the policymakers that form the Conference of the Parties (COP) rather than the Intergovernmental Panel on Climate Change (IPCC). It is for these reasons that Inger Andersen, Executive Director of the UN Environment Programme, has described the treaty as "the most important international multilateral environmental deal since Paris."12

To fulfil its purpose of putting paid to plastic pollution by 2040, the Global Plastics Treaty will need to garner greater international support from nation states, but, more importantly, it must also be fully implemented in its intended original scope by 2024. That means that governments, businesses and other stakeholders should maintain their support for a holistic, legally binding approach to the plastic emergency, resisting any emerging pressure to weaken the proposals that are contained within the original resolution. Failure to realise the potential represented by the Global Plastics Treaty risks an unimaginable consequence: the amount of plastic entering our marine environment almost tripling to 23-37 million tons per year by 2040.<sup>13</sup> Learn more about the Global Plastics Treaty at www.unep.org/about-un-environment/ inc-plastic-pollution.

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### What's the Problem? Microplastics

### The term microplastics is one many of us are familiar with.

Almost ten years after the term was coined, we've been told of many unlikely places that microplastics can be found- whether that's in the air in our homes<sup>14</sup>, on Mount Everest<sup>15</sup> or, even, our blood<sup>16</sup>. But what are microplastics, where do they come from, and why are they of concern?

Microplastics are exactly that; tiny solid particles of plastic, measuring less than 5mm. Microplastics can be created in a number of ways:

- Through the breakdown of larger items of plastic litter
- Microfibres shed from textiles
- Particles resulting from tyre abrasion.
- Tiny particles that have been deliberately manufactured for use in products such as exfoliating beads in facial or body scrubs.
- Spillage of tiny particles of plastic that are the feedstock for the production of other plastic items.<sup>17</sup>

Microplastics, like other plastics, are not biodegradable. This means they accumulate year on year; current estimates suggest there are already trillions of microplastic particles in the marine environment<sup>18</sup>.

Professor Richard Thompson, OBE FRS was the first to use the term microplastics, in his landmark paper 'Lost at Sea: Where is All the Plastic? On the prolific nature of microplastics today, he comments:

"While news articles often describe heavily contaminated locations. It's now clear that plastic and microplastics contaminate shorelines worldwide.

Our work has so clearly shown, that microplastics are present in every sample of beach sand, whether it's in Australia, Asia, Europe, North or South America. We've looked in the deep sea, in Arctic ice, in the gut of hundreds of fish from the English Channel, and we've found microplastic contamination everywhere."19

Microplastics have been found not only in marine ecosystems, but freshwater and terrestrial ecosystems too, making their way into our food chains. But it doesn't stop there-last year, a breakthrough study at Vrije Universiteit Amsterdam in the Netherlands found microplastics in the blood of 80% of those tested.<sup>20</sup> This follows on from a disturbing 2020 discovery that bottle-fed babies are swallowing millions of microplastics a day.<sup>21</sup>

What effect are these microplastics having on our environment, and our bodies? There are still many unanswered questions about the potential harm that microplastics could cause. We do know that there are over 10,000 unique chemicals used in plastics, 2,400 of which a recent study identified as "substances of potential concern."22

While more research into the long term effects of microplastics is needed, their growing presence in our ecosystems, food, drink and even our bloodstreams, highlights the urgent need to prevent plastic entering the environment in the first place.

### **300 million**<sup>23</sup>

Tonnes of plastic produced worldwide each year

## 1.75 million<sup>24</sup>

Number of fragments that a single plastic bag can be shredded into

### **700,000**<sup>26</sup>

Number of microfibres a single wash load of acrylic clothing can release





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### **Ten Years of Volunteer Support**

Over the past ten years, the marine litter survey has been supported by amazing volunteers.





Individuals and groups have dedicated their time to both carrying out surveys and cleaning up beaches after surveys have taken place. We couldn't complete this important work without their efforts.

Paul Moore, local wildlife expert and retired entomologist is one such volunteer. Paul began giving his time to the surveys nine years ago and has been involved in many of the marine litter reports to date (*although did not carry out surveys for this year's report*).

#### Why volunteer?

For Paul, volunteering was borne out of a genuine interest in marine litter, "It started from going down to the beaches to walk, I'd see the litter and start picking it up. I was naturally curious to see what was being littered."

Although he has also taken part in clean ups, Paul has primarily volunteered his time to conducting beach surveys. This involves recording litter found on beach samples, following the OSPAR guidelines.

Over the years he's been involved in the surveys, Paul has noticed some trends:

"Plastic bags have gone down considerably. Disposable BBQs were getting quite common for

*Top: Volunteers collect the millionth piece of litter from our survey beaches, on Rostrevor beach in 2018.* 

Bottom left: Surveyors Conor, Jess & Paul on Rathlin Island, January 2019.

Bottom right: Volunteer surveyor, Paul Moore.

a while but have been going down in numbers again. Novel things- mobile phones are starting to turn up now, and I've even had one solar panel. Cotton buds seem to have decreased. You get some things from Scotland and England. I have had things off boats, from Indonesia and France. Haven't had anything from America, but you would get stuff from the continent."

Although witnessing the level of marine litter can be "frustrating", Paul says volunteering is good fun, nonetheless. "It's good exercise, you're walking up and down the beach continually, good physical exercise. It's nice to get out in the fresh air. Volunteers try it once, and then are queueing up to do it. You have good craic with other people. There's no point complaining about litter, until you get out and see how bad it is for yourself."

If you'd like to volunteer your time to the marine litter survey, please email enquiries@keepnorthernirelandbeautiful.org.

### What Can You do to Make a Difference?

You can make a difference in your local maritime environment in many ways. Live Here Love Here and Keep Northern Ireland **Beautiful offer something for** everyone who has a passion for making a difference.



#### **Healthy Oceans, Healthy Minds**

Healthy Oceans, Healthy Minds is an annual invitation for communities and individuals to come together and reconnect with the full array of our waterways. This programme takes place every summer and Autumn each year with the aim of achieving five goals. 1) Inspiring and re-establishing people's connection with our seas and oceans. 2) Raising awareness of the benefits a healthy marine environment can make to our physical and mental health and wellbeing. 3) Educating people on alterative choices/habits they can adopt that help protect our oceans from further damage and pollution. 4) Motivating and empowering people to take individual positive actions to protect our seas and oceans 5) Celebrating and showcasing groups connecting people to blue spaces.

If you have an idea for an event email: enquiries@liveherelovehere.org

#### **Adopt A Spot**

Adopt A Spot is a community-based volunteer Live Here Love Here regularly runs grant support programme focused on minimising litter and promoting programmes to help support groups and communities civic pride. Families, community groups, youth groups, in their fight against our litter problem. Make sure to schools, businesses and sporting associations are check out Live Here Love Here's social media channels all encouraged to help foster a healthier, greener and and website to see what support you or your group cleaner Northern Ireland by adopting and caring for could get to help you on your journey. a neglected area. By helping improve just one spot Live Here Love Here also runs the Big Spring Clean at a time, we can help tackle litter that ends up in our annually, which is open to individuals, schools, groups waterways and beaches. Your adopted Spot should and businesses from all communities who want to rid be safe and accessible for conducting clean-up their local environment of litter and discarded rubbish. activities and within a reasonable distance from you. This is a great way to connect with other like-minded It is so easy to take part and we have a dedicated groups who want to do little actions that can make a big difference.

team to help you on your journey towards making our environment better. If you want to find out more information about how you could Adopt A Spot email adoptaspot@keepnorthernirelandbeautiful.org

Adopt<sup>®</sup> A Spot





### **Big Spring Clean & Grant Support**

Visit www.liveherelovehere.org

### Recommendations

All players in society must contribute to solve the monumental marine-health battle that we have on our hands. As always, a joined-up approach remains essential.

#### Government

#### 1. Back the High Seas Treaty

The promise of the Global Plastics Treaty is reinforced by a new UN Member State mandate to negotiate a wide-ranging deal that will apply to approximately two-thirds of oceans that exist outside of national jurisdictions. Agreed in March 2023, the High Seas Treaty was almost two decades in the making, and, among other things, it will aim to create huge swathes of marine protected areas (MPAs) that deliver on the Global Biodiversity Framework's target of conserving 30% of the ocean by 2030.

Learn more about the High Seas Treaty at news.un.org/en/story/2023/03/1134157.

#### 2. Introduce More Bans and Levies

Due to collapse of the Executive, progress on single-use plastics legislation has stalled, leaving Northern Ireland lagging behind the achievements of neighbouring nations in the UK.

#### 3. Play Your Part

Sound and timely environmental policies are what the electorate need most from their representatives, but actions can also help change existing norms.

Taking part in a local beach clean with a group operating in your constituency, could be a great way to engage in this space.

#### **Businesses**

#### 1. Sign the Global Plastics Treaty

Some of the biggest multinational companies in the world have already signaled their support for this international instrument that aims to stop plastic pollution from ravaging our oceans irreversibly by 2040. Many others enterprises have done the same with policies such as Deposit Return Schemes and Extended Producer Responsibility.

Why not do something equally powerful and go on the record with your businesses' support for the Global Plastics Treaty? Add your signature at www.businessforplasticstreaty.org.

#### 2. Donate to a Marine Charity

Protecting endangered species, building bonds between people and the sea, and addressing overfishing problems. Those are just a handful of examples of the amazing and vital services that marine charities perform to preserve and enhance our aquatic ecosystems.

If your business has the available funds and you want to show that you are serious about caring for our blue spaces, you might consider donating to a marine charity.

#### 3. Organise a Litter-Pick

The beach, river or lough that is closest to your business is the perfect place for you to protect our precious waterways. You can register the event as part of our BIG Spring Clean or Healthy Oceans Healthy Minds campaigns that are highlights of Live Here Love Here each year, and we will help get more members of the public involved in your good work.

Visit <u>www.liveherelovehere.org</u> for more information.

### Individuals

#### 1. Make a Plastic Promise

In most cases, people have huge power and choice in where they choose to spend their money. Our Plastic Promise sets you the challenges to refuse, reduce and reuse (in that order) common plastic products, and the best part is that most of these items are regular marine-litter culprits.

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Sign up to cut your plastic footprint at www.liveherelovehere.org/PlasticPromise.

#### 2. Support the Global Plastics Treaty

As noted, the Global Plastics Treaty has enormous potential to offer a lasting legacy in our unsustainable relationship with plastics, particularly the single-use variety. But people power will be crucial in ensuring that the treaty truly delivers the circular economy that we need.

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Ten years of the Northern Ireland **Marine Survey** 2012-2022

If you would like to learn more about volunteering with Keep Northern Ireland Beautiful or would like to get involved with the marine litter surveys please contact:



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